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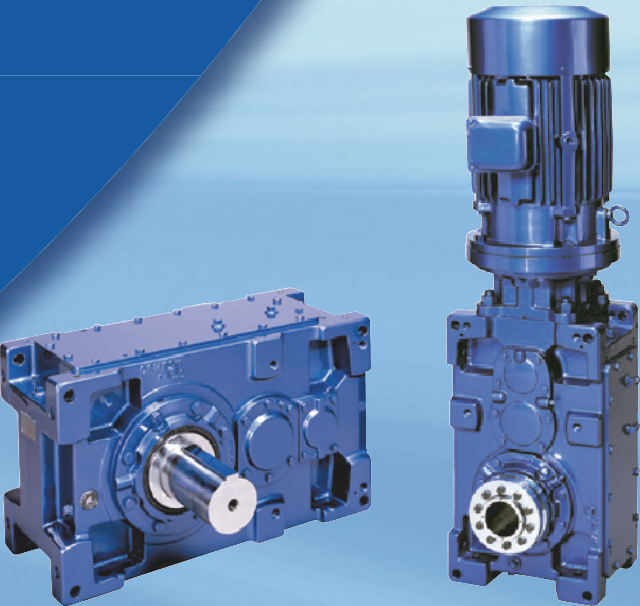
Sumitomo Drive Technologies

PARAMAX[®] 9000 Series

Reducer & Drive Units

Sumitomo Drive Technologies
Always on the Move

PARAMAX[®] 9000 Series
Reducer & Drive Units



A**Features**

Available Combination
 Drive Units and Reducers
 Basic Motor
 Introduction of Application

B**Drive Unit**

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JUST FIT SIZE

26 sizes variation for most accurate economical selection.

Prepared full range 26 sizes variation.
Fitness size selection available for every requested torque.
Customer's wide design availability with most accurate economical selection.

Size	Output Torque	Size	Output Torque	Size	Output Torque
9015	2.6	9065	31.4	9110	174
9025	4.2	9070	38.2	9115	207
9030	6.4	9075	47.8	9118	260
9035	8.5	9080	58.5	9121	301
9040	10.1	9085	73.1	9126	351
9045	13.2	9090	85.9	9128	420
9050	15.3	9095	101	9131	473
9055	19.9	9100	122	9136	552
9060	24.4	9105	144		

【kNm】

NEW DESIGN CONCEPT

Direct motor mount for right angle type also standardized.

Direct motor mount design of right angle type is standardized.

It have a number of outstanding features.

1. No input coupling
2. No coupling alignment required
3. Compact drive assembly

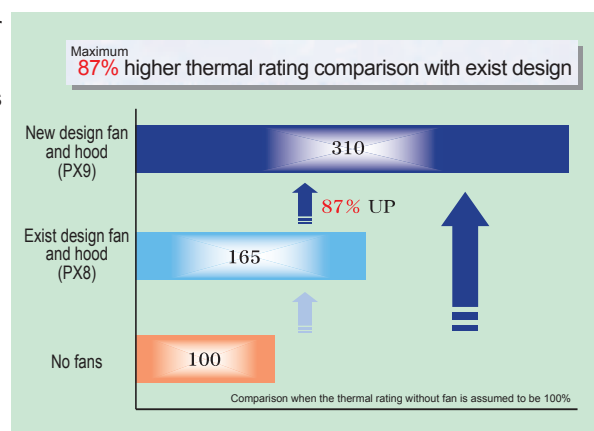


LARGER THERMAL CAPACITY

Advanced thermal capacity by new designed fan cooling system. (Option)

New designed fan and conduct air cowling gain larger thermal capacity.

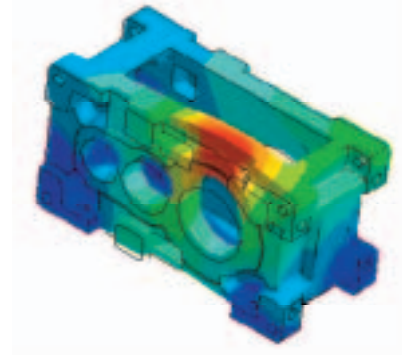
This system benefit for severe situation like continuous operation, even if compact size.



LOW NOISE

Low noise resulting from optimized gear tooth profile modification and rigid housing design.

FEM analysis used to maximize housing strength and rigidity, so maintaining correct gear alignment and bearing loading.

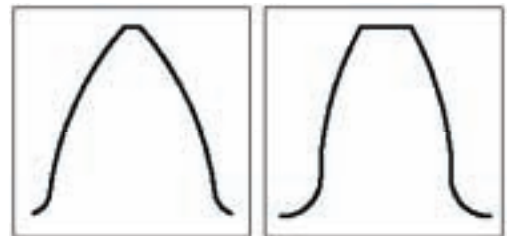


FEM Analysis

HIGH TOOTH STRENGTH

25 deg Pressure angle

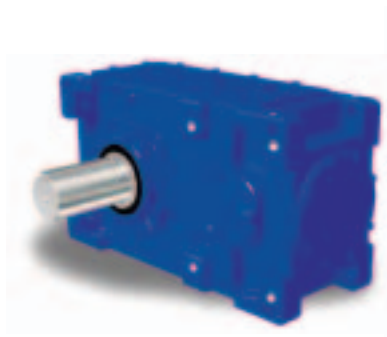
In comparison with ordinary pressure angle (20 deg), 25 deg pressure angle permits a tooth from with thicker dedendum. This translates into higher tooth strength rating, an essential feature for shock load applications.



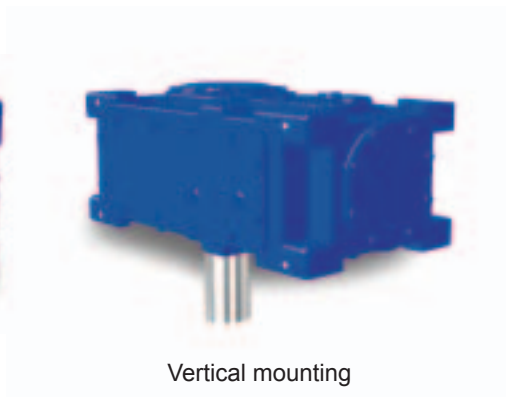
25 deg Pressure Angle 20 deg Pressure Angle

UNIVERSAL HOUSING

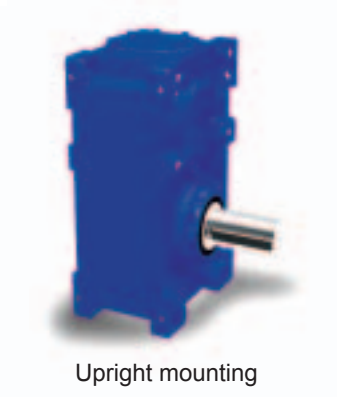
Horizontal, vertical or upright mounting - All use the same housing.



Horizontal mounting



Vertical mounting



Upright mounting

AVAILABLE COMBINATION

Drive Unit: Right Angle

Ratio	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71
O/P speed r/min	60Hz 286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51	45	40	36	32	29	25
	50Hz 238	211	188	167	150	134	120	107	94	83	75	67	60	54	48	42	38	33	30	27	24	21
5.5x4																●	●	●	●	●	●	●
7.5x4															●	●	●	●	●	●	●	●
11x4									●	●	●	●	●	●	●	●	●	●	●	●	●	●
15x4						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Motor (kW × P)	18.5x4				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	22x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	30x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	37x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	45x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	55x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Drive Unit: Parallel

Ratio	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71
O/P speed r/min	60Hz 286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51	45	40	36	32	29	25
	50Hz 238	211	188	167	150	134	120	107	94	83	75	67	60	54	48	42	38	33	30	27	24	21
5.5x4								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7.5x4						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
11x4		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
15x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Motor (kW × P)	18.5x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	22x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	30x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	37x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	45x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	55x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	75 x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	90 x4			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	110 x4					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Reducer

Ratio	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71
9015	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
9025	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
9030	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9035			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9040	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9045			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9050	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9055			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9060	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9065			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9070	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Size	9075		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9080	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9085			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9090	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9095		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9105		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9110	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9115		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9118												●		●	●	●	●	●	●	●	●
	9121													●	●	●	●	●	●	●	●	●
	9126													●	●	●	●	●	●	●	●	●
	9128													●	●	●	●	●	●	●	●	●
	9131											●	●	●	●	●	●	●	●	●	●	●
	9136											●	●	●	●	●	●	●	●	●	●	●

AVAILABLE COMBINATION

80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500	Ratio
23	20	18	16	14	13	11	10	9.0	8.0	7.2	6.4	5.7	5.1	4.5	4.0	3.6	60Hz O/P speed
19	17	15	13	12	11	9.4	8.3	7.5	6.7	6.0	5.4	4.8	4.2	3.8	3.3	3.0	r/min
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	5.5x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	7.5x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	11x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	18.5x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	22x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	30x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	37x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	45x4
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	55x4

80	90
23	20
19	17
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●



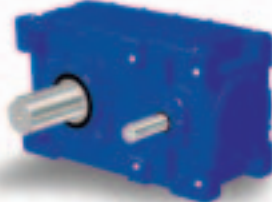
Drive Unit: Right Angle



Drive Unit: Parallel



Reducer: Right Angle



Reducer: Parallel

80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500	Ratio
																	9015
●	●	●	●	●	●	●	●	●	●								9025
●	●	●	●	●	●	●	●	●	●	●	●						9030
●	●	●	●	●	●	●	●	●	●								9035
●	●	●	●	●	●	●	●	●	●	●	●						9040
●	●	●	●	●	●	●	●	●	●	●	●	●					9045
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			9050
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9055
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9060
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9065
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9070
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9075
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9080
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9085
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9090
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9095
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9100
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9105
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9110
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9115
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9118
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9121
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9126
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9128
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9131
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9136

AVAILABLE COMBINATION

Basic Motor

Table 1. 3-Phase Induction Motors (4 Pole).

◎ : Standard Insulation
● : Manufactured Models

Capacity kW	Specifications						Inverter Motors (Constant Torque)	
	Indoor Type	Outdoor Type	Corrosion-proof Class 2	Insulation Class			Indoor Type	Outdoor Type
5.5	●	●	●	◎	●	●	●	●
7.5	●	●	●	◎	●	●	●	●
11	●	●	●	◎	●	●	●	●
15	●	●	●	◎	●	●	●	●
18.5	●	●	●	◎	●	●	●	●
22	●	●	●	◎	●	●	●	●
30	●	●	●		◎	●	●	●
37	●	●	●		◎	●	●	●
45	●	●	●		◎	●	●	●
55	●	●	●		◎	●	●	●

Continuous Rating, 55kW and under,
 Remarks Applicable Voltage : 200V 50/60Hz(400V 50/60Hz,440V 60Hz,440V 60Hz)
 Provided that the base frequency for driving an inverter is 60 Hz.

Table 2. 3-Phase Induction Motors with Built-in Brakes (4 Pole).

◎ : Standard Insulation
● : Manufactured Models

Capacity kW	Specifications						Inverter Motors (Constant Torque)	
	Indoor Type	Outdoor Type	Corrosion-proof Class 2	Insulation Class			Indoor Type	Outdoor Type
5.5	●	●	●	◎	●	●	●	●
7.5	●	●	●	◎	●	●	●	●
11	●	●	●	◎	●	●	●	●
15	●	●	●	◎	●	●	●	●
18.5	●	●	●	◎	●	●	●	●
22	●	●	●	◎	●	●	●	●
30	●	●	●		◎	●	●	●
37	●	●	●		◎	●		

Continuous Rating,
 Remarks Applicable Voltage : 200V 50/60Hz , 220V 50/60Hz (400V 50/60Hz , 440V 60Hz)
 Provided that the base frequency for driving an inverter is 60 Hz.
 Brake Insulation : B type

- Notes: 1. Motors with output kW specifications other than as listed in Tables 1-4 are also manufactured.
 Consult factory.
 Examples: Special voltage, dust-proof, humidity-proof, tropical treatment, high temperature, ship use, dual shaft (round & square shaft), CSA standard, NEMA standard, etc.
2. When using an inverter drive, advice us of ambient temperature, input r/min, mounting method, load characteristics and other conditions of use.

AVAILABLE COMBINATION

Table 3. Safety Increased Explosion-proof (eG3) 3-Phase Induction Motor (4 Pole).

◎ : Standard Insulation
● : Manufactured Models

Capacity kW	Specifications				
	Indoor Type	Outdoor Type	Corrosion-proof Class 2	Insulation Class B	F
5.5	●	●	●	◎	●
7.5	●	●	●	◎	●
11	●	●	●	◎	●
15	●	●	●	◎	
18.5	●	●	●	◎	
22	●	●	●	◎	
30	●	●	●	◎	●
37	●	●	●		◎
45	●	●	●		◎
55	●	●	●		◎

Continuous Rating
Remarks Applicable Voltage: 200V, 220V, 350V, 380V, 400V, 440V, 50/60Hz

Table 4. Pressure-tight Explosion-proof (d2G4) 3-Phase Motor (4 Pole).

◎ : Standard Insulation
● : Manufactured Models

Capacity kW	Specifications				Inverter Motors (Constant Torque) Indoor Type
	Indoor Type	Outdoor Type	Corrosion-proof Class 2	Insulation Class B	
5.5	●	●	●	◎	●
7.5	●	●	●	◎	●
11	●	●	●	◎	●
15	●	●	●	◎	●
18.5	●	●	●	◎	●
22	●	●	●	◎	●
30	●	●	●	◎	●
37	●	●	●		●

Continuous Rating
Remarks Applicable Voltage : 200V , 220V , 350V , 380V , 400V , 440V 50/60Hz
(Inverter Motors) : 200V 60Hz , 220V 60Hz , 400V 60Hz , 440V 60Hz
Applicable Inverter :Applicable only to Sumitomo Inverters.(Refer to Inverter catalogue.)

INTRODUCTION OF APPLICATION

With Motor



Common base



Drive unit right angle



Drive unit parallel



Double Stack

Single stage



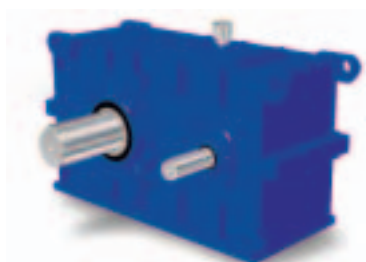
Top mount

Reducer

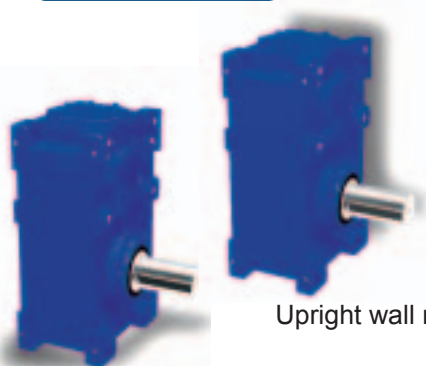


Right angle

Steel housing



Mounting

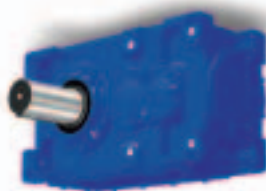


Upright wall mount

Upright mount



Vertical mount



Ceiling mount

Special slow speed shaft



Drop bearing housing



Hollow shaft

B



<Drive Unit Parallel Shaft>



<Drive Unit Right Angle Shaft>

Drive Unit

Standard Specifications	...	B- 2
Construction Drawing	...	B- 3
Nomenclature	...	B- 4
Selection	...	B- 6
Service Factor SF	...	B- 8
Right Angle Shaft	...	B- 11
Parallel Shaft	...	B- 73
Exact Reduction Ratio	...	B- 110

Drive Unit Standard Specifications

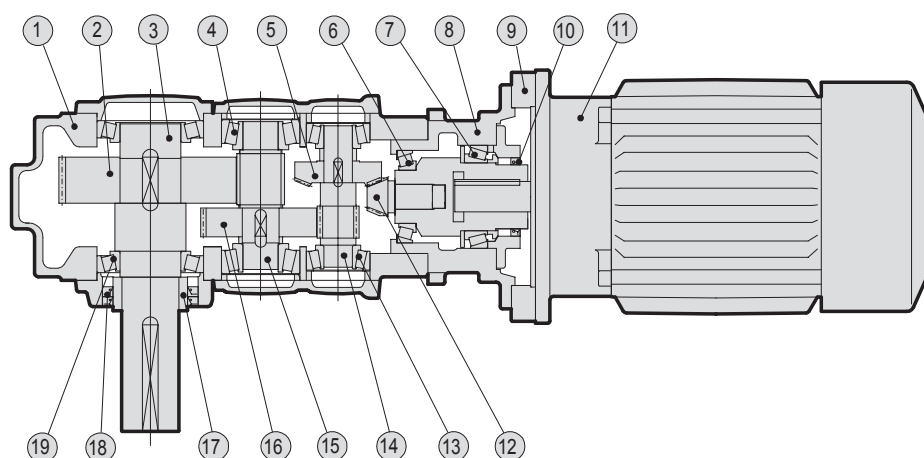
Item		Standard Specification		Standard Specification with Built-in Brake	
Motor	Capacity Range	5.5kWX4P ~ 55kWX4P		5.5kWX4P ~ 11kWX4P · FB Brake (Non Asbestos) 15kWX4P CMB Brake 18.5kWX4P ~ 37kWX4P ESB Brake	
	Enclosure	Totally enclosed fan cooled type		Totally enclosed fan cooled type	
	Power Source	55kW and smaller 200V 50/60Hz, 220V 60Hz		15kW and smaller 200V 50/60Hz, 220V 60Hz	
	Insulation	Insulation P	4P	Insulation P	4P
		Class B	5.5 ~ 22kW	Class B	5.5 ~ 15kW
		Class F	30 ~ 55kW		
	Time Rating	Continuous rating		Continuous rating	
	Lead Wiring (Lug Type)	Lead wiring P	4P	Lead wiring P	4P
		3	5.5 ~ 7.5kW (Direct starting)	5	5.5 ~ 7.5kW (Direct starting)
6		Note 1 11 ~ 55kW (λ-Δstarting available)	8	Note 1 11 ~ 37kW (λ-Δstarting available)	
Standards	According to JIS				

Note 1: λ-Δ start is also available. Please consult us.

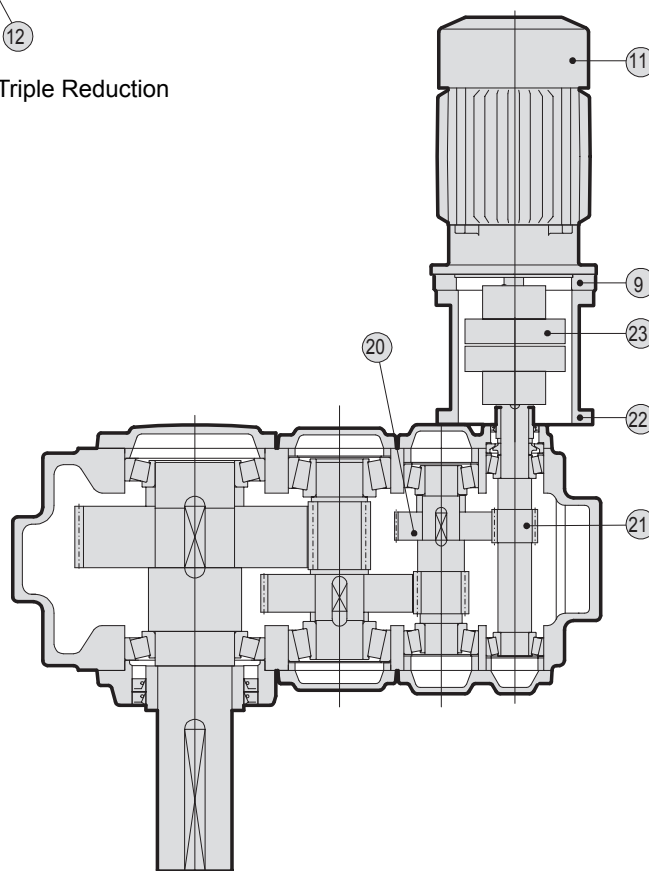
Item		Standard Specification		
		Mounting	High Speed Shaft Speed	
Reducer	Lubrication Method	Horizontal Shaft	750 ~ 1800r/min	Oil bath lubrication In case of high speed shaft speed is less than 750r/min, electric pump lubrication may be used. Consult SUMITOMO for details.
		Vertical Shaft	400 ~ 1800r/min	Pump lubrication (Two different pump lubrication systems are available; shaft connected pump lubrication and electric pump lubrication. For details, refer to the outside dimension drawing.)
		Upright Shaft	750 ~ 1800r/min	Oil bath lubrication Grease lubrication for right angle input shaft.
	Lubricant	Refer to the page D-2		
	Gear Type	Involute external gear		
Ambient Conditions	Installation Location	Indoor (Minimal dust and humidity)		
	Ambient Temperature	— 10°C ~ 40°C A cooling fan may provided depending on the usage (Note 1)		
	Ambient Humidity	Under 85%		
	Elevation	Under 1,000 meters		
	Atmosphere	Well ventilated location, free of corrosive gases, explosive gases, vapors and dust.		
Installation		Horizontal installation Refer to the page D-2		
Method of Coupling with Driven Machine		Coupling, gears, chain sprocket or belt.		
Painting		Surface preparation: Shot blasting after washing before machining Inside painting: UNI GROUND PTC primer is sprayed once Outside painting: For prime-coating, UNI GROUND PTC primer is sprayed once. For final coating, NEO ALKYS is sprayed once. Painting color: MANSEL 5G 6/4.5. Refer to the page D-3.		

Note 1: In general, a heating or cooling system is necessary in case the ambient temperature is lower than — 10°C or higher than +50°C .

Drive Unit Construction Drawing



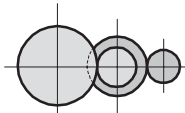
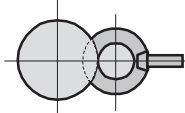
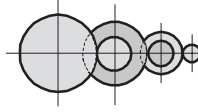
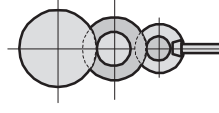
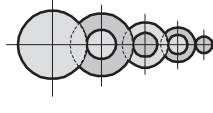
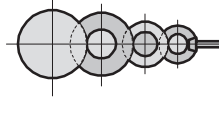
Drive Unit Right Angle Shaft Triple Reduction



Drive Unit Parallel Shaft Triple Reduction

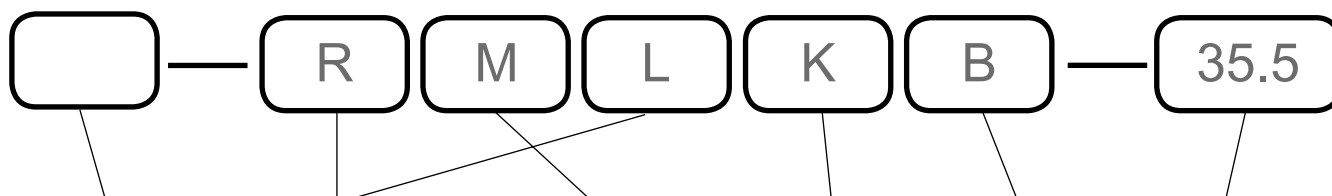
Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name
1	Housing	7	Taper roller bearing	13	Taper roller bearing	19	Taper roller bearing
2	Helical gear	8	Bearing housing	14	Helical pinion shaft	20	Helical gear
3	Slow speed shaft	9	Flange for motor	15	Helical pinion shaft	21	Helical pinion shaft
4	Taper roller bearing	10	Oil seal	16	Helical gear	22	Motor adapter
5	Bevel gear	11	Motor	17	Collar	23	Coupling
6	Taper roller bearing	12	Bevel pinion shaft	18	Oil seal		

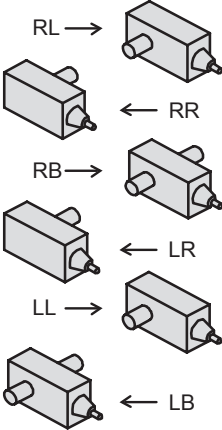
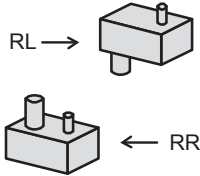
Drive Unit Nomenclature

P	H	A	9055		R	3	
Series	Mounting	Housing	Size	Torque kNm	Shaft Position	Number of Gear Stage	
P Paramax	H	A Monoblock	9015	2.6	R Right Angle	2	
	 Horizontal		9025	4.2			
			9030	6.4		 Double Reduction	
			9035	8.5			
			9040	10.1			
			V	9045		13.2	P
	 Vertical		9050	15.3			
			9055	19.9		 Triple Reduction	
			9060	24.4			
	W		D Split	9065		31.4	
		9070		38.2			
		9075		47.8	 Quadruple Reduction		
		9080		58.5			
		9085		73.1			

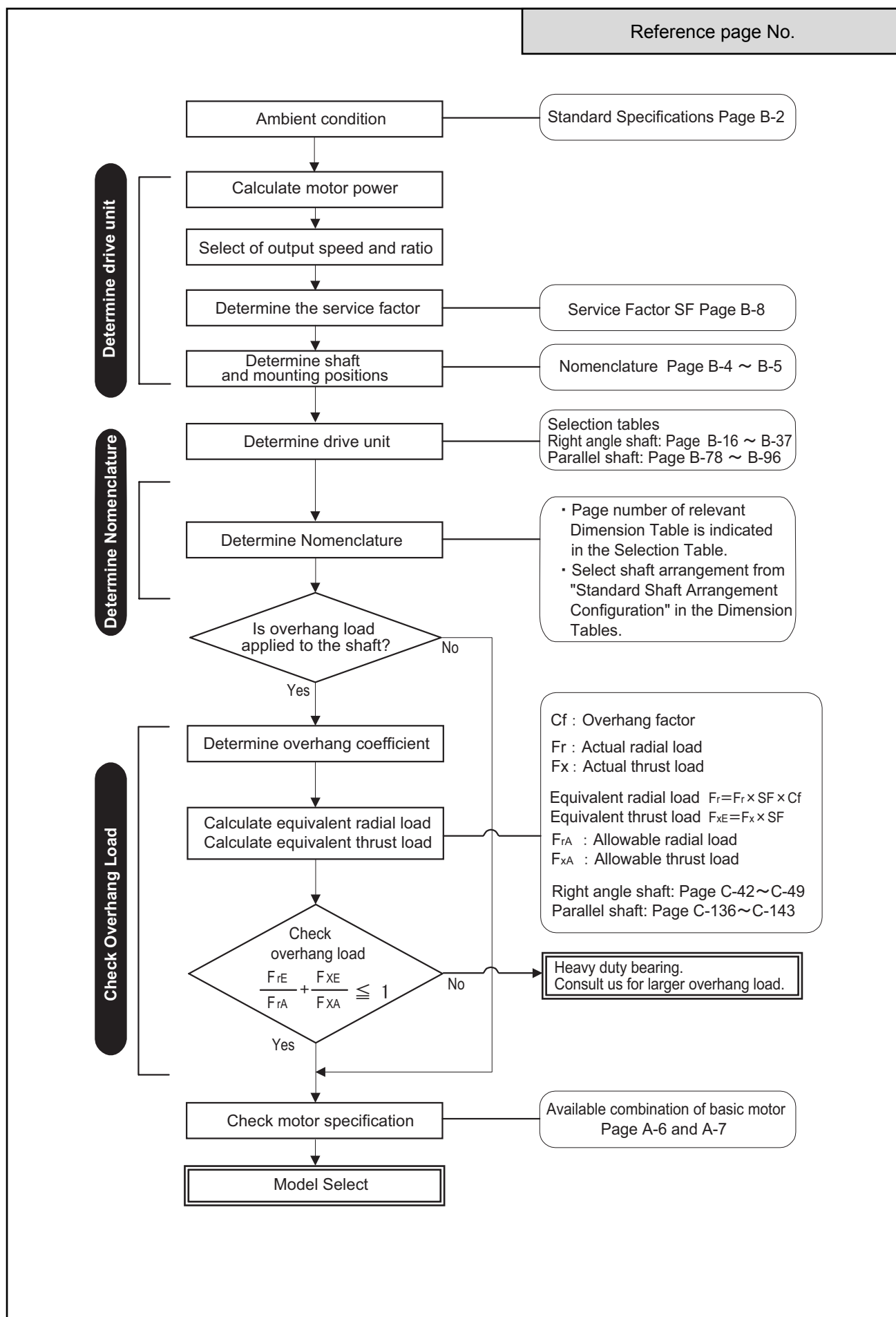
1. For shaft arrangement, refer to the dimension sheets.
2. Consult us for reduction ratios smaller than 6.3.

Drive Unit Nomenclature



Mounting for Upright	Shaft Arrangement	High Speed Shaft	Slow Speed Shaft	Option	Nominal Ratio	
(Blank)		M  Right Angle Shaft  Parallel Shaft	(Blank)	(Blank)	Right Angle Shaft	
			 Solid Shaft	 Without Option	6.356 7.163 871 980 1090 11.2100 12.5112 14125 16140 18160 20180 22.4200 25224 28250 31.5280 35.5315 40355 45400 50450	
T  Hollow Shaft (Shrink Disk Type)	B  With Backstop	Parallel Shaft				
W  Wall Mount (Upright Mounting)			Y  Flange for Motor (Right Angle Shaft)	K  Hollow Shaft (Key Type)	6.356 7.163 871 980 1090 11.2100 12.5112 14125 16140 18160 20180 22.4200 25224 28250 31.5280 35.5315 40355 45400 50450 500	
	J  Motor Adapter (Parallel Shaft)					

Drive Unit Selection



Drive Unit Selection Example

○ : Conditions ■ : Selected item		Reference page No.
○ Ambient Condition	: Indoor, Ambient temperature 20°C	B-2 Standard Specifications
■ Check ambient condition	→ OK	
○ Load Power P	: P = 17kW	
■ Motor power	→ 18.5 kW	
○ Electric source	: 200V 50Hz	B-8 Service Factor
○ Output speed	: 33 r/min	
Load condition		
○ Type of load, Operating hours	: Uniform load · 14 hours/day	
■ Determine service factor	→ 1.25	B-4 ~B-5 Nomenclature B-24 Selection Tables
○ Shaft and mounting positions	: Right Angle Shaft · Horizontal Mounting	
■ Determine size, shaft position, number of stages	→ 9030 R3 45 Size 9030 Right Angle Shaft Triple Reduction Nominal Reduction Ratio 45	
■ Check dimension		
■ Check shaft arrangement	→ RML	B-44 *1 Dimension Tables
■ Check nomenclature	→ PHA9030R3-RML-45	
Check Overhang load		
○ Overhang member	: Sprocket (Single row)	
■ Overhang factor Cf	→ Cf = 1.0	B-38 Allowable external load
○ Radial load position and direction	: Center of solid shaft, Downward	
○ Radial load Fr	: 8.5 kN	
○ Thrust load Fx	: 0 kN	
■ Equivalent radial load FrE	→ $F_{rE} = 8.5 \times 1.25 \times 1.0 = 10.6$	B-38 Allowable Radial Load B-38 Allowable Thrust Load
■ Equivalent axial load FrX	→ $F_{rX} = 0 \times 1.25 = 0$	
■ Allowable radial load	→ 26.5 kN	
■ Allowable thrust load	→ 26.5 kN	
$\frac{10.6}{26.5} + \frac{0}{26.5} = 0.40 < 1$		A-6 Available Combination of Basic Motor
○ Motor specification	: 200V 50Hz without brake · indoor	
■ Check motor specification	→ OK	
■ Model selected	→ PHA9035R3-RML-45 200V 50Hz without brake · indoor	
		*1 Page number of the relevant Dimension Table is indicated in the Selection Table.

Drive Unit Service Factor SF

Service Factor SF

Driven Machine		Operating Hours (hours/day)				
		3 hrs	10 hrs	24 hrs		
CRANES						
Classification of Crane	Hoisting	Traverse Motion	Travel Motion	Slewing Motion	Boom Hoisting	The crane classification is based on JIS B8821-1976 "Calculation standard for the structure of crane."
Group I	1.00	1.50		1.25	1.00	
Group II	1.25		1.50		1.00	
Group III	1.50		1.75		1.25	
Group IV	1.75		2.00		1.50	
CONVEYORS (General purpose)						
Uniformly load or fed				1.00	1.00	1.25
Heavy load						
Not uniformly fed				1.00	1.25	1.50
Reciprocating or shaker				1.50	1.75	2.00
ELEVATORS						
Elevators				1.50	1.50	1.50
Escalators				1.25	1.25	1.25
METAL MILLS						
Draw bench carriage and main drive				1.50	1.50	1.50
Runout table						
Non reversing						
Group drives				1.50	1.50	1.50
Individual drivers				2.00	2.00	2.00
Reversing				2.00	2.00	2.00
Slab pushers				1.50	1.50	1.50
Shears				2.00	2.00	2.00
Wire drawing				1.25	1.25	1.25
Wire winding machine				1.25	1.50	1.50
METAL STRIP PROCESSING MACHINERY						
Bridles				1.50	1.50	1.50
Coilers & uncoilers				1.00	1.25	1.50
Edge trimmers				1.00	1.25	1.50
Flatteners				1.25	1.25	1.50
Loopers (Accumulators)				1.50	1.50	2.00
Pinch rolls				1.25	1.25	1.50
Scrap choppers				2.00	2.00	2.00
Shears				2.00	2.00	2.00
Slitters				1.00	1.25	1.50
MILL, ROTARY TYPE						
Ball and rod				2.00	2.00	2.00
Cement Kilns				2.00	2.00	2.00
Kilns (Except cement kilns)				1.50	1.50	1.50
Dryers and coolers				1.50	1.50	1.50
SEWAGE DISPOSAL EQUIPMENT						
Aerators				2.00	2.00	2.00
Bar screens				1.25	1.25	1.25
Chemical feeders				1.25	1.25	1.25
Dewatering screens				1.50	1.50	1.50
Scum breakers				1.50	1.50	1.50
Slow or rapid mixers				1.50	1.50	1.50
Sludge collectors				1.25	1.25	1.25
Thickeners				1.50	1.50	1.50
Vacuum filters				1.50	1.50	1.50
EXTRUDERS						
Plastics				1.25	1.25	1.25
Rubber				1.50	1.50	1.50
FEEDERS						
Apron				1.00	1.25	1.50
Belt				1.00	1.25	1.50
Disk				1.00	1.00	1.25
Reciprocating				1.50	1.75	2.00
Screw				1.00	1.25	1.50

Driven Machine		Operating Hours (hours/day)		
		3 hrs	10 hrs	24 hrs
RUBBER INDUSTRY				
Mixers		1.75	1.75	2.00
Mixing mill -2 smooth rolls		1.50	1.50	1.75
Batch drop mill -2 smooth rolls		1.50	1.50	1.50
Cracker warmer				
-2 roll: 1 corrugated roll		1.75	1.75	1.75
Cracker -2 corrugated rolls		2.00	2.00	2.00
Holding, feed and blend mill				
-2 rolls		1.25	1.25	1.25
Refiner -2 rolls		1.50	1.50	1.50
Calenders		1.50	1.50	1.50
PAPER MILL				
All types incl. Paper making machine		2.00	2.00	2.00
AGITATORS AND MIXERS				
Pure liquids		1.00	1.00	1.25
Liquids and solids		1.00	1.25	1.50
Liquids variable density		1.00	1.25	1.50
MIXERS				
Concrete		1.25	1.25	1.50
CRUSHER				
Stone or ore		2.50	2.50	2.50
BLOWERS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Vane		1.00	1.25	1.50
COMPRESSORS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Reciprocating: multi cylinder		1.50	1.50	1.75
Reciprocating: single cylinder		1.75	1.75	2.00
FANS				
Centrifugal		1.00	1.00	1.25
Cooling towers		※	※	※
Forced draft		1.25	1.25	1.25
Suction draft		1.50	1.50	1.50
Industrial and mine		1.50	1.50	1.50
PUMPS				
Centrifugal		1.00	1.00	1.25
Screw pump		1.25	1.25	1.50
Gear pump		1.25	1.25	1.50
DREDGES				
Cable reels		1.25	1.25	1.50
Conveyors		1.25	1.25	1.50
Cutter head drive		2.00	2.00	2.00
Pumps		2.00	2.00	2.00
Screen drives		1.75	1.75	2.00
Stackers		1.25	1.25	1.50
Winches		1.25	1.25	1.50
GENERATORS AND EXCITERS				
		1.00	1.00	1.25
HAMMER MILLS				
		1.75	1.75	2.00
SUGAR INDUSTRY				
Beet slicer		2.00	2.00	2.00
Cane knives		1.50	1.50	1.50
Crushers		1.50	1.50	1.50
Mills (Slow speed end)		1.75	1.75	1.75

Notes:

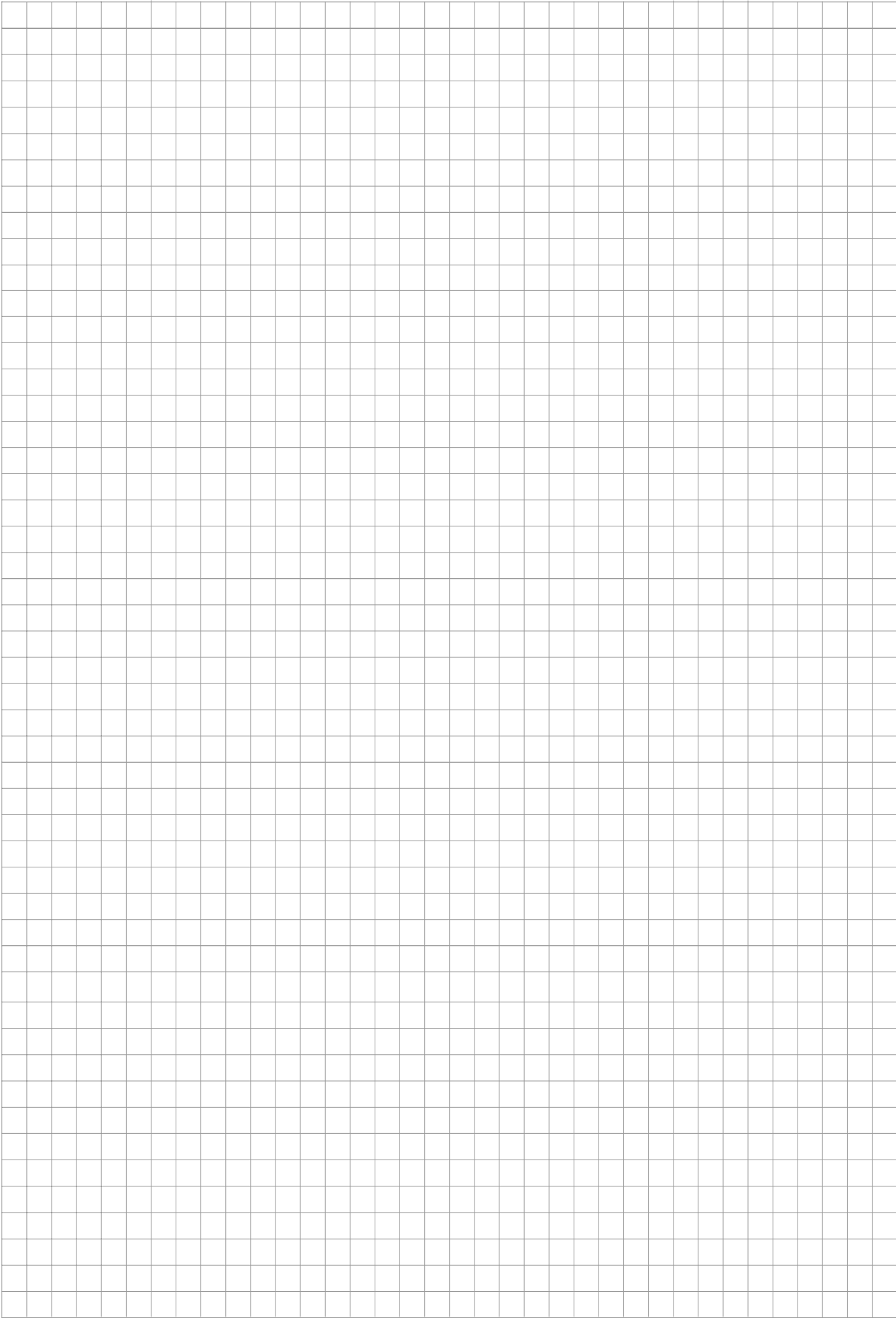
- (1) Values in the above table are based on AGMA standards and SUMITOMO's experience.
- (2) Values in the above table apply for electric motors as prime movers - if prime mover is a multi cylinder combustion engine, 0.25 has to be added to the SF.
- (3) Consult us for special duty or when special safety specifications are needed.
- (4) ※ : For SF, consult us.

Drive Unit Service Factor SF

Refer to the following for driven machines not shown on the left page.

Prime Mover	Operating Hours	Type of Load		
		Uniform Load	Moderate Shock Load	Heavy Shock Load
		U	M	H
Electric Motor	3 hours/day	1.00	1.00	1.50
	10 hours/day	1.00	1.25	1.75
	24 hours/day	1.25	1.50	2.00
Internal Combustion Engine (multi cylinder)	3 hours/day	1.00	1.25	1.75
	10 hours/day	1.25	1.50	2.00
	24 hours/day	1.50	1.75	2.25

Note: Consult us when the operating hours are less than 3 hours/day or when an internal combustion engine (single cylinder) is used.





<Drive Unit Right Angle Shaft Horizontal Mounting>



<Drive Unit Right Angle Shaft Upright Mounting>



<Drive Unit Right Angle Shaft Vertical Mounting>

B

Drive Unit Right Angle Shaft

Selection	... B- 12
Allowable Radial and Thrust Loads	... B- 38
Dimension Sheets	... B- 42
Exact Actual Ratio	... B- 110

SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Right Angle Shaft	1500r/min	40 Degree

kW	SF	Low Speed Shaft Speed (r/min)																		
		238	211	188	167	150	134	120	107	94	83	75	67	60	54	48	42	38	33	30
		Nominal Reduction Ratio																		
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50
5.5kW 4P	1															9030	9030	9030	9030	9030
	1.25															9030	9030	9030	9030	9030
	1.5															9030	9030	9030	9030	9030
	2															9030	9030	9030	9030	9030
7.5kW 4P	1															9030	9030	9030	9030	9030
	1.25															9030	9030	9030	9030	9030
	1.5															9030	9030	9030	9030	9030
	2															9030	9030	9030	9030	9030
11kW 4P	1										9030	9030	9030	9030	9030	9030	9030	9030	9030	9030
	1.25										9030	9030	9030	9030	9030	9030	9030	9030	9030	9030
	1.5										9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	2										9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
15kW 4P	1								9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030
	1.25								9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	1.5								9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	2								9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040
18.5kW 4P	1					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	1.25					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	1.5					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9045
	2					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9045	9045
22kW 4P	1	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	1.25	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9045
	1.5	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9045
	2	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9030	9030	9035	9035	9040	9045	9045	9045	9050
30kW 4P	1	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9040	9040	9045
	1.25	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9040	9045	9045
	1.5	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9030	9030	9035	9035	9040	9045	9045	9050	9050
	2	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9050	9050	9055	9055
37kW 4P	1	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9035	9040	9040	9040	9040	9045	9045
	1.25	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9035	9040	9040	9045	9045	9050	9050
	1.5	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9045	9050	9055	9055
	2	9030	9030	9030	9030	9030	9030	9035	9035	9045	9045	9050	9050	9050	9050	9050	9055	9055	9060	9060
45kW 4P	1	9030	9040	9035	9035	9035	9035	9035	9035	9035	9035	9040	9040	9040	9040	9045	9045	9045	9050	9050
	1.25	9030	9040	9035	9035	9035	9035	9035	9035	9035	9035	9040	9040	9040	9045	9045	9045	9050	9055	9055
	1.5	9030	9040	9035	9035	9035	9035	9035	9035	9045	9045	9040	9040	9045	9045	9045	9055	9055	9055	9060
	2	9030	9040	9035	9035	9035	9035	9045	9045			9050	9050	9050	9055	9055	9060	9060	9065	9065
55kW 4P	1	9040	9040	9035	9040	9040	9040	9040	9040	9040	9045	9045	9045	9055	9055	9055	9055	9055	9055	9055
	1.25	9040	9040	9035	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055	9055	9055	9055	9055	9060	9060
	1.5	9040	9040	9035	9040	9040	9040	9045	9045			9050	9050	9055	9055	9055	9055	9060	9065	9065
	2	9040	9040	9040	9040	9040	9040	9045	9045			9070	9070	9070	9070	9070	9070	9070	9070	9075

Size of Reducer

SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)																			SF	kW
27	24	21	19	17	15	13	12	11	9.4	8.3	7.5	6.7	6.0	5.4	4.8	4.2	3.8	3.3		
Nominal Reduction Ratio																				
56	63	71	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1	5.5kW 4P
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1.25	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9055	9065	9065	1.5	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9055	9055	9060	9060	9065	9065	9075	2	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9055	9055	9065	1	7.5kW 4P
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9060	9065	9065	1.25	
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9075	1.5	
9030	9030	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	2	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9055	9055	9060	9060	9065	9065	9075	1	11kW 4P
9030	9030	9030	9035	9035	9040	9040	9045	9045	9045	9055	9055	9055	9060	9065	9065	9070	9075	9075	1.25	
9035	9040	9040	9040	9040	9040	9045	9045	9055	9055	9055	9060	9065	9065	9065	9065	9070	9075	9075	1.5	
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085	2	
9030	9030	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	1	15kW 4P
9035	9040	9040	9045	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9075	9085	1.25	
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085	1.5	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085	9085	9085	2	
9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9075	1	18.5kW 4P
9035	9040	9045	9045	9050	9050	9055	9055	9065	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1.25	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	9085	1.5	
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				2	
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085	1	22kW 4P
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	9085	1.25	
9045	9050	9055	9055	9055	9060	9065	9065	9065	9065	9070	9070	9075	9075	9085	9085	9085			1.5	
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9080	9085	9085	9085					2	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085	9085	9085	1	30kW 4P
9050	9050	9055	9055	9065	9070	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				1.25	
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085	9085					1.5	
9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085									2	
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				1	37kW 4P
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1.25	
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1.5	
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085										2	
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085	9085					1	45kW 4P
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1.25	
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085	9085									1.5	
9070	9075	9075	9080	9080	9080	9085	9085												2	
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1	55kW 4P
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085										1.25	
9065	9070	9070	9075	9075	9080	9080	9085	9085											1.5	
9075																			2	

SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Right Angle Shaft	1800r/min	40 Degree

kW	SF	Low Speed Shaft Speed (r/min)																	
		286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51	45	40
		Nominal Reduction Ratio																	
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45
5.5kW	1																		9030
	1.25																		9030
	4P 1.5																		9030
	2																		9030
7.5kW	1															9030	9030	9030	9030
	1.25															9030	9030	9030	9030
	4P 1.5															9030	9030	9030	9030
	2															9030	9030	9030	9030
11kW	1									9030	9030	9035	9030	9030	9030	9030	9030	9030	9030
	1.25									9030	9030	9035	9030	9030	9030	9030	9030	9030	9030
	4P 1.5									9030	9030	9035	9030	9030	9030	9030	9030	9030	9030
	2									9030	9030	9035	9035	9030	9030	9030	9030	9030	9035
15kW	1									9030	9030	9030	9030	9030	9030	9030	9030	9030	9030
	1.25									9030	9030	9030	9030	9030	9030	9030	9030	9030	9030
	4P 1.5									9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	2									9030	9030	9030	9030	9030	9030	9030	9030	9035	9035
18.5kW	1									9030	9030	9030	9030	9030	9030	9030	9030	9030	9030
	1.25									9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	4P 1.5									9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	2									9030	9030	9030	9030	9030	9030	9035	9035	9040	9045
22kW	1					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	1.25					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035
	4P 1.5					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9045
	2					9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9045
30kW	1	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9035	9035	9035
	1.25	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9035	9040	9045
	4P 1.5	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9035	9040	9045
	2	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9030	9040	9035	9040	9045	9045	9050	9055
37kW	1	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9035	9035	9040	9040	9040	9040	9045
	1.25	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9035	9035	9035	9040	9040	9040	9040	9045
	4P 1.5	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9035	9040	9040	9045	9045	9050	9050
	2	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9040	9040	9040	9045	9045	9050	9055	9055
45kW	1	9040	9040	9035	9035	9035	9035	9035	9035	9035	9040	9040	9040	9040	9040	9045	9045	9045	9045
	1.25	9040	9040	9035	9035	9035	9035	9035	9035	9035	9040	9040	9040	9040	9040	9045	9045	9045	9050
	4P 1.5	9040	9040	9035	9035	9035	9035	9035	9035	9035	9040	9040	9040	9040	9045	9045	9045	9045	9055
	2	9040	9040	9035	9035	9035	9035	9035	9045	9045	9050	9050	9050	9050	9050	9055	9055	9060	9065
55kW	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9055	9055	9055	9055	9055	9055
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	6045	6045	6045	9055	9055	9055	9055	9055	9055
	4P 1.5	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055	9055	9055	9055	9060	9060
	2	9040	9040	9040	9040	9040	9040	9045	9045			9060	9060	9060	9060	9065	9065	9070	9070

Size of Reducer



SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)																			SF	kW	
32	29	25	23	20	18	16	14	13	11	10	9.0	8.0	7.2	6.4	5.7	5.1	4.5	4.0			
Nominal Reduction Ratio																					
56	63	71	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450			
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9050	9055	9055	1.25	5.5kW
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	9055	1.5	4P
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9055	9050	9055	9055	9060	9065	9065	2		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9050	9055	9055	1	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9055	9055	9055	9055	9065	1.25	7.5kW
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9060	9065	9065	1.5	4P	
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9065	9065	9065	9075	9075	2	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9060	9065	9065	1		
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9065	9075	1.25	11kW
9030	9030	9030	9035	9035	9040	9040	9045	9045	9045	9055	9055	9055	9060	9065	9065	9065	9070	9075	9075	1.5	4P
9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9075	2		
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9065	9065	9065	9075	9075	1	
9030	9030	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	1.25	15kW	
9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9085	1.5	4P	
9040	9040	9045	9045	9050	9055	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	2		
9030	9030	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	1		
9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9075	9085	1.25	18.5kW	
9035	9040	9045	9045	9050	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1.5	4P	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085			2		
9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9075	1		
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1.25	22kW	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085		1.5	4P	
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				2		
9040	9040	9045	9045	9050	9055	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1		
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085			1.25	30kW	
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				1.5	4P	
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	9085						2		
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085			1		
9050	9050	9055	9055	9065	9070	9070	9070	9070	9075	9075	9080	9080	9085	9085	9085				1.25	37kW	
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1.5	4P	
9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085									2		
9050	9055	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				1		
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1.25	45kW	
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1.5	4P	
9065	9070	9070	9075	9075	9080	9080	9080	9085	9085										2		
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1		
9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085									1.25	55kW	
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085										1.5	4P	
9070	9075	9075	9080	9080	9080	9085	9085												2		

SELECTION Drive Unit Right Angle Shaft 5.5kW

5.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
47.6	1100	113	4.89	57.1	919	94	5.81	9030	R3	31.5	B-44	B-54	B-64
42.3	1240	127	4.89	50.7	1040	106	5.81	9030	R3	35.5	B-44	B-54	B-64
37.5	1400	143	4.69	45.0	1170	119	5.45	9030	R3	40	B-44	B-54	B-64
			4.89				5.81	9035	R3	40	B-44	B-54	B-64
33.3	1580	161	4.21	40.0	1310	134	5.05	9030	R3	45	B-44	B-54	B-64
			4.89				5.81	9035	R3	45	B-44	B-54	B-64
30.0	1750	179	2.92	36.0	1460	149	3.50	9030	R3	50	B-44	B-54	B-64
			4.89				5.81	9035	R3	50	B-44	B-54	B-64
			4.74				5.69	9040	R3	50	B-44	B-54	B-64
26.8	1960	200	2.92	32.1	1630	167	3.50	9030	R3	56	B-44	B-54	B-64
			4.47				5.34	9035	R3	56	B-44	B-54	B-64
			4.74				5.69	9040	R3	56	B-44	B-54	B-64
23.8	2210	225	2.92	28.6	1840	188	3.50	9030	R3	63	B-44	B-54	B-64
			4.74				5.69	9040	R3	63	B-44	B-54	B-64
21.1	2490	254	2.69	25.4	2070	212	3.21	9030	R3	71	B-44	B-54	B-64
			2.92				3.50	9035	R3	71	B-44	B-54	B-64
			3.98				4.76	9040	R3	71	B-44	B-54	B-64
			4.74				5.69	9045	R3	71	B-44	B-54	B-64
18.8	2800	286	2.92	22.5	2330	238	3.50	9035	R3	80	B-44	B-54	B-64
			3.89				4.65	9040	R4	80	B-48	B-58	B-68
			4.74				5.69	9045	R3	80	B-48	B-58	B-68
16.7	3150	322	2.85	20.0	2630	268	3.41	9035	R3	90	B-44	B-54	B-64
			3.18				3.81	9040	R4	90	B-48	B-58	B-68
			4.18				5.00	9045	R3	90	B-48	B-58	B-68
			4.60				5.45	9050	R4	90	B-48	B-58	B-68
15.0	3500	358	3.05	18.0	2920	298	3.65	9040	R4	100	B-48	B-58	B-68
			3.94				4.72	9045	R4	100	B-48	B-58	B-68
			4.52				5.41	9050	R4	100	B-48	B-58	B-68
13.4	3920	400	2.50	16.1	3270	334	3.00	9040	R4	112	B-48	B-58	B-68
			3.34				4.00	9045	R4	112	B-48	B-58	B-68
			3.70				4.45	9050	R4	112	B-48	B-58	B-68
			4.60				5.45	9055	R4	112	B-48	B-58	B-68
12.0	4380	447	2.47	14.4	3650	372	2.96	9040	R4	125	B-48	B-58	B-68
			3.09				3.70	9045	R4	125	B-48	B-58	B-68
			3.61				4.34	9050	R4	125	B-48	B-58	B-68
			4.60				5.45	9055	R4	125	B-48	B-58	B-68
10.7	4900	501	2.03	12.9	4090	417	2.43	9040	R4	140	B-48	B-58	B-68
			2.63				3.14	9045	R4	140	B-48	B-58	B-68
			2.98				3.56	9050	R4	140	B-48	B-58	B-68
			3.89				4.65	9955	R4	140	B-48	B-58	B-68
			4.65				5.45	9060	R4	140	B-50	B-60	B-70
9.4	5600	572	2.50	11.3	4670	477	3.00	9045	R4	160	B-48	B-58	B-68
			2.60				3.10	9050	R4	160	B-48	B-58	B-68
			3.87				4.63	9055	R4	160	B-48	B-58	B-68
8.3	6300	644	2.12	10.0	5250	536	2.54	9045	R4	180	B-48	B-58	B-68
			2.43				2.92	9050	R4	180	B-48	B-58	B-68
			3.10				3.72	9055	R4	180	B-48	B-58	B-68
			3.80				4.56	9060	R4	180	B-50	B-60	B-70
			4.85				5.81	9065	R4	180	B-50	B-60	B-70
7.5	7000	715	2.27	9.0	5840	596	2.72	9050	R4	200	B-48	B-58	B-68
			3.69				4.41	9060	R4	200	B-50	B-60	B-70
			3.89				4.67	9065	R4	200	B-50	B-60	B-70
6.7	7840	801	1.87	8.0	6540	667	2.23	9050	R4	224	B-48	B-58	B-68
			2.90				3.49	9060	R4	224	B-50	B-60	B-70
			3.89				4.67	9065	R4	224	B-50	B-60	B-70
6.0	8750	894	1.81	7.2	7300	745	2.18	9050	R4	250	B-48	B-58	B-68
			2.96				3.56	9060	R4	250	B-50	B-60	B-70
			3.85				4.63	9065	R4	250	B-50	B-60	B-70
			4.69				5.45	9070	R4	250	B-50	B-60	B-70
5.4	9800	1000	1.94	6.4	8170	834	2.34	9055	R4	280	B-48	B-58	B-68
			2.34				2.80	9060	R4	280	B-50	B-60	B-70
			3.03				3.63	9065	R4	280	B-50	B-60	B-70
			3.90				4.67	9070	R4	280	B-50	B-60	B-70
4.8	11030	1130	1.40	5.7	9190	938	1.67	9050	R4	315	B-48	B-58	B-68
			1.94				2.32	9055	R4	315	B-48	B-58	B-68
			2.09				2.50	9060	R4	315	B-50	B-60	B-70
			3.09				3.70	9065	R4	315	B-50	B-60	B-70
			3.40				4.09	9070	R4	315	B-50	B-60	B-70
			4.94				5.81	9075	R4	315	B-50	B-60	B-70
4.2	12430	1270	1.20	5.1	10360	1060	1.45	9050	R4	355	B-48	B-58	B-68
			1.56				1.87	9055	R4	355	B-48	B-58	B-68
			1.89				2.27	9060	R4	355	B-50	B-60	B-70
			2.43				2.92	9065	R4	355	B-50	B-60	B-70
			3.20				3.83	9070	R4	355	B-50	B-60	B-70
			4.14				4.96	9075	R4	355	B-50	B-60	B-70
			4.70				5.63	9080	R4	355	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 5.5kW, 7.5kW

Frequency							Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m						
3.8	14010	1430	1.47	4.5	11670	1190	9055	R4	400	B-48	B-58	B-68
			2.18				9065	R4	400	B-50	B-60	B-70
			3.61				9075	R4	400	B-50	B-60	B-70
3.3	15760	1610	1.25	4.0	13130	1340	9055	R4	450	B-48	B-58	B-68
			1.96				9065	R4	450	B-50	B-60	B-70
			3.38				9075	R4	450	B-50	B-60	B-70
			4.92				9085	R4	450	B-50	B-60	B-70

7.5kW	Frequency	Hz	50Hz	60Hz
	Pole	P	4	4
	Speed n1	r/min	1500	1800

Frequency							Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m						
53.6	1340	137	4.93	64.3	1110	114	9030	R3	28	B-44	B-54	B-64
47.6	1500	154	3.58	57.1	1250	128	9030	R3	31.5	B-44	B-54	B-64
42.3	1700	173	3.58	50.7	1410	144	9030	R3	35.5	B-44	B-54	B-64
37.5	1910	195	3.44	45	1590	163	9030	R3	40	B-44	B-54	B-64
			3.58				9035	R3	40	B-44	B054	B-64
33.3	2150	219	3.09	40	1790	183	9030	R3	45	B-44	B-54	B-64
			3.58				9035	R3	45	B-44	B-54	B-64
			4.57				9040	R3	45	B-44	B-54	B-64
30.0	2390	244	2.14	36	1990	203	9030	R3	50	B-44	B-54	B-64
			3.58				9035	R3	50	B-44	B-54	B-64
			3.48				9040	R3	50	B-44	B-54	B-64
26.8	2670	273	2.14	32.1	2230	228	9030	R3	56	B-44	B-54	B-64
			3.28				9035	R3	56	B-44	B-54	B-64
			3.48				9040	R3	56	B-44	B-54	B-64
			4.80				9045	R3	56	B-44	B-54	B-64
23.8	3010	307	2.14	28.6	2510	256	9030	R3	63	B-44	B-54	B-64
			3.48				9040	R3	63	B-44	B-54	B-64
21.1	3390	346	1.97	25.4	2830	288	9030	R3	71	B-44	B-54	B-64
			2.14				9035	R3	71	B-44	B-54	B-64
			2.92				9040	R3	71	B-44	B-54	B-64
			3.48				9045	R3	71	B-44	B-54	B-64
			4.26				9050	R3	71	B-44	B-54	B-64
18.8	3820	390	2.14	22.5	3180	325	9035	R3	80	B-44	B-54	B-64
			2.85				9040	R4	80	B-48	B-58	B-68
			3.48				9045	R3	80	B-44	B-54	B-64
			4.93				9060	R4	80	B-50	B-60	B-70
16.7	4300	439	2.09	20.0	3580	366	9035	R3	90	B-44	B-54	B-64
			2.33				9040	R4	90	B-48	B-58	B-68
			3.06				9045	R3	90	B-44	B-54	B-64
			3.37				9050	R4	90	B-48	B-58	B-68
			4.53				9055	R3	90	B-44	B-54	B-64
			4.93				9060	R4	90	B-50	B-60	B-70
15.0	4780	488	2.24	18.0	3980	406	9040	R4	100	B-48	B-58	B-68
			2.89				9045	R4	100	B-48	B-58	B-68
			3.32				9050	R4	100	B-48	B-58	B-68
			4.93				9060	R4	100	B-50	B-60	B-70
13.4	5350	546	1.84	16.1	4460	455	9040	R4	112	B-48	B-58	B-68
			2.45				9045	R4	112	B-48	B-58	B-68
			2.72				9050	R4	112	B-48	B-58	B-68
			3.37				9055	R4	112	B-48	B-58	B-68
			4.13				9060	R4	112	B-50	B-60	B-70
12.0	5970	609	1.81	14.4	4970	508	9040	R4	125	B-48	B-58	B-68
			2.26				9045	R4	125	B-48	B-58	B-68
			2.65				9050	R4	125	B-48	B-58	B-68
			3.37				9055	R4	125	B-48	B-58	B-68
			4.26				9060	R4	125	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 7.5kW

Frequency								Model			Page of Dimension Sheet		
50Hz			SF	60Hz			SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm	kgf m		Output Speed r/min	Output Torque (Tout) Nm	kgf m							
10.7	6690	683	1.49	12.9	5570	569	1.78	9040	R4	140	B-48	B-58	B-68
			1.93				2.30	9045	R4	140	B-48	B-58	B-68
			2.18				2.61	9050	R4	140	B-48	B-58	B-68
			2.85				3.41	9055	R4	140	B-48	B-58	B-68
			3.41				4.00	9060	R4	140	B-50	B-60	B-70
			4.42				5.29	9065	R4	140	B-50	B-60	B-70
9.4	7640	780	1.84	11.3	6370	650	2.20	9045	R4	160	B-48	B-58	B-68
			1.90				2.28	9050	R4	160	B-48	B-58	B-68
			2.84				3.40	9055	R4	160	B-48	B-58	B-68
			4.54				5.45	9065	R4	160	B-50	B-60	B-70
8.3	8600	878	1.56	10.0	7160	731	1.86	9045	R4	180	B-48	B-58	B-68
			1.78				2.14	9050	R4	180	B-48	B-58	B-68
			2.28				2.73	9055	R4	180	B-48	B-58	B-68
			2.78				3.34	9060	R4	180	B-50	B-60	B-70
			3.56				4.26	9065	R4	180	B-50	B-60	B-70
			4.40				5.20	9070	R4	180	B-50	B-60	B-70
7.5	9550	975	1.66	9.0	7960	813	2.00	9050	R4	200	B-48	B-58	B-68
			1.90				2.28	9055	R4	200	B-48	B-58	B-68
			2.70				3.24	9060	R4	200	B-50	B-60	B-70
			2.85				3.42	9065	R4	200	B-50	B-60	B-70
			4.40				5.20	9070	R4	200	B-50	B-60	B-70
6.7	10700	1090	1.37	8.0	8910	910	1.64	9050	R4	224	B-48	B-58	B-68
			1.86				2.24	9055	R4	224	B-48	B-58	B-68
			2.13				2.56	9060	R4	224	B-50	B-60	B-70
			2.85				3.42	9065	R4	224	B-50	B-60	B-70
			3.74				4.40	9070	R4	224	B-50	B-60	B-70
			4.40				5.20	9075	R4	224	B-50	B-60	B-70
6.0	11940	1220	1.33	7.2	9950	1020	1.60	9050	R4	250	B-48	B-58	B-68
			1.78				2.13	9055	R4	250	B-48	B-58	B-68
			2.17				2.61	9060	R4	250	B-50	B-60	B-70
			2.82				3.40	9065	R4	250	B-50	B-60	B-70
			3.44				4.00	9070	R4	250	B-50	B-60	B-70
			4.40				5.20	9075	R4	250	B-50	B-60	B-70
5.4	13370	1370	1.09	6.4	11140	1140	1.32	9050	R4	280	B-48	B-58	B-68
			1.42				1.72	9055	R4	280	B-48	B-58	B-68
			1.72				2.05	9060	R4	280	B-50	B-60	B-70
			2.22				2.66	9065	R4	280	B-50	B-60	B-70
			2.86				3.42	9070	R4	280	B-50	B-60	B-70
			3.97				4.66	9075	R4	280	B-50	B-60	B-70
			4.26				5.20	9080	R4	280	B-50	B-60	B-70
4.8	15040	1540	1.02	5.7	12530	1280	1.22	9050	R4	315	B-48	B-58	B-68
			1.42				1.70	9055	R4	315	B-48	B-58	B-68
			1.53				1.84	9060	R4	315	B-50	B-60	B-70
			2.26				2.72	9065	R4	315	B-50	B-60	B-70
			2.49				3.00	9070	R4	315	B-50	B-60	B-70
			3.62				4.26	9075	R4	315	B-50	B-60	B-70
			3.85				4.53	9080	R4	315	B-50	B-60	B-70
4.2	16950	1730	0.88	5.1	14130	1440	1.06	9050	R4	355	B-48	B-58	B-68
			1.14				1.37	9055	R4	355	B-48	B-58	B-68
			1.38				1.66	9060	R4	355	B-50	B-60	B-70
			1.78				2.14	9065	R4	355	B-50	B-60	B-70
			2.34				2.81	9070	R4	355	B-50	B-60	B-70
			3.04				3.64	9075	R4	355	B-50	B-60	B-70
			3.45				4.13	9080	R4	355	B-50	B-60	B-70
			4.53				5.46	9085	R4	355	B-50	B-60	B-70
3.8	19100	1950	1.07	4.5	15920	1630	1.29	9055	R4	400	B-48	B-58	B-68
			1.60				1.92	9065	R4	400	B-50	B-60	B-70
			2.65				3.17	9075	R4	400	B-50	B-60	B-70
			4.00				4.80	9085	R4	400	B-50	B-60	B-70
3.3	21490	2190	0.92	4.0	17910	1830	1.10	9055	R4	450	B-48	B-58	B-68
			1.44				1.73	9065	R4	450	B-50	B-60	B-70
			2.48				2.98	9075	R4	450	B-50	B-60	B-70
			3.61				4.26	9085	R4	450	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 11kW

11kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
93.8	1120	114	3.90	113	934	95	4.63	9030	R2	16	B-42	B-52	B-62
83.3	1260	129	3.90	100	1050	107	4.63	9030	R2	18	B-42	B-52	B-62
75.0	1400	143	4.63	90.0	1170	119	5.54	9030	R3	20	B-44	B-54	B-64
67.0	1570	160	4.18	80.4	1310	133	5.00	9030	R3	22.4	B-44	B-54	B-64
60.0	1750	179	3.72	72.0	1460	149	4.45	9030	R3	25	B-44	B-54	B-64
			4.90				5.81	9035	R3	25	B-44	B-54	B-64
53.6	1960	200	3.36	64.3	1630	167	4.00	9030	R3	28	B-44	B-54	B-64
			4.45				5.27	9035	R3	28	B-44	B-54	B-64
			5.00				5.90	9040	R3	28	B-44	B-54	B-64
47.6	2210	225	2.44	57.1	1840	188	2.90	9030	R3	31.5	B-44	B-54	B-64
			3.90				4.63	9035	R3	31.5	B-44	B-54	B-64
			4.37				5.18	9040	R3	31.5	B-44	B-54	B-64
			2.44				2.90	9030	R3	35.5	B-44	B-54	B-64
42.3	2490	254	3.54	50.7	2070	212	4.27	9035	R3	35.5	B-44	B-54	B-64
			3.81				4.63	9040	R3	35.5	B-44	B-54	B-64
			2.34				2.72	9030	R3	40	B-44	B-54	B-64
37.5	2800	286	2.44	45.0	2330	238	2.90	9035	R3	40	B-44	B-54	B-64
			3.72				4.55	9040	R3	40	B-44	B-54	B-64
			4.37				5.25	9045	R3	40	B-44	B-54	B-64
			2.10				2.52	9030	R3	45	B-44	B-54	B-64
33.3	3150	322	2.44	40.0	2630	268	2.90	9035	R3	45	B-44	B-54	B-64
			3.11				3.73	9040	R3	45	B-44	B-54	B-64
			4.07				4.87	9045	R3	45	B-44	B-54	B-64
			4.54				5.45	9050	R3	45	B-44	B-54	B-64
			1.46				1.75	9030	R3	50	B-44	B-54	B-64
30.0	3500	358	2.44	36.0	2920	298	2.90	9035	R3	50	B-44	B-54	B-64
			3.89				4.67	9045	R3	50	B-44	B-54	B-64
			4.45				5.36	9050	R3	50	B-44	B-54	B-64
			1.46				1.75	9030	R3	56	B-44	B-54	B-64
26.8	3920	400	2.23	32.1	3270	334	2.67	9035	R3	56	B-44	B-54	B-64
			2.37				2.84	9040	R3	56	B-44	B-54	B-64
			3.27				3.91	9045	R3	56	B-44	B-54	B-64
			3.63				4.36	9050	R3	56	B-44	B-54	B-64
			4.72				5.63	9055	R3	56	B-44	B-54	B-64
			1.46				1.75	9030	R3	63	B-44	B-54	B-64
23.8	4410	450	2.37	28.6	3680	375	2.84	9040	R3	63	B-44	B-54	B-64
			3.54				4.27	9050	R3	63	B-44	B-54	B-64
			4.72				5.72	9055	R3	63	B-44	B-54	B-64
			1.34				1.60	9030	R3	71	B-44	B-54	B-64
21.1	4970	508	1.46	25.4	4140	423	1.75	9035	R3	71	B-44	B-54	B-64
			1.99				2.38	9040	R3	71	B-44	B-54	B-64
			2.37				2.84	9045	R3	71	B-44	B-54	B-64
			2.90				3.54	9050	R3	71	B-44	B-54	B-64
			3.81				4.54	9055	R3	71	B-44	B-54	B-64
			4.54				5.45	9060	R3	71	B-46	B-56	B-66
			1.46				1.75	9035	R3	80	B-44	B-54	B-64
18.8	5600	572	1.94	22.5	4670	477	2.32	9040	R4	80	B-48	B-58	B-68
			2.37				2.84	9045	R3	80	B-44	B-54	B-64
			3.81				4.63	9055	R3	80	B-44	B-54	B-64
			1.42				1.70	9035	R3	90	B-44	B-54	B-64
16.7	6300	644	1.59	20.0	5250	536	1.90	9040	R4	90	B-48	B-58	B-68
			2.09				2.50	9045	R3	80	B-44	B-54	B-64
			2.30				2.72	9050	R4	90	B-48	B-58	B-68
			3.09				3.72	9055	R3	90	B-44	B-54	B-64
			3.36				4.09	9060	R4	90	B-50	B-60	B-70
			4.81				5.76	9065	R3	90	B-46	B-56	B-66
			1.52				1.82	9040	R4	100	B-48	B-58	B-68
15.0	7000	715	1.97	18.0	5840	596	2.36	9045	R4	100	B-48	B-58	B-68
			2.26				2.70	9050	R4	100	B-48	B-58	B-68
			3.36				4.09	9060	R4	100	B-50	B-60	B-70
			1.25				1.50	9040	R4	112	B-48	B-58	B-68
13.4	7840	801	1.67	16.1	6540	667	2.00	9045	R4	112	B-48	B-58	B-68
			1.85				2.22	9050	R4	112	B-48	B-58	B-68
			2.30				2.72	9055	R4	112	B-48	B-58	B-68
			2.81				3.45	9060	R4	112	B-50	B-60	B-70
			3.40				4.09	9065	R4	112	B-50	B-60	B-70
			4.90				5.90	9070	R4	112	B-50	B-60	B-70
12.0	8750	894	1.23	14.4	7300	745	1.48	9040	R4	125	B-48	B-58	B-68
			1.54				1.85	9045	R4	125	B-48	B-58	B-68
			1.80				2.17	9050	R4	125	B-48	B-58	B-68
			2.30				2.72	9055	R4	125	B-48	B-58	B-68
			2.90				3.45	9060	R4	125	B-50	B-60	B-70
			3.40				4.09	9065	R4	125	B-50	B-60	B-70
			4.54				5.45	9070	R4	125	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 11kW

Frequency										Model			Page of Dimension Sheet		
50Hz			SF	60Hz			SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright		
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m										
10.7	9800	1000	1.01	12.9	8170	834	1.21	9040	R4	140	B-48	B-58	B-68		
			1.31				1.57	9045	R4	140	B-48	B-58	B-68		
			1.49				1.78	9050	R4	140	B-48	B-58	B-68		
			1.94				2.32	9055	R4	140	B-48	B-58	B-68		
			2.32				2.72	9060	R4	140	B-50	B-60	B-70		
			3.01				3.60	9065	R4	140	B-50	B-60	B-70		
			3.72				4.54	9070	R4	140	B-50	B-60	B-70		
9.4	11210	1140	1.25	11.3	9340	953	1.50	9045	R4	160	B-48	B-58	B-68		
			1.30				1.55	9050	R4	160	B-48	B-58	B-68		
			1.93				2.31	9055	R4	160	B-48	B-58	B-68		
			3.10				3.71	9065	R4	160	B-50	B-60	B-70		
			4.81				5.72	9075	R4	160	B-50	B-60	B-70		
8.3	12610	1290	1.06	10.0	10510	1070	1.27	9045	R4	180	B-48	B-58	B-68		
			1.21				1.46	9050	R4	180	B-48	B-58	B-68		
			1.55				1.86	9055	R4	180	B-48	B-58	B-68		
			1.90				2.28	9060	R4	180	B-50	B-60	B-70		
			2.42				2.90	9065	R4	180	B-50	B-60	B-70		
			3.00				3.54	9070	R4	180	B-50	B-60	B-70		
			4.00				4.81	9075	R4	180	B-50	B-60	B-70		
			4.72				5.63	9080	R4	180	B-50	B-60	B-70		
7.5	14010	1430	1.13	9.0	11670	1190	1.36	9050	R4	200	B-48	B-58	B-68		
			1.30				1.55	9055	R4	200	B-48	B-58	B-68		
			1.84				2.20	9060	R4	200	B-50	B-60	B-70		
			1.94				2.33	9065	R4	200	B-50	B-60	B-70		
			3.00				3.54	9070	R4	200	B-50	B-60	B-70		
			4.45				5.36	9080	R4	200	B-50	B-60	B-70		
6.7	15690	1600	0.93	8.0	13070	1330	1.11	9050	R4	224	B-48	B-58	B-68		
			1.27				1.52	9055	R4	224	B-48	B-58	B-68		
			1.45				1.74	9060	R4	224	B-50	B-60	B-70		
			1.94				2.33	9065	R4	224	B-50	B-60	B-70		
			2.55				3.00	9070	R4	224	B-50	B-60	B-70		
			3.00				3.54	9075	R4	224	B-50	B-60	B-70		
			3.90				4.63	9080	R4	224	B-50	B-60	B-70		
			4.90				5.90	9085	R4	224	B-50	B-60	B-70		
6.0	17510	1790	0.90	7.2	14590	1490	1.09	9050	R4	250	B-48	B-58	B-68		
			1.21				1.45	9055	R4	250	B-48	B-58	B-68		
			1.48				1.78	9060	R4	250	B-50	B-60	B-70		
			1.92				2.31	9065	R4	250	B-50	B-60	B-70		
			2.34				2.72	9070	R4	250	B-50	B-60	B-70		
			3.00				3.54	9075	R4	250	B-50	B-60	B-70		
			3.45				4.09	9080	R4	250	B-50	B-60	B-70		
			4.72				5.63	9085	R4	250	B-50	B-60	B-70		
5.4	19610	2000	0.97	6.4	16340	1670	1.17	9055	R4	280	B-48	B-58	B-68		
			1.17				1.40	9060	R4	280	B-50	B-60	B-70		
			1.51				1.81	9065	R4	280	B-50	B-60	B-70		
			1.95				2.33	9070	R4	280	B-50	B-60	B-70		
			2.70				3.18	9075	R4	280	B-50	B-60	B-70		
			2.90				3.54	9080	R4	280	B-50	B-60	B-70		
			4.09				4.90	9085	R4	280	B-50	B-60	B-70		
4.8	22060	2250	0.97	5.7	18380	1880	1.16	9055	R4	315	B-48	B-58	B-68		
			1.04				1.25	9060	R4	315	B-50	B-60	B-70		
			1.54				1.85	9065	R4	315	B-50	B-60	B-70		
			1.70				2.04	9070	R4	315	B-50	B-60	B-70		
			2.47				2.90	9075	R4	315	B-50	B-60	B-70		
			2.62				3.09	9080	R4	315	B-50	B-60	B-70		
			3.63				4.36	9085	R4	315	B-50	B-60	B-70		
4.2	24860	2540	0.94	5.1	20720	2120	1.13	9060	R4	355	B-50	B-60	B-70		
			1.21				1.46	9065	R4	355	B-50	B-60	B-70		
			1.60				1.91	9070	R4	355	B-50	B-60	B-70		
			2.07				2.48	9075	R4	355	B-50	B-60	B-70		
			2.35				2.81	9080	R4	355	B-50	B-60	B-70		
			3.09				3.72	9085	R4	355	B-50	B-60	B-70		
3.8	28010	2860	1.09	4.5	23340	2380	1.30	9065	R4	400	B-50	B-60	B-70		
			1.80				2.16	9075	R4	400	B-50	B-60	B-70		
			2.72				3.27	9085	R4	400	B-50	B-60	B-70		
3.3	31520	3220	0.98	4.0	26260	2680	1.18	9065	R4	450	B-50	B-60	B-70		
			1.69				2.03	9075	R4	450	B-50	B-60	B-70		
			2.46				2.90	9085	R4	450	B-50	B-60	B-70		

SELECTION Drive Unit Right Angle Shaft 15kW

15kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz			Output Speed r/min	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m	SF		Output Torque (Tout) Nm	kgf m	SF						
120	1190	122	4.06	144	995	102	4.86	9030	R2	12.5	B-42	B-52	B-62
107	1340	137	4.06	129	1110	114	4.86	9030	R2	14	B-42	B-52	B-62
93.8	1530	156	2.86	113	1270	130	3.40	9030	R2	16	B-42	B-52	B-62
			4.06				4.86	9035	R2	16	B-42	B-52	B-62
			4.20				5.00	9040	R2	16	B-42	B-52	B-62
83.3	1720	176	2.86	100	1430	146	3.40	9030	R2	18	B-42	B-52	B-62
			4.06				4.86	9035	R2	18	B-42	B-52	B-62
			4.20				5.00	9040	R2	18	B-42	B-52	B-62
75.0	1910	195	3.40	90.0	1590	163	4.06	9030	R3	20	B-44	B-54	B-64
			4.46				5.20	9040	R3	20	B-44	B-54	B-64
67.0	2140	218	3.06	80.4	1780	182	3.66	9030	R3	22.4	B-44	B-54	B-64
			4.46				5.20	9040	R3	22.4	B-44	B-54	B-64
60.0	2390	244	2.73	72.0	1990	203	3.26	9030	R3	25	B-44	B-54	B-64
			3.60				4.26	9035	R3	25	B-44	B-54	B-64
			4.47				5.20	9040	R3	25	B-44	B-54	B-64
53.6	2670	273	2.46	64.3	2230	228	2.93	9030	R3	28	B-44	B-54	B-64
			3.26				3.86	9035	R3	28	B-44	B-54	B-64
			3.66				4.33	9040	R3	28	B-44	B-54	B-64
			4.50				5.20	9045	R3	28	B-44	B-54	B-64
47.6	3010	307	1.79	57.1	2510	256	2.13	9030	R3	31.5	B-44	B-54	B-64
			2.86				3.40	9035	R3	31.5	B-44	B-54	B-64
			3.20				3.80	9040	R3	31.5	B-44	B-54	B-64
			4.50				5.20	9045	R3	31.5	B-44	B-54	B-64
42.3	3390	346	1.79	50.7	2830	288	2.13	9030	R3	35.5	B-44	B-54	B-64
			2.60				3.13	9035	R3	35.5	B-44	B-54	B-64
			2.80				3.40	9040	R3	35.5	B-44	B-54	B-64
			3.85				4.61	9045	R3	35.5	B-44	B-54	B-64
			4.33				5.20	9050	R3	35.5	B-44	B-54	B-64
37.5	3820	390	1.72	45.0	3180	325	2.00	9030	R3	40	B-44	B-54	B-64
			1.79				2.13	9035	R3	40	B-44	B-54	B-64
			2.73				3.34	9040	R3	40	B-44	B-54	B-64
			3.20				3.85	9045	R3	40	B-44	B-54	B-64
			4.06				4.86	9050	R3	40	B-44	B-54	B-64
33.3	4300	439	1.54	40.0	3580	366	1.85	9030	R3	45	B-44	B-54	B-64
			1.79				2.13	9035	R3	45	B-44	B-54	B-64
			2.28				2.74	9040	R3	45	B-44	B-54	B-64
			2.98				3.57	9045	R3	45	B-44	B-54	B-64
			3.33				4.00	9050	R3	45	B-44	B-54	B-64
			4.53				5.46	9055	R3	45	B-44	B-54	B-64
30.0	4780	488	1.07	36.0	3980	406	1.28	9030	R3	50	B-44	B-54	B-64
			1.79				2.13	9035	R3	50	B-44	B-54	B-64
			2.85				3.42	9045	R3	50	B-44	B-54	B-64
			3.26				3.93	9050	R3	50	B-44	B-54	B-64
			4.33				5.20	9055	R3	50	B-44	B-54	B-64
			4.93				5.60	9060	R3	50	B-46	B-56	B-66
26.8	5350	546	1.07	32.1	4460	455	1.28	9030	R3	56	B-44	B-54	B-64
			1.64				1.96	9035	R3	56	B-44	B-54	B-64
			1.74				2.08	9040	R3	56	B-44	B-54	B-64
			2.40				2.87	9045	R3	56	B-44	B-54	B-64
			2.66				3.20	9050	R3	56	B-44	B-54	B-64
			3.46				4.13	9055	R3	56	B-44	B-54	B-64
			4.26				5.13	9060	R3	56	B-46	B-56	B-66
23.8	6020	614	1.07	28.6	5010	512	1.28	9030	R3	63	B-44	B-54	B-64
			1.74				2.08	9040	R3	63	B-44	B-54	B-64
			2.60				3.13	9050	R3	63	B-44	B-54	B-64
			3.46				4.20	9055	R3	63	B-44	B-54	B-64
			4.00				4.53	9060	R3	63	B-46	B-56	B-66
			4.93				5.60	9065	R3	63	B-46	B-56	B-66
21.1	6780	692	0.98	25.4	5650	577	1.18	9030	R3	71	B-44	B-54	B-64
			1.07				1.28	9035	R3	71	B-44	B-54	B-64
			1.46				1.74	9040	R3	71	B-44	B-54	B-64
			1.74				2.08	9045	R3	71	B-44	B-54	B-64
			2.13				2.60	9050	R3	71	B-44	B-54	B-64
			2.80				3.33	9055	R3	71	B-44	B-54	B-64
			3.33				4.00	9060	R3	71	B-46	B-56	B-66
			4.48				5.36	9065	R3	71	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 15kW

Drive Unit	Frequency							Model			Page of Dimension Sheet		
	50Hz			60Hz			SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Speed r/min	Output Torque (Tout) Nm	kgf m	Output Speed r/min	Output Torque (Tout) Nm	kgf m							
Selection Tables	18.8	7640	780	22.5	6370	650	1.07	9035	R3	80	B-44	B-54	B-64
							1.42	9040	R4	80	B-48	B-58	B-68
							1.74	9045	R3	80	B-44	B-54	B-64
							2.80	9055	R3	80	B-44	B-54	B-64
							4.00	9065	R3	80	B-46	B-56	B-64
							4.40	9070	R4	80	B-50	B-60	B-70
	16.7	8600	878	20.0	7160	731	1.04	9035	R3	90	B-44	B-54	B-64
							1.16	9040	R4	90	B-48	B-58	B-68
							1.53	9045	R3	90	B-44	B-54	B-64
							1.68	9050	R4	90	B-48	B-58	B-68
							2.26	9055	R3	90	B-44	B-54	B-64
							2.46	9060	R4	90	B-50	B-60	B-70
Dimension Tables	15.0	9550	975	18.0	7960	813	3.53	9065	R3	90	B-46	B-56	B-66
							4.40	9070	R4	90	B-50	B-60	B-70
							1.12	9040	R4	100	B-48	B-58	B-68
							1.44	9045	R4	100	B-48	B-58	B-68
							1.66	9050	R4	100	B-48	B-58	B-68
							2.46	9060	R4	100	B-50	B-60	B-70
	13.4	10700	1090	16.1	8910	910	4.33	9070	R4	100	B-50	B-60	B-70
							0.92	9040	R4	112	B-48	B-58	B-68
							1.22	9045	R4	112	B-48	B-58	B-68
							1.36	9050	R4	112	B-48	B-58	B-68
							1.68	9055	R4	112	B-48	B-58	B-68
							2.06	9060	R4	112	B-50	B-60	B-70
Dimension Tables	12.0	11940	1220	14.4	9950	1020	2.50	9065	R4	112	B-50	B-60	B-70
							3.60	9070	R4	112	B-50	B-60	B-70
							4.40	9075	R4	112	B-50	B-60	B-70
							0.90	9040	R4	125	B-48	B-58	B-68
							1.13	9045	R4	125	B-48	B-58	B-68
							1.32	9050	R4	125	B-48	B-58	B-68
Dimension Tables	10.7	13370	1370	12.9	11140	1140	1.68	9055	R4	125	B-48	B-58	B-68
							2.13	9060	R4	125	B-50	B-60	B-70
							2.50	9065	R4	125	B-50	B-60	B-70
							3.33	8970	R4	125	B-50	B-60	B-70
							4.40	9075	R4	125	B-50	B-60	B-70
							5.00	9080	R4	125	B-50	B-60	B-70
Dimension Tables	9.4	15280	1560	11.3	12730	1300	0.96	9045	R4	140	B-48	B-58	B-68
							1.09	9050	R4	140	B-48	B-58	B-68
							1.42	9055	R4	140	B-48	B-58	B-68
							1.70	9060	R4	140	B-50	B-60	B-70
							2.21	9065	R4	140	B-50	B-60	B-70
							2.73	9070	R4	140	B-50	B-60	B-70
Dimension Tables	8.3	17190	1760	10.0	14330	1460	3.86	9075	R4	140	B-50	B-60	B-70
							4.33	9080	R4	140	B-50	B-60	B-70
							0.92	9045	R4	160	B-48	B-58	B-68
							0.95	9050	R4	160	B-48	B-58	B-68
							1.42	9055	R4	160	B-48	B-58	B-68
							2.27	9065	R4	160	B-50	B-60	B-70
Dimension Tables	7.5	19100	1950	9.0	15920	1630	3.53	9075	R4	160	B-50	B-60	B-70
							3.80	9080	R4	160	B-50	B-60	B-70
							0.89	9050	R4	180	B-48	B-58	B-68
							1.14	9055	R4	180	B-48	B-58	B-68
							1.39	9060	R4	180	B-50	B-60	B-70
							1.78	9065	R4	180	B-50	B-60	B-70
Dimension Tables	7.5	19100	1950	9.0	15920	1630	2.93	9075	R4	180	B-50	B-60	B-70
							3.46	9080	R4	180	B-50	B-60	B-70
							4.53	9085	R4	180	B-50	B-60	B-70
							0.83	9050	R4	200	B-48	B-58	B-68
							0.95	9055	R4	200	B-48	B-58	B-68
							1.35	9060	R4	200	B-50	B-60	B-70
Dimension Tables	7.5	19100	1950	9.0	15920	1630	1.42	9065	R4	200	B-50	B-60	B-70
							2.20	9070	R4	200	B-50	B-60	B-70
							3.26	9080	R4	200	B-50	B-60	B-70
							3.80	9085	R4	200	B-50	B-60	B-70
							1.00	9050	R4	200	B-48	B-58	B-68
							1.14	9055	R4	200	B-48	B-58	B-68
Dimension Tables	7.5	19100	1950	9.0	15920	1630	1.62	9060	R4	200	B-50	B-60	B-70
							1.71	9065	R4	200	B-50	B-60	B-70
							2.0	9070	R4	200	B-50	B-60	B-70
							3.93	9080	R4	200	B-50	B-60	B-70
							4.53	9085	R4	200	B-50	B-60	B-70
							1.00	9050	R4	200	B-48	B-58	B-68

SELECTION Drive Unit Right Angle Shaft 15kW, 18.5kW

Frequency							Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m						
6.7	21390	2180	0.93	8.0	17830	1820	9055	R4	224	B-48	B-58	B-68
			1.06				9060	R4	224	B-50	B-60	B-70
			1.42				9065	R4	224	B-50	B-60	B-70
			1.87				9070	R4	224	B-50	B-60	B-70
			2.20				9075	R4	224	B-50	B-60	B-70
			2.86				9080	R4	224	B-50	B-60	B-70
			3.60				9085	R4	224	B-50	B-60	B-70
6.0	23880	2440	0.89	7.2	19900	2030	9055	R4	250	B-48	B-58	B-68
			1.08				9060	R4	250	B-50	B-60	B-70
			1.41				9065	R4	250	B-50	B-60	B-70
			1.72				9070	R4	250	B-50	B-60	B-70
			2.20				9075	R4	250	B-50	B-60	B-70
			2.53				9080	R4	250	B-50	B-60	B-70
			3.46				9085	R4	250	B-50	B-60	B-70
5.4	26740	2730	0.86	6.4	22280	2280	9060	R4	280	B-50	B-60	B-70
			1.11				9065	R4	280	B-50	B-60	B-70
			1.43				9070	R4	280	B-50	B-60	B-70
			1.98				9075	R4	280	B-50	B-60	B-70
			2.13				9080	R4	280	B-50	B-60	B-70
			3.00				9085	R4	280	B-50	B-60	B-70
4.8	30080	3070	1.13	5.7	25070	2560	9065	R4	315	B-50	B-60	B-70
			1.24				9070	R4	315	B-50	B-60	B-70
			1.81				9075	R4	315	B-50	B-60	B-70
			1.92				9080	R4	315	B-50	B-60	B-70
			2.66				9085	R4	315	B-50	B-60	B-70
4.2	33900	3460	0.89	5.1	28250	2880	9065	R4	355	B-50	B-60	B-70
			1.17				9070	R4	355	B-50	B-60	B-70
			1.52				9075	R4	355	B-50	B-60	B-70
			1.72				9080	R4	355	B-50	B-60	B-70
			2.26				9085	R4	355	B-50	B-60	B-70
3.8	38200	3900	1.32	4.5	31830	3250	9075	R4	400	B-50	B-60	B-70
			2.00				9085	R4	400	B-50	B-60	B-70
3.3	42980	4390	1.24	4.0	35810	3660	9075	R4	450	B-50	B-60	B-70
			1.80				9085	R4	450	B-50	B-60	B-70

18.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency							Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m						
150	1180	120	4.75	180	982	100	9030	R2	10	B-42	B-52	B-62
134	1320	135	4.48	161	1100	112	9030	R2	11.2	B-42	B-52	B-62
120	1470	150	3.29	144	1230	125	9030	R2	12.5	B-42	B-52	B-62
			4.37				9040	R2	12.5	B-42	B-52	B-62
			4.75				9.35	R2	12.5	B-42	B-52	B-62
107	1650	168	3.29	129	1370	140	9.30	R2	14	B-42	B-52	B-62
			4.75				9.35	R2	14	B-42	B-52	B-62
93.8	1880	192	2.32	113	1570	160	9030	R2	16	B-42	B-52	B-62
			3.29				9035	R2	16	B-42	B-52	B-62
			3.40				9040	R2	16	B-42	B-52	B-62
			4.37				9045	R2	16	B-42	B-52	B-62
83.3	2120	216	2.32	100	1770	180	9030	R2	18	B-42	B-52	B-62
			3.29				9035	R2	18	B-42	B-52	B-62
			3.40				9040	R2	18	B-42	B-52	B-62
			4.37				9045	R2	18	B-42	B-52	B-62
75.0	2360	241	2.75	90.0	1960	200	9030	R3	20	B-44	B-54	B-64
			3.62				9040	R3	20	B-44	B-54	B-64
67.0	2640	269	2.48	80.4	2200	224	9030	R3	22.4	B-44	B-54	B-64
			3.62				9040	R3	22.4	B-44	B-54	B-64
60.0	2940	301	2.21	72.0	2450	251	9030	R3	25	B-44	B-54	B-64
			2.91				9035	R3	25	B-44	B-54	B-64
			3.62				9040	R3	25	B-44	B-54	B-64

SELECTION Drive Unit Right Angle Shaft 18.5kW

Frequency									Model			Page of Dimension Sheet		
50Hz			SF	60Hz			SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright	
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m									
53.6	3300	337	2.00	64.3	2750	281	2.37	9030	R3	28	B-44	B-54	B-64	
			2.64				3.13	9035	R3	28	B-44	B-54	B-64	
			2.97				3.51	9040	R3	28	B-44	B-54	B-64	
			3.65				4.21	9045	R3	28	B-44	B-54	B-64	
			4.32				5.18	9050	R3	28	B-44	B-54	B-64	
47.6	3710	379	1.45	57.1	3090	316	1.72	9030	R3	31.5	B-44	B-54	B-64	
			2.32				2.75	9035	R3	31.5	B-44	B-54	B-64	
			2.60				3.08	9040	R3	31.5	B-44	B-54	B-64	
			3.65				4.21	9045	R3	31.5	B-44	B-54	B-64	
			4.27				4.91	9050	R3	31.5	B-44	B-54	B-64	
42.3	4180	427	1.45	50.7	3480	356	1.72	9030	R3	35.5	B-44	B-54	B-64	
			2.10				2.54	9035	R3	35.5	B-44	B-54	B-64	
			2.27				2.75	9040	R3	35.5	B-44	B-54	B-64	
			3.12				3.74	9045	R3	35.5	B-44	B-54	B-64	
			3.51				4.21	9050	R3	35.5	B-44	B-54	B-64	
			4.45				5.40	9055	R3	35.5	B-44	B-54	B-64	
			1.39				1.62	9030	R3	40	B-44	B-54	B-64	
			1.45				1.72	9035	R3	40	B-44	B-54	B-64	
			2.21				2.70	9040	R3	40	B-44	B-54	B-64	
			2.60				3.12	9045	R3	40	B-44	B-54	B-64	
			3.29				3.94	9050	R3	40	B-44	B-54	B-64	
			4.27				4.91	9055	R3	40	B-44	B-54	B-64	
			1.25				1.50	9030	R3	45	B-44	B-54	B-64	
			1.45				1.72	9035	R3	45	B-44	B-54	B-64	
			1.85				2.22	9040	R3	45	B-44	B-54	B-64	
			2.42				2.89	9045	R3	45	B-44	B-54	B-64	
			2.70				3.24	9050	R3	45	B-44	B-54	B-64	
			3.67				4.43	9055	R3	45	B-44	B-54	B-64	
			4.37				5.24	9060	R3	45	B-46	B-56	B-66	
			0.87				1.04	9030	R3	50	B-44	B-54	B-64	
			1.45				1.72	9035	R3	50	B-44	B-54	B-64	
			2.31				2.77	9045	R3	50	B-44	B-54	B-64	
			2.64				3.18	9050	R3	50	B-44	B-54	B-64	
			3.51				4.21	9055	R3	50	B-44	B-54	B-64	
			4.00				4.54	9060	R3	50	B-46	B-56	B-66	
			0.87				1.04	9030	R3	56	B-44	B-54	B-64	
			1.32				1.58	9035	R3	56	B-44	B-54	B-64	
			1.41				1.69	9040	R3	56	B-44	B-54	B-64	
			1.94				2.33	9045	R3	56	B-44	B-54	B-64	
			2.16				2.59	9050	R3	56	B-44	B-54	B-64	
			2.81				3.35	9055	R3	56	B-44	B-54	B-64	
			3.45				4.16	9060	R3	56	B-46	B-56	B-66	
			4.61				5.51	9065	R3	56	B-46	B-56	B-66	
			0.87				1.04	9030	R3	63	B-44	B-54	B-64	
									1.41				1.69	9040
2.10	2.54	9050		R3	63	B-44			B-54				B-64	
2.81	3.40	9055		R3	63	B-44			B-54				B-64	
3.24	3.67	9060		R3	63	B-46			B-56				B-66	
4.00	4.54	9065		R3	63	B-46			B-56				B-66	
			4.75				5.40	9070	R3	63	B-46	B-56	B-66	
			0.87				1.04	9035	R3	71	B-44	B-54	B-64	
			1.18				1.41	9040	R3	71	B-44	B-54	B-64	
			1.41				1.69	9045	R3	71	B-44	B-54	B-64	
									1.72				2.10	9050
2.27	2.70	9055		R3	71	B-44			B-54				B-64	
2.70	3.24	9060		R3	71	B-46			B-56				B-66	
3.63	4.35	9065		R3	71	B-46			B-56				B-66	
4.54	5.40	9070		R3	71	B-46			B-56				B-66	
			0.87				1.04	9035	R3	80	B-44	B-54	B-64	
			1.15				1.38	9040	R4	80	B-48	B-58	B-68	
			1.41				1.69	9045	R3	80	B-44	B-54	B-64	
			2.27				2.75	9055	R3	80	B-44	B-54	B-64	
			3.24				3.67	9065	R3	80	B-46	B-56	B-66	
			3.56				4.32	9070	R4	80	B-50	B-60	B-70	
			4.75				5.40	9075	R3	80	B-46	B-56	B-66	

SELECTION Drive Unit Right Angle Shaft 18.5kW

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
16.7	10600	1080	0.84	20.0	8830	902	1.01	9035	R3	90	B-44	B-54	B-64
			0.94				1.13	9040	R4	90	B-48	B-58	B-68
			1.24				1.48	9045	R3	90	B-44	B-54	B-64
			1.36				1.62	9050	R4	90	B-48	B-58	B-68
			1.83				2.21	9055	R3	90	B-44	B-54	B-64
			2.00				2.43	9060	R4	90	B-50	B-60	B-70
			2.86				3.42	9065	R3	90	B-46	B-56	B-66
			3.56				4.32	9070	R4	90	B-50	B-60	B-70
			4.75				5.40	9075	R3	90	B-46	B-56	B-66
			15.0				11780	1200	0.90	18.0	9820	1000	1.08
1.17	1.40	9045		R4	100	B-48			B-58				B-68
1.34	1.61	9050		R4	100	B-48			B-58				B-68
2.00	2.43	9060		R4	100	B-50			B-60				B-70
3.51	4.21	9070		R4	100	B-50			B-60				B-70
13.4	13190	1350	0.99	16.1	10990	1120	1.18	9045	R4	112	B-48	B-58	B-68
			1.10				1.32	9050	R4	112	B-48	B-58	B-68
			1.36				1.62	9055	R4	112	B-48	B-58	B-68
			1.67				2.05	9060	R4	112	B-50	B-60	B-70
			2.02				2.43	9065	R4	112	B-50	B-60	B-70
			2.91				3.51	9070	R4	112	B-50	B-60	B-70
			3.56				4.32	9075	R4	112	B-50	B-60	B-70
			4.59				5.51	9080	R4	112	B-50	B-60	B-70
12.0	14720	1500	0.91	14.4	12270	1250	1.10	9045	R4	125	B-48	B-58	B-68
			1.07				1.29	9050	R4	125	B-48	B-58	B-68
			1.36				1.62	9055	R4	125	B-48	B-58	B-68
			1.72				2.05	9060	R4	125	B-50	B-60	B-70
			2.02				2.43	9065	R4	125	B-50	B-60	B-70
			2.70				3.24	9070	R4	125	B-50	B-60	B-70
			3.56				4.32	9075	R4	125	B-50	B-60	B-70
			4.05				4.86	9080	R4	125	B-50	B-60	B-70
			10.7				16490	1680	0.88	12.9	13740	1400	1.05
1.15	1.38	9055		R4	140	B-48			B-58				B-68
1.38	1.62	9060		R4	140	B-50			B-60				B-70
1.79	2.14	9065		R4	140	B-50			B-60				B-70
2.21	2.70	9070		R4	140	B-50			B-60				B-70
3.13	3.72	9075		R4	140	B-50			B-60				B-70
3.51	4.21	9080		R4	140	B-50			B-60				B-70
4.81	5.78	9085		R4	140	B-50			B-60				B-70
9.4	18850	1920	1.15	11.3	15700	1600	1.37	9055	R4	160	B-48	B-58	B-68
			1.84				2.21	9065	R4	160	B-50	B-60	B-70
			1.78				2.10	9070	R4	160	B-50	B-60	B-70
			2.86				3.40	9075	R4	160	B-50	B-60	B-70
			3.08				3.67	9080	R4	160	B-50	B-60	B-70
			4.27				5.13	9085	R4	160	B-50	B-60	B-70
8.3	21200	2160	0.92	10.0	17670	1800	1.10	9055	R4	180	B-48	B-58	B-68
			1.12				1.35	9060	R4	180	B-50	B-60	B-70
			1.44				1.73	9065	R4	180	B-50	B-60	B-70
			1.78				2.10	9070	R4	180	B-50	B-60	B-70
			2.37				2.86	9075	R4	180	B-50	B-60	B-70
			2.81				3.35	9080	R4	180	B-50	B-60	B-70
			3.67				4.43	9085	R4	180	B-50	B-60	B-70
7.5	23560	2410	1.09	9.0	19630	2000	1.31	9060	R4	200	B-50	B-60	B-70
			1.15				1.38	9065	R4	200	B-50	B-60	B-70
			1.78				2.10	9070	R4	200	B-50	B-60	B-70
			2.64				3.18	9080	R4	200	B-50	B-60	B-70
			3.08				3.67	9085	R4	200	B-50	B-60	B-70
6.7	26380	2690	0.86	8.0	21990	2240	1.03	9060	R4	224	B-50	B-60	B-70
			1.15				1.38	9065	R4	224	B-50	B-60	B-70
			1.51				1.78	9070	R4	224	B-50	B-60	B-70
			1.78				2.10	9075	R4	224	B-50	B-60	B-70
			2.32				2.75	9080	R4	224	B-50	B-60	B-70
			2.91				3.51	9085	R4	224	B-50	B-60	B-70
6.0	29450	3010	0.88	7.2	24540	2510	1.05	9060	R4	250	B-50	B-60	B-70
			1.14				1.37	9065	R4	250	B-50	B-60	B-70
			1.39				1.62	9070	R4	250	B-50	B-60	B-70
			1.78				2.10	9075	R4	250	B-50	B-60	B-70
			2.05				2.43	9080	R4	250	B-50	B-60	B-70
			2.81				2.53	9085	R4	250	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 18.5kW, 22kW

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
5.4	32980	3370	0.90	6.4	27480	2810	1.08	9065	R4	280	B-50	B-60	B-70
			1.16				1.38	9070	R4	280	B-50	B-60	B-70
			1.61				1.89	9075	R4	280	B-50	B-60	B-70
			1.72				2.10	9080	R4	280	B-50	B-60	B-70
			2.43				2.91	9085	R4	280	B-50	B-60	B-70
4.8	37100	3790	0.91	5.7	30920	3160	1.10	9065	R4	315	B-50	B-60	B-70
			1.01				1.21	9070	R4	315	B-50	B-60	B-70
			1.47				1.72	9075	R4	315	B-50	B-60	B-70
			1.56				1.83	9080	R4	315	B-50	B-60	B-70
			2.16				2.59	9085	R4	315	B-50	B-60	B-70
4.2	41810	4270	0.95	5.1	34840	3560	1.14	9070	R4	355	B-50	B-60	B-70
			1.23				1.47	9075	R4	355	B-50	B-60	B-70
			1.40				1.67	9080	R4	355	B-50	B-60	B-70
			1.83				2.21	9085	R4	355	B-50	B-60	B-70
3.8	47110	4810	1.07	4.5	39260	4010	1.28	9075	R4	400	B-50	B-60	B-70
			1.62				1.94	9085	R4	400	B-50	B-60	B-70
3.3	53000	5410	1.00	4.0	44170	4510	1.21	9075	R4	450	B-50	B-60	B-70
			1.46				1.72	9085	R4	450	B-50	B-60	B-70

22kW	Frequency	Hz	50Hz	60Hz
	Pole	P	4	4
	Speed	n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
238	882	90	4.68	286	735	75	5.45	9030	R2	6.3	B-42	B-52	B-62
211	994	102	4.68	254	829	85	5.45	9030	R2	7.1	B-42	B-52	B-62
188	1120	114	4.45	225	934	95	5.13	9030	R2	8	B-42	B-52	B-62
			4.68				5.45	9035	R2	8	B-42	B-52	B-62
167	1260	129	4.45	200	1050	107	5.13	9030	R2	9	B-42	B-52	B-62
			4.68				5.45	9035	R2	9	B-42	B-52	B-62
150	1400	143	4.00	180	1170	119	4.54	9030	R2	10	B-42	B-52	B-62
			4.45				5.13	9035	R2	10	B-42	B-52	B-62
134	1570	160	3.77	161	1310	133	4.54	9030	R2	11.2	B-42	B-52	B-62
			4.45				5.13	9035	R2	11.2	B-42	B-52	B-62
120	1750	179	2.77	144	1460	149	3.31	9030	R2	12.5	B-42	B-52	B-62
			4.00				4.54	9035	R2	12.5	B-42	B-52	B-62
107	1960	200	2.77	129	1630	167	3.31	9030	R2	14	B-42	B-52	B-62
			4.00				4.54	9035	R2	14	B-42	B-52	B-62
93.8	2240	229	1.95	113	1870	191	2.31	9030	R2	16	B-42	B-52	B-62
			2.77				3.31	9035	R2	16	B-42	B-52	B-62
			2.86				3.40	9040	R2	16	B-42	B-52	B-62
			3.68				4.40	9045	R2	16	B-42	B-52	B-62
83.3	2520	257	1.95	100	2100	215	2.31	9030	R2	18	B-42	B-52	B-62
			2.77				3.31	9035	R2	18	B-42	B-52	B-62
			2.86				3.40	9040	R2	18	B-42	B-52	B-62
			3.68				4.40	9045	R2	18	B-42	B-52	B-62
75.0	2800	286	2.31	90.0	2330	238	2.77	9030	R3	20	B-44	B-54	B-64
			3.04				3.54	9040	R3	20	B-44	B-54	B-64
			4.31				4.90	9050	R3	20	B-44	B-54	B-64
			4.95				5.59	9060	R3	20	B-46	B-56	B-66
67.0	3140	320	2.09	80.4	2610	267	2.50	9030	R3	22.4	B-44	B-54	B-64
			3.04				3.54	9040	R3	22.4	B-44	B-54	B-64
			4.31				4.90	9050	R3	22.4	B-44	B-54	B-64
			4.95				5.59	9060	R3	22.4	B-46	B-56	B-66
60.0	3500	358	1.86	72.0	2920	298	2.22	9030	R3	25	B-44	B-54	B-64
			2.45				2.90	9035	R3	25	B-44	B-54	B-64
			3.05				3.54	9040	R3	25	B-44	B-54	B-64
			4.31				4.90	9050	R3	25	B-44	B-54	B-64
			4.95				5.59	9060	R3	25	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 22kW

Frequency							Model			Page of Dimension Sheet			
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright	
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m								SF
53.6	3920	400	1.68	64.3	3270	334	2.00	9030	R3	28	B-44	B-54	B-64
			2.22				2.63	9035	R3	28	B-44	B-54	B-64
			2.50				2.95	9040	R3	28	B-44	B-54	B-64
			3.07				3.54	9045	R3	28	B-44	B-54	B-64
			3.63				4.36	9050	R3	28	B-44	B-54	B-64
			4.31				4.90	9055	R3	28	B-44	B-54	B-64
			4.95				5.59	9060	R3	28	B-46	B-56	B-66
47.6	4410	450	1.22	57.1	3680	375	1.45	9030	R3	31.5	B-44	B-54	B-64
			1.95				2.31	9035	R3	31.5	B-44	B-54	B-64
			2.18				2.59	9040	R3	31.5	B-44	B-54	B-64
			3.07				3.54	9045	R3	31.5	B-44	B-54	B-64
			3.59				4.13	9050	R3	31.5	B-44	B-54	B-64
			4.31				4.90	9055	R3	31.5	B-42	B-52	B-62
			4.95				5.59	9065	R3	31.5	B-46	B-56	B-66
42.3	4970	508	1.22	50.7	4140	423	1.45	9030	R3	35.5	B-44	B-54	B-64
			1.77				2.13	9035	R3	35.5	B-44	B-54	B-64
			1.90				2.31	9040	R3	35.5	B-44	B-54	B-64
			2.62				3.14	9045	R3	35.5	B-44	B-54	B-64
			2.95				3.54	9050	R3	35.5	B-44	B-54	B-64
			3,81				4.54	9055	R3	35.5	B-44	B-54	B-64
			4.22				4.77	9060	R3	35.5	B-46	B-56	B-66
4.95	5.59	9065	R3	35.5	B-46	B-56	B-66						
37.5	5600	572	1.17	45.0	4670	477	1.36	9030	R3	40	B-44	B-54	B-64
			1.22				1.45	9035	R3	40	B-44	B-54	B-64
			1.86				2.27	9040	R3	40	B-44	B-54	B-64
			2.18				2.62	9045	R3	40	B-44	B-54	B-64
			2.77				3.31	9050	R3	40	B-44	B-54	B-64
			3.59				4.13	9055	R3	40	B-44	B-54	B-64
			4.22				4.77	9060	R3	40	B-46	B-56	B-66
33.3	6300	644	1.05	40.0	5250	536	1.26	9030	R3	45	B-44	B-54	B-64
			1.22				1.45	9035	R3	45	B-44	B-54	B-64
			1.55				1.86	9040	R3	45	B-44	B-54	B-64
			2.03				2.43	9045	R3	45	B-44	B-54	B-64
			2.27				2.72	9050	R3	45	B-44	B-54	B-64
			3.09				3.72	9055	R3	45	B-44	B-54	B-64
			3.68				4.40	9060	R3	45	B-46	B-56	B-66
			4.22				4.77	9065	R3	45	B-46	B-56	B-66
30.0	7000	715	1.22	36.0	5840	596	1.45	9035	R3	50	B-44	B-54	B-64
			1.94				2.33	9045	R3	50	B-44	B-54	B-64
			2.22				2.68	9050	R3	50	B-44	B-54	B-64
			2.95				3.54	9055	R3	50	B-44	B-54	B-64
			3.36				3.81	9060	R3	50	B-46	B-56	B-66
			4.22				4.77	9065	R3	50	B-46	B-56	B-66
			4.90				5.59	9070	R3	50	B-46	B-56	B-66
26.8	7840	801	1.11	32.1	6540	667	1.33	9035	R3	56	B-44	B-54	B-64
			1.18				1.42	9040	R3	56	B-44	B-54	B-64
			1.63				1.95	9045	R3	56	B-44	B-54	B-64
			1.81				2.18	9050	R3	56	B-44	B-54	B-64
			2.36				2.81	9055	R3	56	B-44	B-54	B-64
			2.90				3.50	9060	R3	56	B-46	B-56	B-66
			3.87				4.63	9065	R3	56	B-46	B-56	B-66
			4.86				5.59	9070	R3	56	B-46	B-56	B-66
23.8	8820	901	1.18	28.6	7350	751	1.42	9040	R3	63	B-44	B-54	B-64
			1.77				2.13	9050	R3	63	B-44	B-54	B-64
			2.36				2.86	9055	R3	63	B-44	B-54	B-64
			2.72				3.09	9060	R3	63	B-46	B-56	B-66
			3.36				3.81	9065	R3	63	B-46	B-56	B-66
			4.00				4.54	9070	R3	63	B-46	B-56	B-66
			4.90				5.59	9075	R3	63	B-46	B-56	B-66
21.1	9940	1020	0.99	25.4	8290	846	1.19	9040	R3	71	B-44	B-54	B-64
			1.18				1.42	9045	R3	71	B-44	B-54	B-64
			1.45				1.77	9050	R3	71	B-44	B-54	B-64
			1.90				2.27	9055	R3	71	B-44	B-54	B-64
			2.27				2.72	9060	R3	71	B-46	B-56	B-66
			3.05				3.65	9065	R3	71	B-46	B-56	B-66
			3.81				4.54	9070	R3	71	B-46	B-56	B-66
			4.90				5.59	9075	R3	71	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 22kW

Frequency								Model			Page of Dimension Sheet		
50Hz			60Hz										
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
18.8	11210	1140	0.97	22.5	9340	953	1.16	9040	R4	80	B-48	B-58	B-68
			1.18				1.42	9045	R3	80	B-44	B-54	B-64
			1.90				2.31	9055	R3	80	B-44	B-54	B-64
			2.72				3.09	9065	R3	80	B-46	B-56	B-66
			3.00				3.63	9070	R4	80	B-50	B-60	B-70
			4.00				4.54	9075	R3	80	B-46	B-56	B-66
			4.54				5.13	9080	R4	80	B-50	B-60	B-70
16.7	12610	1290	1.04	20.0	10510	1070	1.25	9045	R3	90	B-44	B-54	B-64
			1.15				1.36	9050	R4	90	B-48	B-58	B-68
			1.54				1.86	9055	R3	90	B-44	B-54	B-64
			1.68				2.04	9060	R4	90	B-50	B-60	B-70
			2.40				2.88	9065	R3	90	B-46	B-56	B-66
			3.00				3.63	9070	R4	90	B-50	B-60	B-70
			4.00				4.54	9075	R3	90	B-46	B-56	B-66
4.54	5.13	9080	R4	90	B-50	B-60	B-70						
15.0	14010	1430	0.98	18.0	11670	1190	1.18	9045	R4	100	B-48	B-58	B-68
			1.13				1.35	9050	R4	100	B-48	B-58	B-68
			1.68				2.04	9060	R4	100	B-50	B-60	B-70
			2.95				3.54	9070	R4	100	B-50	B-60	B-70
			4.50				5.13	9080	R4	100	B-50	B-60	B-70
13.4	15690	1600	0.83	16.1	13070	1330	1.00	9045	R4	112	B-48	B-58	B-68
			0.92				1.11	9050	R4	112	B-48	B-58	B-68
			1.15				1.36	9055	R4	112	B-48	B-58	B-68
			1.40				1.72	9060	R4	112	B-50	B-60	B-70
			1.70				2.04	9065	R4	112	B-50	B-60	B-70
			2.45				2.95	9070	R4	112	B-50	B-60	B-70
			3.00				3.63	9075	R4	112	B-50	B-60	B-70
			3.86				4.63	9080	R4	112	B-50	B-60	B-70
4.54	5.13	9085	R4	112	B-50	B-60	B-70						
12.0	17510	1790	0.90	14.4	14590	1490	1.08	9050	R4	125	B-48	B-58	B-68
			1.15				1.36	9055	R4	125	B-48	B-58	B-68
			1.45				1.72	9060	R4	125	B-50	B-60	B-70
			1.70				2.04	9065	R4	125	B-50	B-60	B-70
			2.27				2.72	9070	R4	125	B-50	B-60	B-70
			3.00				3.63	9075	R4	125	B-50	B-60	B-70
			3.40				4.09	9080	R4	125	B-50	B-60	B-70
			4.54				5.13	9085	R4	125	B-50	B-60	B-70
10.7	19610	2000	0.97	12.9	16340	1670	1.16	9055	R4	140	B-48	B-58	B-68
			1.16				1.36	9060	R4	140	B-50	B-60	B-70
			1.50				1.80	9065	R4	140	B-50	B-60	B-70
			1.86				2.27	9070	R4	140	B-50	B-60	B-70
			2.63				3.13	9075	R4	140	B-50	B-60	B-70
			2.95				3.54	9080	R4	140	B-50	B-60	B-70
			4.04				4.86	9085	R4	140	B-50	B-60	B-70
9.4	22410	2290	0.96	11.3	18680	1910	1.15	9055	R4	160	B-48	B-58	B-68
			1.55				1.85	9065	R4	160	B-50	B-60	B-70
			2.40				2.86	9075	R4	160	B-50	B-60	B-70
			2.59				3.09	9080	R4	160	B-50	B-60	B-70
			3.59				4.31	9085	R4	160	B-50	B-60	B-70
8.3	25210	2570	0.95	10.0	21010	2150	1.14	9060	R4	180	B-50	B-60	B-70
			1.21				1.45	9065	R4	180	B-50	B-60	B-70
			1.50				1.77	9070	R4	180	B-50	B-60	B-70
			2.00				2.40	9075	R4	180	B-50	B-60	B-70
			2.36				2.81	9080	R4	180	B-50	B-60	B-70
			3.09				3.72	9085	R4	180	B-50	B-60	B-70
7.5	28010	2860	0.92	9.0	23340	2380	1.10	9060	R4	200	B-50	B-60	B-70
			0.97				1.16	9065	R4	200	B-50	B-60	B-70
			1.50				1.77	9070	R4	200	B-50	B-60	B-70
			2.22				2.68	9080	R4	200	B-50	B-60	B-70
			2.59				3.09	9085	R4	200	B-50	B-60	B-70
6.7	31370	3200	0.97	8.0	26150	2670	1.16	9065	R4	224	B-50	B-60	B-70
			1.27				1.50	9070	R4	224	B-50	B-60	B-70
			1.50				1.77	9075	R4	224	B-50	B-60	B-70
			1.95				2.31	9080	R4	224	B-50	B-60	B-70
			2.45				2.95	9085	R4	224	B-50	B-60	B-70
6.0	35020	3580	0.96	7.2	29180	2980	1.15	9065	R4	224	B-50	B-60	B-70
			1.17				1.36	9070	R4	250	B-50	B-60	B-70
			1.50				1.77	9075	R4	250	B-50	B-60	B-70
			1.72				2.04	9080	R4	250	B-50	B-60	B-70
			2.36				2.81	9085	R4	250	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 22kW, 30kW

Frequency							Model			Page of Dimension Sheet			
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
5.4	39220	4000	0.97	6.4	32680	3340	1.16	9070	R4	280	B-50	B-60	B-70
			1.35				1.59	9075	R4	280	B-50	B-60	B-70
			1.45				1.77	9080	R4	280	B-50	B-60	B-70
			2.04				2.45	9085	R4	280	B-50	B-60	B-70
4.8	44120	4500	0.85	5.7	36770	3750	1.02	9070	R4	315	B-50	B-60	B-70
			1.23				1.45	9075	R4	315	B-50	B-60	B-70
			1.31				1.54	9080	R4	315	B-50	B-60	B-70
			1.81				2.18	9085	R4	315	B-50	B-60	B-70
4.2	49720	5080	1.03	5.1	41440	4230	1.24	9075	R4	355	B-50	B-60	B-70
			1.17				1.40	9080	R4	355	B-50	B-60	B-70
			1.54				1.86	9085	R4	355	B-50	B-60	B-70
3.8	56030	5720	0.90	4.5	46690	4770	1.08	9075	R4	400	B-50	B-60	B-70
			1.36				1.63	9085	R4	400	B-50	B-60	B-70
3.3	63030	6440	0.84	4.0	52530	5360	1.01	9075	R4	450	B-50	B-60	B-70
			1.23				1.45	9085	R4	450	B-50	B-60	B-70

30kW	Frequency	Hz	50Hz	60Hz
	Pole	P	4	4
	Speed	n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
238	1200	123	3.43	286	1000	102	4.00	9030	R2	6.3	B-42	B-52	B-62
			4.59				9040	R2	6.3	B-42	B-52	B-62	
211	1360	138	3.43	254	1130	115	4.00	9030	R2	7.1	B-42	B-52	B-62
			4.59				9040	R2	7.1	B-42	B-52	B-62	
188	1530	156	3.26	225	1270	130	3.76	9030	R2	8	B-42	B-52	B-62
			3.43				4.00	9035	R2	8	B-42	B-52	B-62
			4.13				4.59	9040	R2	8	B-42	B-52	B-62
167	1720	176	3.26	200	1430	146	3.76	9030	R2	9	B-42	B-52	B-62
			3.43				4.00	9035	R2	9	B-42	B-52	B-62
			4.13				4.59	9040	R2	9	B-42	B-52	B-62
150	1910	195	2.93	180	1590	163	3.33	9030	R2	10	B-42	B-52	B-62
			3.26				3.76	9035	R2	10	B-42	B-52	B-62
			3.76				4.26	9040	R2	10	B-42	B-52	B-62
			4.80				5.76	9045	R2	10	B-42	B-52	B-62
134	2140	218	2.76	161	1780	182	3.33	9030	R2	11.2	B-42	B-52	B-62
			3.26				3.76	9035	R2	11.2	B-42	B-52	B-62
			3.76				4.26	9040	R2	11.2	B-42	B-52	B-62
			4.80				5.76	9045	R2	11.2	B-42	B-52	B-62
120	2390	244	2.03	144	1990	203	2.43	9030	R2	12.5	B-42	B-52	B-62
			2.93				3.33	9035	R2	12.5	B-42	B-52	B-62
			3.90				4.66	9045	R2	12.5	B-42	B-52	B-62
107	2670	273	2.03	129	2230	228	2.43	9030	R2	14	B-42	B-52	B-62
			2.93				3.33	9035	R2	14	B-42	B-52	B-62
			3.90				4.66	9045	R2	14	B-42	B-52	B-62
93.8	3060	312	1.43	113	2550	260	1.70	*9030	R2	16	B-42	B-52	B-62
			2.03				2.43	9035	R2	16	B-42	B-52	B-62
			2.10				2.50	9040	R2	16	B-42	B-52	B-62
			2.70				3.23	9045	R2	16	B-42	B-52	B-62
83.3	3440	351	1.43	100	2870	293	1.70	*9030	R2	18	B-42	B-52	B-62
			2.03				2.43	9035	R2	18	B-42	B-52	B-62
			2.10				2.50	9040	R2	18	B-42	B-52	B-62
			2.70				3.23	9045	R2	18	B-42	B-52	B-62
75.0	3820	390	1.70	90.0	3180	325	2.03	9030	R3	20	B-44	B-54	B-64
			2.23				2.60	9040	R3	20	B-44	B-54	B-64
			3.16				3.60	9050	R3	20	B-44	B-54	B-64
			3.63				4.09	9060	R3	20	B-46	B-56	B-66
67.0	4280	437	1.53	80.4	3570	364	1.83	9030	R3	22.4	B-44	B-54	B-64
			2.23				2.60	9040	R3	22.4	B-44	B-54	B-64
			3.16				3.60	9050	R3	22.4	B-44	B-54	B-64
			3.63				4.09	9060	R3	22.4	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 30kW

Drive Unit	Frequency						Model			Page of Dimension Sheet		
	50Hz			60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Speed r/min	Output Torque (Tout) Nm	SF kgf m	Output Speed r/min	Output Torque (Tout) Nm	SF kgf m						
Selection Tables	60.0	4780	488	72.0	3980	406	9035	R3	25	B-44	B-54	B-64
							9040	R3	25	B-44	B-54	B-64
							9050	R3	25	B-44	B-54	B-64
							9060	R3	25	B-46	B-56	B-66
	53.6	5350	546	64.3	4460	455	9035	R3	28	B-44	B-54	B-64
							9040	R3	28	B-44	B-54	B-64
							9045	R3	28	B-44	B-54	B-64
							9050	R3	28	B-44	B-54	B-64
							9055	R3	28	B-44	B-54	B-64
	47.6	6020	614	57.1	5010	512	9060	R3	28	B-46	B-56	B-66
							9035	R3	31.5	B-44	B-54	B-64
							9040	R3	31.5	B-44	B-54	B-64
							9045	R3	31.5	B-44	B-54	B-64
							9050	R3	31.5	B-44	B-54	B-64
Dimension Tables	42.3	6780	692	50.7	5650	577	9060	R3	31.5	B-46	B-56	B-66
							9065	R3	31.5	B-46	B-56	B-66
							9070	R3	31.5	B-46	B-56	B-66
	37.5	7640	780	45.0	6370	650	9035	R3	35.5	B-44	B-54	B-64
							9040	R3	35.5	B-44	B-54	B-64
							9045	R3	35.5	B-44	B-54	B-64
							9050	R3	35.5	B-44	B-54	B-64
							9055	R3	35.5	B-44	B-54	B-64
	33.3	8600	878	40.0	7160	731	9060	R3	35.5	B-46	B-56	B-66
							9065	R3	35.5	B-46	B-56	B-66
							9070	R3	35.5	B-46	B-56	B-66
	30.0	9550	975	36.0	7960	813	9035	R3	40	B-44	B-54	B-64
							9040	R3	40	B-44	B-54	B-64
							9045	R3	40	B-44	B-54	B-64
							9050	R3	40	B-44	B-54	B-64
							9055	R3	40	B-44	B-54	B-64
	26.8	10700	1090	32.1	8910	910	9060	R3	40	B-46	B-56	B-66
							9065	R3	40	B-46	B-56	B-66
							9070	R3	40	B-46	B-56	B-66
	23.8	12030	1230	28.6	10030	1020	9035	R3	45	B-44	B-54	B-64
							9040	R3	45	B-44	B-54	B-64
							9045	R3	45	B-44	B-54	B-64
							9050	R3	45	B-44	B-54	B-64
							9055	R3	45	B-44	B-54	B-64
	21.1	13560	1380	25.4	11300	1150	9060	R3	45	B-46	B-56	B-66
							9065	R3	45	B-46	B-56	B-66
							9070	R3	45	B-46	B-56	B-66
							9035	R3	50	B-44	B-54	B-64
							9040	R3	50	B-44	B-54	B-64
							9045	R3	50	B-44	B-54	B-64
							9050	R3	50	B-44	B-54	B-64
							9055	R3	50	B-44	B-54	B-64
							9060	R3	50	B-46	B-56	B-66
							9065	R3	50	B-46	B-56	B-66
							9070	R3	50	B-46	B-56	B-66
							9035	R3	56	B-44	B-54	B-64
							9040	R3	56	B-44	B-54	B-64
							9045	R3	56	B-44	B-54	B-64
							9050	R3	56	B-44	B-54	B-64
							9055	R3	56	B-44	B-54	B-64
							9060	R3	56	B-46	B-56	B-66
							9065	R3	56	B-46	B-56	B-66
							9070	R3	56	B-46	B-56	B-66
							9035	R3	63	B-44	B-54	B-64
							9040	R3	63	B-44	B-54	B-64
							9050	R3	63	B-44	B-54	B-64
							9060	R3	63	B-46	B-56	B-66
							9065	R3	63	B-46	B-56	B-66
							9070	R3	63	B-46	B-56	B-66
							9075	R3	63	B-46	B-56	B-66
							9045	R3	71	B-44	B-54	B-64
							9050	R3	71	B-44	B-54	B-64
							9055	R3	71	B-44	B-54	B-64
							9060	R3	71	B-46	B-56	B-66
							9065	R3	71	B-46	B-56	B-66
							9070	R3	71	B-46	B-56	B-66
							9075	R3	71	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 30kW

Frequency							Model			Page of Dimension Sheet			
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright	
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m								SF
18.8	15280	1560	0.87	22.5	12730	1300	1.04	9045	R3	80	B-44	B-54	B-64
			1.40				1.70	9055	R3	80	B-44	B-54	B-64
			2.00				2.26	9065	R3	80	B-46	B-56	B-66
			2.20				2.66	9070	R4	80	B-50	B-60	B-70
			2.93				3.33	9075	R3	80	B-46	B-56	B-66
			3.33				3.76	9080	R4	80	B-50	B-60	B-70
16.7	17190	1760	0.84	20.0	14330	1460	1.00	9050	R4	90	B-48	B-58	B-68
			1.13				1.36	9055	R3	90	B-44	B-54	B-64
			1.23				1.50	9060	R4	90	B-50	B-60	B-70
			1.76				2.11	9065	R3	90	B-46	B-56	B-66
			2.20				2.66	9070	R4	90	B-50	B-60	B-70
			2.93				3.33	9075	R3	90	B-46	B-56	B-66
15.0	19100	1950	3.33	18.0	15920	1630	3.76	9080	R4	90	B-50	B-60	B-70
			0.84				1.00	9055	R4	100	B-48	B-58	B-68
			1.23				1.50	9060	R4	100	B-50	B-60	B-70
			2.16				2.60	9070	R4	100	B-50	B-60	B-70
13.4	21390	2180	3.30	16.1	17830	1820	3.76	9080	R4	100	B-50	B-60	B-70
			0.84				1.00	9055	R4	112	B-48	B-58	B-68
			1.03				1.26	9060	R4	112	B-50	B-60	B-70
			1.25				1.50	9065	R4	112	B-50	B-60	B-70
			1.80				2.16	9070	R4	112	B-50	B-60	B-70
			2.20				2.66	9075	R4	112	B-50	B-60	B-70
			2.83				3.40	9080	R4	112	B-50	B-60	B-70
3.33	3.76	9085	R4	112	B-50	B-60	B-70						
12.0	23880	2440	0.84	14.4	19900	2030	1.00	9055	R4	125	B-48	B-58	B-68
			1.06				1.26	9060	R4	125	B-50	B-60	B-70
			1.25				1.50	9065	R4	125	B-50	B-60	B-70
			1.66				2.00	9070	R4	125	B-50	B-60	B-70
			2.20				2.66	9075	R4	125	B-50	B-60	B-70
			2.50				3.00	9080	R4	125	B-50	B-60	B-70
10.7	26740	2730	3.33	12.9	22280	2280	3.76	9085	R4	125	B-50	B-60	B-70
			0.85				1.00	9060	R4	140	B-50	B-60	B-70
			1.10				1.32	9065	R4	140	B-50	B-60	B-70
			1.36				1.66	9070	R4	140	B-50	B-60	B-70
			1.93				2.29	9075	R4	140	B-50	B-60	B-70
			2.16				2.60	9080	R4	140	B-50	B-60	B-70
9.4	30560	3120	2.96	11.3	25470	2600	3.56	9085	R4	140	B-50	B-60	B-70
			1.13				1.36	9065	R4	160	B-50	B-60	B-70
			1.76				2.10	9075	R4	160	B-50	B-60	B-70
			1.90				2.26	9080	R4	160	B-50	B-60	B-70
8.3	34380	3510	2.63	10.0	28650	2930	3.16	9085	R4	160	B-50	B-60	B-70
			0.89				1.06	9065	R4	180	B-50	B-60	B-70
			1.10				1.30	9070	R4	180	B-50	B-60	B-70
			1.46				1.76	9075	R4	180	B-50	B-60	B-70
			1.73				2.06	9080	R4	180	B-50	B-60	B-70
7.5	38200	3900	2.26	9.0	31830	3250	2.73	9085	R4	180	B-50	B-60	B-70
			1.10				1.30	9070	R4	200	B-50	B-60	B-70
			1.63				1.96	9080	R4	200	B-50	B-60	B-70
			1.90				2.26	9085	R4	200	B-50	B-60	B-70
6.7	42780	4370	0.93	8.0	35650	3640	1.10	9070	R4	224	B-50	B-60	B-70
			1.10				1.30	9075	R4	224	B-50	B-60	B-70
			1.43				1.70	9080	R4	224	B-50	B-60	B-70
			1.80				2.16	9085	R4	224	B-50	B-60	B-70
6.0	47750	4880	0.86	7.2	39790	4060	1.00	9070	R4	250	B-50	B-60	B-70
			1.10				1.30	9075	R4	250	B-50	B-60	B-70
			1.26				1.50	9080	R4	250	B-50	B-60	B-70
			1.73				2.06	9085	R4	250	B-50	B-60	B-70
5.4	53480	5460	0.99	6.4	44570	4550	1.16	9075	R4	280	B-50	B-60	B-70
			1.06				1.30	9080	R4	280	B-50	B-60	B-70
			1.50				1.80	9085	R4	280	B-50	B-60	B-70
4.8	60170	6140	0.90	5.7	50140	5120	1.06	9075	R4	315	B-50	B-60	B-70
			0.96				1.13	9080	R4	315	B-50	B-60	B-70
			1.33				1.60	9085	R4	315	B-50	B-60	B-70
4.2	67810	6920	0.86	5.1	56500	5770	1.03	9080	R4	355	B-50	B-60	B-70
			1.13				1.36	9085	R4	355	B-50	B-60	B-70
3.8	76400	7800	1.00	4.5	63670	6500	1.20	9085	R4	400	B-50	B-60	B-70
3.3	85950	8780	0.90	4.0	71630	7310	1.06	9085	R4	450	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 37kW

37kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
238	1480	152	2.78	286	1240	126	3.24	*9030	R2	6.3	B-42	B-52	B-62
			3.72				9040	R2	6.3	B-42	B-52	B-62	
211	1670	171	2.78	254	1390	142	3.24	*9030	R2	7.1	B-42	B-52	B-62
			3.72				9040	R2	7.1	B-42	B-52	B-62	
188	1880	192	2.64	225	1570	160	3.05	*9030	R2	8	B-42	B-52	B-62
			2.78				9035	R2	8	B-42	B-52	B-62	
			3.35				9040	R2	8	B-42	B-52	B-62	
			4.37				9045	R2	8	B-42	B-52	B-62	
167	2120	216	2.64	200	1770	180	3.05	*9030	R2	9	B-42	B-52	B-62
			2.78				9035	R2	9	B-42	B-52	B-62	
			3.35				9040	R2	9	B-42	B-52	B-62	
			4.37				9045	R2	9	B-42	B-52	B-62	
150	2360	241	2.37	180	1960	200	2.70	*9030	R2	10	B-42	B-52	B-62
			2.64				9035	R2	10	B-42	B-52	B-62	
			3.05				9040	R2	10	B-42	B-52	B-62	
			3.89				9045	R2	10	B-42	B-52	B-62	
134	2640	269	2.24	161	2200	224	2.70	*9030	R2	11.2	B-42	B-52	B-62
			2.64				9035	R2	11.2	B-42	B-52	B-62	
			3.05				9040	R2	11.2	B-42	B-52	B-62	
			3.89				9045	R2	11.2	B-42	B-52	B-62	
120	2940	301	1.64	144	2450	251	1.97	*9030	R2	12.5	B-42	B-52	B-62
			2.37				9035	R2	12.5	B-42	B-52	B-62	
			3.16				9045	R2	12.5	B-42	B-52	B-62	
107	3300	337	1.64	129	2750	281	1.97	*9030	R2	14	B-42	B-52	B-62
			2.37				9035	R2	14	B-42	B-52	B-62	
			3.16				9045	R2	14	B-42	B-52	B-62	
93.8	3770	385	1.64	113	3140	321	1.97	9035	R2	16	B-42	B-52	B-62
			1.70				9040	R2	16	B-42	B-52	B-62	
			2.18				9045	R2	16	B-42	B-52	B-62	
83.3	4240	433	1.64	100	3530	361	1.97	9035	R2	18	B-42	B-52	B-62
			1.70				9040	R2	18	B-42	B-52	B-62	
			2.18				9045	R2	18	B-42	B-52	B-62	
75.0	4710	481	1.16	90.0	3930	401	1.37	*9035	R2	20	B-42	B-52	B-62
			1.81				9040	R3	20	B-44	B-54	B-64	
			2.56				9050	R3	20	B-44	B-54	B-64	
			2.94				9060	R3	20	B-46	B-56	B-66	
			4.51				9070	R3	20	B-46	B-56	B-66	
67.0	5280	539	1.16	80.4	4400	449	1.37	*9035	R2	22.4	B-42	B-52	B-62
			1.81				9040	R3	22.4	B-44	B-54	B-64	
			2.56				9050	R3	22.4	B-44	B-54	B-64	
			2.94				9060	R3	22.4	B-46	B-56	B-66	
			4.51				9070	R3	22.4	B-46	B-56	B-66	
60.0	5890	601	1.45	72.0	4910	501	1.72	9035	R3	25	B-44	B-54	B-64
			1.81				9040	R3	25	B-44	B-54	B-64	
			2.56				9050	R3	25	B-44	B-54	B-64	
			2.94				9060	R3	25	B-46	B-56	B-66	
			4.51				9070	R3	25	B-46	B-56	B-66	
53.6	6600	673	1.48	64.3	5500	561	1.75	9040	R3	28	B-44	B-54	B-64
			1.82				9045	R3	28	B-44	B-54	B-64	
			2.16				9050	R3	28	B-44	B-54	B-64	
			2.56				9055	R3	28	B-44	B-54	B-64	
			2.94				9060	R3	28	B-46	B-56	B-66	
			4.51				9070	R3	28	B-46	B-56	B-66	
47.6	7420	758	1.30	57.1	6180	631	1.54	9040	R3	31.5	B-44	B-54	B-64
			1.82				9045	R3	31.5	B-44	B-54	B-64	
			2.13				9050	R3	31.5	B-44	B-54	B-64	
			2.56				9055	R3	31.5	B-44	B-54	B-64	
			2.94				9065	R3	31.5	B-46	B-56	B-66	
			3.67				9070	R3	31.5	B-46	B-56	B-66	
			4.51				9075	R3	31.5	B-46	B-56	B-66	
42.3	8360	854	1.13	50.7	6970	711	1.37	9040	R3	35.5	B-44	B-54	B-64
			1.56				9045	R3	35.5	B-44	B-54	B-64	
			1.75				9050	R3	35.5	B-44	B-54	B-64	
			2.27				9055	R3	35.5	B-44	B-54	B-64	
			2.51				9060	R3	35.5	B-46	B-56	B-66	
			2.94				9065	R3	35.5	B-46	B-56	B-66	
			3.67				9070	R3	35.5	B-46	B-56	B-66	
			4.51				9075	R3	35.5	B-46	B-56	B-66	

SELECTION Drive Unit Right Angle Shaft 37kW

Frequency							Model			Page of Dimension Sheet			
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright	
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m								SF
37.5	9420	962	1.10	45.0	7850	802	1.35	9040	R3	40	B-44	B-54	B-64
			1.30				1.56	9045	R3	40	B-44	B-54	B-64
			1.64				1.97	9050	R3	40	B-44	B-54	B-64
			2.13				2.45	9055	R3	40	B-44	B-54	B-64
			2.51				2.83	9060	R3	40	B-46	B-56	B-66
			3.67				4.18	9070	R3	40	B-46	B-56	B-66
33.3	10600	1080	0.92	40.0	8830	902	1.11	9040	R3	45	B-44	B-54	B-64
			1.21				1.44	9045	R3	45	B-44	B-54	B-64
			1.35				1.62	9050	R3	45	B-44	B-54	B-64
			1.83				2.21	9055	R3	45	B-44	B-54	B-64
			2.18				2.62	9060	R3	45	B-46	B-56	B-66
			2.51				2.83	9065	R3	45	B-46	B-56	B-66
3.64	4.18	9070	R3	45	B-46	B-56	B-66						
30.0	11780	1200	1.15	36.0	9820	1000	1.38	9045	R3	50	B-44	B-54	B-64
			1.32				1.59	9050	R3	50	B-44	B-54	B-64
			1.75				2.10	9055	R3	50	B-44	B-54	B-64
			2.00				2.27	9060	R3	50	B-46	B-56	B-66
			2.51				2.83	9065	R3	50	B-46	B-56	B-66
			2.91				3.32	9070	R3	50	B-46	B-56	B-66
3.67	4.18	9075	R3	50	B-46	B-56	B-66						
26.8	13190	1350	0.97	32.1	10990	1120	1.16	9045	R3	56	B-44	B-54	B-64
			1.08				1.29	9050	R3	56	B-44	B-54	B-64
			1.40				1.67	9055	R3	56	B-44	B-54	B-64
			1.72				2.08	9060	R3	56	B-46	B-56	B-66
			2.30				2.75	9065	R3	56	B-46	B-56	B-66
			2.89				3.32	9070	R3	56	B-46	B-56	B-66
3.67	4.18	9075	R3	56	B-46	B-56	B-66						
23.8	14840	1520	1.05	28.6	12370	1260	1.27	9050	R3	63	B-44	B-54	B-64
			1.40				1.70	9055	R3	63	B-44	B-54	B-64
			1.62				1.83	9060	R3	63	B-46	B-56	B-66
			2.00				2.27	9065	R3	63	B-46	B-56	B-66
			2.37				2.70	9070	R3	63	B-46	B-56	B-66
			2.91				3.32	9075	R3	63	B-46	B-56	B-66
21.1	16730	1710	0.86	25.4	13940	1420	1.05	9050	R3	71	B-44	B-54	B-64
			1.13				1.35	9055	R3	71	B-44	B-54	B-64
			1.35				1.62	9060	R3	71	B-46	B-56	B-66
			1.81				2.17	9065	R3	71	B-46	B-56	B-66
			2.27				2.70	9070	R3	71	B-46	B-56	B-66
			2.91				3.32	9075	R3	71	B-46	B-56	B-66
18.8	18850	1920	1.13	22.5	15700	1600	1.37	9055	R3	80	B-44	B-54	B-64
			1.62				1.83	9065	R3	80	B-46	B-56	B-66
			1.78				2.16	9070	R4	80	B-50	B-60	B-70
			2.37				2.70	9075	R3	80	B-46	B-56	B-66
			2.70				3.05	9080	R4	80	B-50	B-60	B-70
			0.91				1.10	9055	R3	90	B-44	B-54	B-64
16.7	21200	2160	1.00	20.0	17670	1800	1.21	9060	R4	90	B-50	B-60	B-70
			1.43				1.71	9065	R3	90	B-46	B-56	B-66
			1.78				2.16	9070	R4	90	B-50	B-60	B-70
			2.37				2.70	9075	R3	90	B-46	B-56	B-66
			2.70				3.05	9080	R4	90	B-50	B-60	B-70
			1.00				1.21	9060	R4	100	B-50	B-60	B-70
15.0	23560	2410	1.75	18.0	19630	2000	2.10	9070	R4	100	B-50	B-60	B-70
			2.67				3.05	9080	R4	100	B-50	B-60	B-70
			0.83				1.02	9060	R4	112	B-50	B-60	B-70
			1.01				1.21	9065	R4	112	B-50	B-60	B-70
			1.45				1.75	9070	R4	112	B-50	B-60	B-70
			1.78				2.16	9075	R4	112	B-50	B-60	B-70
12.0	29450	3010	2.29	14.4	24540	2510	2.75	9080	R4	112	B-50	B-60	B-70
			2.70				3.05	9085	R4	112	B-50	B-60	B-70
			0.86				1.02	9060	R4	125	B-50	B-60	B-70
			1.01				1.21	9065	R4	125	B-50	B-60	B-70
			1.35				1.62	9070	R4	125	B-50	B-60	B-70
			1.78				2.16	9075	R4	125	B-50	B-60	B-70
10.7	32980	3370	2.02	12.9	27480	2810	2.43	9080	R4	125	B-50	B-60	B-70
			2.70				3.05	9085	R4	125	B-50	B-60	B-70
			0.89				1.07	9065	R4	140	B-50	B-60	B-70
			1.10				1.35	9070	R4	140	B-50	B-60	B-70
			1.56				1.86	9075	R4	140	B-50	B-60	B-70
			1.75				2.10	9080	R4	140	B-50	B-60	B-70
2.40	2.89	9085	R4	140	B-50	B-60	B-70						

SELECTION Drive Unit Right Angle Shaft 37kW, 45kW

Frequency							Model			Page of Dimension Sheet		
50Hz		SF	60Hz		SF		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm kgf m		Output Speed r/min	Output Torque (Tout) Nm kgf m								
9.4	37690	3850	11.3	31410	3210	0.92	9065	R4	160	B-50	B-60	B-70
						1.43	9075	R4	160	B-50	B-60	B-70
						1.54	9080	R4	160	B-50	B-60	B-70
						2.13	9085	R4	160	B-50	B-60	B-70
8.3	42400	4330	10.0	35340	3610	0.89	9070	R4	180	B-50	B-60	B-70
						1.18	9075	R4	180	B-50	B-60	B-70
						1.40	9080	R4	180	B-50	B-60	B-70
						1.83	9085	R4	180	B-50	B-60	B-70
7.5	47110	4810	9.0	39260	4010	0.89	9070	R4	200	B-50	B-60	B-70
						1.32	9080	R4	200	B-50	B-60	B-70
						1.54	9085	R4	200	B-50	B-60	B-70
6.7	52770	5390	8.0	43970	4490	0.89	9075	R4	224	B-50	B-60	B-70
						1.16	9080	R4	224	B-50	B-60	B-70
						1.45	9085	R4	224	B-50	B-60	B-70
6.0	58890	6010	7.2	49080	5010	0.89	9075	R4	250	B-50	B-60	B-70
						1.02	9080	R4	250	B-50	B-60	B-70
						1.40	9085	R4	250	B-50	B-60	B-70
5.4	65960	6730	6.4	54970	5610	0.86	9080	R4	280	B-50	B-60	B-70
						1.21	9085	R4	280	B-50	B-60	B-70
4.8	74200	7580	5.7	61840	6310	1.08	9085	R4	315	B-50	B-60	B-70
4.2	83630	8540	5.1	69690	7110	0.91	9085	R4	355	B-50	B-60	B-70

45kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

Frequency							Model			Page of Dimension Sheet		
50Hz		SF	60Hz		SF		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm kgf m		Output Speed r/min	Output Torque (Tout) Nm kgf m								
238	1800	184	286	1500	154	2.66	*9030	R2	6.3	B-42	B-52	B-62
						3.06	9040	R2	6.3	B-42	B-52	B-62
211	2030	208	254	1700	173	3.06	9040	R2	7.1	B-42	B-52	B-62
188	2290	234	225	1910	195	2.66	9035	R2	8	B-42	B-52	B-62
						3.06	9040	R2	8	B-42	B-52	B-62
						4.31	9045	R2	8	B-42	B-52	B-62
167	2580	263	200	2150	219	2.66	*9035	R2	9	B-42	B-52	B-62
						3.06	9040	R2	9	B-42	B-52	B-62
						4.31	9045	R2	9	B-42	B-52	B-62
150	2870	293	180	2390	244	2.51	*9035	R2	10	B-42	B-52	B-62
						2.84	9040	R2	10	B-42	B-52	B-62
						3.84	9045	R2	10	B-42	B-52	B-62
134	3210	328	161	2670	273	2.51	*9035	R2	11.2	B-42	B-52	B-62
						2.84	9040	R2	11.2	B-42	B-52	B-62
						3.84	9045	R2	11.2	B-42	B-52	B-62
120	3580	366	144	2980	305	2.22	*9035	R2	12.5	B-42	B-52	B-62
						3.11	9045	R2	12.5	B-42	B-52	B-62
107	4010	410	129	3340	341	2.22	*9035	R2	14	B-42	B-52	B-62
						3.11	9045	R2	14	B-42	B-52	B-62
93.8	4580	468	113	3820	390	1.62	*9035	R2	16	B-42	B-52	B-62
						1.66	*9040	R2	16	B-42	B-52	B-62
						2.15	9045	R2	16	B-42	B-52	B-62
83.3	5160	527	100	4300	439	1.62	*9035	R2	18	B-42	B-52	B-62
						1.66	*9040	R2	18	B-42	B-52	B-62
						2.15	9045	R2	18	B-42	B-52	B-62
75.0	5730	585	90.0	4780	488	1.73	9040	R3	20	B-44	B-54	B-64
						2.40	9050	R3	20	B-44	B-54	B-64
						2.73	9060	R3	20	B-46	B-56	B-66
						4.22	9070	R3	20	B-46	B-56	B-66
67.0	6420	655	80.4	5350	546	1.73	9040	R3	22.4	B-44	B-54	B-64
						2.40	9050	R3	22.4	B-44	B-54	B-64
						2.73	9060	R3	22.4	B-46	B-56	B-66
						4.22	9070	R3	22.4	B-46	B-56	B-66
60.0	7160	731	72.0	5970	609	1.73	9040	R3	25	B-44	B-54	B-64
						2.40	9050	R3	25	B-44	B-54	B-64
						2.73	9060	R3	25	B-46	B-56	B-66
						4.22	9070	R3	25	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 45kW

Frequency								Model			Page of Dimension Sheet		
50Hz			SF	60Hz			SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m								
53.6	8020	819	1.22	64.3	6690	683	1.44	9040	R3	28	B-44	B-54	B-64
			1.50				1.73	9045	R3	28	B-44	B-54	B-64
			1.77				2.13	9050	R3	28	B-44	B-54	B-64
			2.11				2.40	9055	R3	28	B-44	B-54	B-64
			2.42				2.73	9060	R3	28	B-46	B-56	B-66
			3.71				4.22	9070	R3	28	B-46	B-56	B-66
47.6	9020	921	1.50	57.1	7520	768	1.73	9045	R3	31.5	B-44	B-54	B-64
			1.75				2.02	9050	R3	31.5	B-44	B-54	B-64
			2.11				2.40	9055	R3	31.5	B-44	B-54	B-64
			2.42				2.73	9065	R3	31.5	B-46	B-56	B-66
			3.02				3.44	9070	R3	31.5	B-46	B-56	B-66
			3.71				4.22	9075	R3	31.5	B-46	B-56	B-66
42.3	10170	1040	1.28	50.7	8480	865	1.53	9045	R3	31.5	B-44	B-54	B-64
			1.44				1.73	9050	R3	35.5	B-44	B-54	B-64
			1.86				2.22	9055	R3	35.5	B-44	B-54	B-64
			2.06				2.33	9060	R3	35.5	B-46	B-56	B-66
			2.42				2.73	9065	R3	35.5	B-46	B-56	B-66
			3.02				3.44	9070	R3	35.5	B-46	B-56	B-66
37.5	11460	1170	3.71	45.0	9550	975	4.22	9075	R3	35.5	B-46	B-56	B-66
			1.06				1.28	9045	R3	40	B-44	B-54	B-64
			1.35				1.62	9050	R3	40	B-44	B-54	B-64
			1.75				2.02	9055	R3	40	B-44	B-54	B-64
			2.06				2.33	9060	R3	40	B-46	B-56	B-66
			3.02				3.44	9070	R3	40	B-46	B-56	B-66
33.3	12890	1320	0.99	40.0	10740	1100	1.19	9045	R3	45	B-44	B-54	B-64
			1.11				1.33	9050	R3	45	B-44	B-54	B-64
			1.51				1.82	9055	R3	45	B-44	B-54	B-64
			1.80				2.15	9060	R3	45	B-46	B-56	B-66
			2.06				2.33	9065	R3	45	B-46	B-56	B-66
			3.00				3.44	9070	R3	45	B-46	B-56	B-66
30.0	14330	1460	0.95	36.0	11940	1220	1.14	9045	R3	50	B-44	B-54	B-64
			1.08				1.31	9050	R3	50	B-44	B-54	B-64
			1.44				1.73	9055	R3	50	B-44	B-54	B-64
			1.64				1.86	9060	R3	50	B-46	B-56	B-66
			2.06				2.33	9065	R3	50	B-46	B-56	B-66
			2.40				2.73	9070	R3	50	B-46	B-56	B-66
26.8	16040	1640	3.02	32.1	13370	1370	3.44	9075	R3	50	B-46	B-56	B-66
			0.88				1.06	9050	R3	56	B-44	B-54	B-64
			1.15				1.37	9055	R3	56	B-44	B-54	B-64
			1.42				1.71	9060	R3	56	B-46	B-56	B-66
			1.89				2.26	9065	R3	56	B-46	B-56	B-66
			2.37				2.73	9070	R3	56	B-46	B-56	B-66
23.8	18050	1840	3.02	28.6	15040	1540	3.44	9075	R3	56	B-46	B-56	B-66
			1.15				1.40	9055	R3	63	B-44	B-54	B-64
			1.33				1.51	9060	R3	63	B-46	B-56	B-66
			1.64				1.86	9065	R3	63	B-46	B-56	B-66
			1.95				2.22	9070	R3	63	B-46	B-56	B-66
			2.40				2.73	9075	R3	63	B-46	B-56	B-66
21.1	20340	2080	0.93	25.4	16950	1730	1.11	9055	R3	71	B-44	B-54	B-64
			1.11				1.33	9060	R3	71	B-46	B-56	B-66
			1.49				1.78	9065	R3	71	B-46	B-56	B-66
			1.86				2.22	9070	R3	71	B-46	B-56	B-66
			2.40				2.73	9075	R3	71	B-46	B-56	B-66
18.8	22920	2340	0.93	22.5	19100	1950	1.13	9055	R3	80	B-44	B-54	B-64
			1.33				1.51	9065	R3	80	B-50	B-60	B-70
			1.46				1.77	9070	R4	80	B-50	B-60	B-70
			1.95				2.22	9075	R3	80	B-46	B-56	B-66
			2.22				2.51	9080	R4	80	B-50	B-60	B-70
16.7	25790	2630	0.82	20.0	21490	2190	1.00	9060	R4	90	B-50	B-60	B-70
			1.17				1.40	9065	R3	90	B-46	B-56	B-66
			1.46				1.77	9070	R4	90	B-50	B-60	B-70
			1.95				2.22	9075	R3	90	B-46	B-56	B-66
			2.22				2.51	9080	R4	90	B-50	B-60	B-70
15.0	28650	2930	0.82	18.0	23880	2440	1.00	9060	R4	100	B-50	B-60	B-70
			1.44				1.73	9070	R4	100	B-50	B-60	B-70
			2.20				2.51	9080	R4	100	B-50	B-60	B-70
13.4	32090	3280	0.83	16.1	26740	2730	1.00	9065	R4	112	B-50	B-60	B-70
			1.20				1.44	9070	R4	112	B-50	B-60	B-70
			1.46				1.77	9075	R4	112	B-50	B-60	B-70
			1.88				2.26	9080	R4	112	B-50	B-60	B-70
			2.22				2.51	9085	R4	112	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 45kW, 55kW

Frequency							Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m						
12.0	35810	3660	0.83	14.4	29840	3050	9065	R4	125	B-50	B-60	B-70
			1.11				9070	R4	125	B-50	B-60	B-70
			1.46				9075	R4	125	B-50	B-60	B-70
			1.66				9080	R4	125	B-50	B-60	B-70
			2.22				9085	R4	125	B-50	B-60	B-70
10.7	40110	4100	0.91	12.9	33430	3410	9070	R4	140	B-50	B-60	B-70
			1.28				9075	R4	140	B-50	B-60	B-70
			1.44				9080	R4	140	B-50	B-60	B-70
			1.97				9085	R4	140	B-50	B-60	B-70
9.4	45840	4680	1.17	11.3	38200	3900	9075	R4	160	B-50	B-60	B-70
			1.26				9080	R4	160	B-50	B-60	B-70
			1.75				9085	R4	160	B-50	B-60	B-70
8.3	51570	5270	0.97	10.0	42980	4390	9075	R4	180	B-50	B-60	B-70
			1.15				9080	R4	180	B-50	B-60	B-70
			1.51				9085	R4	180	B-50	B-60	B-70
7.5	57300	5850	1.08	9.0	47750	4880	9080	R4	200	B-50	B-60	B-70
			1.26				9085	R4	200	B-50	B-60	B-70
6.7	64180	6550	0.95	8.0	53480	5460	9080	R4	224	B-50	B-60	B-70
			1.20				9085	R4	224	B-50	B-60	B-70
6.0	71630	7310	0.84	7.2	59690	6090	9080	R4	250	B-50	B-60	B-70
			1.15				9085	R4	250	B-50	B-60	B-70
5.4	80220	8190	1.00	6.4	66850	6830	9085	R4	280	B-50	B-60	B-70
4.8	90250	9210	0.88	5.7	75210	7680	9085	R4	315	B-50	B-60	B-70

55kW

Frequency Hz	50Hz	60Hz
Pole P	4	4
Speed n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

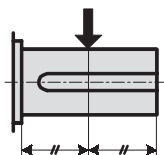
Frequency							Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m						
238	2210	225	2.50	286	1840	188	9040	R2	6.3	B-42	B-52	B-62
211	2490	254	2.50	254	2070	212	*9040	R2	7.1	B-42	B-52	B-62
188	2800	286	1.87	225	2330	238	*9035	R2	8	B-42	B-52	B-62
			2.25				*9040	R2	8	B-42	B-52	B-62
167	3150	322	2.25	200	2630	268	9045	R2	8	B-42	B-52	B-62
			2.94									
150	3500	358	2.25	180	2920	298	*9040	R2	9	B-42	B-52	B-62
			2.94				9045	R2	9	B-42	B-52	B-62
134	3920	400	2.05	161	3270	334	*9040	R2	10	B-42	B-52	B-62
			2.61				9045	R2	10	B-42	B-52	B-62
120	4380	447	2.05	144	3650	372	*9040	R2	11.2	B-42	B-52	B-62
			2.61				9045	R2	11.2	B-42	B-52	B-62
107	4900	501	1.47	129	4090	417	*9040	R2	12.5	B-42	B-52	B-62
			2.12				9045	R2	12.5	B-42	B-52	B-62
93.8	5600	572	1.47	113	4670	477	*9040	R2	14	B-42	B-52	B-62
			1.47				9045	R2	14	B-42	B-52	B-62
83.8	6300	644	1.14	100.0	5250	536	*9040	R2	16	B-42	B-52	B-62
			1.72				9045	R2	16	B-42	B-52	B-62
75.0	7000	715	1.98	90.0	5840	596	*9045	R2	18	B-42	B-52	B-62
			3.03				*9045	R2	20	B-42	B-52	B-62
							9050	R3	20	B-44	B-54	B-64
							9060	R3	20	B-46	B-56	B-66
67.0	7840	801	1.36	80.4	6540	667	9070	R3	20	B-46	B-56	B-66
			1.96				*9045	R2	22.4	B-42	B-52	B-62
			2.23				9050	R3	22.4	B-44	B-54	B-64
			3.45				9060	R3	22.4	B-46	B-56	B-66
60.0	8750	894	1.36	72.0	7300	745	*9045	R2	22.4	B-42	B-52	B-62
			1.96				9050	R3	22.4	B-44	B-54	B-64
			2.23				9060	R3	22.4	B-46	B-56	B-66
53.6	9800	1000	1.96	64.3	8170	834	9070	R3	25	B-46	B-56	B-66
			1.98				*9055	R3	25	B-44	B-54	B-64
			3.03				9060	R3	25	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 55kW

Frequency							Model			Page of Dimension Sheet			
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
47.6	11030	1130	1.72	57.1	9190	938	1.96	9055	R3	31.5	B-44	B-54	B-64
			1.98				2.23	9065	R3	31.5	B-46	B-56	B-66
			2.47				2.81	9070	R3	31.5	B-46	B-56	B-66
			3.03				3.45	9075	R3	31.5	B-46	B-56	B-66
42.3	12430	1270	1.52	50.7	10360	1060	1.81	9055	R3	35.5	B-44	B-54	B-64
			1.69				1.90	9060	R3	35.5	B-46	B-56	B-66
			1.98				2.23	9065	R3	35.5	B-46	B-56	B-66
			2.47				2.81	9070	R3	35.5	B-46	B-56	B-66
			3.03				3.45	9075	R3	35.5	B-46	B-56	B-66
37.5	14010	1430	1.43	45.0	11670	1190	1.65	9055	R3	40	B-44	B-54	B-64
			1.69				1.90	9060	R3	40	B-46	B-56	B-66
			2.47				2.81	9070	R3	40	B-46	B-56	B-66
33.3	15760	1610	1.23	40.0	13130	1340	1.49	9055	R3	45	B-44	B-54	B-64
			1.47				1.76	9060	R3	45	B-46	B-56	B-66
			1.69				1.90	9065	R3	45	B-46	B-56	B-66
			2.45				2.81	9070	R3	45	B-46	B-56	B-66
30.0	17510	1790	1.18	36.0	14590	1490	1.41	9055	R3	50	B-44	B-54	B-64
			1.34				1.52	9060	R3	50	B-46	B-56	B-66
			1.69				1.90	9065	R3	50	B-46	B-56	B-66
			1.96				2.23	9070	R3	50	B-46	B-56	B-66
			2.47				2.81	9075	R3	50	B-46	B-56	B-66
26.8	19610	2000	0.94	32.1	16340	1670	1.12	9055	R3	56	B-44	B-54	B-64
			1.16				1.40	9060	R3	56	B-46	B-56	B-66
			1.55				1.85	9065	R3	56	B-46	B-56	B-66
			1.94				2.23	9070	R3	56	B-46	B-56	B-66
			2.47				2.81	9075	R3	56	B-46	B-56	B-66
23.8	22060	2250	0.94	28.6	18380	1880	1.14	9055	R3	63	B-44	B-54	B-64
			1.09				1.23	9060	R3	63	B-46	B-56	B-66
			1.34				1.52	9065	R3	63	B-46	B-56	B-66
			1.60				1.81	9070	R3	63	B-46	B-56	B-66
			1.96				2.23	9075	R3	63	B-46	B-56	B-66
21.1	24860	2540	0.90	25.4	20720	2120	1.09	9060	R3	71	B-46	B-56	B-66
			1.22				1.46	9065	R3	71	B-46	B-56	B-66
			1.52				1.81	9070	R3	71	B-46	B-56	B-66
			1.96				2.23	9075	R3	71	B-46	B-56	B-66
18.8	28010	2860	1.09	22.5	23340	2380	1.23	9065	R3	80	B-46	B-56	B-66
			1.20				1.45	9070	R4	80	B-50	B-60	B-70
			1.60				1.81	9075	R3	80	B-46	B-56	B-66
			1.81				2.05	9080	R4	80	B-50	B-60	B-70
16.7	31520	3220	0.96	20.0	26260	2680	1.15	9065	R3	90	B-46	B-56	B-66
			1.20				1.45	9070	R4	90	B-50	B-60	B-70
			1.60				1.81	9075	R3	90	B-46	B-56	B-66
			1.81				2.05	9080	R4	90	B-50	B-60	B-70
15.0	35020	3580	1.18	18.0	29180	2980	1.41	9070	R4	100	B-50	B-60	B-70
			1.80				2.05	9080	R4	100	B-50	B-60	B-70
13.4	39220	4000	0.98	16.1	32680	3340	1.18	9070	R4	112	B-50	B-60	B-70
			1.20				1.45	9075	R4	112	B-50	B-60	B-70
			1.54				1.85	9080	R4	112	B-50	B-60	B-70
			1.81				2.05	9085	R4	112	B-50	B-60	B-70
12.0	43770	4470	0.90	14.4	36480	3720	1.09	9070	R4	125	B-50	B-60	B-70
			1.20				1.45	9075	R4	125	B-50	B-60	B-70
			1.36				1.63	9080	R4	125	B-50	B-60	B-70
			1.81				2.05	9085	R4	125	B-50	B-60	B-70
10.7	49020	5010	1.05	12.9	40850	4170	1.25	9075	R4	140	B-50	B-60	B-70
			1.18				1.41	9080	R4	140	B-50	B-60	B-70
			1.61				1.94	9085	R4	140	B-50	B-60	B-70
9.4	56030	5720	0.96	11.3	46690	4770	1.14	9075	R4	160	B-50	B-60	B-70
			1.03				1.23	9080	R4	160	B-50	B-60	B-70
			1.43				1.72	9085	R4	160	B-50	B-60	B-70
8.3	63030	6440	0.94	10.0	52530	5360	1.12	9080	R4	180	B-50	B-60	B-70
			1.23				1.49	9085	R4	180	B-50	B-60	B-70
7.5	70030	7150	0.89	9.0	58360	5960	1.07	9080	R4	200	B-50	B-60	B-70
			1.03				1.23	9085	R4	200	B-50	B-60	B-70
6.7	78440	8010	0.98	8.0	65360	6670	1.18	9085	R4	224	B-50	B-60	B-70
6.0	87540	8940	0.94	7.2	72950	7450	1.12	9085	R4	250	B-50	B-60	B-70

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: Double Reduction RMR, LML
Triple Reduction RML, LMR/Quadruple Reduction RMR, LML

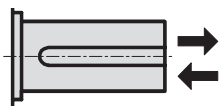
L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	77.0	100.1
160	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	89.0	108.9
Standard bearing model	100	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	99.0	99.0	122.1
63	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	131.5	125.6
40	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	141.0	125.1
≤ 25	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	139.5	122.6
Heavy duty bearing model	250						71.1	93.7	70.1	122.5	122.5	141.8
160							78.0	94.7	77.5	137.5	137.5	132.4
100							81.4	98.1	92.2	149.5	149.5	127.0
63							81.4	98.1	114.8	149.0	149.0	125.6
40							81.4	98.1	117.7	148.5	148.5	125.1
≤ 25							81.4	98.1	117.7	147.0	147.0	122.6

Sheet 2

Applicable to configurations: Double Reduction RML, LMR
Triple Reduction RMR, LML/Quadruple Reduction RML, LMR

L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	44.0	58.4
160	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	55.5	64.3
Standard bearing model	100	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	74.6
63	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	95.0	104.5
40	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	129.0	146.7
≤ 25	26.5	35.3	42.2	49.1	54.9	67.7	60.8	68.7	67.7	167.0	167.0	171.2
Heavy duty bearing model	250						46.1	74.6	40.2	90.0	90.0	114.8
160							52.0	72.1	45.6	103.5	103.5	125.1
100							60.3	79.0	59.4	116.0	116.0	140.8
63							81.4	96.6	80.0	152.5	152.5	174.1
40							81.4	98.1	108.9	192.0	192.0	191.8
≤ 25							81.4	98.1	117.7	180.5	180.5	171.2

Allowable Axial Load (kN)



L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	28.0	23.5	23.5
160	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	28.4	27.5	27.5
Standard bearing model	100	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	32.9	32.9
63	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	52.5	45.6	45.6
40	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	63.3	60.3
≤ 25	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	67.7	60.3
Heavy duty bearing model	250						23.1	34.8	18.6	18.6	56.9	56.9
160							25.0	33.4	21.1	21.1	56.9	56.9
100							29.4	36.8	27.5	27.5	56.9	56.9
63							39.2	43.2	36.3	36.3	56.9	56.9
40							39.2	43.2	49.1	49.1	56.9	56.9
≤ 25							39.2	43.2	56.9	56.9	56.9	56.9

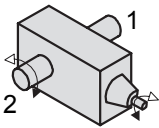
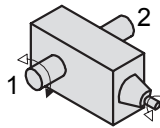
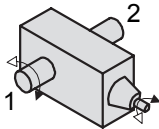
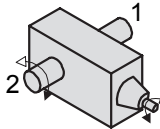
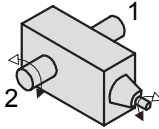
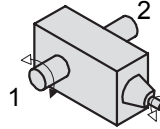
SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

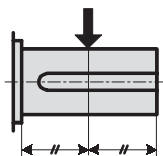
Notes

1. The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
2. Consult us for the blanks in the table.
3. Consult us when the radial load is applied upward.
4. In case of double projection shaft (RMB, LMB)
 - (1) See sheet 1 when the radial load is applied only to the shaft 1.
 - (2) See sheet 2 when the radial load is applied only to the shaft 2.
 - (3) Consult us when the radial load is applied to both shafts.

	RMB	LMB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: Double Reduction RMR, LML
Triple Reduction RML, LMR/Quadruple Reduction RMR, LML

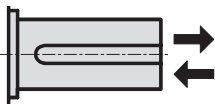
L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200
160	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100
100	2550	3600	3950	4000	4800	5450	4850	5550	5550	10100	10100	12450
63	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800
40	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750
≤ 25	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500
250							7250	9550	7150	12500	12500	14450
160							7950	9650	7900	14000	14000	13500
100							8300	10000	9400	15250	15250	12950
63							8300	10000	11700	15200	15200	12800
40							8300	10000	12000	15150	15150	12750
≤ 25							8300	10000	12000	15000	15000	12500

Sheet 2

Applicable to configurations: Double Reduction RML, LMR
Triple Reduction RMR, LML/Quadruple Reduction RML, LMR

L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950
160	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550
100	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	6450	7600
63	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650
40	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950
≤ 25	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450
250							4700	7600	4100	9150	9150	11700
160							5300	7350	4650	10550	10550	12750
100							6150	8050	6050	11800	11800	14350
63							8300	9850	8150	15550	15550	17750
40							8300	10000	11100	19550	19550	19550
≤ 25							8300	10000	12000	18400	18400	17450

Allowable Axial Load (kgf)



L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400
160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2900	2800	2800
100	2500	2350	3350	3200	3800	3250	3500	4400	4050	4050	3350	3350
63	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650
40	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150
≤ 25	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150
250							2350	3550	1900	1900	5800	5800
160							2550	3400	2150	2150	5800	5800
100							3000	3750	2800	2800	5800	5800
63							4000	4400	3700	3700	5800	5800
40							4000	4400	5000	5000	5800	5800
≤ 25							4000	4400	5800	5800	5800	5800

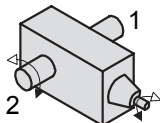
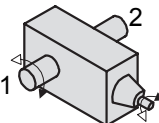
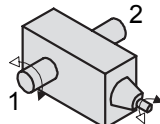
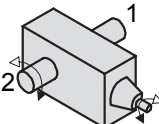
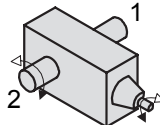
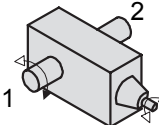
SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

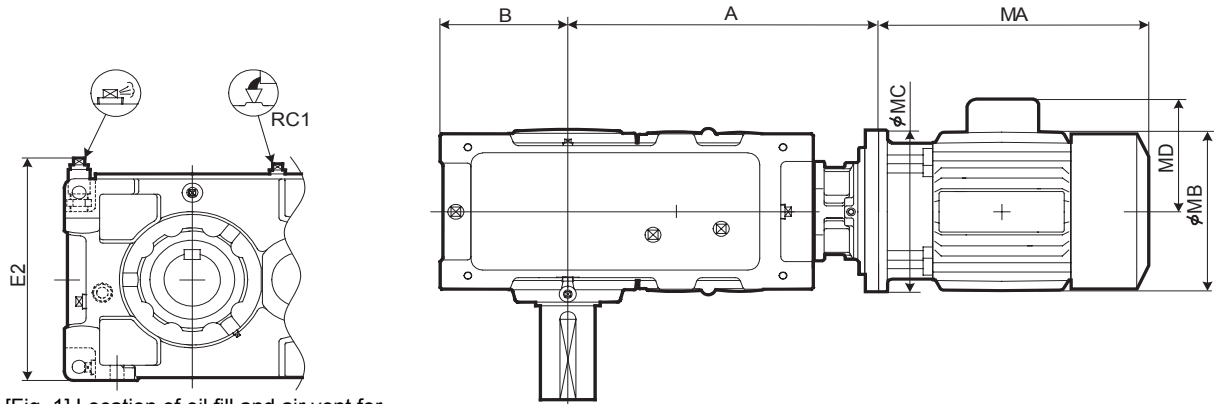
Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

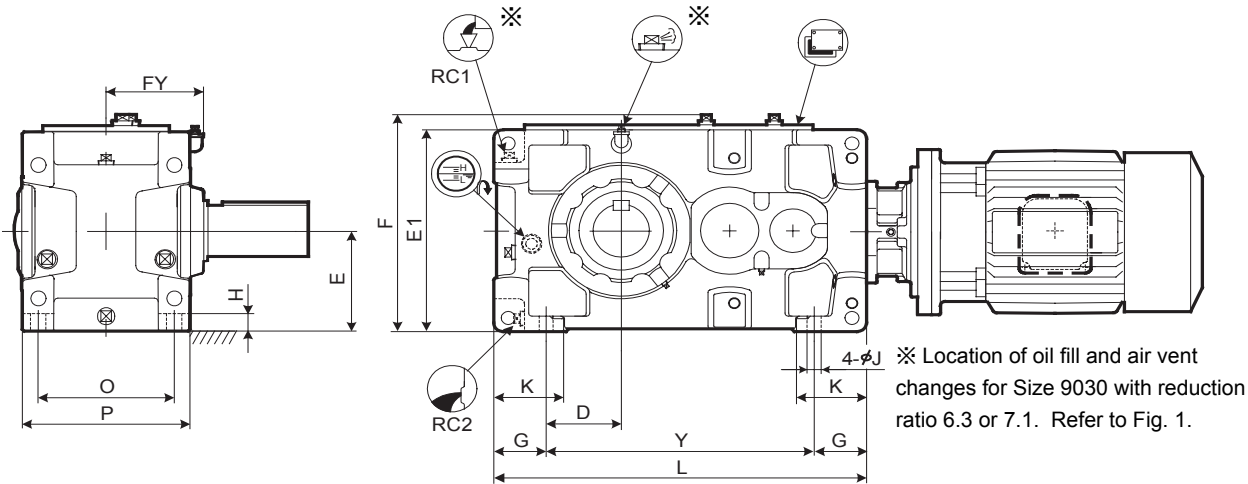
Notes

1. The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
2. Consult us for the blanks in the table.
3. Consult us when the radial load is applied upward.
4. In case of double projection shaft (RMB, LMB)
 - (1) See sheet 1 when the radial load is applied only to the shaft 1.
 - (2) See sheet 2 when the radial load is applied only to the shaft 2.
 - (3) Consult us when the radial load is applied to both shafts.

	RMB	LMB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		



[Fig. 1] Location of oil fill and air vent for Size 9030 with reduction ratio 6.3 or 7.1



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Double Reduction Horizontal Mounting 9030 ▶ 9045

PARAMAX Horizontal Monoblock
 Right Angle Double Reduction
 P H A 9030 9045 R 2

Size	A	B	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9030		200	110	160	320	353	349	154	90	28	24	120	590	215	265	410
9035	See	219	129	185	370		399	154	90	28	24	120	640	215	265	460
9040	below	235	120	200	400		431	172	115	30	28	150	685	255	315	455
9045		256	141	220	440		471	172	115	30	28	150	745	255	315	515

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg) *	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	10	240	255
9035	3/4"	3/4"	12	260	275
9040	1"	1"	16	340	350
9045	1"	1"	18	400	410

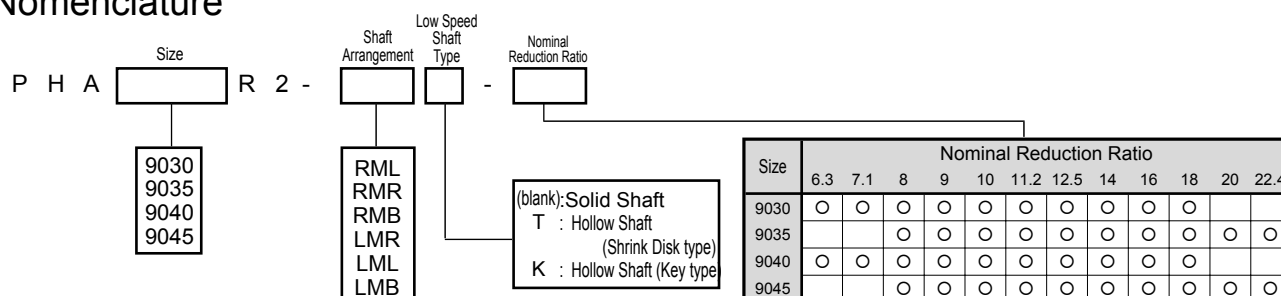
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9030	9035	9040	9045		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	540	571			11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	11	131	175
18.5	625	394	400	835	394	400	297	540	571	595	634	17	213	258
22	625	394	400	835	394	400	297	540	571	595	634	17	213	258
30	625	394	400	835	394	400	297	540	571	595	634	17	224	280
37	715.5	394	450	930.5	394	450	297	570	601	625	664	15	259	320
45	715.5	394	450	930.5	394	450	297	570	601	625	664	15	259	320
55	769.5	484	550				412		601	625	664	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
						X1	Y1	Z1	L1											
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump



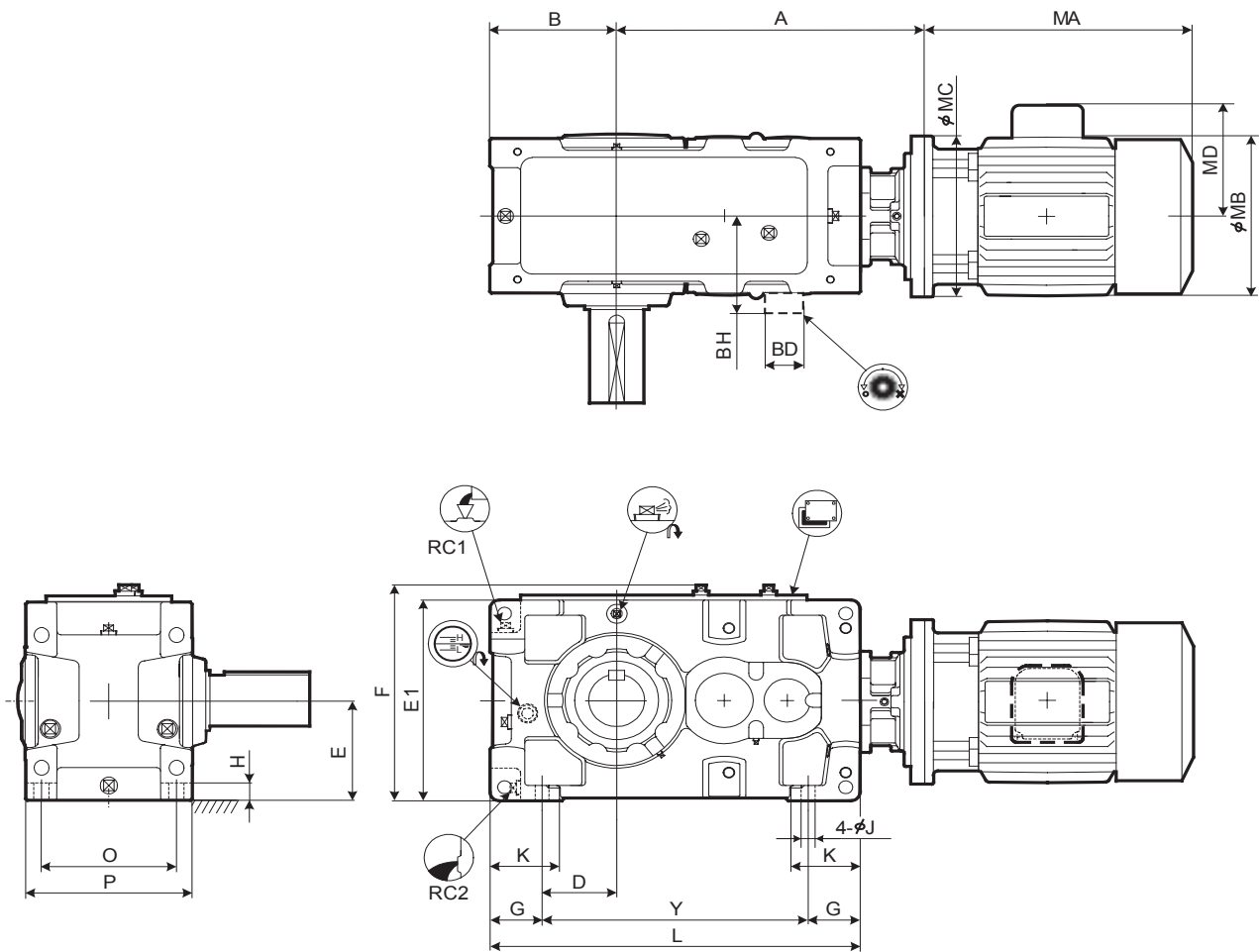
Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Triple Reduction Horizontal Mounting 9030 ▶ 9055

Drive Unit
Selection
Tables
Dimension
Tables



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Horizontal Mounting 9030 ▶ 9055

PARAMAX
Horizontal
Monoblock
Right Angle
Triple
Reduction

P
H
A
9030
9055
R
3

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9030		200	110	160	320	349	90	28	24	120	590	215	265	410
9035		219	129	185	370	399	90	28	24	120	640	215	265	460
9040	See below	235	120	200	400	431	115	30	28	150	685	255	315	455
9045		256	141	220	440	471	115	30	28	150	745	255	315	515
9050		255	138.5	210	420	451	116.5	32	28	150	775	285	345	542
9055		286	171	245	490	521	115	32	28	150	845	285	345	615

Size	BD	BH	RC1	RC2	Oil Qty. (L)	Wt. (kg)**	
						5.5-30kW	37-55kW
9030			3/4"	3/4"	10	240	250
9035			3/4"	3/4"	12	260	270
9040			1"	1"	16	325	345
9045			1"	1"	18	385	405
9050	150	263	1"	1"	21	475	485
9055	150	263	1"	1"	28	535	545

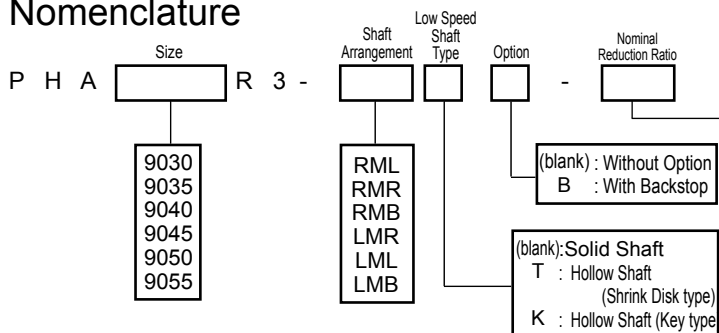
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	540	571	595	634			8	43	54
7.5	415	251	315	510	251	315	185	540	571	595	634	675	714	8	57	77
11	480	251	350	575	251	350	188	540	571	595	634	675	714	11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	675	714	11	131	175
18.5	625	394	400	835	394	400	297	540	571	595	634	675	714	17	213	258
22	625	394	400	835	394	400	297	540	571	595	634	675	714	17	213	258
30	625	394	400	835	394	400	297	540	571	595	634	675	714	17	224	280
37	715.5	394	450	930.5	394	450	297		601	625	664	705	744	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
55	769.5	484	550				412					705	744	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9030	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○	○	○		
9040		○	○	○	○	○	○	○	○	○	○	○	○	○		
9045				○	○	○	○	○	○	○	○	○	○	○		
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump



Backstop (Option)

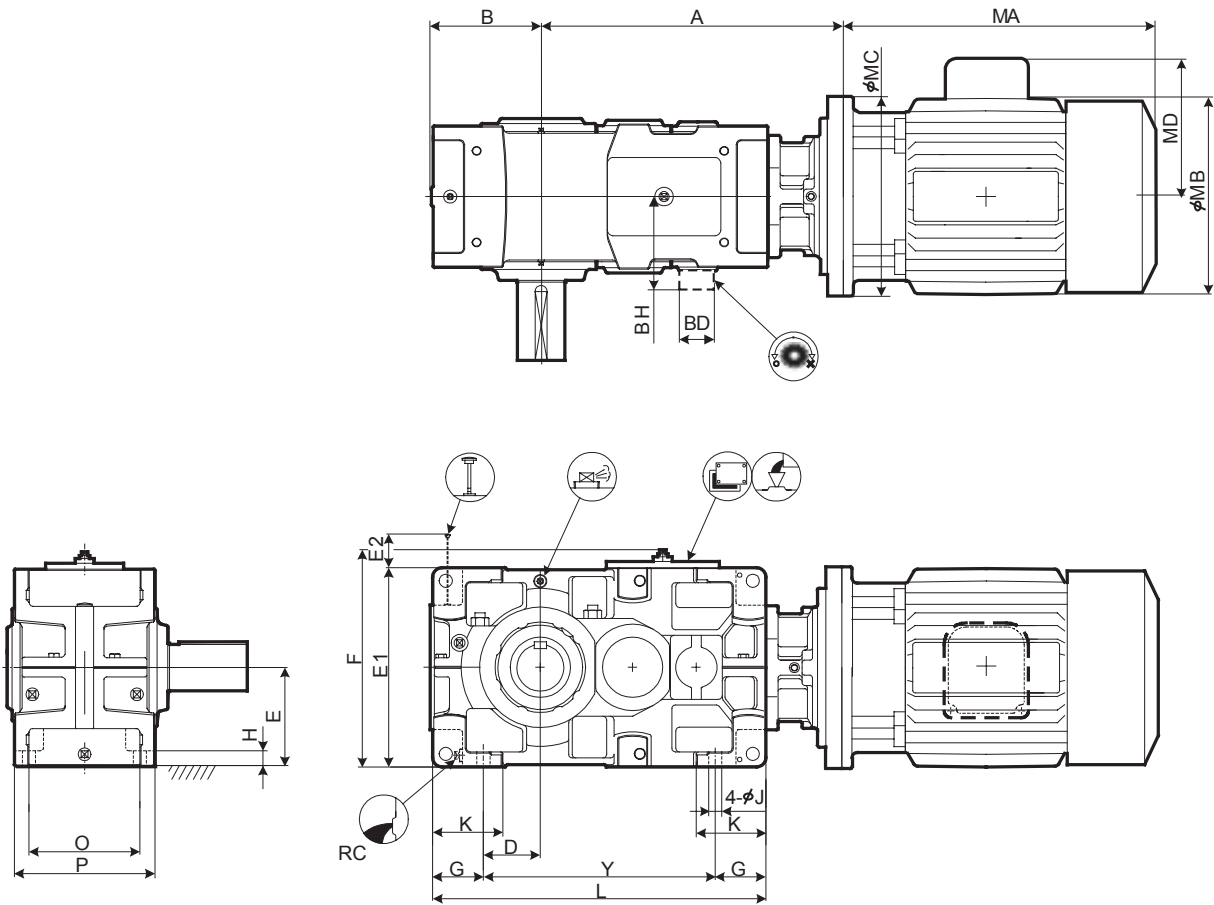


Opposite Side

Drive Unit

Selection Tables

Dimension Tables



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Horizontal Mounting 9060 ▶ 9075

PARAMAX
Horizontal
Split
Right Angle
Triple
Reduction

P
H
D
9060
9075
R
3

Size	A	B	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	See below	299	151	265	530	158	578	135	35	35	180	885	310	380	615
9065		338	190	300	600	123	648	135	35	35	180	970	310	380	700
9070		336	163	300	600	183	648	160	40	42	215	1020	350	430	700
9075		383	210	335	670	148	718	160	52	42	220	1120	350	430	800

Size	BD	BH	RC	Oil Qty. (L)	Wt. (kg) *	
					5.5-30kW	37-55kW
9060	175	308	1"	29	680	690
9065	175	308	1"	33	805	815
9070	190	330	1"	45	950	960
9075	190	330	1"	52	1200	1210

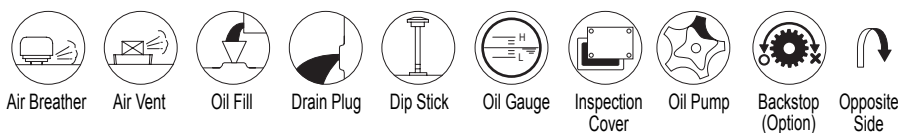
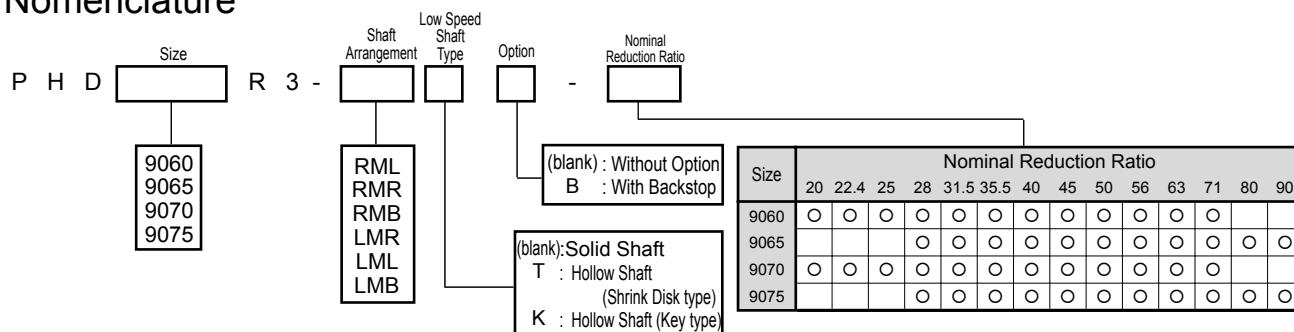
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

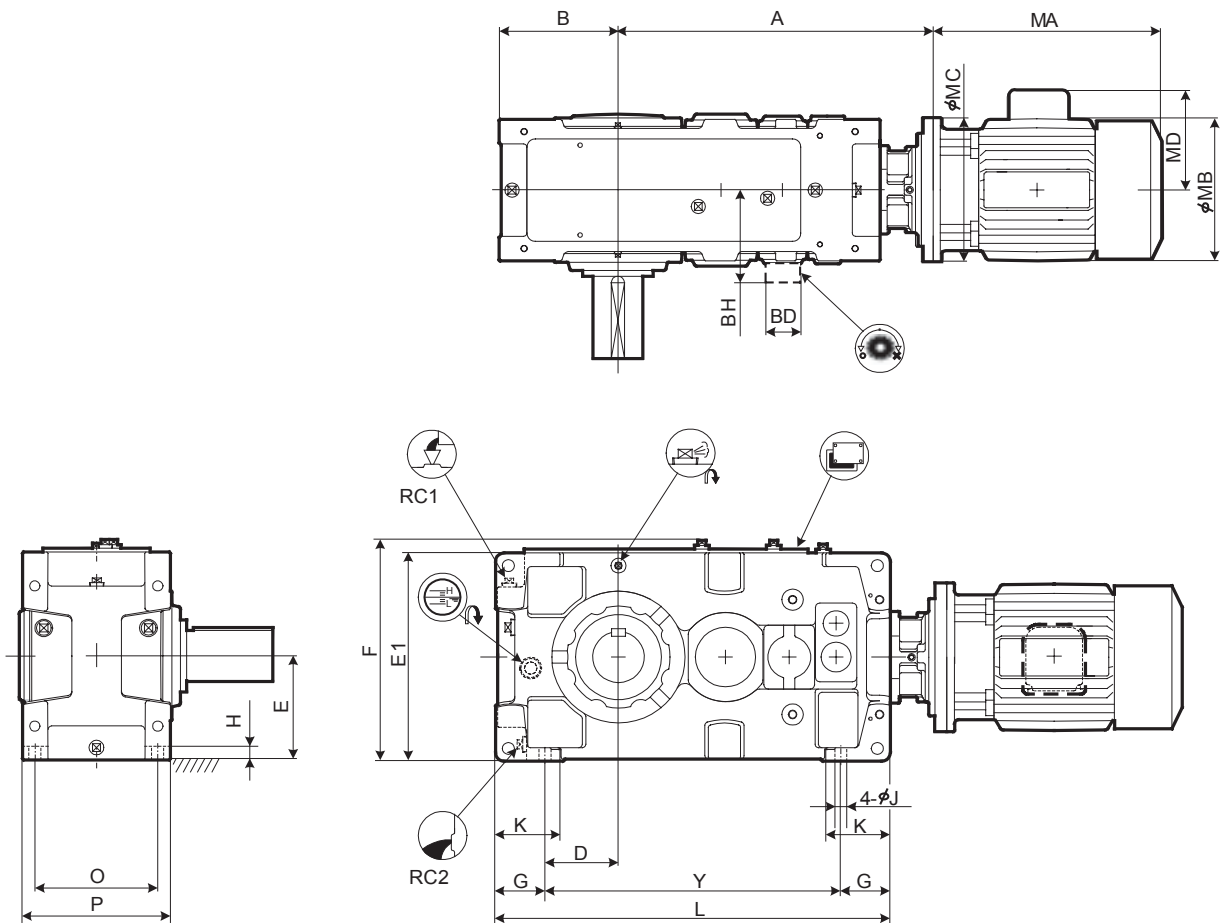
kW	Motor							A				Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9060	9065	9070	9075		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	744	790			11	76	96
15	545	324	350	700	324	350	232	744	790			11	131	175
18.5	625	394	400	835	394	400	297	744	790	852	905	17	213	258
22	625	394	400	835	394	400	297	744	790	852	905	17	213	258
30	625	394	400	835	394	400	297	744	790	852	905	17	224	280
37	715.5	394	450	930.5	394	450	297	774	790	882	935	15	259	320
45	715.5	394	450	930.5	394	450	297	774	790	882	935	15	259	320
55	769.5	484	550				412	774	790	882	935	29	276	

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148

Unit: mm

Nomenclature





Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Horizontal Mounting 9040 ▶ 9055

PARAMAX Horizontal Monoblock
Right Angle Quadruple Reduction

P H A 9040 9055 R 4

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9040	See below	235	120	200	400	431	115	30	28	150	759	255	315	529
9045		256	141	220	440	471	115	30	28	150	819	255	315	589
9050		255	138.5	210	420	451	116.5	32	28	150	848	285	345	615
9055		286	171	245	490	521	115	32	28	150	918	285	345	688

Size	BD	BH	RC1	RC2	Oil Qty. (L)	Wt. (kg) *	
9040			1"	1"	19	355	365
9045			1"	1"	21	425	435
9050	150	263	1"	1"	24	490	500
9055	150	263	1"	1"	29	550	560

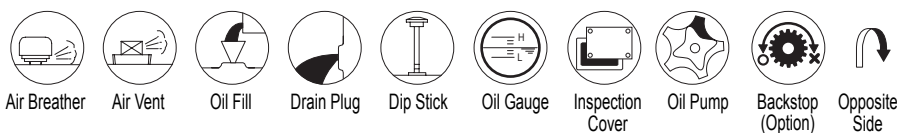
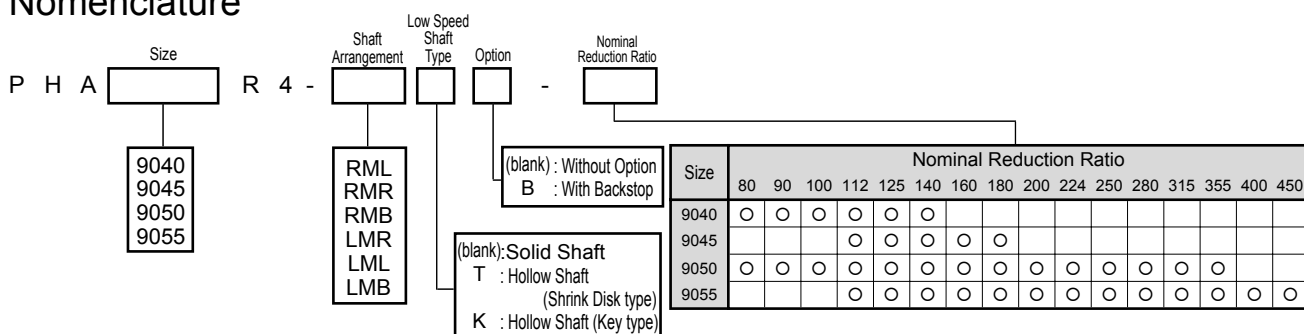
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

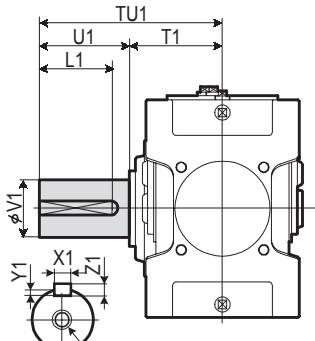
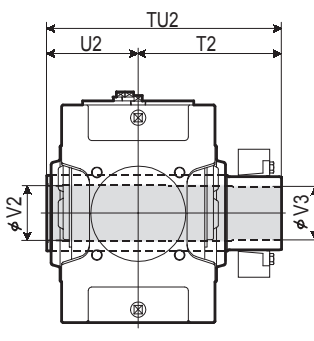
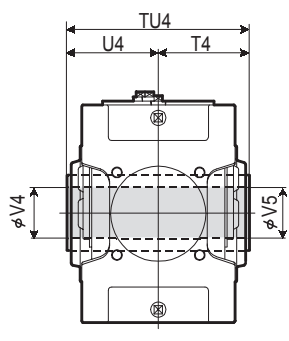
kW	Motor				A				Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD			Without Brake	With Brake
	MA	MB	MC	MA	MB	MC		9040 9045 9050 9055			
5.5	382	212	315	454	212	315	144	674 713 743 782	8	43	54
7.5	415	251	315	510	251	315	185	674 713 743 782	8	57	77
11	480	251	350	575	251	350	188	674 713 743 782	11	76	96
15	545	324	350	700	324	350	232	674 713 743 782	11	131	175
18.5	625	394	400	835	394	400	297	674 713 743 782	17	213	258
22	625	394	400	835	394	400	297	674 713 743 782	17	213	258
30	625	394	400	835	394	400	297	743 782	17	224	280

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	 Refer to the Page D-18 for details.	 Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB
					

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Horizontal Mounting 9060 ▶ 9085

Size	A	B	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060		299	151	265	530	121	578	135	35	35	180	970	310	380	700
9065		338	190	300	600	86	648	135	35	35	180	1055	310	380	785
9070	See below	336	163	300	600	140	648	160	40	42	215	1115	350	430	795
9075		383	210	335	670	105	718	160	52	42	220	1215	350	430	895
9080		378	205	335	670	162	718	160	52	42	220	1275	380	460	955
9085		422	249	375	750	122	798	160	52	42	220	1375	380	460	1055

Size	BD	BH	RC	Oil Qty. (L)	Wt. (kg) **	
					5.5-30kW	37-55kW
9060	175	308	1"	38	700	710
9065	175	308	1"	43	855	865
9070	190	330	1"	57	990	1000
9075	190	330	1"	67	1210	1220
9080	210	365	1"	73	1410	1420
9085	210	365	1"	90	1670	1680

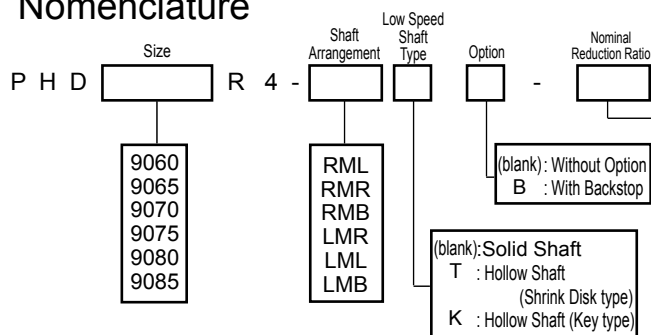
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9060	9065	9070	9075	9080	9085		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	829	875	947	1000	1055	1111	8	43	54
7.5	415	251	315	510	251	315	185	829	875	947	1000	1055	1111	8	57	77
11	480	251	350	575	251	350	188	829	875	947	1000	1055	1111	11	76	96
15	545	324	350	700	324	350	232	829	875	947	1000	1055	1111	11	131	175
18.5	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	213	258
22	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	213	258
30	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	224	280
37	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
45	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
55	769.5	484	550				412			977	1030	1085	1141	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
						Key														
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio																			
	80	90	100	112	125	140	160	180	200	224	250	260	280	315	355	400	450			
9060		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9065				○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9075			○	○	○	○	○	○	○		○	○	○	○	○	○	○			
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

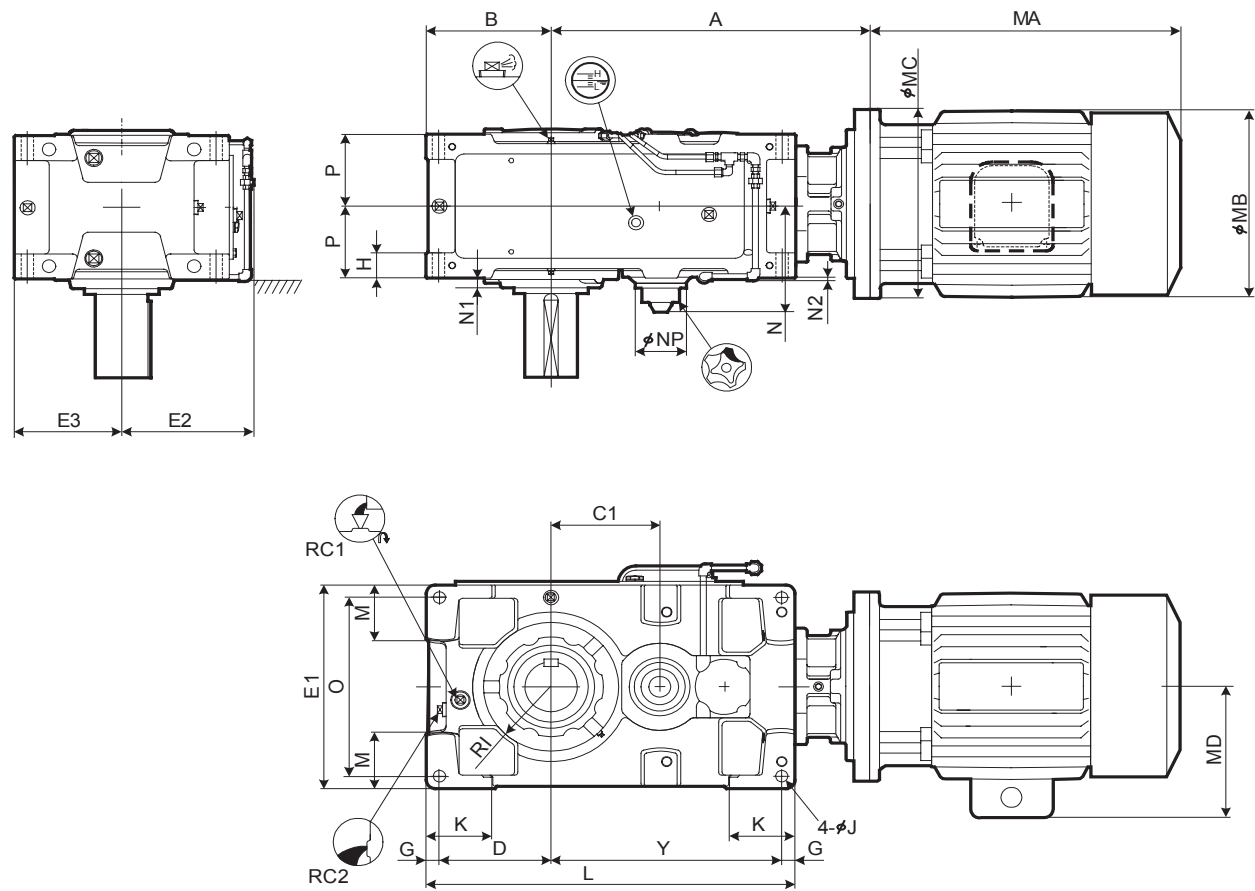


Backstop (Option)



Opposite Side

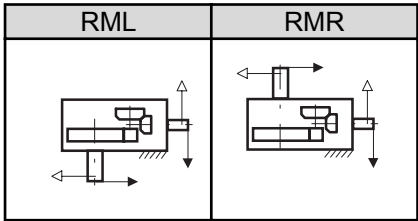
DIMENSIONS Right Angle Double Reduction Vertical Mounting 9030 ▶ 9045



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Double Reduction Vertical Mounting 9030 ▶ 9045

PARAMAX Vertical Monoblock Right Angle Double Reduction

P V A 9030 9045 R 2

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9030	See below	200	155	175	320	220	160	25	50	105	24	120	590	85	221	22	9	117	270	132.5	365
9035		219	186	194	370	245	185	25	50	120	24	120	640	100	221	22	9	117	320	132.5	396
9040		235	180	205	400	260	200	30	60	120	28	150	685	100	239	15	2	117	340	157.5	420
9045		256	219	266	440	266	220	30	60	140	28	150	745	120	243	17.5	2	117	380	157.5	459

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg) *	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	7	240	255
9035	3/4"	3/4"	9	260	275
9040	1"	1"	19	340	350
9045	1"	1"	23	400	410

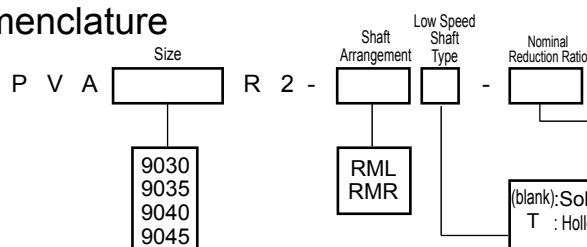
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9030	9035	9040	9045		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	540	571			11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	11	131	175
18.5	625	394	400	835	394	400	297	540	571	595	634	17	213	258
22	625	394	400	835	394	400	297	540	571	595	634	17	213	258
30	625	394	400	835	394	400	297	540	571	595	634	17	224	280
37	715.5	394	450	930.5	394	450	297	570	601	625	664	15	259	320
45	715.5	394	450	930.5	394	450	297	570	601	625	664	15	259	320
55	769.5	484	550				412		601	625	664	29	276	

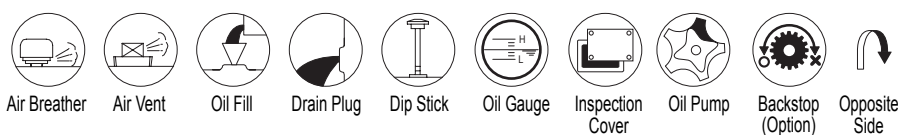
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105

Unit: mm

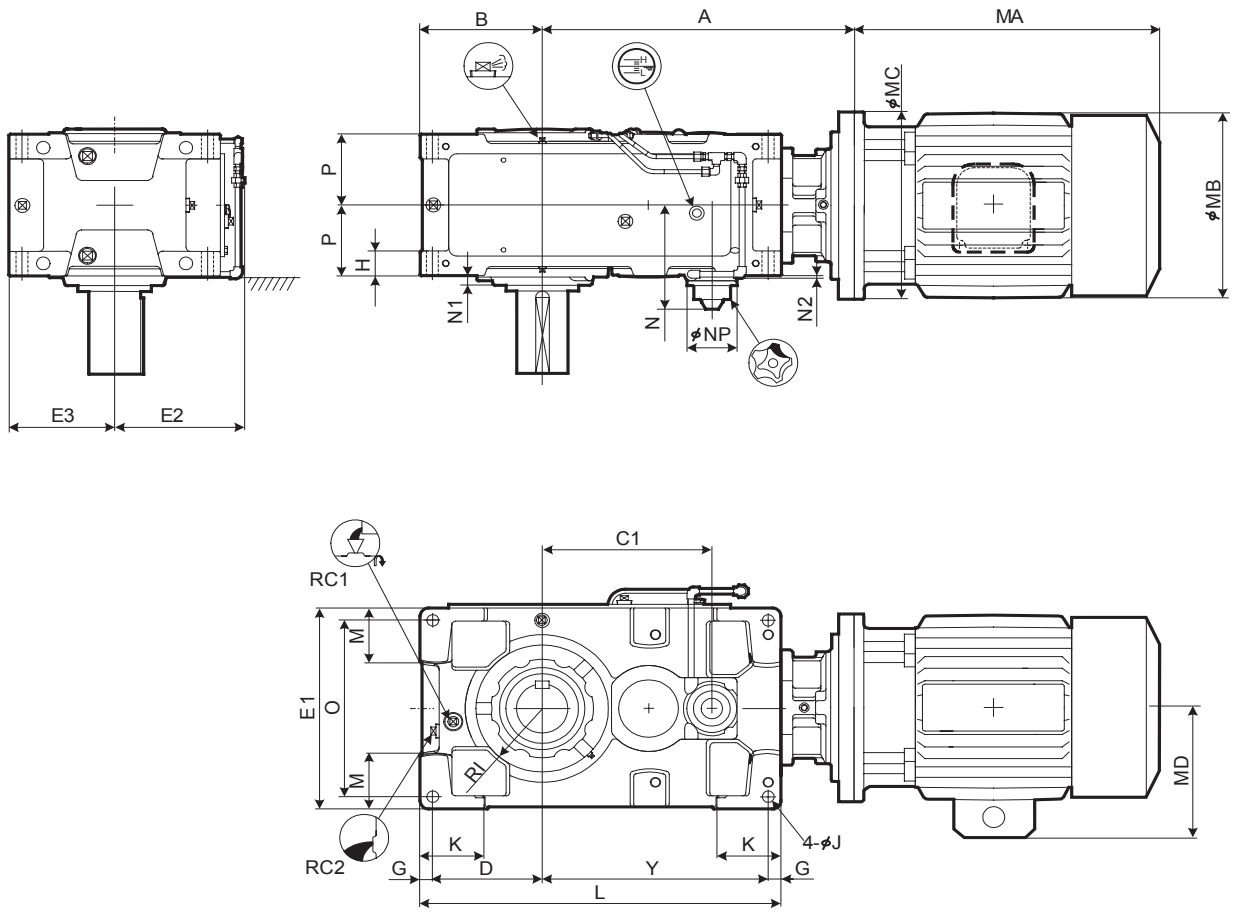
Nomenclature



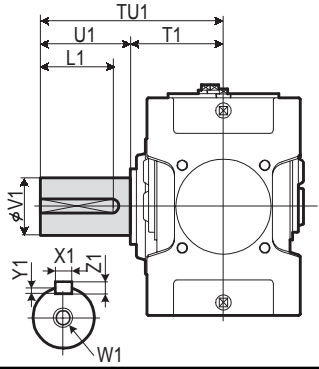
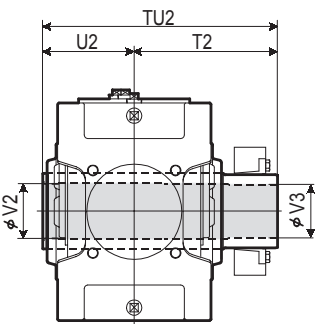
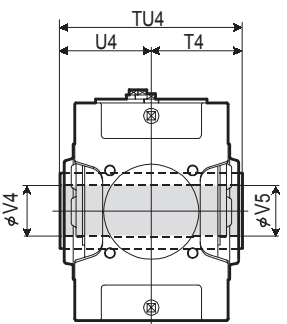
Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○



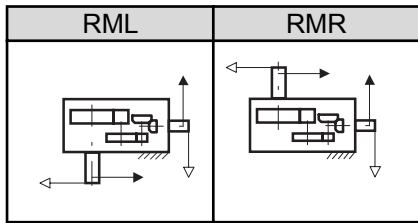
DIMENSIONS Right Angle Triple Reduction Vertical Mounting 9030 ▶ 9055



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	 Refer to the Page D-18 for details.	 Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Vertical Mounting 9030 ▶ 9055

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9030		200	264	175	320	220	160	25	50	105	24	120	590	85	211	22	9	100	270	132.5	365
9035		219	295	194	370	245	185	25	50	120	24	120	640	100	211	22	9	100	320	132.5	396
9040	See below	235	306	205	400	260	200	30	60	120	28	150	685	100	239	15	2	117	340	157.5	420
9045		256	345	226	440	266	220	30	60	140	28	150	745	120	239	17.5	2	117	380	157.5	459
9050		255	358	225	420	270	210	30	60	140	28	150	775	110	259	23	7	117	360	172.5	490
9055		286	397	256	490	305	245	30	60	155	28	150	845	135	259	23	7	117	430	172.5	529

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg) **	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	9	240	250
9035	3/4"	3/4"	12	260	270
9040	1"	1"	18	325	345
9045	1"	1"	22	385	405
9050	1"	1"	21	475	485
9055	1"	1"	30	535	545

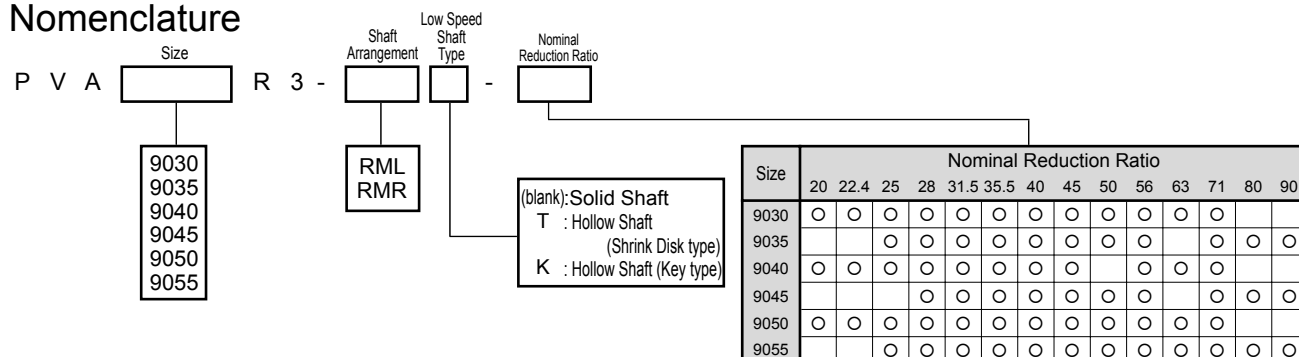
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	540	571	595	634			8	43	54
7.5	415	251	315	510	251	315	185	540	571	595	634	675	714	8	57	77
11	480	251	350	575	251	350	188	540	571	595	634	675	714	11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	675	714	11	131	175
18.5	625	394	400	835	394	400	297	540	571	595	634	675	714	17	213	258
22	625	394	400	835	394	400	297	540	571	595	634	675	714	17	213	258
30	625	394	400	835	394	400	297	540	571	595	634	675	714	17	224	280
37	715.5	394	450	930.5	394	450	297		601	625	664	705	744	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
55	769.5	484	550				412					705	744	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

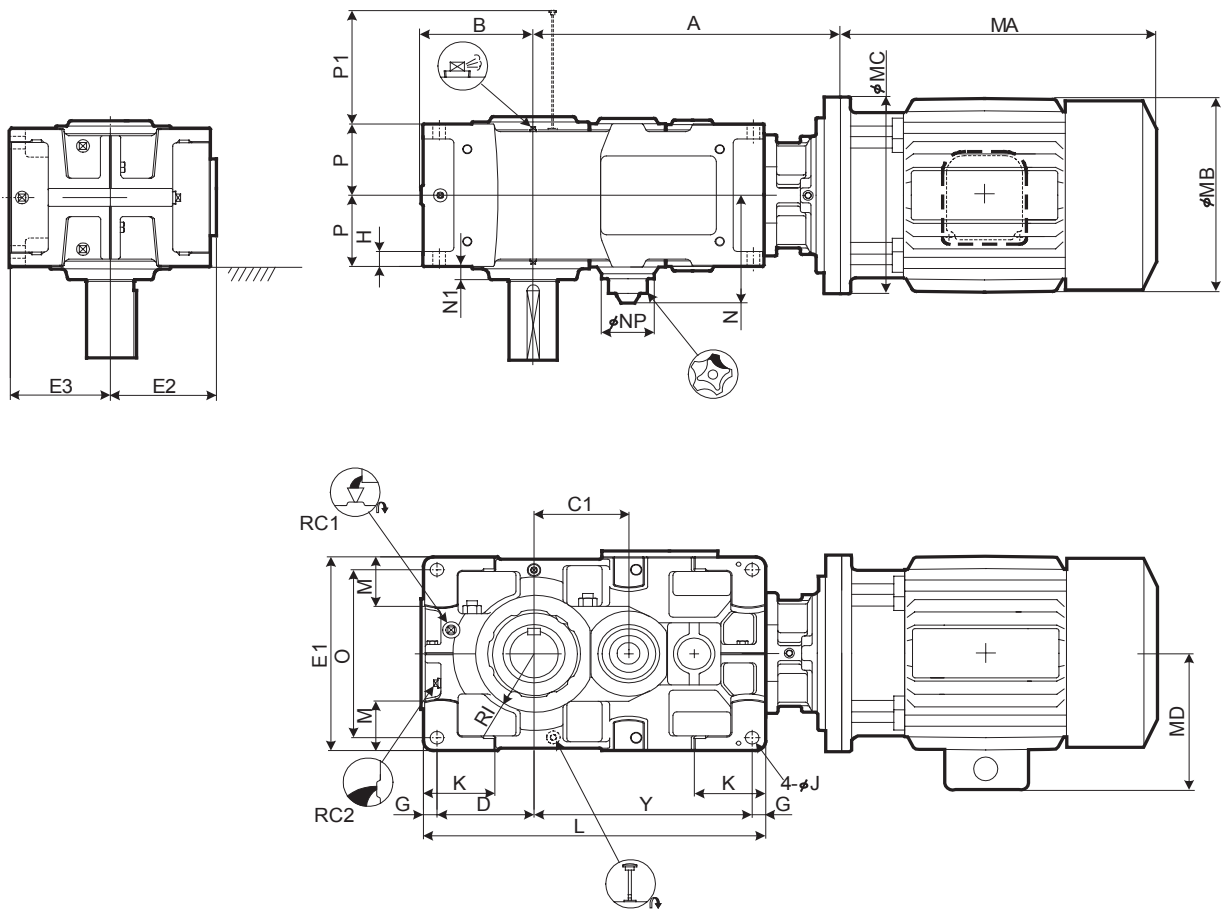


Backstop (Option)



Opposite Side

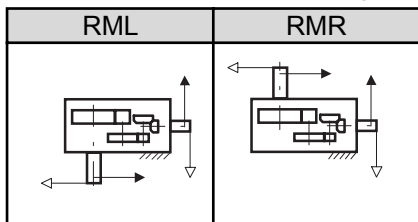
DIMENSIONS Right Angle Triple Reduction Vertical Mounting 9060 ▶ 9075



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Technical drawing of a solid shaft with dimensions U1, T1, L1, TU1, V1, X1, Z1, and W1.	Technical drawing of a hollow shaft (Shrink Disk Type) with dimensions U2, T2, TU2, V2, and V3. Refer to the Page D-18 for details.	Technical drawing of a hollow shaft (Key Type) with dimensions U4, T4, TU4, V4, and V5. Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RMR is equipped with visible gauge. Refer to page D-28.

DIMENSIONS Right Angle Triple Reduction Vertical Mounting 9060 ▶ 9075

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060		299	414	251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	213	564
9065	See below	338	460	290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	213	610
9070		336	482	283	600	317	300	40	40	175	42	215	1020	155	304	38	117	520	215	233	657
9075		383	535	330	670	352	355	40	52	190	42	220	1120	195	304	40	117	590	215	233	710

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg)※	
				5.5-30kW	37-55kW
9060	1"	1"	28	680	690
9065	1"	1"	35	805	815
9070	1"	1"	46	950	960
9075	1"	1"	59	1200	1210

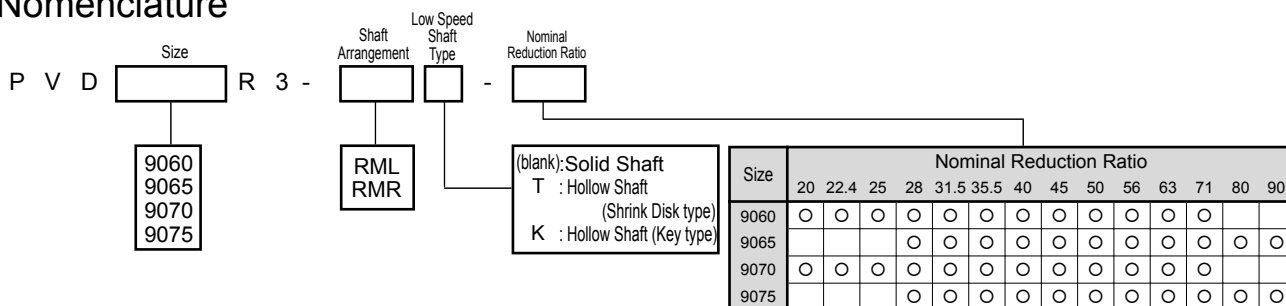
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange (kg)		Mass of Motor (kg)	
	Without Brake			With Brake			MD								
	MA	MB	MC	MA	MB	MC		9060	9065	9070	9075	Without Brake	With Brake	Without Brake	With Brake
11	480	251	350	575	251	350	188	744	790			11	76	96	
15	545	324	350	700	324	350	232	744	790			11	131	175	
18.5	625	394	400	835	394	400	297	744	790	852	905	17	213	258	
22	625	394	400	835	394	400	297	744	790	852	905	17	213	258	
30	625	394	400	835	394	400	297	744	790	852	905	17	224	280	
37	715.5	394	450	930.5	394	450	297	774	790	882	935	15	259	320	
45	715.5	394	450	930.5	394	450	297	774	790	882	935	15	259	320	
55	769.5	484	550				412	774	790	882	935	29	276		

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



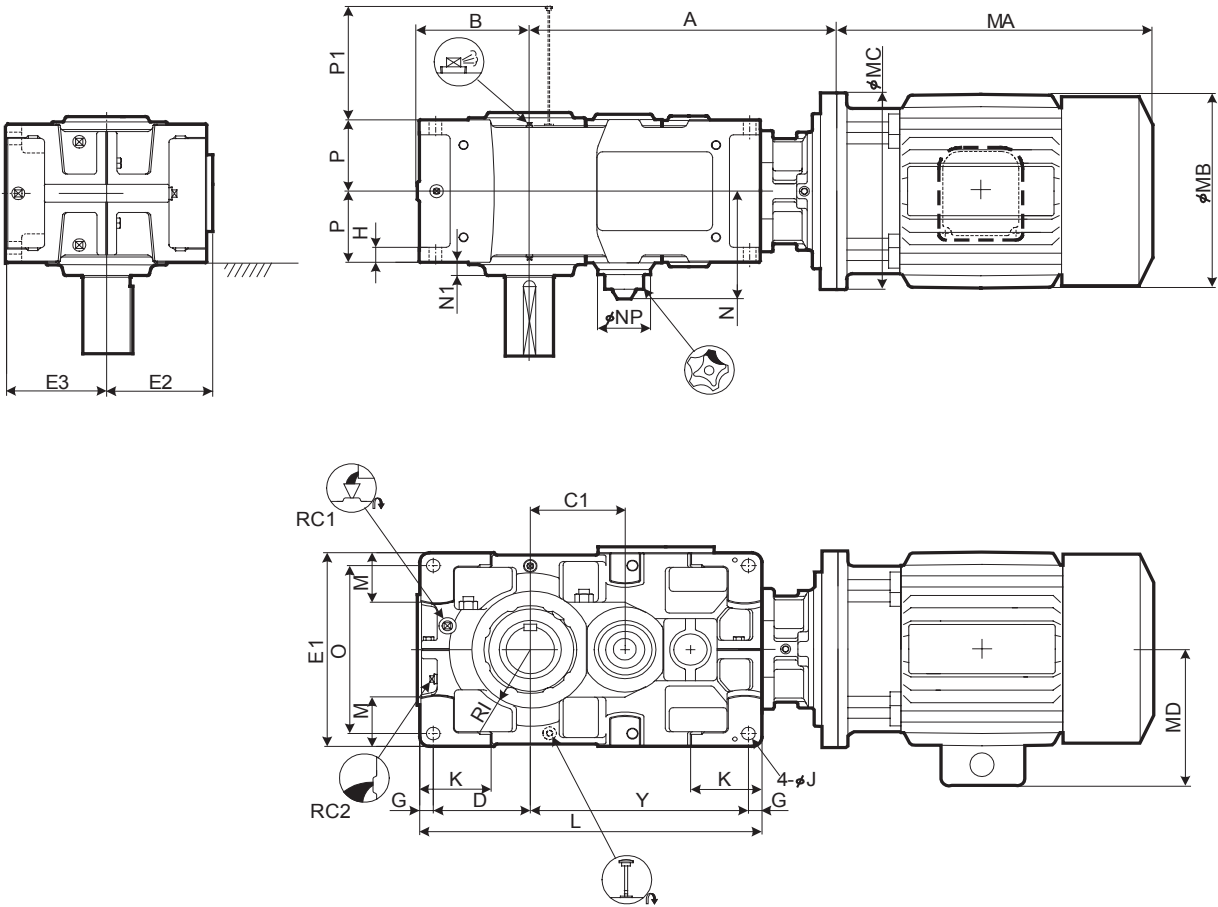
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	 Refer to the Page D-18 for details.	 Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

LMR	LML

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Vertical Mounting 9040 ▶ 9055

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9040		235	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	See below	256	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050		255	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055		286	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg)※	
				5.5-30kW	37-55kW
9040	1"	1"	18	355	365
9045	1"	1"	22	425	435
9050	1"	1"	24	490	500
9055	1"	1"	34	550	560

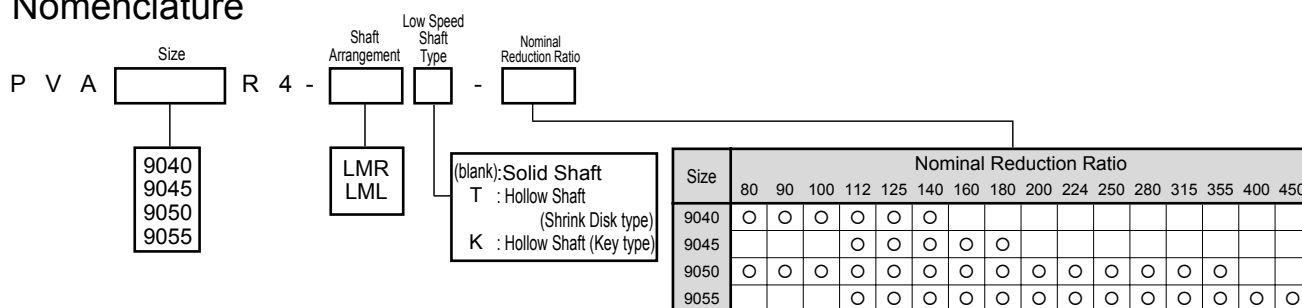
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
5.5	382	212	315	454	212	315	144	674	713	743	782	8	43	54
7.5	415	251	315	510	251	315	185	674	713	743	782	8	57	77
11	480	251	350	575	251	350	188	674	713	743	782	11	76	96
15	545	324	350	700	324	350	232	674	713	743	782	11	131	175
18.5	625	394	400	835	394	400	297	674	713	743	782	17	213	258
22	625	394	400	835	394	400	297	674	713	743	782	17	213	258
30	625	394	400	835	394	400	297			743	782	17	224	280

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



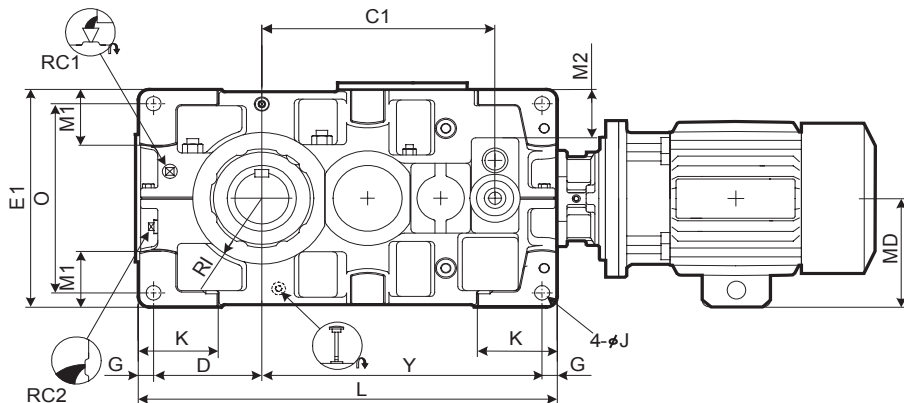
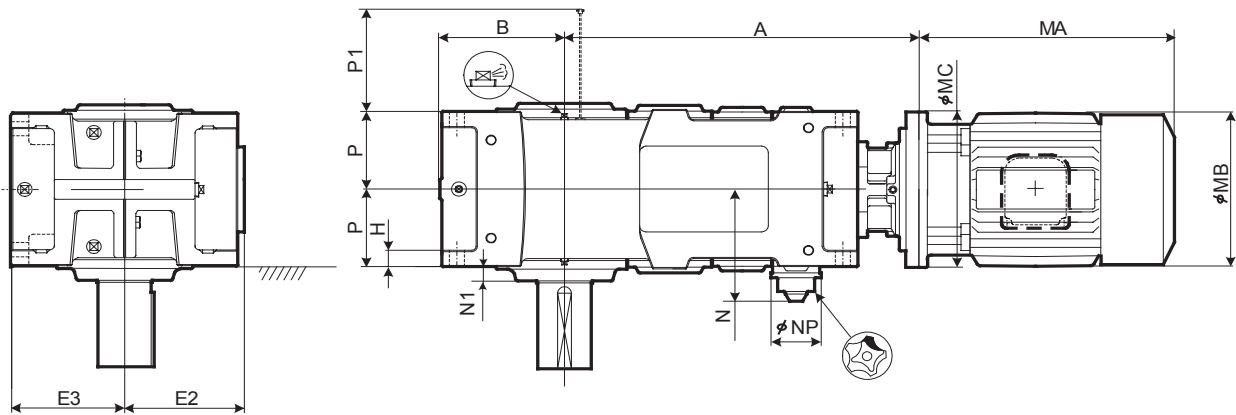
Oil Pump



Backstop (Option)



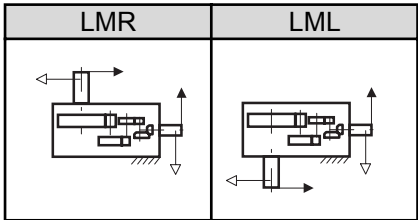
Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Shaft arrangement LMR is equipped with visible gauge. Refer to page D-28.

DIMENSIONS Right Angle Quadruple Reduction Vertical Mounting 9060 ▶ 9085

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	NP	N1	O	P	P1	Y
9060		299	540	251	530	282	265	35	35	160	35	180	970	140	118	277.5	117	35	460	190	203	649
9065		338	586	290	600	317	300	35	35	175	35	180	1055	175	153	277.5	117	38	530	190	203	695
9070	See below	336	630	283	600	317	300	40	40	175	42	215	1115	155	128	304	117	38	520	215	233	752
9075		383	683	330	670	352	335	40	52	190	42	220	1215	195	163	304	117	40	590	215	233	805
9080		378	725	325	670	352	335	40	52	190	42	220	1275	170	140	322.5	117	45	590	230	263	870
9085		422	781	369	750	392	375	40	52	215	42	220	1375	210	180	322.5	117	40	670	230	263	926

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg) **	
				5.5-30kW	37-55kW
9060	1"	1"	36	700	710
9065	1"	1"	45	855	865
9070	1"	1"	54	990	1000
9075	1"	1"	68	1210	1220
9080	1"	1"	69	1410	1420
9085	1"	1"	94	1670	1680

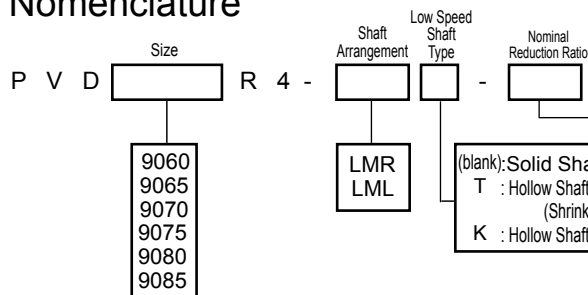
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9060	9065	9070	9075	9080	9085		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	829	875	947	1000	1055	1111	8	43	54
7.5	415	251	315	510	251	315	185	829	875	947	1000	1055	1111	8	57	77
11	480	251	350	575	251	350	188	829	875	947	1000	1055	1111	11	76	96
15	545	324	350	700	324	350	232	829	875	947	1000	1055	1111	11	131	175
18.5	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	213	258
22	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	213	258
30	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	224	280
37	715.5	394	450	930.5	394	450	297	859	875	977	1030	1085	1141	15	259	320
45	715.5	394	450	930.5	394	450	297	859	875	977	1030	1085	1141	15	259	320
55	769.5	484	550				412			977	1030	1085	1141	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9060		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9065			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



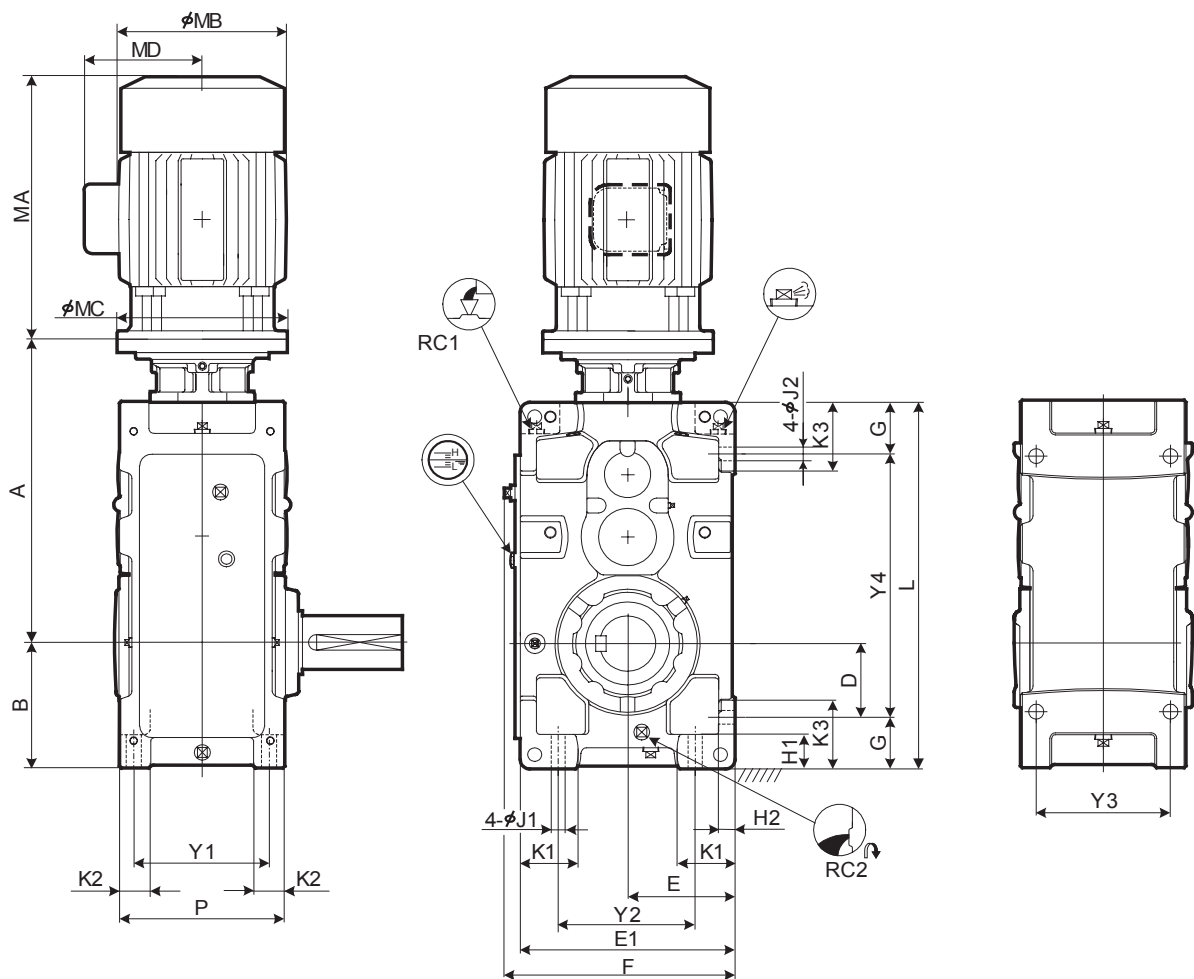
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Double Reduction Upright Mounting 9030 ▶ 9045

Size	A	B	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9030		200	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	See below	219	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040		235	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045		256	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg)※	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	14	240	255
9035	3/4"	3/4"	19	260	275
9040	1"	1"	24	340	350
9045	1"	1"	30	400	410

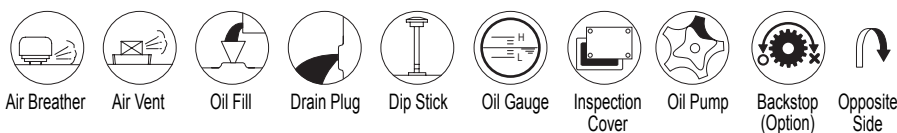
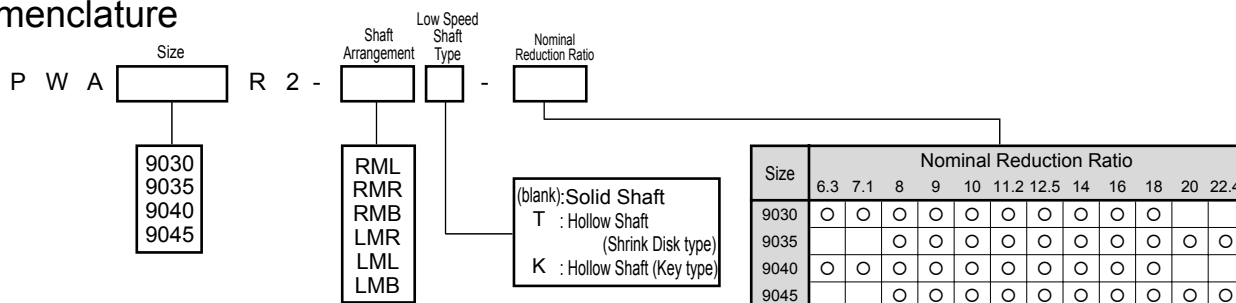
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9030	9035	9040	9045		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	540	571			11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	11	131	175
18.5	625	394	400	835	394	400	297	540	571	595	634	17	213	258
22	625	394	400	835	394	400	297	540	571	595	634	17	213	258
30	625	394	400	835	394	400	297	540	571	595	634	17	224	280
37	715.5	394	450	930.5	394	450	297	570	601	625	664	15	259	320
45	715.5	394	450	930.5	394	450	297	570	601	625	664	15	259	320
55	769.5	484	550				412		601	625	664	29	276	

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1										
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105

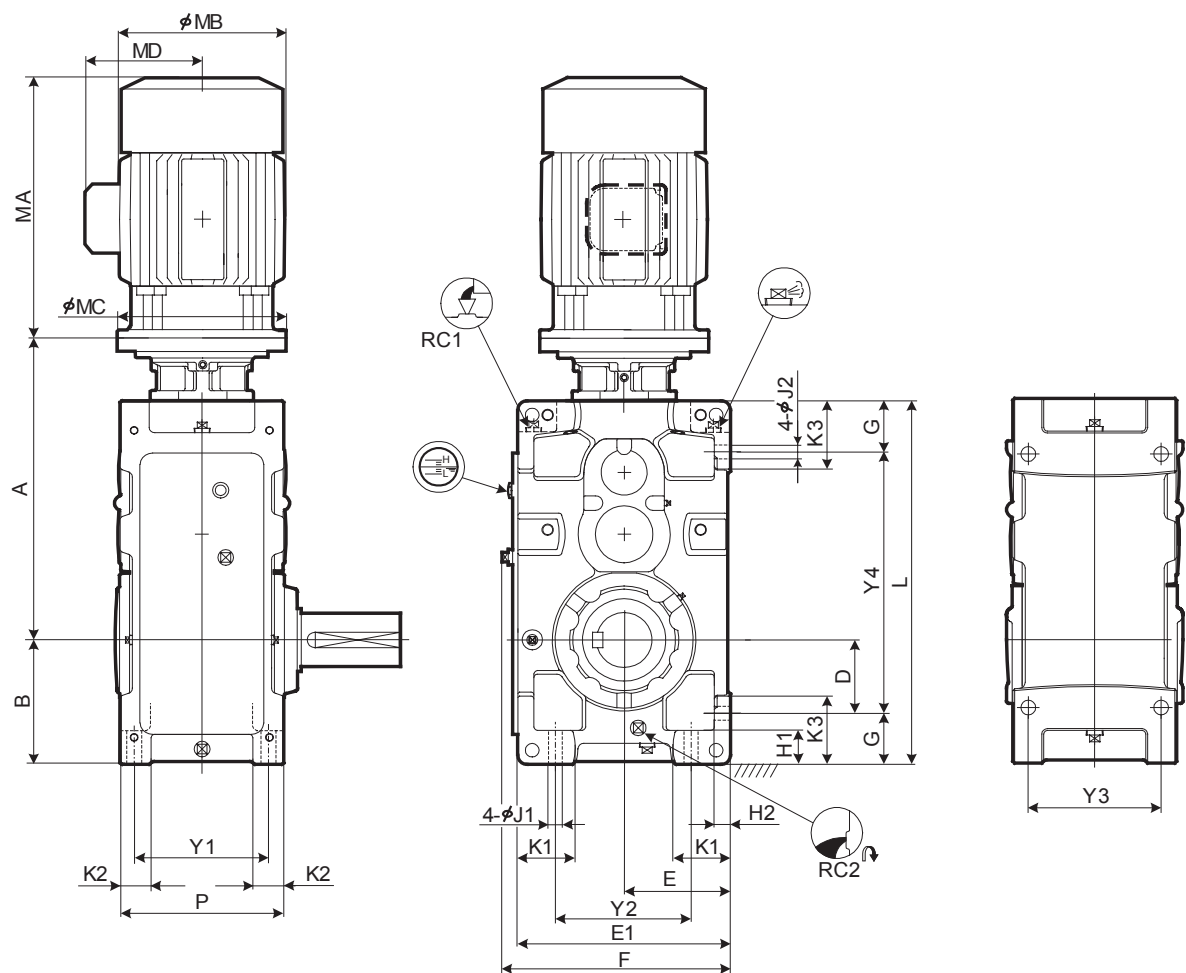
Unit: mm

Nomenclature



DIMENSIONS Right Angle Triple Reduction Upright Mounting 9030 ▶ 9055

Drive Unit
Selection
Tables
Dimension
Tables



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Refer to the Page D-18 for details.	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Upright Mounting 9030 ▶ 9055

Size	A	B	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9030		200	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035		219	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	See below	235	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045		256	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050		255	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055		286	171	245	490	520	115	75	32	28	28	130	60	150	845	345	285	350	285	615

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg) **	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	16	240	250
9035	3/4"	3/4"	21	260	270
9040	1"	1"	29	325	345
9045	1"	1"	36	385	405
9050	1"	1"	35	475	485
9055	1"	1"	46	535	545

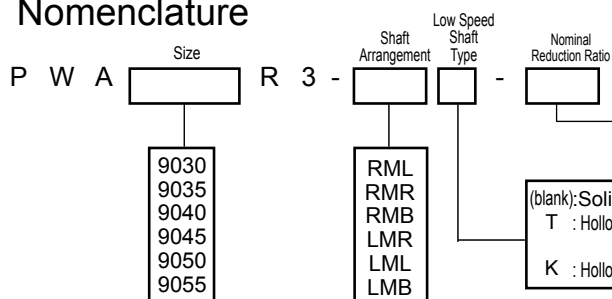
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	540	571	595	634			8	43	54
7.5	415	251	315	510	251	315	185	540	571	595	634	675	714	8	57	77
11	480	251	350	575	251	350	188	540	571	595	634	675	714	11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	675	714	11	131	175
18.5	625	394	400	835	394	400	297	540	571	595	634	675	714	17	213	258
22	625	394	400	835	394	400	297	540	571	595	634	675	714	17	213	258
30	625	394	400	835	394	400	297	540	571	595	634	675	714	17	224	280
37	715.5	394	450	930.5	394	450	297		601	625	664	705	744	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
55	769.5	484	550				412					705	744	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				X1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9030	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○	○	○		
9040	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9045				○	○	○	○	○	○	○	○	○	○	○		
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump



Backstop (Option)



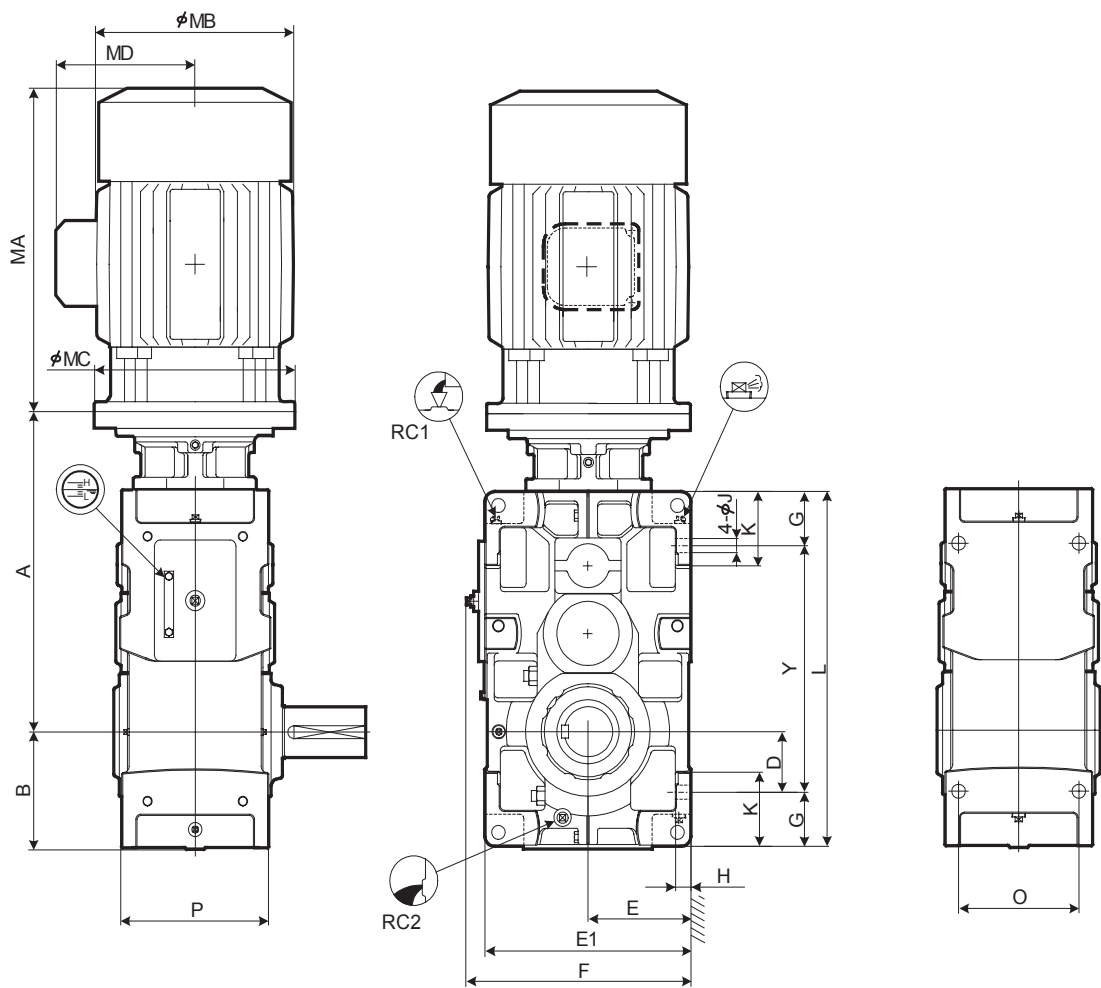
Opposite Side

DIMENSIONS Right Angle Triple Reduction Upright Mounting 9060 ▶ 9075

Drive Unit

Selection Tables

Dimension Tables



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Diagram of a solid shaft with dimensions: $U1$, $T1$, $L1$, $TU1$, $V1$, $X1$, $Z1$, $W1$.	Diagram of a hollow shaft (Shrink Disk Type) with dimensions: $U2$, $T2$, $TU2$, $V2$, $V3$. Refer to the Page D-18 for details.	Diagram of a hollow shaft (Key Type) with dimensions: $U4$, $T4$, $TU4$, $V4$, $V5$. Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Upright Mounting 9060 ▶ 9075

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9060		299	151	265	530	577	135	35	35	180	885	310	380	615
9065	See	338	190	300	600	647	135	35	35	180	975	310	380	700
9070	below	336	163	300	600	647	160	40	42	215	1020	350	430	700
9075		383	210	355	670	717	160	52	42	220	1120	350	430	800

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg)※	
				5.5-30kW	37-55kW
9060	1"	1"	56	680	690
9065	1"	1"	65	805	815
9070	1"	1"	83	950	960
9075	1"	1"	100	1200	1210

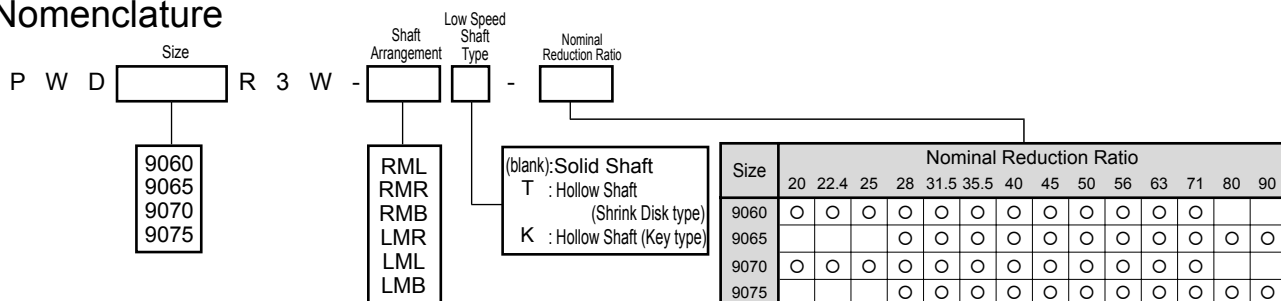
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange (kg)		Mass of Motor (kg)	
	Without Brake			With Brake			MD								
	MA	MB	MC	MA	MB	MC		9060	9065	9070	9075			Without Brake	With Brake
11	480	251	350	575	251	350	188	744	790			11		76	96
15	545	324	350	700	324	350	232	744	790			11		131	175
18.5	625	394	400	835	394	400	297	744	790	852	905	17		213	258
22	625	394	400	835	394	400	297	744	790	852	905	17		213	258
30	625	394	400	835	394	400	297	744	790	852	905	17		224	280
37	715.5	394	450	930.5	394	450	297	774	820	882	935	15		259	320
45	715.5	394	450	930.5	394	450	297	774	820	882	935	15		259	320
55	769.5	484	550				412	774	820	882	935	29		276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



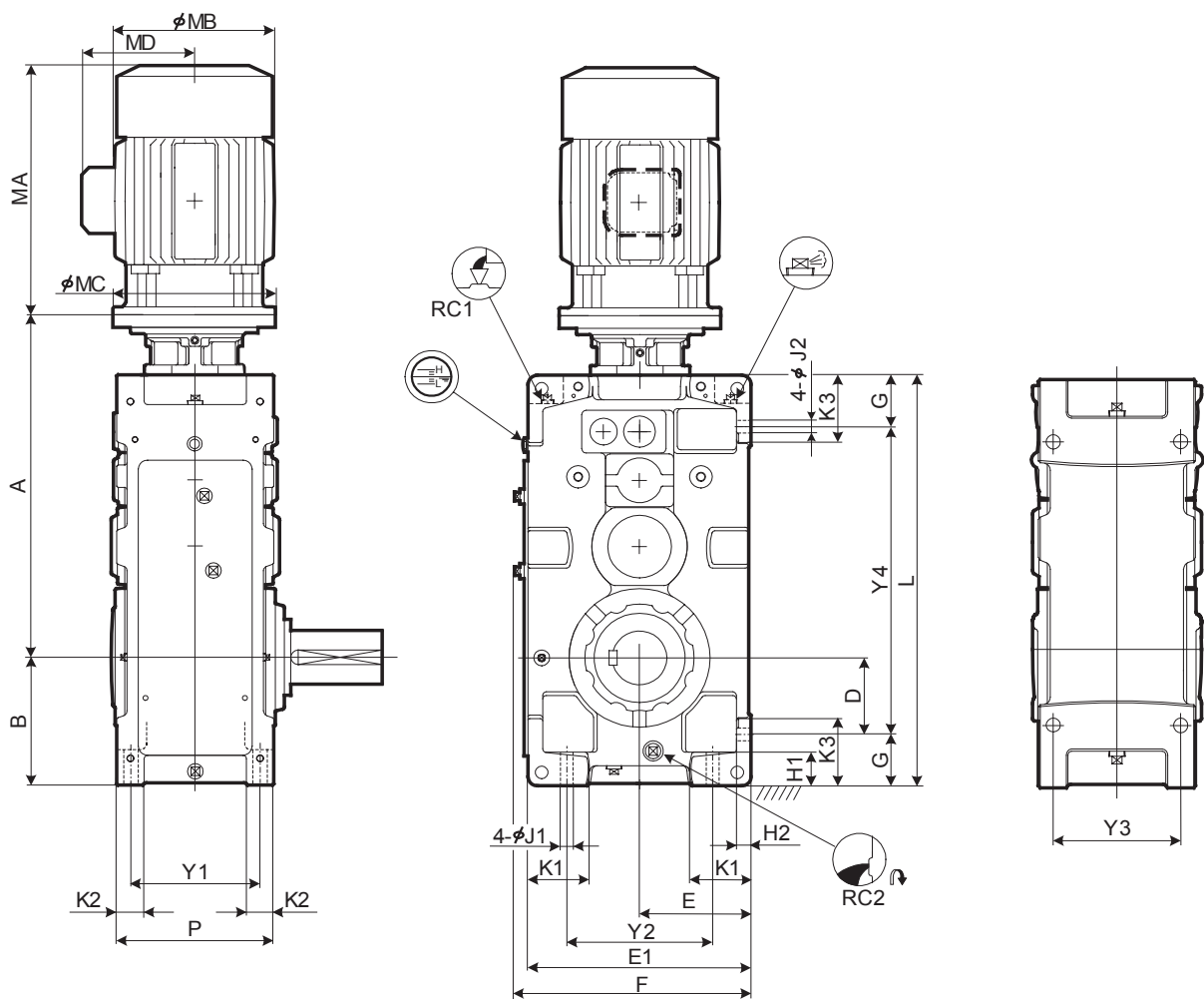
Oil Pump



Backstop (Option)



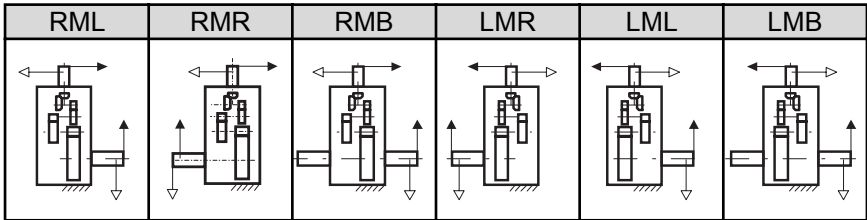
Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Upright Mounting 9040 ▶ 9055

PARAMAX Upright Monoblock Right Angle Quadruple Reduction

P W A 9040 9055 R 4

Size	A	B	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9040	See below	235	120	200	400	430	115	75	30	28	28	100	60	150	759	315	255	260	255	529
9045		256	141	220	440	470	115	75	30	28	28	120	60	150	819	315	255	300	255	589
9050		255	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	285	280	285	615
9055		286	171	245	490	520	115	75	32	28	28	130	60	150	918	345	285	350	285	688

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg) **	
				5.5-30kW	37-55kW
9040	1"	1"	35	355	365
9045	1"	1"	43	425	435
9050	1"	1"	46	490	500
9055	1"	1"	59	550	560

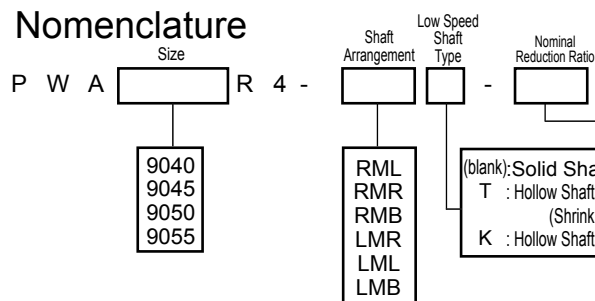
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
5.5	382	212	315	454	212	315	144	674	713	743	782	8	43	54
7.5	415	251	315	510	251	315	185	674	713	743	782	8	57	77
11	480	251	350	575	251	350	188	674	713	743	782	11	76	96
15	545	324	350	700	324	350	232	674	713	743	782	11	131	175
18.5	625	394	400	835	394	400	297	674	713	743	782	17	213	258
22	625	394	400	835	394	400	297	674	713	743	782	17	213	258
30	625	394	400	835	394	400	297			743	782	17	224	280

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450			
9040	○	○	○	○	○	○													
9045				○	○	○	○	○											
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



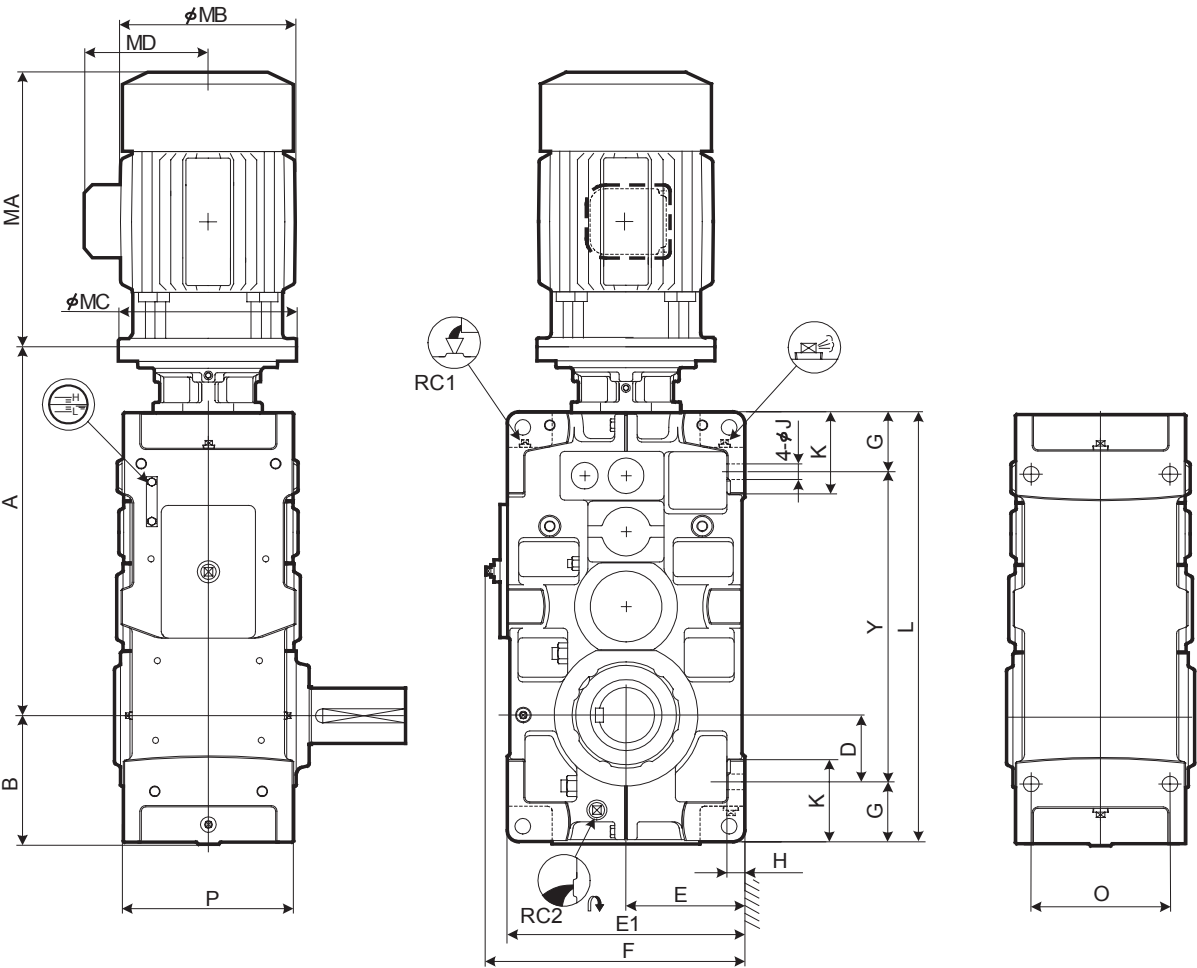
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Diagram of a solid shaft with dimensions: $U1$, $T1$, $L1$, $TU1$, $\phi V1$, $X1$, $Z1$, $W1$.	Diagram of a hollow shaft (shrink disk type) with dimensions: $U2$, $T2$, $TU2$, $\phi V2$, $\phi V3$. Refer to the Page D-18 for details.	Diagram of a hollow shaft (key type) with dimensions: $U4$, $T4$, $TU4$, $\phi V4$, $\phi V5$. Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Upright Mounting 9060 ▶ 9085

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9060	299	151	265	530	577	135	35	35	180	970	310	380	700	
9065	338	190	300	600	648	135	35	35	180	1055	310	380	785	
9070	See below	336	163	300	600	648	160	40	42	215	1115	350	430	795
9075		383	210	335	670	717	160	52	42	220	1215	350	430	895
9080		378	205	335	670	717	160	52	42	220	1275	380	460	955
9085		422	249	375	750	797	160	52	42	220	1375	380	460	1055

Size	RC1	RC2	Oil Qty. (L)	Wt. (kg) *	
				5.5-30kW	37-55kW
9060	1"	1"	68	700	710
9065	1"	1"	85	855	865
9070	1"	1"	107	990	1000
9075	1"	1"	122	1210	1220
9080	1"	1"	128	1410	1420
9085	1"	1"	174	1670	1680

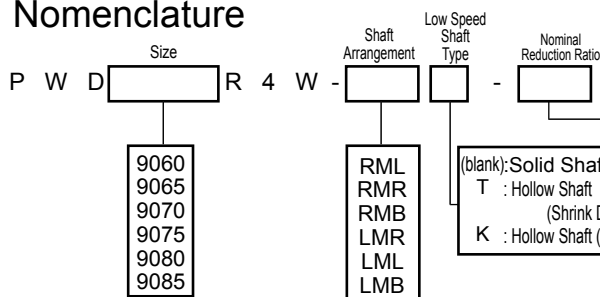
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			Brake			MD	9060	9065	9070	9075	9080	9085		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	829	875	947	1000	1055	1111	8	43	54
7.5	415	251	315	510	251	315	185	829	875	947	1000	1055	1111	8	57	77
11	480	251	350	575	251	350	188	829	875	947	1000	1055	1111	11	76	96
15	545	324	350	700	324	350	232	829	875	947	1000	1055	1111	11	131	175
18.5	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	213	258
22	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	213	258
30	625	394	400	835	394	400	297	829	875	947	1000	1055	1111	17	224	280
37	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
45	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
55	769.5	484	550				412			977	1030	1085	1141	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9060		○	○	○	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○		○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



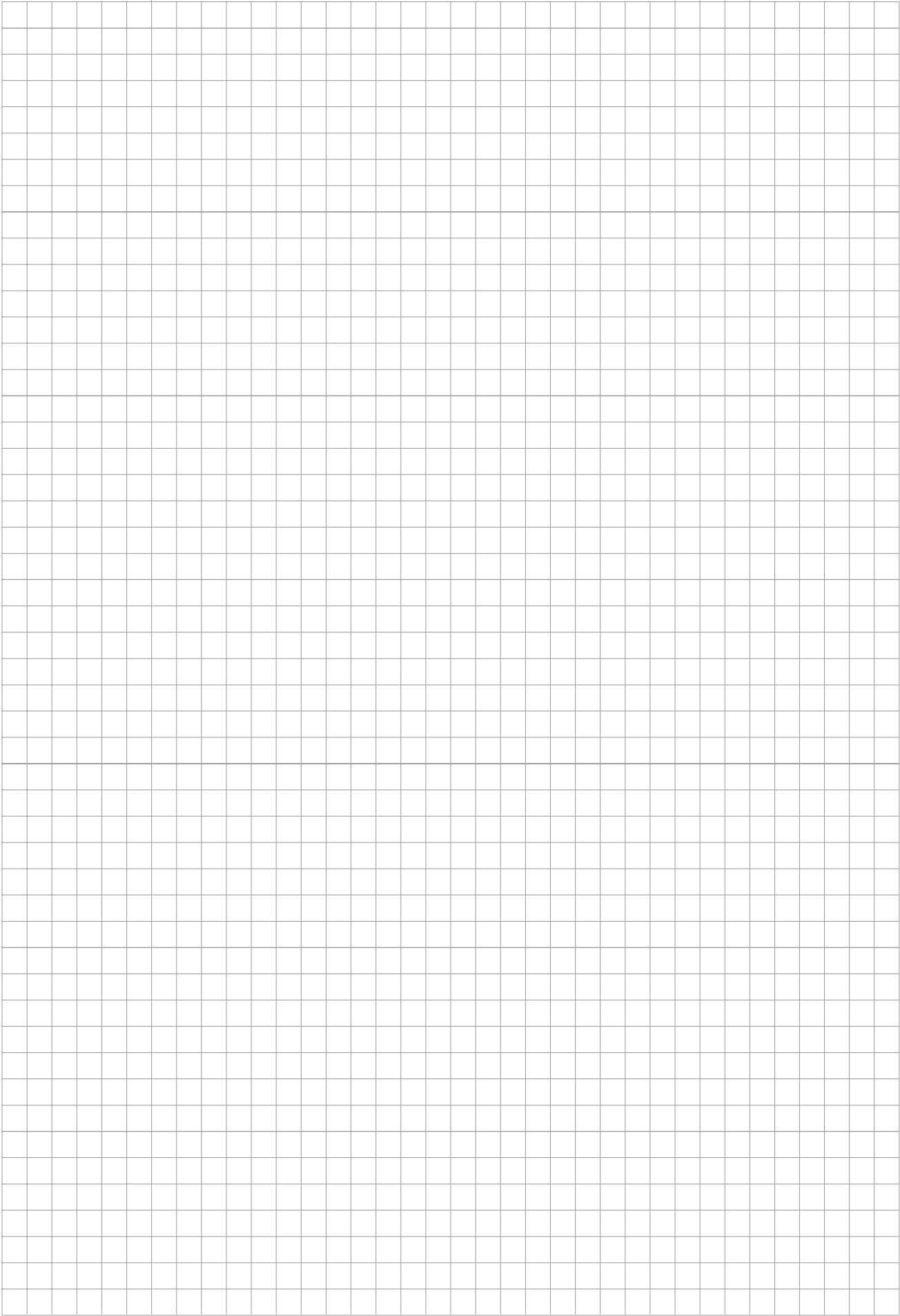
Oil Pump



Backstop (Option)



Opposite Side





B

<Drive Unit Parallel Shaft Vertical Mounting>

Drive Unit: Parallel Shaft

Selection Tables	...	B- 74
Allowable Radial		
and Axial Loads	...	B- 98
Dimension Tables	...	B-102
Actual Reduction Ratio	...	B-111

SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Parallel Shaft	1500r/min	40 Dgree

kW	SF	Low Speed Shaft Speed (r/min)																		
		238	211	188	168	150	134	120	107	94	83	75	67	60	54	48	42	38	33	30
		Nominal Reduction Ratio																		
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50
5.5kW	1								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9030
	1.25								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9030
	4P								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9030
	2								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9030
7.5kW	1						9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9030
	1.25						9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9030
	4P						9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9030
	2						9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
11kW	1		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9030
	1.25		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9030
	4P		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
	2		9015	9015	9015	9015	9015	9015	9015	9015	9025	9015	9025	9025	9025	9030	9030	9030	9030	9035
15kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030
	4P	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035
	2	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9035	9035	9035	9040
18.5kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035
	4P	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035	9040
	2	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9030	9035	9035	9040	9045	9045
22kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035
	1.25	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035	9040
	4P	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035	9035	9040	9040
	2	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9030	9035	9035	9040	9045	9045	9045	9050
30kW	1	9025	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035	9035	9035	9035	9035	9040
	1.25	9025	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035	9035	9035	9040	9045	9045
	4P	9025	9025	9025	9025	9025	9025	9025	9030	9030	9030	9030	9030	9035	9035	9040	9045	9045	9050	9050
	2	9025	9025	9025	9025	9025	9030	9030	9030	9030	9030	9035	9035	9040	9040	9045	9045	9050	9055	9055
37kW	1	9025	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9040	9040	9040	9045	9045
	1.25	9025	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9040	9040	9045	9045	9050
	4P	9025	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9045	9045	9045	9050	9055	9055
	2	9025	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060
45kW	1	9040	9040	9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9045	9045	9055
	1.25	9040	9040	9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9050	9055	9055
	4P	9040	9040	9035	9035	9035	9035	9035	9035	9035	9040	9045	9045	9045	9045	9045	9050	9055	9055	9060
	2	9040	9040	9035	9035	9035	9035	9035	9040	9045	9045	9050	9050	9055	9055	9060	9060	9070	9070	
55kW	1	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055	9055	9055
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055	9055	9060
	4P	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055	9065	9060
	2	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055	9055	9055	9060	9065	9065	9065	9065
75kW	1	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065	9065	9065
	1.25	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065	9065	9065
	4P	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065	9070	9070
	2	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9060	9065	9065	9065	9070	9070	9075	9075
90kW	1			9055	9055	9060	9055	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070	9070	9075
	1.25			9055	9055	9060	9055	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070	9070	9075
	4P			9055	9055	9060	9055	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070	9075	9075
	2			9055	9055	9060	9055	9060	9060	9060	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080
110kW	1				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075	9075
	1.25				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075	9075
	4P				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075	9075
	2				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9080	9085	9085

Size of Reducer



SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)					SF	kW
27	24	21	19	17		
Nominal Reduction Ratio						
56	63	71	80	90		
9030	9030	9030	9035	9035	1	
9030	9030	9030	9035	9035	1.25	5.5kW
9030	9030	9030	9035	9035	1.5	4P
9030	9030	9030	9035	9035	2	
9030	9030	9030	9035	9035	1	
9030	9030	9030	9035	9035	1.25	7.5kW
9030	9030	9030	9035	9035	1.5	4P
9030	9030	9035	9035	9035	2	
9030	9030	9030	9035	9035	1	
9030	9030	9030	9035	9035	1.25	11kW
9030	9030	9035	9035	9045	1.5	4P
9035	9040	9040	9045	9045	2	
9030	9030	9035	9035	9035	1	
9035	9035	9035	9045	9045	1.25	15kW
9035	9040	9045	9045	9045	1.5	4P
9045	9045	9050	9055	9055	2	
9030	9035	9035	9045	9045	1	
9035	9040	9045	9045	9045	1.25	18.5kW
9045	9045	9045	9055	9055	1.5	4P
9050	9050	9055	9055	9065	2	
9035	9040	9040	9045	9045	1	
9040	9045	9045	9055	9055	1.25	22kW
9045	9045	9055	9055	9055	1.5	4P
9055	9055	9055	9065	9065	2	
9045	9045	9050	9055	9055	1	
9050	9050	9055	9055	9065	1.25	30kW
9055	9055	9060	9065	9065	1.5	4P
9060	9060	9065	9065	9075	2	
9050	9050	9055	9055	9065	1	
9055	9055	9060	9065	9065	1.25	37kW
9060	9060	9065	9065	9075	1.5	4P
9065	9065	9070	9075	9075	2	
9055	9055	9060	9065	9065	1	
9060	9060	9065	9065	9075	1.25	45kW
9065	9065	9065	9065	9075	1.5	4P
9070	9070	9075	9075	9085	2	
9060	9060	9065	9065	9075	1	
9065	9065	9065	9075	9075	1.25	55kW
9065	9065	9070	9075	9075	1.5	4P
9075	9075	9080	9085	9085	2	
9070	9070	9070	9075	9075	1	
9070	9070	9075	9075	9085	1.25	75kW
9075	9075	9080	9085	9085	1.5	4P
9080	9080	9085	9085	9085	2	
9075	9075	9075	9075	9085	1	
9075	9075	9080	9085	9085	1.25	90kW
9075	9080	9085	9085	9085	1.5	4P
9085	9085	9085	9085	9085	2	
9080	9085	9085	9085	9085	1	
9080	9085	9085	9085	9085	1.25	110kW
9085	9085	9085	9085	9085	1.5	4P
9085	9085	9085	9085	9085	2	

SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Parallel Shaft	1800r/min	40 Dgree

kW	SF	Low Speed Shaft Speed (r/min)																		
		286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51	45	40	36
		Nominal Reduction Ratio																		
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50
5.5kW	1											9015	9015	9015	9015	9015	9015	9015	9015	9030
	1.25											9015	9015	9015	9015	9015	9015	9015	9015	9030
	4P											9015	9015	9015	9015	9015	9015	9015	9015	9030
	2											9015	9015	9015	9015	9015	9015	9015	9015	9030
7.5kW	1								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9030
	1.25								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9030
	4P								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9030
	2								9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9030
11kW	1				9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9030
	1.25				9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9030
	4P				9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9030
	2				9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9035
15kW	1		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9030
	1.25		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
	4P		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030
	2		9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9035	9035
18.5kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9025	9030	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9030
	4P	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035
	2	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9035	9035	9040	9040
22kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9030	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035
	4P	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035	9040
	2	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9030	9035	9035	9040	9045	9045
30kW	1	9025	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9035	9035	9035	9035	9035	9035	9035	9035
	1.25	9025	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9035	9035	9035	9035	9035	9035	9040	9040
	4P	9025	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9035	9035	9035	9035	9035	9040	9045	9045
	2	9025	9025	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035	9035	9040	9040	9045	9045	9050	9050
37kW	1	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9040	9040	9040	9040
	1.25	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9040	9040	9045	9045
	4P	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9045	9045	9050	9050
	2	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9045	9045	9050	9050	9055	9055
45kW	1			9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9045	9045	9045
	1.25			9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9045	9050	9050
	4P			9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9050	9055	9055
	2			9035	9035	9035	9035	9035	9035	9035	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060
55kW	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055	9055
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055	9055
	4P	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055	9060
	2	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9050	9055	9055	9055	9060	9060	9065
75kW	1			9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065	9065	9065
	1.25			9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065	9065	9065
	4P			9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065	9065	9065
	2			9055	9055	9055	9055	9055	9055	9055	9055	9055	9060	9065	9065	9065	9065	9065	9070	9075
90kW	1				9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070	9070	9075
	1.25				9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070	9070	9075
	4P				9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070	9070	9075
	2				9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070	9075	9075
110kW	1				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075	9080
	1.25				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075	9080
	4P				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075	9080
	2				9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9080	9085

Size of Reducer



SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)					SF	kW
32	29	25	23	20		
Nominal Reduction Ratio						
56	63	71	80	90		
9030	9030	9030	9035	9035	1	5.5kW 4P
9030	9030	9030	9035	9035	1.25	
9030	9030	9030	9035	9035	1.5	
9030	9030	9030	9035	9035	2	
9030	9030	9030	9035	9035	1	7.5kW 4P
9030	9030	9030	9035	9035	1.25	
9030	9030	9030	9035	9035	1.5	
9030	9030	9035	9035	9035	2	
9030	9030	9030	9035	9035	1	11kW 4P
9030	9030	9030	9035	9035	1.25	
9030	9030	9030	9035	9035	1.5	
9030	9035	9035	9045	9045	2	
9030	9030	9030	9035	9035	1	15kW 4P
9030	9030	9035	9035	9035	1.25	
9035	9035	9035	9045	9045	1.5	
9040	9040	9045	9045	9055	2	
9030	9030	9035	9035	9035	1	18.5kW 4P
9035	9035	9035	9045	9045	1.25	
9035	9040	9045	9045	9045	1.5	
9045	9045	9050	9055	9055	2	
9030	9035	9035	9045	9045	1	22kW 4P
9035	9040	9045	9045	9045	1.25	
9040	9045	9045	9055	9055	1.5	
9050	9050	9055	9055	9065	2	
9040	9040	9045	9045	9055	1	30kW 4P
9045	9045	9050	9055	9055	1.25	
9050	9050	9055	9055	9065	1.5	
9055	9055	9060	9065	9065	2	
9045	9045	9050	9055	9055	1	37kW 4P
9050	9050	9055	9055	9065	1.25	
9055	9055	9060	9065	9065	1.5	
9060	9060	9065	9065	9075	2	
9050	9055	9055	9055	9065	1	45kW 4P
9055	9055	9060	9065	9065	1.25	
9060	9060	9065	9065	9075	1.5	
9065	9065	9070	9075	9075	2	
9055	9060	9060	9065	9065	1	55kW 4P
9060	9060	9065	9065	9075	1.25	
9065	9065	9065	9065	9075	1.5	
9070	9070	9075	9075	9085	2	
9070	9070	9070	9075	9075	1	75kW 4P
9070	9070	9070	9075	9075	1.25	
9070	9070	9075	9075	9085	1.5	
9075	9075	9080	9085	9085	2	
9075	9075	9075	9075	9075	1	90kW 4P
9075	9075	9075	9075	9085	1.25	
9075	9075	9080	9085	9085	1.5	
9080	9085	9085	9085	9085	2	
9080	9085	9085	9085	9085	1	110kW 4P
9080	9085	9085	9085	9085	1.25	
9080	9085	9085	9085	9085	1.5	
9085	9085	9085	9085	9085	2	

SELECTION Drive Unit Parallel Shaft 5.5kW, 7.5kW

5.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF				
107	490	50	4.74	129	409	42	5.63	9015	P2	14	B-102
93.8	560	57	4.70	113	467	48	5.63	9015	P2	16	B-102
83.3	630	64	3.83	100	525	54	4.60	9015	P2	18	B-102
75.0	700	72	4.01	90.0	584	60	4.80	9015	P3	20	B-106
67.0	784	80	3.27	80.4	654	67	3.90	9015	P3	22.4	B-106
60.0	875	89	3.23	72.0	730	74	3.89	9015	P3	25	B-106
53.6	980	100	2.63	64.3	817	83	3.16	9015	P3	28	B-106
			4.25				5.09	9025	P3	28	B-106
47.6	1100	113	2.56	57.1	919	94	3.07	9015	P3	31.5	B-106
			3.96				4.74	9025	P3	31.5	B-106
42.3	1240	127	2.09	50.7	1040	106	2.49	9015	P3	35.5	B-106
			3.25				3.89	9025	P3	35.5	B-106
37.5	1400	143	2.07	45.0	1170	119	2.47	9015	P3	40	B-106
			3.21				3.85	9025	P3	40	B-106
			4.63				5.45	9030	P3	40	B-106
33.3	1580	161	1.69	40.0	1310	134	2.01	9015	P3	45	B-106
			2.63				3.16	9025	P3	45	B-106
			4.16				5.00	9030	P3	45	B-106
30.0	1750	179	3.72	36.0	1460	149	4.47	9030	P3	50	B-106
			4.85				5.63	9035	P3	50	B-106
26.8	1960	200	3.36	32.1	1630	167	4.01	9030	P3	56	B-106
			4.41				5.29	9035	P3	56	B-106
23.8	2210	225	3.00	28.6	1840	188	3.58	9030	P3	63	B-106
			3.90				4.67	9035	P3	63	B-106
			4.92				5.81	9040	P3	63	B-106
21.1	2490	254	2.69	25.4	2070	212	3.21	9030	P3	71	B-106
			3.56				4.25	9035	P3	71	B-106
			4.03				4.83	9040	P3	71	B-106
18.8	2800	286	3.12	22.5	2330	238	3.74	9035	P3	80	B-106
16.7	3150	322	2.85	20.0	2630	268	3.41	9035	P3	90	B-106
			4.23				5.07	9045	P3	90	B-106

7.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF				
134	535	55	4.26	161	446	46	5.20	9015	P2	11.2	B-102
120	597	61	4.26	144	497	51	5.06	9015	P2	12.5	B-102
107	669	68	3.48	129	557	57	4.13	9015	P2	14	B-102
93.8	764	78	3.45	113	637	65	4.13	9015	P2	16	B-102
83.3	860	88	2.81	100	716	73	3.37	9015	P2	18	B-102
			4.53				5.46	9025	P2	18	B-102
75.0	955	98	2.94	90.0	796	81	3.52	9015	P3	20	B-106
			4.40				5.20	9025	P3	20	B-106
67.0	1070	109	2.40	80.4	891	91	2.86	9015	P3	22.4	B-106
			3.84				4.53	9025	P3	22.4	B-106
60.0	1190	122	2.37	72.0	995	102	2.85	9015	P3	25	B-106
			3.76				4.26	9025	P3	25	B-106
53.6	1340	137	1.93	64.3	1110	114	2.31	9015	P3	28	B-106
			3.11				3.73	9025	P3	28	B-106
			4.93				5.86	9030	P3	28	B-106
47.6	1500	154	1.88	57.1	1250	128	2.25	9015	P3	31.5	B-106
			2.90				3.48	9025	P3	31.5	B-106
			4.13				5.06	9030	P3	31.5	B-106
42.3	1700	173	1.53	50.7	1410	144	1.82	9015	P3	35.5	B-106
			2.38				2.85	9025	P3	35.5	B-106
			3.81				4.53	9030	P3	35.5	B-106

SELECTION Drive Unit Parallel Shaft 7.5kW, 11kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
37.5	1910	195	1.52	45.0	1590	163	1.81	9015	P3	40	B-106
			2.36				2.82	9025	P3	40	B-106
			3.40				4.00	9030	P3	40	B-106
			4.40				5.20	9035	P3	40	B-106
33.3	2150	219	1.24	40.0	1790	183	1.48	9015	P3	45	B-106
			1.93				2.31	9025	P3	45	B-106
			3.05				3.66	9030	P3	45	B-106
			4.00				4.80	9035	P3	45	B-106
			4.53				5.46	9040	P3	45	B-106
30.0	2390	244	2.73	36.0	1990	203	3.28	9030	P3	50	B-106
			3.56				4.13	9035	P3	50	B-106
			4.40				5.33	9040	P3	50	B-106
26.8	2670	273	2.46	32.1	2230	228	2.94	9030	P3	56	B-106
			3.24				3.88	9035	P3	56	B-106
			3.68				4.40	9040	P3	56	B-106
			4.88				5.84	9045	P3	56	B-106
23.8	3010	307	2.20	28.6	2510	256	2.62	9030	P3	63	B-106
			2.86				3.42	9035	P3	63	B-106
			3.61				4.26	9040	P3	63	B-106
			4.50				5.41	9045	P3	63	B-106
21.1	3390	346	1.97	25.4	2830	288	2.36	9030	P3	71	B-106
			2.61				3.11	9035	P3	71	B-106
			2.96				3.54	9040	P3	71	B-106
			3.86				4.62	9045	P3	71	B-106
			4.26				5.20	9050	P3	71	B-106
18.8	3820	390	2.29	22.5	3180	325	2.74	9035	P3	80	B-106
			3.65				4.38	9045	P3	80	B-106
16.7	4300	439	2.09	20.0	3580	366	2.50	9035	P3	90	B-106
			3.10				3.72	9045	P3	90	B-106
			4.53				5.33	9055	P3	90	B-106

11kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n ₁ r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
211	497	51	4.72	254	414	42	5.63	9015	P2	7.1	B-102
188	560	57	4.63	225	467	48	5.54	9015	P2	8	B-102
167	630	64	3.72	200	525	54	4.45	9015	P2	9	B-102
150	700	72	3.63	180	584	60	4.27	9015	P2	10	B-102
134	784	80	2.90	161	654	67	3.54	9015	P2	11.2	B-102
			4.81				5.81	9025	P2	11.2	B-102
120	875	89	2.90	144	730	74	3.45	9015	P2	12.5	B-102
			4.63				5.54	9025	P2	12.5	B-102
107	980	100	2.37	129	817	83	2.81	9015	P2	14	B-102
			3.81				4.54	9025	P2	14	B-102
93.8	1120	114	2.35	113	934	95	2.81	9015	P2	16	B-102
			3.81				4.54	9025	P2	16	B-102
83.3	1260	129	1.91	100	1050	107	2.30	9015	P2	18	B-102
			3.09				3.72	9025	P2	18	B-102
			4.90				5.90	9030	P2	18	B-102
75.0	1400	143	2.00	90.0	1170	119	2.40	9015	P3	20	B-106
			3.00				3.54	9025	P3	20	B-106
			4.63				5.54	9030	P3	20	B-106

SELECTION Drive Unit Parallel Shaft 11kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz							
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
67.0	1570	160	1.63	80.4	1310	133	1.95	9015	P3	22.4	B-106
			2.61				3.09	9025	P3	22.4	B-106
			4.18				5.00	9030	P3	22.4	B-106
60.0	1750	179	1.61	72.0	1460	149	1.94	9015	P3	25	B-106
			2.56				2.90	9025	P3	25	B-106
			3.72				4.45	9030	P3	25	B-106
			4.81				5.81	9035	P3	25	B-106
53.6	1960	200	1.31	64.3	1630	167	1.58	9015	P3	28	B-106
			2.12				2.54	9025	P3	28	B-106
			3.36				4.00	9030	P3	28	B-106
			4.36				5.27	9035	P3	28	B-106
			4.90				5.90	9040	P3	28	B-106
47.6	2210	225	1.28	57.1	1840	188	1.53	9015	P3	31.5	B-106
			1.98				2.37	9025	P3	31.5	B-106
			2.81				3.45	9030	P3	31.5	B-106
			3.81				4.63	9035	P3	31.5	B-106
			4.72				5.72	9040	P3	31.5	B-106
42.3	2490	254	1.04	50.7	2070	212	1.24	9015	P3	35.5	B-106
			1.62				1.94	9025	P3	35.5	B-106
			2.60				3.09	9030	P3	35.5	B-106
			3.54				4.18	9035	P3	35.5	B-106
			3.90				4.63	9040	P3	35.5	B-106
37.5	2800	286	1.03	45.0	2330	238	1.23	9015	P3	40	B-106
			1.60				1.92	9025	P3	40	B-106
			2.31				2.72	9030	P3	40	B-106
			3.00				3.54	9035	P3	40	B-106
			3.81				4.54	9040	P3	40	B-106
			4.85				5.82	9045	P3	40	B-106
33.3	3150	322	0.84	40.0	2630	268	1.00	9015	P3	45	B-106
			1.31				1.58	9025	P3	45	B-106
			2.08				2.50	9030	P3	45	B-106
			2.72				3.27	9035	P3	45	B-106
			3.09				3.72	9040	P3	45	B-106
			4.12				4.94	9045	P3	45	B-106
			4.72				5.63	9050	P3	45	B-106
30.0	3500	358	1.86	36.0	2920	298	2.23	9030	P3	50	B-106
			2.42				2.81	9035	P3	50	B-106
			3.00				3.63	9040	P3	50	B-106
			3.93				4.71	9045	P3	50	B-106
			4.63				5.54	9050	P3	50	B-106
26.8	3920	400	1.68	32.1	3270	334	2.00	9030	P3	56	B-106
			2.20				2.64	9035	P3	56	B-106
			2.50				3.00	9040	P3	56	B-106
			3.32				3.98	9045	P3	56	B-106
			3.81				4.54	9050	P3	56	B-106
			4.90				5.90	9055	P3	56	B-106
23.8	4410	450	1.50	28.6	3680	375	1.79	9030	P3	63	B-106
			1.95				2.33	9035	P3	63	B-106
			2.46				2.90	9040	P3	63	B-106
			3.07				3.69	9045	P3	63	B-106
			3.54				4.27	9050	P3	63	B-106
			5.00				6.00	9055	P3	63	B-106
21.1	4970	508	1.34	25.4	4140	423	1.60	9030	P3	71	B-106
			1.78				2.12	9035	P3	71	B-106
			2.01				2.41	9040	P3	71	B-106
			2.63				3.15	9045	P3	71	B-106
			2.90				3.54	9050	P3	71	B-106
			4.00				4.81	9055	P3	71	B-106
			4.54				5.45	9060	P3	71	B-108
18.8	5600	572	1.56	22.5	4670	477	1.87	9035	P3	80	B-106
			2.49				2.99	9045	P3	80	B-106
			3.81				4.54	9055	P3	80	B-106
16.7	6300	644	1.42	20.0	5250	536	1.70	9035	P3	90	B-106
			2.11				2.53	9045	P3	90	B-106
			3.09				3.63	9055	P3	90	B-106
			4.81				5.76	9065	P3	90	B-106

SELECTION Drive Unit Parallel Shaft 15kW

15kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF				
238	602	61	4.26	286	501	51	5.06	9015	P2	6.3	B-102
211	678	69	3.46	254	565	58	4.13	9015	P2	7.1	B-102
188	764	78	3.40	225	637	65	4.06	9015	P2	8	B-102
167	860	88	2.73	200	716	73	3.26	9015	P2	9	B-102
			4.53				5.40	9025	P2	9	B-102
150	955	98	2.66	180	796	81	3.13	9015	P2	10	B-102
			4.33				5.20	9025	P2	10	B-102
134	1070	109	2.13	161	891	91	2.60	9015	P2	11.2	B-102
			3.53				4.26	9025	P2	11.2	B-102
120	1190	122	2.13	144	995	102	2.53	9015	P2	12.5	B-102
			3.40				4.06	9025	P2	12.5	B-102
			5.00				5.93	9030	P2	12.5	B-102
107	1340	137	1.74	129	1110	114	2.06	9015	P2	14	B-102
			2.80				3.33	9025	P2	14	B-102
			4.46				5.40	9030	P2	14	B-102
93.8	1530	156	1.72	113	1270	130	2.06	9015	P2	16	B-102
			2.80				3.33	9025	P2	16	B-102
			4.00				4.80	9030	P2	16	B-102
83.3	1720	176	1.40	100	1430	146	1.68	9015	P2	18	B-102
			2.26				2.73	9025	P2	18	B-102
			3.60				4.33	9030	P2	18	B-102
			4.73				5.66	9035	P2	18	B-102
75.0	1910	195	1.47	90.0	1590	163	1.76	9015	P3	20	B-106
			2.20				2.60	9025	P3	20	B-106
			3.40				4.06	9030	P3	20	B-106
			4.20				5.00	9035	P2	20	B-102
67.0	2140	218	1.20	80.4	1780	182	1.43	9015	P3	22.4	B-106
			1.92				2.26	9025	P3	22.4	B-106
			3.06				3.66	9030	P3	22.4	B-106
			3.80				4.53	9035	P2	22.4	B-102
			4.46				5.33	9040	P3	22.4	B-106
4.55	5.44	9045	P3	22.4	B-106						
60.0	2390	244	1.18	72.0	1990	203	1.42	9015	P3	25	B-106
			1.88				2.13	9025	P3	25	B-106
			2.73				3.26	9030	P3	25	B-106
			3.53				4.26	9035	P3	25	B-106
			4.40				5.26	9040	P3	25	B-106
53.6	2670	273	0.96	64.3	2230	228	1.15	9015	P3	28	B-106
			1.55				1.86	9025	P3	28	B-106
			2.46				2.93	9030	P3	28	B-106
			3.20				3.86	9035	P3	28	B-106
			3.60				4.33	9040	P3	28	B-106
4.72	5.64	9045	P3	28	B-106						
47.6	3010	307	0.94	57.1	2510	256	1.12	9015	P3	31.5	B-106
			1.45				1.74	9025	P3	31.5	B-106
			2.06				2.53	9030	P3	31.5	B-106
			2.08				3.40	9035	P3	31.5	B-106
			3.46				4.20	9040	P3	31.5	B-106
4.53	5.44	9045	P3	31.5	B-106						
42.3	3390	346	1.19	50.7	2830	288	1.42	9025	P3	35.5	B-106
			1.90				2.26	9030	P3	35.5	B-106
			2.60				3.06	9035	P3	35.5	B-106
			2.86				3.40	9040	P3	35.5	B-106
			3.80				4.55	9045	P3	35.5	B-106
4.53	5.40	9050	P3	35.5	B-106						
37.5	3820	390	1.18	45.0	3180	325	1.41	9025	P3	40	B-106
			1.70				2.00	9030	P3	40	B-106
			2.20				2.60	9035	P3	40	B-106
			2.80				3.33	9040	P3	40	B-106
			3.56				4.27	9045	P3	40	B-106
4.20	5.00	9050	P3	40	B-106						

SELECTION Drive Unit Parallel Shaft 15kW, 18.5kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
33.3	4300	439	0.96	40.0	3580	366	1.15	9025	P3	45	B-106
			1.52				1.83	9030	P3	45	B-106
			2.00				2.40	9035	P3	45	B-106
			2.26				2.73	9040	P3	45	B-106
			3.02				3.62	9045	P3	45	B-106
			3.46				4.13	9050	P3	45	B-106
			4.73				5.66	9055	P3	45	B-106
30.0	4780	488	1.36	36.0	3980	406	1.64	9030	P3	50	B-106
			1.78				2.06	9035	P3	50	B-106
			2.20				2.66	9040	P3	50	B-106
			2.88				3.46	9045	P3	50	B-106
			3.40				4.06	9050	P3	50	B-106
			4.46				5.40	9055	P3	50	B-106
26.8	5350	546	1.23	32.1	4460	455	1.47	9030	P3	56	B-106
			1.62				1.94	9035	P3	56	B-106
			1.84				2.20	9040	P3	56	B-106
			2.44				2.92	9045	P3	56	B-106
			2.80				3.33	9050	P3	56	B-106
			3.60				4.33	9055	P3	56	B-106
			4.40				5.26	9060	P3	56	B-108
23.8	6020	614	1.10	28.6	5010	512	1.31	9030	P3	63	B-106
			1.43				1.71	9035	P3	63	B-106
			1.80				2.13	9040	P3	63	B-106
			2.25				2.70	9045	P3	63	B-106
			2.60				3.13	9050	P3	63	B-106
			3.66				4.40	9055	P3	63	B-106
			4.26				5.13	9060	P3	63	B-108
21.1	6780	692	0.98	25.4	5650	577	1.18	9030	P3	71	B-106
			1.30				1.55	9035	P3	71	B-106
			1.48				1.77	9040	P3	71	B-106
			1.93				2.31	9045	P3	71	B-106
			2.13				2.60	9050	P3	71	B-106
			2.93				3.53	9055	P3	71	B-106
			3.33				4.00	9060	P3	71	B-108
18.8	7640	780	4.61				5.52	9065	P3	71	B-108
			1.14	22.5	6370	650	1.37	9035	P3	80	B-106
			1.82				2.19	9045	P3	80	B-106
			2.80				3.33	9055	P3	80	B-106
			4.58				5.65	9065	P3	80	B-108
			1.04				1.25	9035	P3	90	B-106
			1.55				1.86	9045	P3	90	B-106
			2.26				2.66	9055	P3	90	B-106
16.7	8600	878	3.53				4.22	9065	P3	90	B-108

18.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n ₁ r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
238	742	76	3.45	286	618	63	4.10	9015	P2	6.3	B-102
211	836	85	2.81	254	697	71	3.35	9015	P2	7.1	B-102
			4.48				5.40	9025	P2	7.1	B-102
188	942	96	2.75	225	785	80	3.29	9015	P2	8	B-102
			4.48				5.35	9025	P2	8	B-102
167	1060	108	2.21	200	883	90	2.64	9015	P2	9	B-102
			3.67				4.37	9025	P2	9	B-102
150	1180	120	2.16	180	982	100	2.54	9015	P2	10	B-102
			3.51				4.21	9025	P2	10	B-102
134	1320	135	1.72	161	1100	112	2.10	9015	P2	11.2	B-102
			2.86				3.45	9025	P2	11.2	B-102
			4.64				5.56	9030	P2	11.2	B-102

SELECTION Drive Unit Parallel Shaft 18.5kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
107	1650	168	1.41	129	1370	140	1.67	9015	P2	14	B-102
			2.27				2.70	9025	P2	14	B-102
			3.62				4.37	9030	P2	14	B-102
			4.91				5.89	9035	P2	14	B-102
93.8	1880	192	1.40	113	1570	160	1.67	9015	P2	16	B-102
			2.27				2.70	9025	P2	16	B-102
			3.24				3.89	9030	P2	16	B-102
			4.21				5.08	9035	P2	16	B-102
83.3	2120	216	1.14	100	1770	180	1.36	9015	P2	18	B-102
			1.83				2.21	9025	P2	18	B-102
			2.91				3.51	9030	P2	18	B-102
			3.83				4.59	9035	P2	18	B-102
75.0	2360	241	4.32	90.0	1960	200	5.13	9040	P2	18	B-102
			1.78				2.10	9025	P3	20	B-106
			2.75				3.29	9030	P3	20	B-106
			3.40				4.05	9035	P2	20	B-102
67.0	2640	269	4.43	80.4	2200	224	5.29	9040	P3	20	B-106
			1.55				1.83	9025	P3	22.4	B-106
			2.48				2.97	9030	P3	22.4	B-106
			3.08				3.67	9035	P2	22.4	B-102
60.0	2940	301	3.62	72.0	2450	251	4.32	9040	P3	22.4	B-106
			4.55				5.44	9045	P3	22.4	B-106
			1.52				1.72	9025	P3	25	B-106
			2.21				2.64	9030	P3	25	B-106
53.6	3300	337	2.86	64.3	2750	281	3.45	9035	P3	25	B-106
			3.56				4.27	9040	P3	25	B-106
			4.53				5.43	9045	P3	25	B-106
			1.26				1.51	9025	P3	28	B-106
47.6	3710	379	2.00	57.1	3090	316	2.37	9030	P3	28	B-106
			2.59				3.13	9035	P3	28	B-106
			2.91				3.51	9040	P3	28	B-106
			3.82				4.57	9045	P3	28	B-106
42.3	4180	427	4.37	50.7	3480	356	5.24	9050	P3	28	B-106
			1.17				1.41	9025	P3	31.5	B-106
			1.67				2.05	9030	P3	31.5	B-106
			2.27				2.75	9035	P3	31.5	B-106
37.5	4710	481	2.81	45.0	3930	401	3.40	9040	P3	31.5	B-106
			3.67				4.41	9045	P3	31.5	B-106
			4.43				5.29	9050	P3	31.5	B-106
			0.96				1.15	9025	P3	35.5	B-106
33.3	5300	541	1.54	40.0	4420	451	1.83	9030	P3	35.5	B-106
			2.10				2.48	9035	P3	35.5	B-106
			2.32				2.75	9040	P3	35.5	B-106
			3.08				3.69	9045	P3	35.5	B-106
30.0	5890	601	3.67	36.0	4910	501	4.37	9050	P3	35.5	B-106
			4.59				5.45	9055	P3	35.5	B-106
			0.95				1.14	9025	P3	40	B-106
			1.37				1.62	9030	P3	40	B-106
			1.78				2.10	9035	P3	40	B-106
			2.27				2.70	9040	P3	40	B-106
			2.88				3.46	9045	P3	40	B-106
			3.40				4.05	9050	P3	40	B-106
			4.75				5.67	9055	P3	40	B-106
			1.23				1.48	9030	P3	45	B-106
			1.62				1.94	9035	P3	45	B-106
			1.83				2.21	9040	P3	45	B-106
			2.45				2.94	9045	P3	45	B-106
			2.81				3.35	9050	P3	45	B-106
			3.83				4.59	9055	P3	45	B-106
			4.43				5.29	9060	P3	45	B-108
			1.10				1.32	9030	P3	50	B-106
			1.44				1.67	9035	P3	50	B-106
			1.78				2.16	9040	P3	50	B-106
			2.34				2.80	9045	P3	50	B-106
			2.75				3.29	9050	P3	50	B-106
			3.62				4.37	9055	P3	50	B-106
			4.54				5.40	9060	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 18.5kW, 22kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (T _{out}) Nm	kgf m			Output Torque (T _{out}) Nm	kgf m					
26.8	6600	673	1.00	32.1	5500	561	1.19	9030	P3	56	B-106
			1.31				1.57	9035	P3	56	B-106
			1.49				1.78	9040	P3	56	B-106
			1.97				2.36	9045	P3	56	B-106
			2.27				2.70	9050	P3	56	B-106
			2.91				3.51	9055	P3	56	B-106
			3.56				4.27	9060	P3	56	B-108
			4.64				5.56	9065	P3	56	B-108
23.8	7420	758	0.89	28.6	6180	631	1.06	9030	P3	63	B-106
			1.16				1.38	9035	P3	63	B-106
			1.46				1.72	9040	P3	63	B-106
			1.82				2.19	9045	P3	63	B-106
			2.10				2.54	9050	P3	63	B-106
			2.97				3.56	9055	P3	63	B-106
			3.45				4.16	9060	P3	63	B-108
			4.80				5.76	9065	P3	63	B-108
21.1	8360	854	1.05	25.4	6970	711	1.26	9035	P3	71	B-106
			1.20				1.43	9040	P3	71	B-106
			1.56				1.87	9045	P3	71	B-106
			1.72				2.10	9050	P3	71	B-106
			2.37				2.86	9055	P3	71	B-106
			2.70				3.24	9060	P3	71	B-108
			3.74				4.47	9065	P3	71	B-106
			4.48				5.35	9070	P3	71	B-108
18.8	9420	962	0.92	22.5	7850	802	1.11	9035	P3	80	B-106
			1.48				1.77	9045	P3	80	B-106
			2.27				2.70	9055	P3	80	B-106
			3.71				4.45	9065	P3	80	B-108
16.7	10600	1080	0.84	20.0	8830	902	1.01	9035	P3	90	B-106
			1.25				1.50	9045	P3	90	B-106
			1.83				2.16	9055	P3	90	B-106
			2.86				3.42	9065	P3	90	B-108
			4.75				5.67	9075	P3	90	B-108

22kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (T _{out}) Nm	kgf m			Output Torque (T _{out}) Nm	kgf m					
238	882	90	2.90	286	735	75	3.45	9015	P2	6.3	B-102
			4.63				5.54	9025	P2	6.3	B-102
211	994	102	2.36	254	829	85	2.81	9015	P2	7.1	B-102
			3.77				4.54	9025	P2	7.1	B-102
188	1120	114	2.31	225	934	95	2.77	9015	P2	8	B-102
			3.77				4.50	9025	P2	8	B-102
167	1260	129	1.86	200	1050	107	2.22	9015	P2	9	B-102
			3.09				3.68	9025	P2	9	B-102
			4.77				5.72	9030	P3	9	B-102
150	1400	143	1.81	180	1170	119	2.13	9015	P2	10	B-102
			2.95				3.54	9025	P2	10	B-102
			4.36				5.22	9030	P3	10	B-102
134	1570	160	1.45	161	1310	133	1.77	9015	P2	11.2	B-102
			2.40				2.90	9025	P2	11.2	B-102
			3.90				4.68	9030	P2	11.2	B-102
120	1750	179	1.45	144	1460	149	1.72	9015	P2	12.5	B-102
			2.31				2.77	9025	P2	12.5	B-102
			3.40				4.04	9030	P2	12.5	B-102
			4.54				5.45	9035	P2	12.5	B-102
107	1960	200	1.18	129	1630	167	1.40	9015	P2	14	B-102
			1.90				2.27	9025	P2	14	B-102
			3.04				3.68	9030	P2	14	B-102
			4.13				4.95	6035	P2	14	B-102
			4.50				5.36	9040	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 22kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
93.8	2240	229	1.17	113	1870	191	1.40	9015	P2	16	B-102
			1.90				2.27	9025	P2	16	B-102
			2.72				3.27	9030	P2	16	B-102
			3.54				4.27	9035	P2	16	B-102
			4.40				5.27	9040	P2	16	B-102
83.3	2520	257	1.54	100	2100	215	1.86	9025	P2	18	B-102
			2.45				2.95	9030	P2	18	B-102
			3.22				3.86	9035	P2	18	B-102
			3.63				4.31	9040	P2	18	B-102
			4.75				5.67	9045	P2	18	B-102
75.0	2800	286	1.50	90.0	2330	238	1.77	9025	P3	20	B-106
			2.31				2.77	9030	P3	20	B-106
			2.86				3.40	9035	P2	20	B-102
			3.72				4.45	9040	P3	20	B-106
			4.68				5.60	9045	P2	20	B-102
67.0	3140	320	1.30	80.4	2610	267	1.54	9025	P3	22.4	B-106
			2.09				2.50	9030	P3	22.4	B-106
			2.59				3.09	9035	P2	22.4	B-102
			3.04				3.63	9040	P3	22.4	B-106
			3.82				4.57	9045	P2	22.4	B-102
			4.81				5.77	9050	P3	22.4	B-106
60.0	3500	358	1.28	72.0	2920	298	1.45	9025	P3	25	B-106
			1.86				2.22	9030	P3	25	B-106
			2.40				2.90	9035	P3	25	B-106
			3.00				3.59	9040	P3	25	B-106
			3.80				4.57	9045	P3	25	B-106
			4.45				5.36	9050	P3	25	B-106
53.6	3920	400	1.06	64.3	3270	334	1.27	9025	P3	28	B-106
			1.68				2.00	9030	P3	28	B-106
			2.18				2.63	9035	P3	28	B-106
			2.45				2.95	9040	P3	28	B-106
			3.21				3.85	9045	P3	28	B-106
			3.68				4.40	9050	P3	28	B-106
47.6	4410	450	0.99	57.1	3680	375	1.18	9025	P3	31.5	B-106
			1.40				1.72	9030	P3	31.5	B-106
			1.90				2.31	9035	P3	31.5	B-106
			2.36				2.86	9040	P3	31.5	B-106
			3.09				3.70	9045	P3	31.5	B-106
			3.72				4.45	9050	P3	31.5	B-106
42.3	4970	508	4.77	50.7	4140	423	5.72	9055	P3	31.5	B-106
			1.30				1.54	9030	P3	35.5	B-106
			1.77				2.09	9035	P3	35.5	B-106
			1.95				2.31	9040	P3	35.5	B-106
			2.59				3.10	9045	P3	35.5	B-106
			3.09				3.68	9050	P3	35.5	B-106
37.5	5600	572	3.86	45.0	4670	477	4.59	9055	P3	35.5	B-106
			4.86				5.81	9060	P3	35.5	B-108
			1.15				1.36	9030	P3	40	B-106
			1.50				1.77	9035	P3	40	B-106
			1.90				2.27	9040	P3	40	B-106
			2.42				2.91	9045	P3	40	B-106
33.3	6300	644	2.86	40.0	5250	536	3.40	9050	P3	40	B-106
			4.00				4.77	9055	P3	40	B-106
			4.72				5.68	9060	P3	40	B-108
			1.04				1.25	9030	P3	45	B-106
			1.36				1.63	9035	P3	45	B-106
			1.54				1.86	9040	P3	45	B-106
30.0	7000	715	2.06	36.0	5840	596	2.47	9045	P3	45	B-106
			2.36				2.81	9050	P3	45	B-106
			3.22				3.86	9055	P3	45	B-106
			3.72				4.45	9060	P3	45	B-108
			0.93				1.11	9030	P3	50	B-106
			1.21				1.40	9035	P3	50	B-106
			1.50				1.81	9040	P3	50	B-106
			1.96				2.35	9045	P3	50	B-106
			2.31				2.77	9050	P3	50	B-106
			3.04				3.68	9055	P3	50	B-106
			3.81				4.54	9060	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 22kW, 30kW

Frequency							Model			Page of Dimension Sheet							
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Vertical							
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					SF						
26.8	7840	801	0.84	32.1	6540	667	1.00	9030	P3	56	B-106						
			1.10				1.32	9035	P3	56	B-106						
			1.25				1.50	9040	P3	56	B-106						
			1.66				1.99	9045	P3	56	B-106						
			1.90				2.27	9050	P3	56	B-106						
			2.45				2.95	9055	P3	56	B-106						
			3.00				3.59	9060	P3	56	B-108						
			3.90				4.67	9065	P3	56	B-108						
			4.68				5.59	9070	P3	56	B-108						
			23.8				8820	901	0.97	28.6	7350	751	1.16	9035	P3	63	B-106
1.23	1.45	9040		P3	63	B-106											
1.53	1.84	9045		P3	63	B-106											
1.77	2.13	9050		P3	63	B-106											
2.50	3.00	9055		P3	63	B-106											
2.90	3.50	9060		P3	63	B-108											
4.04	4.84	9065		P3	63	B-108											
4.50	5.40	9070		P3	63	B-108											
21.1	9940	1020		0.89	25.4	8290			846				1.06	9035	P3	71	B-106
				1.00									1.20	9040	P3	71	B-106
			1.31	1.57			9045	P3		71	B-106						
			1.45	1.77			9050	P3		71	B-106						
			2.00	2.40			9055	P3		71	B-106						
			2.27	2.72			9060	P3		71	B-108						
			3.14	3.76			9065	P3		71	B-108						
			3.77	4.50			9070	P3		71	B-108						
			4.95	5.95			9075	P3		71	B-108						
			18.8	11210			1140	1.24		22.5	9340	953	1.49	9045	P3	80	B-106
1.90	2.27	9055			P3	80		B-106									
3.12	3.75	9065			P3	80		B-108									
4.77	5.68	9075			P3	80		B-108									
16.7	12610	1290	1.05	20.0	10510	1070	1.26	9045	P3	90	B-106						
			1.54				1.81	9055	P3	90	B-106						
			2.40				2.88	9065	P3	90	B-108						
			4.00				4.77	9075	P3	90	B-108						

30kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
238	1200	123	3.40	286	1000	102	4.06	9025	P2	6.3	B-102
			4.96				5.96	9030	P2	6.3	B-102
211	1360	138	2.76	254	1130	115	3.33	9025	P2	7.1	B-102
			4.50				5.36	9030	P2	7.1	B-102
188	1530	156	2.76	225	1270	130	3.30	9025	P2	8	B-102
			3.90				4.66	9030	P2	8	B-102
167	1720	176	2.26	200	1430	146	2.70	9025	P2	9	B-102
			3.50				4.20	9030	P2	9	B-102
			4.73				5.66	9035	P2	9	B-102
150	1910	195	2.16	180	1590	163	2.60	9025	P2	10	B-102
			3.20				3.83	9030	P2	10	B-102
			4.06				4.86	9035	P2	10	B-102
134	2140	218	1.76	161	1780	182	2.13	9025	P2	11.2	B-102
			2.86				3.43	9030	P2	11.2	B-102
			3.70				4.43	9035	P2	11.2	B-102
			4.30				5.13	9040	P2	11.2	B-102
120	2390	244	1.70	144	1990	203	2.03	9025	P2	12.5	B-102
			2.50				2.96	9030	P2	12.5	B-102
			3.33				4.00	9035	P2	12.5	B-102
			4.03				4.83	9040	P2	12.5	B-102
107	2670	273	1.40	129	2230	228	1.66	9025	P2	14	B-102
			2.23				2.70	9030	P2	14	B-102
			3.03				3.63	9035	P2	14	B-102
			3.30				3.93	9040	P2	14	B-102
			4.54				5.42	9045	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 30kW

Frequency							Model			Page of Dimension Sheet	
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Vertical	
Output Speed r/min	Output Torque (Tout) Nm kgf m	Output Speed r/min		Output Torque (Tout) Nm kgf m	SF						
93.8	3060	312	1.40	113	2550	260	1.66	9025	P2	16	B-102
			2.00				2.40	9030	P2	16	B-102
			2.60				3.13	9035	P2	16	B-102
			3.23				3.86	9040	P2	16	B-102
			4.26				5.09	9045	P2	16	B-102
			4.73				5.66	9050	P2	16	B-102
83.3	3440	351	1.80	100	2870	293	2.16	9030	P2	18	B-102
			2.36				2.83	9035	P2	18	B-102
			2.66				3.16	9040	P2	18	B-102
			3.48				4.16	9045	P2	18	B-102
			3.90				4.66	9050	P2	18	B-102
75.0	3820	390	1.70	90.0	3180	325	2.03	9030	P3	20	B-106
			2.10				2.50	9035	P2	20	B-102
			2.73				3.26	9040	P3	20	B-106
			3.43				4.10	9045	P2	20	B-102
			4.30				5.13	9050	P3	20	B-106
67.0	4280	437	1.90	80.4	3570	364	2.26	9035	P2	22.4	B-102
			2.23				2.66	9040	P3	22.4	B-106
			2.80				3.35	9045	P2	22.4	B-102
			3.53				4.23	9050	P3	22.4	B-106
			4.06				4.86	9055	P2	22.4	B-102
60.0	4780	488	1.76	72.0	3980	406	2.13	9035	P3	25	B-106
			2.20				2.63	9040	P3	25	B-106
			2.79				3.35	9045	P3	25	B-106
			3.26				3.93	9050	P3	25	B-106
			4.59				5.50	9055	P3	25	B-106
53.6	5350	546	1.60	64.3	4460	455	1.93	9035	P3	28	B-106
			1.80				2.16	9040	P3	28	B-106
			2.36				2.82	9045	P3	28	B-106
			2.70				3.23	9050	P3	28	B-106
			3.70				4.40	9055	P3	28	B-106
4.30	5.13	9060	P3	28	B-108						
47.6	6020	614	1.40	57.1	5010	512	1.70	9035	P3	31.5	B-106
			1.73				2.10	9040	P3	31.5	B-106
			2.26				2.72	9045	P3	31.5	B-106
			2.73				3.26	9050	P3	31.5	B-106
			3.50				4.20	9055	P3	31.5	B-106
4.53	5.43	9060	P3	31.5	B-108						
42.3	6780	692	1.30	50.7	5650	577	1.53	9035	P3	35.5	B-106
			1.43				1.70	9040	P3	35.5	B-106
			1.90				2.27	9045	P3	35.5	B-106
			2.26				2.70	9050	P3	35.5	B-106
			2.83				3.36	9055	P3	35.5	B-106
			3.56				4.26	9060	P3	35.5	B-108
			4.48				5.36	9065	P3	35.5	B-108
37.5	7640	780	1.10	45.0	6370	650	1.30	9035	P3	40	B-106
			1.40				1.66	9040	P3	40	B-106
			1.78				2.13	9045	P3	40	B-106
			2.10				2.50	9050	P3	40	B-106
			2.93				3.50	9055	P3	40	B-106
			3.46				4.16	9060	P3	40	B-108
			4.83				5.80	9065	P3	40	B-108
33.3	8600	878	1.00	40.0	7160	731	1.20	9035	P3	45	B-106
			1.13				1.36	9040	P3	45	B-106
			1.51				1.81	9045	P3	45	B-106
			1.73				2.06	9050	P3	45	B-106
			2.36				2.83	9055	P3	45	B-106
			2.73				3.26	9060	P3	45	B-108
			3.74				4.47	9065	P3	45	B-108
4.46	5.33	9070	P3	45	B-108						
30.0	9550	975	0.89	36.0	7960	813	1.03	9035	P3	50	B-106
			1.10				1.33	9040	P3	50	B-106
			1.44				1.73	9045	P3	50	B-106
			1.70				2.03	9050	P3	50	B-106
			2.23				2.70	9055	P3	50	B-106
			2.80				3.33	9060	P3	50	B-108
			3.72				4.45	9065	P3	50	B-108
4.13	4.93	9070	P3	50	B-108						

SELECTION Drive Unit Parallel Shaft 30kW, 37kW

Frequency							Model			Page of Dimension Sheet	
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
26.8	10700	1090	0.92	32.1	8910	910	1.10	9040	P3	56	B-106
			1.22				1.46	9045	P3	56	B-106
			1.40				1.66	9050	P3	56	B-106
			1.80				2.16	9055	P3	56	B-106
			2.20				2.63	9060	P3	56	B-108
			2.86				3.43	9065	P3	56	B-108
			3.43				4.09	9070	P3	56	B-108
			4.73				5.66	9075	P3	56	B-108
23.8	12030	1230	0.90	28.6	10030	1020	1.06	9040	P3	63	B-106
			1.12				1.35	9045	P3	63	B-106
			1.30				1.56	9050	P3	63	B-106
			1.83				2.20	9055	P3	63	B-106
			2.13				2.56	9060	P3	63	B-108
			2.96				3.55	9065	P3	63	B-108
			3.30				3.96	9070	P3	63	B-108
			4.36				5.20	9075	P3	63	B-108
21.1	13560	1380	0.96	25.4	11300	1150	1.15	9045	P3	71	B-106
			1.06				1.30	9050	P3	71	B-106
			1.46				1.76	9055	P3	71	B-106
			1.66				2.00	9060	P3	71	B-108
			2.30				2.76	9065	P3	71	B-108
			2.76				3.30	9070	P3	71	B-108
			3.63				4.36	9075	P3	71	B-108
			4.33				5.16	9080	P3	71	B-108
18.8	15280	1560	0.91	22.5	12730	1300	1.09	9045	P3	80	B-106
			1.40				1.66	9055	P3	80	B-106
			2.29				2.75	9065	P3	80	B-108
			3.50				4.16	9075	P3	80	B-108
16.7	17190	1760	1.13	20.0	14330	1460	1.33	9055	P3	90	B-106
			1.76				2.11	9065	P3	90	B-108
			2.93				3.50	9075	P3	90	B-108
			4.53				5.40	9075	P3	90	B-108

37kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
238	1480	152	2.75	286	1240	126	3.29	9025	P2	6.3	B-102
			4.02				4.83	9030	P2	6.3	B-102
211	1670	171	3.64	254	1390	142	4.35	9030	P2	7.1	B-102
188	1880	192	3.16	225	1570	160	3.78	9030	P2	8	B-102
			4.21				5.05	9035	P2	8	B-102
167	2120	216	2.83	200	1770	180	3.40	9030	P2	9	B-102
			3.83				4.59	9035	P2	9	B-102
			4.27				5.08	9040	P2	9	B-102
150	2360	241	2.59	180	1960	200	3.10	9030	P2	10	B-102
			3.29				3.94	9035	P2	10	B-102
			4.27				5.08	9040	P2	10	B-102
134	2640	269	2.32	161	2200	224	2.78	9030	P2	11.2	B-102
			3.00				3.59	9035	P2	11.2	B-102
			3.48				4.16	9040	P2	11.2	B-102
			4.48				5.35	9045	P2	11.2	B-102
120	2940	301	2.02	144	2450	251	2.40	9030	P2	12.5	B-102
			2.70				3.24	9035	P2	12.5	B-102
			3.27				3.91	9040	P2	12.5	B-102
			4.47				5.16	9045	P2	12.5	B-102
			5.00				6.00	9050	P2	12.5	B-102
107	3300	337	1.81	129	2750	281	2.18	9030	P2	14	B-102
			2.45				2.94	9035	P2	14	B-102
			2.67				3.18	9040	P2	14	B-102
			3.68				4.39	9045	P2	14	B-102
			4.13				4.94	9050	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 37kW

Frequency							Model			Page of Dimension Sheet	
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Vertical	
Output Speed r/min	Output Torque (Tout) Nm kgf m	Output Speed r/min		Output Torque (Tout) Nm kgf m	SF						
93.8	3770	385	1.62	113	3140	321	1.94	9030	P2	16	B-102
			2.10				2.54	9035	P2	16	B-102
			2.62				3.13	9040	P2	16	B-102
			3.45				4.12	9045	P2	16	B-102
			3.83				4.59	9050	P2	16	B-102
83.3	4240	433	1.45	100	3530	361	1.75	9030	P2	18	B-102
			1.91				2.29	9035	P2	18	B-102
			2.16				2.56	9040	P2	18	B-102
			2.82				3.37	9045	P2	18	B-102
			3.16				3.78	9050	P2	18	B-102
			4.29				5.16	9055	P2	18	B-102
			5.00				6.00	9060	P2	18	B-104
75.0	4710	481	1.70	90.0	3930	401	2.02	9035	P2	20	B-102
			2.21				2.64	9040	P3	20	B-106
			2.78				3.33	9045	P2	20	B-102
			3.48				4.16	9050	P3	20	B-106
			4.10				4.91	9055	P2	20	B-102
67.0	5280	539	1.54	80.4	4400	449	1.83	9035	P2	22.4	B-102
			1.81				2.16	9040	P3	22.4	B-106
			2.27				2.72	9045	P2	22.4	B-102
			2.86				3.43	9050	P3	22.4	B-106
			3.29				3.94	9055	P2	22.4	B-102
			4.54				5.43	9060	P3	22.4	B-108
60.0	5890	601	1.43	72.0	4910	501	1.72	9035	P3	25	B-106
			1.78				2.13	9040	P3	25	B-106
			2.26				2.71	9045	P3	25	B-106
			2.64				3.18	9050	P3	25	B-106
			3.72				4.45	9055	P3	25	B-106
			4.40				5.27	9060	P3	25	B-108
53.6	6600	673	1.45	64.3	5500	561	1.75	9040	P3	28	B-106
			1.91				2.28	9045	P3	28	B-106
			2.18				2.62	9050	P3	28	B-106
			3.00				3.56	9055	P3	28	B-106
			3.48				4.16	9060	P3	28	B-108
			4.73				5.66	9065	P3	28	B-108
47.6	7420	758	1.40	57.1	6180	631	1.70	9040	P3	31.5	B-106
			1.83				2.20	9045	P3	31.5	B-106
			2.21				2.64	9050	P3	31.5	B-106
			2.83				3.40	9055	P3	31.5	B-106
			3.67				4.40	9060	P3	31.5	B-108
			4.72				5.64	9065	P3	31.5	B-108
42.3	8360	854	1.16	50.7	6970	711	1.37	9040	P3	35.5	B-106
			1.54				1.84	9045	P3	35.5	B-106
			1.83				2.18	9050	P3	35.5	B-106
			2.29				2.72	9055	P3	35.5	B-106
			2.89				3.45	9060	P3	35.5	B-108
			3.63				4.34	9065	P3	35.5	B-108
			4.51				5.37	9070	P3	35.5	B-108
37.5	9420	962	1.13	45.0	7850	802	1.35	9040	P3	40	B-106
			1.44				1.73	9045	P3	40	B-106
			1.70				2.02	9050	P3	40	B-106
			2.37				2.83	9055	P3	40	B-106
			2.81				3.37	9060	P3	40	B-108
			3.92				4.70	9065	P3	40	B-108
			4.32				5.18	9070	P3	40	B-108
33.3	10600	1080	0.91	40.0	8830	902	1.10	9040	P3	45	B-106
			1.22				1.47	9045	P3	45	B-106
			1.40				1.67	9050	P3	45	B-106
			1.91				2.29	9055	P3	45	B-106
			2.21				2.64	9060	P3	45	B-108
			3.03				3.62	9065	P3	45	B-108
			3.62				4.32	9070	P3	45	B-108
			4.78				5.72	9075	P3	45	B-108
30.0	11780	1200	0.89	36.0	9820	1000	1.08	9040	P3	50	B-106
			1.17				1.40	9045	P3	50	B-106
			1.37				1.64	9050	P3	50	B-106
			1.81				2.18	9055	P3	50	B-106
			2.27				2.70	9060	P3	50	B-108
			3.01				3.61	9065	P3	50	B-108
			3.35				4.00	9070	P3	50	B-108
			4.56				5.48	9075	P3	50	B-108
			4.91				5.89	9080	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 37kW, 45kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
26.8	13190	1350	0.98	32.1	10990	1120	1.18	9045	P3	56	B-106
			1.13				1.35	9050	P3	56	B-106
			1.45				1.75	9055	P3	56	B-106
			1.78				2.13	9060	P3	56	B-108
			2.32				2.78	9065	P3	56	B-108
			2.78				3.32	9070	P3	56	B-108
			3.83				4.59	9075	P3	56	B-108
			4.27				5.10	9080	P3	56	B-108
23.8	14840	1520	0.91	28.6	12370	1260	1.09	9045	P3	63	B-106
			1.05				1.27	9050	P3	63	B-106
			1.48				1.78	9055	P3	63	B-106
			1.72				2.08	9060	P3	63	B-108
			2.40				2.88	9065	P3	63	B-108
			2.67				3.21	9070	P3	63	B-108
			3.54				4.21	9075	P3	63	B-108
			4.05				4.83	9080	P3	63	B-108
21.1	16730	1710	0.86	25.4	13940	1420	1.05	9050	P3	71	B-106
			1.18				1.43	9055	P3	71	B-106
			1.35				1.62	9060	P3	71	B-108
			1.87				2.23	9065	P3	71	B-108
			2.24				2.67	9070	P3	71	B-108
			2.94				3.54	9075	P3	71	B-108
			3.51				4.18	9080	P3	71	B-108
			4.45				5.32	9085	P3	71	B-108
18.8	18850	1920	1.13	22.5	15700	1600	1.35	9055	P3	80	B-106
			1.85				2.23	9065	P3	80	B-108
			2.83				3.37	9075	P3	80	B-108
			4.27				5.10	9085	P3	80	B-108
16.7	21200	2160	0.91	20.0	17670	1800	1.08	9055	P3	90	B-106
			1.43				1.71	9065	P3	90	B-108
			2.37				2.83	9075	P3	90	B-108
			3.67				4.37	9085	P3	90	B-108

45kW	Frequency	Hz	50Hz	60Hz
	Pole	P	4	4
	Speed n1	r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
238	1800	184	4.95	286	1500	154	5.71	9040	P2	6.3	B-102
211	2030	208	4.46	254	1700	173	5.35	9040	P2	7.1	B-102
188	2290	234	3.46	225	1910	195	4.15	9035	P2	8	B-102
			4.22				4.86	9040	P2	8	B-102
			4.96				5.72	9045	P2	8	B-102
167	2580	263	3.15	200	2150	219	3.77	9035	P2	9	B-102
			3.51				4.17	9040	P2	9	B-102
			4.71				5.62	9045	P2	9	B-102
150	2870	293	2.71	180	2390	244	3.24	9035	P2	10	B-102
			3.51				4.17	9040	P2	10	B-102
			4.23				4.88	9045	P2	10	B-102
134	3210	328	2.46	161	2670	273	2.95	9035	P2	11.2	B-102
			2.86				3.42	9040	P2	11.2	B-102
			3.68				4.40	9045	P2	11.2	B-102
			4.17				5.00	9050	P2	11.2	B-102
120	3580	366	2.22	144	2980	305	2.66	9035	P2	12.5	B-102
			2.68				3.22	9040	P2	12.5	B-102
			3.68				4.24	9045	P2	12.5	B-102
			4.11				4.93	9050	P2	12.5	B-102
107	4010	410	2.02	129	3340	341	2.42	9035	P2	14	B-102
			2.20				2.62	9040	P2	14	B-102
			3.02				3.61	9045	P2	14	B-102
			3.40				4.06	9050	P2	14	B-102
			4.37				5.22	9055	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 45kW

Frequency							Model			Page of Dimension Sheet	
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Vertical	
Output Speed r/min	Output Torque (Tout) Nm kgf m	Output Speed r/min		Output Torque (Tout) Nm kgf m	SF						
93.8	4580	468	1.73	113	3820	390	2.08	9035	P2	16	B-102
			2.15				2.57	9040	P2	16	B-102
			2.84				3.39	9045	P2	16	B-102
			3.15				3.77	9050	P2	16	B-102
			4.40				5.26	9055	P2	16	B-102
83.3	5160	527	1.57	100	4300	439	1.88	9035	P2	18	B-102
			1.77				2.11	9040	P2	18	B-102
			2.32				2.77	9045	P2	18	B-102
			2.60				3.11	9050	P2	18	B-102
			3.53				4.24	9055	P2	18	B-102
			4.11				4.93	9060	P2	18	B-104
75.0	5730	585	1.40	90.0	4780	488	1.66	9035	P2	20	B-102
			1.82				2.17	9040	P3	20	B-106
			2.28				2.73	9045	P2	20	B-102
			2.86				3.42	9050	P3	20	B-106
			3.37				4.04	9055	P2	20	B-102
			4.73				5.64	9060	P3	20	B-108
67.0	6420	655	1.87	80.4	5350	546	2.23	9045	P2	22.4	B-102
			2.35				2.82	9050	P3	22.4	B-106
			2.71				3.24	9055	P2	22.4	B-102
			3.73				4.46	9060	P3	22.4	B-108
			4.30				5.14	9065	P2	22.4	B-108
60.0	7160	731	1.86	72.0	5970	609	2.23	9045	P3	25	B-106
			2.17				2.62	9050	P3	25	B-106
			3.06				3.66	9055	P3	25	B-106
			3.62				4.33	9060	P3	25	B-108
53.6	8020	819	1.57	64.3	6690	683	1.88	9045	P3	28	B-106
			1.80				2.15	9050	P3	28	B-106
			2.46				2.93	9055	P3	28	B-106
			2.86				3.42	9060	P3	28	B-108
			3.89				4.65	9065	P3	28	B-108
			4.62				5.53	9070	P3	28	B-108
47.6	9020	921	1.51	57.1	7520	768	1.81	9045	P3	31.5	B-106
			1.82				2.17	9050	P3	31.5	B-106
			2.33				2.80	9055	P3	31.5	B-106
			3.02				3.62	9060	P3	31.5	B-108
			3.88				4.64	9065	P3	31.5	B-108
			4.44				5.31	9070	P3	31.5	B-108
42.3	10170	1040	1.26	50.7	8480	865	1.51	9045	P3	35.5	B-106
			1.51				1.80	9050	P3	35.5	B-106
			1.88				2.24	9055	P3	35.5	B-106
			2.37				2.84	9060	P3	35.5	B-108
			2.98				3.57	9065	P3	35.5	B-108
			3.71				4.42	9070	P3	35.5	B-108
			4.91				5.88	9075	P3	35.5	B-108
37.5	11460	1170	1.18	45.0	9550	975	1.42	9045	P3	40	B-106
			1.40				1.66	9050	P3	40	B-106
			1.95				2.33	9055	P3	40	B-106
			2.31				2.77	9060	P3	40	B-108
			3.22				3.86	9065	P3	40	B-108
			3.55				4.26	9070	P3	40	B-108
			4.68				5.60	9075	P3	40	B-108
33.3	12890	1320	1.00	40.0	10740	1100	1.20	9045	P3	45	B-106
			1.15				1.37	9050	P3	45	B-106
			1.57				1.88	9055	P3	45	B-106
			1.82				2.17	9060	P3	45	B-108
			2.49				2.98	9065	P3	45	B-108
			2.97				3.55	9070	P3	45	B-108
			3.93				4.71	9075	P3	45	B-108
			4.68				5.62	9080	P3	45	B-108
30.0	14330	1460	0.96	36.0	11940	1220	1.15	9045	P3	50	B-106
			1.13				1.35	9050	P3	50	B-106
			1.48				1.80	9055	P3	50	B-106
			1.86				2.22	9060	P3	50	B-108
			2.48				2.97	9065	P3	50	B-108
			2.75				3.28	9070	P3	50	B-108
			3.75				4.51	9075	P3	50	B-108
			4.04				4.84	9080	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 45kW, 55kW

Frequency							Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m				
26.8	16040	1640	0.93	32.1	13370	1370	9050	P3	56	B-106
			1.20				9055	P3	56	B-106
			1.46				9060	P3	56	B-108
			1.91				9065	P3	56	B-108
			2.28				9070	P3	56	B-108
			3.15				9075	P3	56	B-108
			3.51				9080	P3	56	B-108
			4.91				9085	P3	56	B-108
23.8	18050	1840	1.22	28.6	15040	1540	9055	P3	63	B-106
			1.42				9060	P3	63	B-108
			1.97				9065	P3	63	B-108
			2.20				9070	P3	63	B-108
			2.91				9075	P3	63	B-108
			3.33				9080	P3	63	B-108
			4.26				9085	P3	63	B-108
21.1	20340	2080	0.97	25.4	16950	1730	9055	P3	71	B-106
			1.11				9060	P3	71	B-108
			1.53				9065	P3	71	B-108
			1.84				9070	P3	71	B-108
			2.42				9075	P3	71	B-108
			2.88				9080	P3	71	B-108
			3.66				9085	P3	71	B-108
18.8	22920	2340	0.93	22.5	19100	1950	9055	P3	80	B-106
			1.52				9065	P3	80	B-108
			2.33				9075	P3	80	B-108
			3.51				9085	P3	80	B-108
16.7	25790	2630	1.17	20.0	21490	2190	9065	P3	90	B-108
			1.95				9075	P3	90	B-108
			3.02				9085	P3	90	B-108

55kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency							Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m				
238	2210	225	4.05	286	1840	188	9040	P2	6.3	B-102
211	2490	254	3.65	254	2070	212	9040	P2	7.1	B-102
188	2800	286	3.45	225	2330	238	9040	P2	8	B-102
			4.06				9045	P2	8	B-102
			4.92				9050	P2	8	B-102
167	3150	322	2.87	200	2630	268	9040	P2	9	B-102
			3.85				9045	P2	9	B-102
			4.34				9050	P2	9	B-102
150	3500	358	2.87	180	2920	298	9040	P2	10	B-102
			3.46				9045	P2	10	B-102
			4.10				9050	P2	10	B-102
			4.92				9055	P2	10	B-102
134	3920	400	2.34	161	3270	334	9040	P2	11.2	B-102
			3.01				9045	P2	11.2	B-102
			3.41				9050	P2	11.2	B-102
			4.54				9055	P2	11.2	B-102
120	4380	447	2.20	144	3650	372	9040	P2	12.5	B-102
			3.01				9045	P2	12.5	B-102
			3.36				9050	P2	12.5	B-102
			4.10				9055	P2	12.5	B-102
107	4900	501	1.80	129	4090	417	9040	P2	14	B-102
			2.47				9045	P2	14	B-102
			2.78				9050	P2	14	B-102
			3.58				9055	P2	14	B-102
			4.40				9060	P2	14	B-104
93.8	5600	572	2.32	113	4670	477	9045	P2	16	B-102
			2.58				9050	P2	16	B-102
			3.60				9055	P2	16	B-102
			4.27				9060	P2	16	B-104

SELECTION Drive Unit Parallel Shaft 55kW

Frequency							Model			Page of Dimension Sheet	
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Vertical	
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m						SF
83.3	6300	644	1.90	100	5250	536	2.27	9045	P2	18	B-102
			2.12				2.54	9050	P2	18	B-102
			2.89				3.47	9055	P2	18	B-102
			3.36				4.03	9060	P2	18	B-104
			4.59				5.48	9065	P2	18	B-104
75.0	7000	715	1.87	90.0	5840	596	2.24	9045	P2	20	B-102
			2.34				2.80	9050	P3	20	B-106
			2.76				3.30	9055	P2	20	B-102
			3.87				4.61	9060	P3	20	B-108
			4.57				5.46	9065	P2	20	B-104
67.0	7840	801	1.53	80.4	6540	667	1.83	9045	P2	22.4	B-102
			1.92				2.30	9050	P3	22.4	B-106
			2.21				2.65	9055	P2	22.4	B-102
			3.05				3.65	9060	P3	22.4	B-108
			3.52				4.21	9065	P2	22.4	B-104
			4.72				5.63	9070	P3	22.4	B-108
60.0	8750	894	2.50	72.0	7300	745	3.00	9055	P3	25	B-106
			2.96				3.54	9060	P3	25	B-108
			4.12				4.76	9065	P3	25	B-108
			4.54				5.43	9070	P3	25	B-108
53.6	9800	1000	2.01	64.3	8170	834	2.40	9055	P3	28	B-106
			2.34				2.80	9060	P3	28	B-108
			3.18				3.81	9065	P3	28	B-108
			3.78				4.52	9070	P3	28	B-108
			5.00				5.98	9075	P3	28	B-108
47.6	11030	1130	1.90	57.1	9190	938	2.29	9055	P3	31.5	B-106
			2.47				2.96	9060	P3	31.5	B-108
			3.17				3.79	9065	P3	31.5	B-108
			3.63				4.34	9070	P3	31.5	B-108
			4.80				5.72	9075	P3	31.5	B-108
42.3	12430	1270	1.54	50.7	10360	1060	1.83	9055	P3	35.5	B-106
			1.94				2.32	9060	P3	35.5	B-108
			2.44				2.92	9065	P3	35.5	B-108
			3.03				3.61	9070	P3	35.5	B-108
			4.01				4.81	9075	P3	35.5	B-108
			4.67				5.58	9080	P3	35.5	B-108
37.5	14010	1430	1.60	45.0	11670	1190	1.90	9055	P3	40	B-106
			1.89				2.27	9060	P3	40	B-108
			2.63				3.16	9065	P3	40	B-108
			2.90				3.49	9070	P3	40	B-108
			3.83				4.58	9075	P3	40	B-108
			4.43				5.30	9080	P3	40	B-108
33.3	15760	1610	1.29	40.0	13130	1340	1.54	9055	P3	45	B-106
			1.49				1.78	9060	P3	45	B-108
			2.04				2.44	9065	P3	45	B-108
			2.43				2.90	9070	P3	45	B-108
			3.21				3.85	9075	P3	45	B-108
			3.83				4.59	9080	P3	45	B-108
			4.89				5.83	9085	P3	45	B-108
30.0	17510	1790	1.21	360	14590	1490	1.47	9055	P3	50	B-106
			1.52				1.81	9060	P3	50	B-108
			2.03				2.43	9065	P3	50	B-108
			2.25				2.69	9070	P3	50	B-108
			3.07				3.69	9075	P3	50	B-108
			3.30				3.96	9080	P3	50	B-108
26.8	19610	2000	0.98	32.1	16340	1670	1.18	9055	P3	56	B-106
			1.20				1.43	9060	P3	56	B-108
			1.56				1.87	9065	P3	56	B-108
			1.87				2.23	9070	P3	56	B-108
			2.58				3.09	9075	P3	56	B-108
			2.87				3.43	9080	P3	56	B-108
			4.01				4.80	9085	P3	56	B-108
23.8	22060	2250	1.16	28.6	18380	1880	1.40	9060	P3	63	B-108
			1.61				1.93	9065	P3	63	B-108
			1.80				2.16	9070	P3	63	B-108
			2.38				2.83	9075	P3	63	B-108
			2.72				3.25	9080	P3	63	B-108
			3.49				4.18	9085	P3	63	B-108

SELECTION Drive Unit Parallel Shaft 55kW, 75kW

Frequency							Model			Page of Dimension Sheet	
50Hz				60Hz							
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Vertical
21.1	24860	2540	0.90	25.4	20720	2120	1.09	9060	P3	71	B-108
			1.25				1.50	9065	P3	71	B-108
			1.50				1.80	9070	P3	71	B-108
			1.98				2.38	9075	P3	71	B-108
			2.36				2.81	9080	P3	71	B-108
			3.00				3.58	9085	P3	71	B-108
18.8	28010	2860	1.24	22.5	23340	2380	1.50	9065	P3	80	B-108
			1.90				2.27	9075	P3	80	B-108
			2.87				3.43	9085	P3	80	B-108
16.7	31520	3220	0.96	20.0	26260	2680	1.15	9065	P3	90	B-108
			1.60				1.90	9075	P3	90	B-108
			2.47				2.94	9085	P3	90	B-108

75kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz							
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Vertical
238	3010	307	4.06	286	2510	256	4.66	9050	P2	6.3	B-102
211	3390	346	3.90	254	2830	288	4.65	9050	P2	7.1	B-102
188	3820	390	4.06	225	3180	325	4.66	9055	P2	8	B-102
167	4300	439	4.06	200	3580	366	4.66	9055	P2	9	B-102
			4.94				5.90	9060	P2	9	B-104
150	4780	488	3.61	180	3980	406	4.14	9055	P2	10	B-102
134	5350	546	3.33	161	4460	455	3.98	9055	P2	11.2	B-102
			4.01				4.80	9060	P2	11.2	B-104
120	5970	609	3.01	144	4970	508	3.45	9055	P2	12.5	B-102
			4.09				4.88	9060	P2	12.5	B-104
107	6690	683	2.62	129	5570	569	3.13	9055	P2	14	B-102
			3.22				3.85	9060	P2	14	B-104
			4.19				5.00	9065	P2	14	B-104
93.8	7640	780	2.64	113	6370	650	3.16	9055	P2	16	B-102
			3.13				3.74	9060	P2	16	B-104
			4.37				5.19	9065	P2	16	B-104
			4.90				5.86	9070	P2	16	B-104
83.3	8600	878	2.12	100	7160	731	2.54	9055	P2	18	B-102
			2.46				2.96	9060	P2	18	B-104
			3.36				4.02	9065	P2	18	B-104
			4.10				4.90	9070	P2	18	B-104
75.0	9550	975	2.02	90.0	7960	813	2.42	9055	P2	20	B-102
			2.84				3.38	9060	P3	20	B-108
			3.35				4.01	9065	P2	20	B-104
			4.13				4.74	9070	P3	20	B-108
67.0	10700	1090	1.62	80.4	8910	910	1.94	9055	P2	22.4	B-102
			2.24				2.68	9060	P3	22.4	B-108
			2.58				3.08	9065	P2	22.4	B-104
			3.46				4.13	9070	P3	22.4	B-108
			4.34				5.20	9075	P2	22.4	B-104
60.0	11940	1220	3.02	72.0	9950	1020	3.49	9065	P3	25	B-108
			3.33				3.98	9070	P3	25	B-108
			4.13				4.74	9075	P3	25	B-108
53.6	13370	1370	2.33	64.3	11140	1140	2.79	9065	P3	28	B-108
			2.77				3.32	9070	P3	28	B-108
			3.66				4.38	9075	P3	28	B-108
			4.40				5.26	9080	P3	28	B-108
47.6	15040	1540	2.32	57.1	12530	1280	2.78	9065	P3	31.5	B-108
			2.66				3.18	9070	P3	31.5	B-108
			3.52				4.20	9075	P3	31.5	B-108
			3.96				4.73	9080	P3	31.5	B-108
42.3	16950	1730	1.79	50.7	14130	1440	2.14	9065	P3	35.5	B-108
			2.22				2.65	9070	P3	35.5	B-108
			2.94				3.53	9075	P3	35.5	B-108
			3.42				4.09	9080	P3	35.5	B-108
			4.61				5.50	9085	P3	35.5	B-108

SELECTION Drive Unit Parallel Shaft 75kW, 90kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz							
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
37.5	19100	1950	1.93	45.0	15920	1630	2.32	9065	P3	40	B-108
			2.13				2.56	9070	P3	40	B-108
			2.81				3.36	9075	P3	40	B-108
			3.25				3.89	9080	P3	40	B-108
			4.17				4.98	9085	P3	40	B-108
33.3	21490	2190	1.49	40.0	17910	1830	1.78	9065	P3	45	B-108
			1.78				2.13	9070	P3	45	B-108
			2.36				2.82	9075	P3	45	B-108
			2.81				3.37	9080	P3	45	B-108
			3.58				4.28	9085	P3	45	B-108
30.0	23880	2440	1.48	36.0	19900	2030	1.78	9065	P3	50	B-108
			1.65				1.97	9070	P3	50	B-108
			2.25				2.70	9075	P3	50	B-108
			2.42				2.90	9080	P3	50	B-108
			3.42				4.10	9085	P3	50	B-108
26.8	26740	2730	1.37	32.1	22280	2280	1.64	9070	P3	56	B-108
			1.89				2.26	9075	P3	56	B-108
			2.10				2.52	9080	P3	56	B-108
			2.94				3.52	9085	P3	56	B-108
23.8	30080	3070	1.32	28.6	25070	2560	1.58	9070	P3	63	B-108
			1.74				2.08	9075	P3	63	B-108
			2.00				2.38	9080	P3	63	B-108
			2.56				3.06	9085	P3	63	B-108
21.1	33900	3460	1.10	25.4	28250	2880	1.32	9070	P3	71	B-108
			1.45				1.74	9075	P3	71	B-108
			1.73				2.06	9080	P3	71	B-108
			2.20				2.62	9085	P3	71	B-108
18.8	38200	3900	1.40	22.5	31830	3250	1.66	9075	P3	80	B-108
			2.10				2.52	9085	P3	80	B-108
16.7	42980	4390	1.17	20.0	35810	3660	1.40	9075	P3	90	B-108
			1.81				2.16	9085	P3	90	B-108

90kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF				
188	4580	468	3.38	225	3820	390	3.88	9055	P2	8	B-102
167	5160	527	3.38	200	4300	439	3.88	9055	P2	9	B-102
			4.12				4.92	9060	P2	9	B-104
150	5730	582	4.24	180	4780	488	5.02	9060	P2	10	B-104
134	6420	655	2.77	161	5350	546	3.32	9055	P2	11.2	B-102
			3.34				4.00	9060	P2	11.2	B-104
			4.30				5.13	9065	P2	11.2	B-104
120	7160	731	3.41	144	5970	609	4.06	9060	P2	12.5	B-104
			4.42				5.02	9065	P2	12.5	B-104
107	8020	819	2.68	129	6690	683	3.21	9060	P2	14	B-104
			3.49				4.17	9065	P2	14	B-104
			4.25				5.07	9070	P2	14	B-104
93.8	9170	936	2.61	113	7640	780	3.12	9060	P2	16	B-104
			3.64				4.33	9065	P2	16	B-104
			4.08				4.88	9070	P2	16	B-104
83.3	10310	1050	2.05	100	8600	878	2.46	9060	P2	18	B-104
			2.80				3.35	9065	P2	18	B-104
			3.42				4.08	9070	P2	18	B-104
			4.51				5.38	9075	P2	18	B-104
75.0	11460	1170	2.79	90.0	9550	975	3.34	9065	P2	20	B-104
			3.44				3.95	9070	P3	20	B-108
			4.32				5.16	9075	P2	20	B-104

SELECTION Drive Unit Parallel Shaft 90kW, 110kW

Frequency							Model			Page of Dimension Sheet	
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Vertical	
Output Speed r/min	Output Torque (Tout) Nm kgf m	Output Speed r/min		Output Torque (Tout) Nm kgf m	SF						
67.0	12840	1310	2.15	80.4	10700	1090	2.57	9065	P2	22.4	B-104
			2.88				3.44	9070	P3	22.4	B-108
			3.62				4.33	9075	P2	22.4	B-104
			4.45				5.33	9080	P3	22.4	B-108
60.0	14330	1460	2.77	72.0	11940	1220	3.32	9070	P3	25	B-108
			3.44				3.95	9075	P3	25	B-108
			4.24				5.06	9080	P3	25	B-108
53.6	16040	1640	2.31	64.3	13370	1370	2.76	9070	P3	28	B-108
			3.05				3.65	9075	P3	28	B-108
			3.66				4.38	9080	P3	28	B-108
			4.66				5.57	9085	P3	28	B-108
47.6	18050	1840	2.22	57.1	15040	1540	2.65	9070	P3	31.5	B-108
			2.93				3.50	9075	P3	31.5	B-108
			3.30				3.94	9080	P3	31.5	B-108
			4.46				5.34	9085	P3	31.5	B-108
42.3	20340	2080	1.85	50.7	16950	1730	2.21	9070	P3	35.5	B-108
			2.45				2.94	9075	P3	35.5	B-108
			2.85				3.41	9080	P3	35.5	B-108
			3.84				4.58	9085	P3	35.5	B-108
37.5	22920	2340	1.77	45.0	19100	1950	2.13	9070	P3	40	B-108
			2.34				2.80	9075	P3	40	B-108
			2.71				3.24	9080	P3	40	B-108
			3.47				4.15	9085	P3	40	B-108
33.3	25790	2630	1.48	40.0	21490	2190	1.77	9070	P3	45	B-108
			1.96				2.35	9075	P3	45	B-108
			2.34				2.81	9080	P3	45	B-108
			2.98				3.56	9085	P3	45	B-108
30.0	28650	2930	1.87	36.0	23880	2440	2.25	9075	P3	50	B-108
			2.02				2.42	9080	P3	50	B-108
			2.85				3.42	9085	P3	50	B-108
26.8	32090	3280	1.57	32.1	26740	2730	1.88	9075	P3	56	B-108
			1.75				2.10	9080	P3	56	B-108
			2.45				2.93	9085	P3	56	B-108
23.8	36100	3690	1.45	28.6	30080	3070	1.73	9075	P3	63	B-108
			1.66				1.98	9080	P3	63	B-108
			2.13				2.55	9085	P3	63	B-108
21.1	40680	4150	1.21	25.4	33900	3460	1.45	9075	P3	71	B-108
			1.44				1.72	9080	P3	71	B-108
			1.83				2.18	9085	P3	71	B-108
18.8	45840	4680	1.16	22.5	38200	3900	1.38	9075	P3	80	B-108
			1.75				2.10	9085	P3	80	B-108
16.7	51570	5270	0.97	20.0	42980	4390	1.16	9075	P3	90	B-108
			1.51				1.80	9085	P3	90	B-108

110kW	Frequency	Hz	50Hz	60Hz
	Pole	P	4	4
	Speed n1	r/min	1500	1800

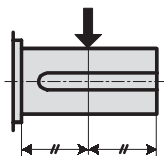
Frequency								Model			Page of Dimension Sheet
50Hz				60Hz							
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
167	6310	644	4.44	161	5260	536	5.30	9065	P2	9	B-104
150	7010	715	4.13	144	5840	596	4.70	9065	P2	10	B-104
134	7840	801	3.51	161	6540	667	4.20	9065	P2	11.2	B-104
			4.50				5.38	9070	P2	11.2	B-104
120	8750	894	3.62	144	7300	745	4.11	9065	P2	12.5	B-104
			4.16				4.97	9070	P2	12.5	B-104
107	9800	1000	2.85				3.41	9065	P2	14	B-104
			3.48				4.15	9070	P2	14	B-104
			4.78				5.70	9075	P2	14	B-104

SELECTION Drive Unit Parallel Shaft 110kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
93.8	11210	1140	2.98	113	9340	953	3.54	9065	P2	16	B-104
			3.34				4.00	9070	P2	16	B-104
			4.40				5.13	9075	P2	16	B-104
83.3	12610	1290	2.80	100	10510	1070	3.34	9070	P2	18	B-104
			3.69				4.40	9075	P2	18	B-104
			4.37				5.21	9080	P2	18	B-104
75.0	14010	1430	3.53	90.0	11670	1190	4.22	9075	P2	20	B-104
			4.20				5.03	9080	P3	20	B-108
67.0	15690	1600	2.96	80.4	13070	1330	3.54	9075	P2	22.4	B-104
			3.64				4.36	9080	P3	22.4	B-108
			4.57				5.46	9085	P2	22.4	B-104
60.0	17510	1790	2.81	72.0	14590	1490	3.23	9075	P3	25	B-108
			3.47				4.14	9080	P3	25	B-108
			4.43				5.20	9085	P3	25	B-108
53.6	19610	2000	2.50	64.3	16340	1670	2.99	9075	P3	28	B-108
			3.00				3.59	9080	P3	28	B-108
			3.81				4.56	9085	P3	28	B-108
47.6	22060	2250	2.40	57.1	18380	1880	2.86	9075	P3	31.5	B-108
			2.70				3.22	9080	P3	31.5	B-108
			3.65				4.37	9085	P3	31.5	B-108
42.3	24860	2540	2.00	50.7	20720	2120	2.40	9075	P3	35.5	B-108
			2.33				2.79	9080	P3	35.5	B-108
			3.14				3.75	9085	P3	35.5	B-108
37.5	28010	2860	1.91	45.0	23340	2380	2.29	9075	P3	40	B-108
			2.21				2.65	9080	P3	40	B-108
			2.84				3.40	9085	P3	40	B-108
33.3	31520	3220	1.60	40.0	26260	2680	1.92	9075	P3	45	B-108
			1.91				2.29	9080	P3	45	B-108
			2.44				2.91	9085	P3	45	B-108
30.0	35020	3580	1.65	36.0	29180	2980	1.98	9080	P3	50	B-108
			2.33				2.80	9085	P3	50	B-108
26.8	39220	4000	1.43	32.1	32680	3340	1.71	9080	P3	56	B-108
			2.00				2.40	9085	P3	56	B-108
23.8	44120	4500	1.74	28.6	36770	3750	2.09	9085	P3	63	B-108
21.1	49720	5080	1.50	25.4	41440	4230	1.79	9085	P3	71	B-108
18.8	56030	5720	1.43	22.5	46690	4770	1.71	9085	P3	80	B-108
16.7	63030	6440	1.23	20.0	52530	5360	1.47	9085	P3	90	B-108

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: RML

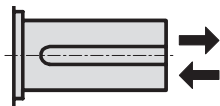
	L.Speed Shaft Speed r/min	Size of Reducer													
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	11.8	17.7	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	77.0	100.1
	160	11.8	17.7	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	89.0	108.9
	100	11.8	17.7	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	54.4	99.0	99.0	122.1
	63	11.8	17.7	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	131.5	125.6
	40	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	141.0	125.1
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	139.5	122.6
Heavy duty bearing model	250									71.1	93.7	70.1	122.5	122.5	141.8
	160									78.0	94.7	77.5	137.5	137.5	132.4
	100									81.4	98.1	92.2	149.5	149.5	127.0
	63									81.4	98.1	114.8	149.0	149.0	125.6
	40									81.4	98.1	117.7	148.5	148.5	125.1
	≤ 25									81.4	98.1	117.7	147.0	147.0	122.6

Sheet 2

Applicable to configurations: RMR

	L.Speed Shaft Speed r/min	Size of Reducer													
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	8.3	15.2	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	44.0	58.4
	160	9.8	17.7	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	55.5	64.3
	100	11.8	17.7	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	63.5	74.6
	63	11.8	17.7	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	95.0	104.5
	40	11.8	17.7	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	129.0	146.7
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	61.6	67.7	60.8	68.7	67.7	167.0	167.0	171.2
Heavy duty bearing model	250									46.1	74.6	40.2	90.0	90.0	114.8
	160									52.0	72.1	45.6	103.5	103.5	125.1
	100									60.3	79.1	59.4	116.0	116.0	140.8
	63									81.4	96.6	80.0	152.5	152.5	174.1
	40									81.4	98.1	108.9	192.0	192.0	191.8
	≤ 25									81.4	98.1	117.7	180.5	180.5	171.2

Allowable Axial Load (kN)



L.Speed Shaft Speed r/min	Size of Reducer														
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	
Standard bearing model	250	9.3	11.4	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	28.0	23.5	23.5
	160	9.3	11.4	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	28.4	27.5	27.5
	100	9.3	11.4	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	39.7	32.9	32.9
	63	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	52.5	45.6	45.6
	40	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	63.3	60.3
	≤ 25	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	67.7	60.3
Heavy duty bearing model	250									23.1	34.8	18.6	18.6	56.9	56.9
	160									25.0	33.4	21.1	21.1	56.9	56.9
	100									29.4	36.8	27.5	27.5	56.9	56.9
	63									39.2	43.2	36.3	36.3	56.9	56.9
	40									39.2	43.2	49.1	49.1	56.9	56.9
	≤ 25									39.2	43.2	56.9	56.9	56.9	56.9

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Overhang Factor

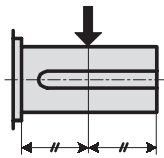
Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Notes

1. The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
2. Consult us for the blanks in the table.
3. Consult us when the radial load is applied upward.

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: RML

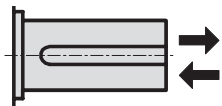
L. Speed Shaft Speed r/min	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	1200	1800	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200
160	1200	1800	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100
Standard bearing model	100	1200	1800	2550	3600	3950	4000	4800	5450	4850	5550	10100	10100	12450
63	1200	1800	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800
40	1200	1800	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750
≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500
Heavy duty bearing model	250								7250	9550	7150	12500	12500	14450
160									7950	9650	7900	14000	14000	13500
100									8300	10000	9400	15250	15250	12950
63									8300	10000	11700	15200	15200	12800
40									8300	10000	12000	15150	15150	12750
≤ 25									8300	10000	12000	15000	15000	12500

Sheet 2

Applicable to configurations: RMR

L. Speed Shaft Speed r/min	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	850	1550	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950
160	1000	1800	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550
Standard bearing model	100	1200	1800	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	7600
63	1200	1800	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650
40	1200	1800	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950
≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450
Heavy duty bearing model	250								4700	7600	4100	9150	9150	11700
160									5300	7350	4650	10550	10550	12750
100									6150	8050	6050	11800	11800	14350
63									8300	9850	8150	15550	15550	17750
40									8300	10000	11100	19550	19550	19550
≤ 25									8300	10000	12000	18400	18400	17450

Allowable Axial Load (kgf)



L. Speed Shaft Speed r/min	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
250	950	1160	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400
160	950	1160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2900	2800	2800
Standard bearing model	100	950	1160	2500	2350	3350	3200	3800	3250	3500	4400	4050	3350	3350
63	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650
40	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150
≤ 25	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150
Heavy duty bearing model	250								2350	3550	1900	1900	5800	5800
160									2550	3400	2150	2150	5800	5800
100									3000	3750	2800	2800	5800	5800
63									4000	4400	3700	3700	5800	5800
40									4000	4400	5000	5000	5800	5800
≤ 25									4000	4400	5800	5800	5800	5800

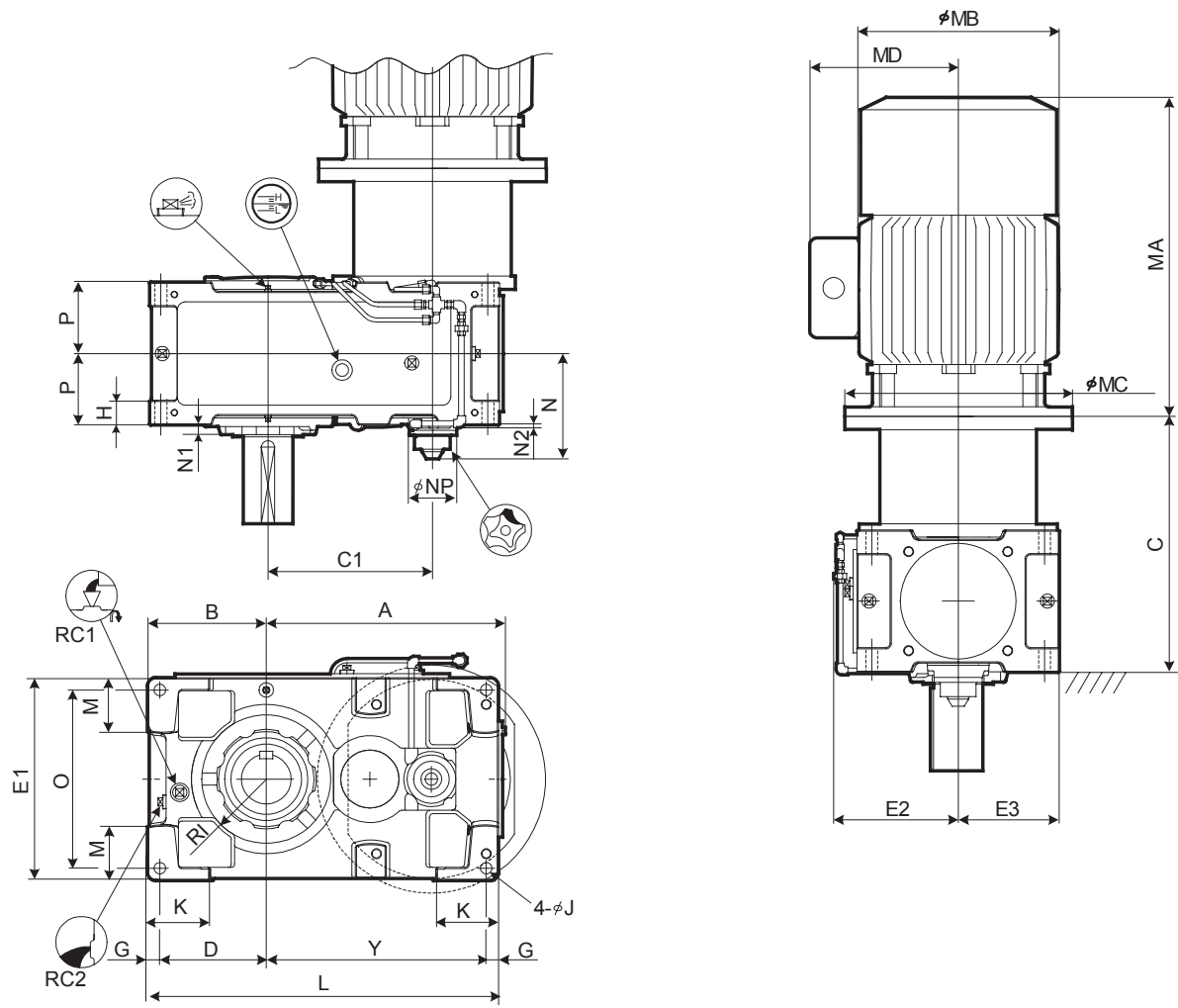
SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Notes

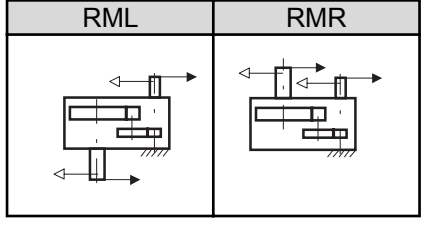
1. The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
2. Consult us for the blanks in the table.
3. Consult us when the radial load is applied upward.



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)

2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

3. Refer to the page D-12 for dimensions not shown in these drawings.

4. Refer to the page D -25 for the dimension of optional parts.

5. Refer to the page D-33 for motor terminal box position.

6. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9015 ▶ 9055

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9015	295	160	194		140	270	195	135	20	35	80	15	95	440	70	186	25	14	100	230	102.5	260
9025	346	175	227		155	310	215	155	20	40	87.5	19	110	505	75	198.5	23	12	100	270	117.5	310
9030	406	200	264		175	320	220	160	25	50	105	24	120	590	85	211	22	9	100	270	132.5	365
9035	437	219	295	See below	194	370	245	185	25	50	120	24	120	640	100	211	22	9	100	320	132.5	396
9040	467	235	306		205	400	260	200	30	60	128	28	150	685	100	239	15	2	117	340	157.5	420
9045	506	256	345		226	440	266	220	30	60	140	28	150	745	120	239	17.5	2	117	380	157.5	459
9050	537	255	358		225	420	270	210	30	60	140	28	150	775	110	259	23	7	117	360	172.5	490
9055	576	286	397		256	490	305	245	30	60	155	28	150	845	135	259	23	7	117	430	172.5	529

Size	RC1	RC2	Oil Qty (L)	Wt. (kg) ^{*)}
9015	3/4"	3/4"	5	125
9025	3/4"	3/4"	7	170
9030	3/4"	3/4"	9	235
9035	3/4"	3/4"	12	255
9040	1"	1"	18	345
9045	1"	1"	22	405
9050	1"	1"	22	485
9055	1"	1"	31	550

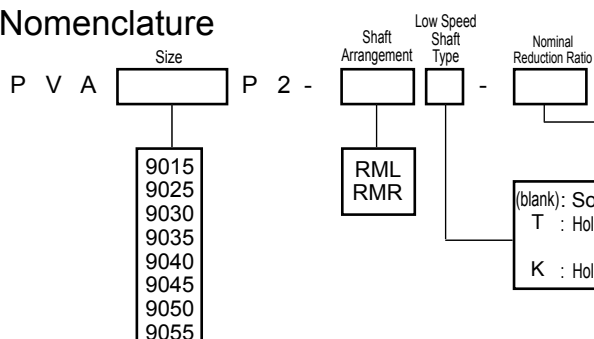
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							C								Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9015	9025	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MG	MC	MA	MB	MC												
5.5	382	212	315	454	212	315	144	397.5								8	43	54
7.5	415	251	315	510	251	315	185	397.5	427.5							8	57	77
11	480	251	350	575	251	350	188	427.5	457.5	515.5						11	76	96
15	545	324	350	700	324	350	232	427.5	457.5	515.5	515.5					11	131	175
18.5	625	394	400	835	394	400	297	427.5	457.5	515.5	515.5	555.5	555.5			17	213	258
22	625	394	400	835	394	400	297	427.5	457.5	515.5	515.5	555.5	555.5			17	213	258
30	625	394	400	835	394	400	297		457.5	515.5	515.5	555.5	555.5	589.5	589.5	17	224	280
37	715.5	394	450	930.5	394	450	297		487.5	545.5	545.5	585.5	585.5	619.5	619.5	15	259	320
45	715.5	394	450	930.5	394	450	297			545.5	585.5	585.5	619.5	619.5	619.5	15	259	320
55	769.5	484	550				412					585.5	585.5	619.5	619.5	29	276	
75	799	490	545				485							619.5	619.5	31	490	
90	799	490	545				485							619.5	619.5	31	540	

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1										
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



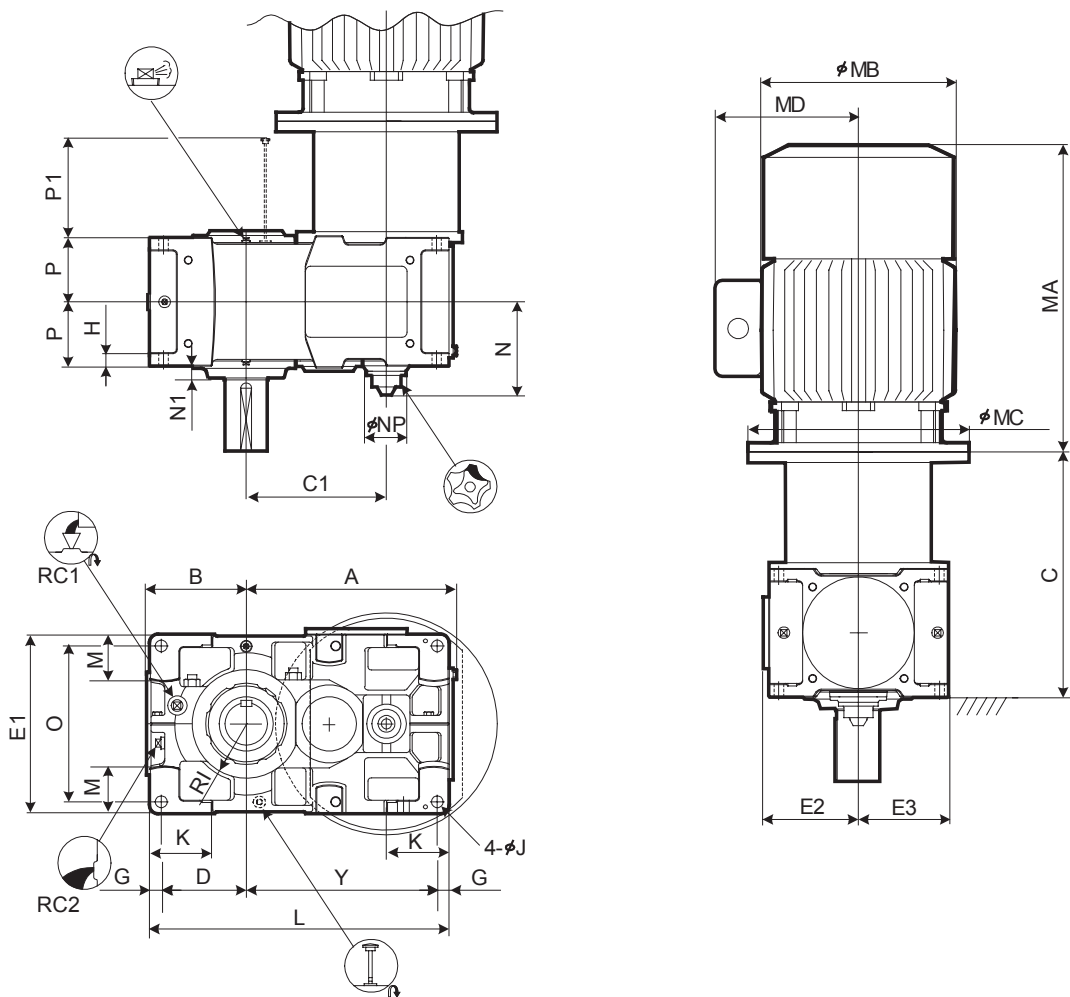
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Standard Shaft Arrangement Configuration

RML	RMR

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)

2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

3. Shaft arrangement RMR is equipped with oil gauge. Refer to the page D-28.
4. Refer to the page D-14 for dimensions not shown in these drawings.

5. Refer to the page D -28 for the dimension of optional parts.

6. Refer to the page D-33 for motor terminal box position.

7. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9060 ▶ 9085

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	621	299	414		251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	223	564
9065	667	338	460		290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	223	610
9070	719	336	482	See below	283	600	317	300	40	40	175	42	215	1020	155	304	38	117	520	215	253	657
9075	772	383	535		330	670	352	335	40	52	160	42	220	1120	195	304	40	117	590	215	253	710
9080	812	378	556		325	670	352	335	40	52	190	42	220	1155	170	322.5	45	117	590	230	283	750
9085	868	422	612		369	750	392	375	40	52	215	42	220	1255	210	322.5	40	117	670	230	283	806

Size	RC1	RC2	Oil Qty (L)	Wt. (kg)*
9060	1"	1"	25	705
9065	1"	1"	32	830
9070	1"	1"	39	985
9075	1"	1"	49	1245
9080	1"	1"	54	1380
9085	1"	1"	71	1650

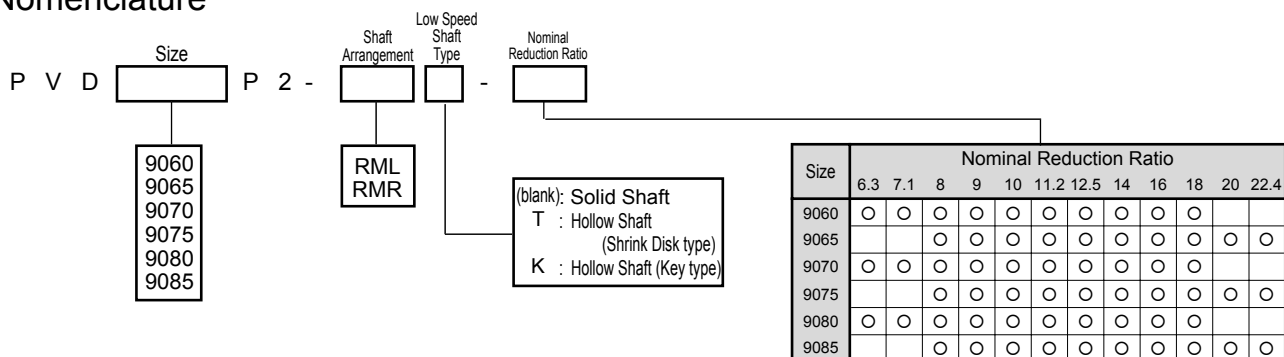
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor				C						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake	With Brake	With Brake	MD	9060	9065	9070	9075	9080	9085		Without Brake	With Brake
	MA MG MC	MA MB MC											
37	715.5 394 450	930.5 394 450	297	694 694							15	259	320
45	715.5 394 450	930.5 394 450	297	694 694							15	259	320
55	769.5 484 550		412	694 694							29	276	
75	799 490 545		485	694 694 744 744							31	490	
90	799 490 545		485	694 694 744 744							31	540	
110	898 550 655		515	724 774 774 838 838							56	675	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



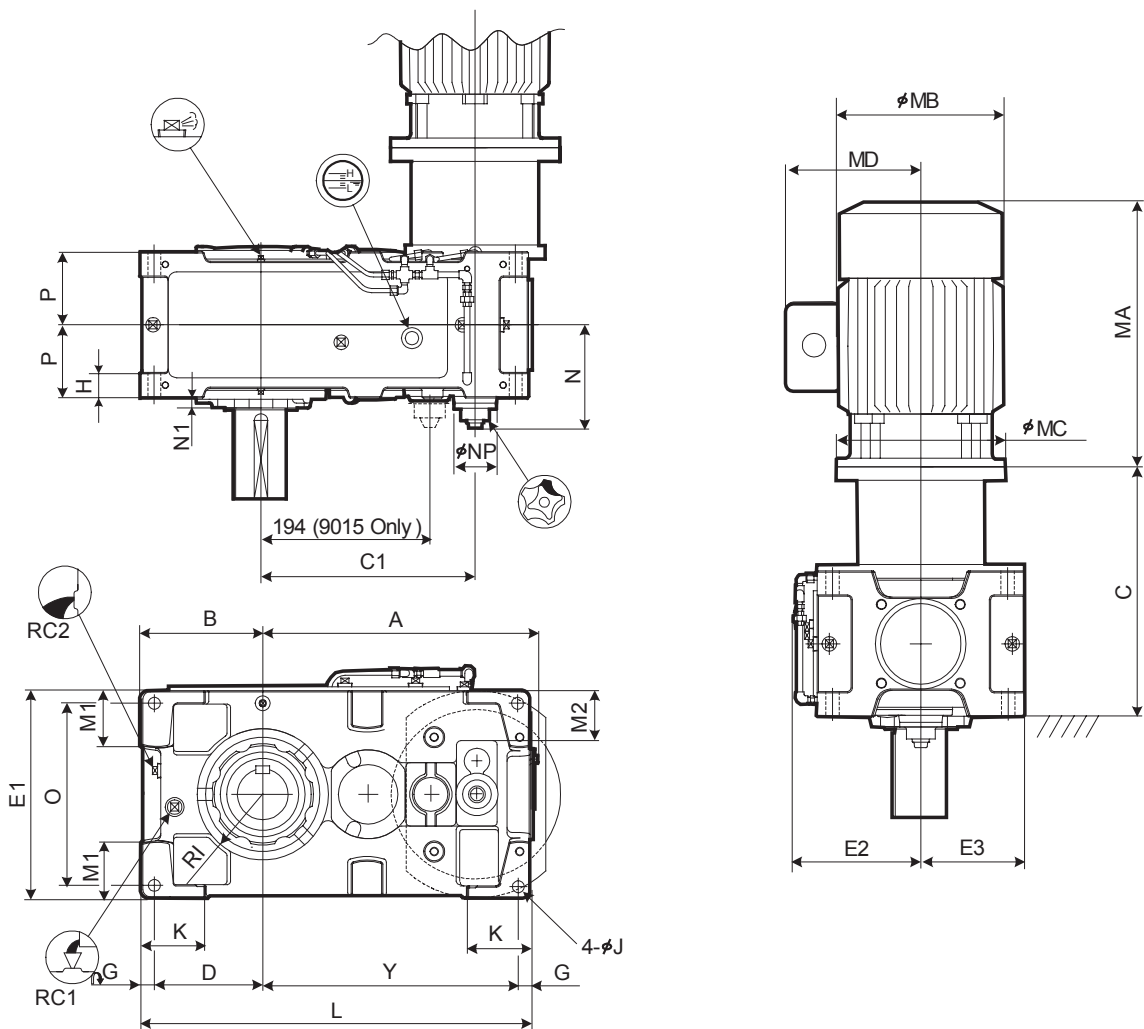
Oil Pump



Backstop (Option)



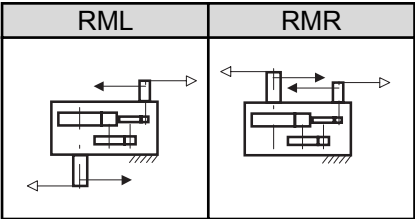
Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)

2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

3. Refer to the page D-13 for dimensions not shown in these drawings.

4. Refer to the page D -25 for the dimension of optional parts.

5. Refer to the page D-33 for motor terminal box position.

6. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9015 ▶ 9055

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9015	338	160	257		140	270	195	135	20	35	80	15	95	485	70	80	186	25	100	230	102.5	305
9025	408	175	306		155	310	215	155	20	40	87.5	19	110	570	75	90	198.5	23	100	270	117.5	375
9030	453	200	343		175	320	220	160	25	50	105	24	120	640	85	50	211	22	100	270	132.5	415
9035	484	219	374	See below	194	370	245	185	25	50	120	24	120	690	100	75	211	22	100	320	132.5	446
9040	540	235	398		205	400	260	200	28	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	577	256	437		226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050	609	255	467		225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055	648	286	506		256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

Size	RC1	RC2	Oil Qty (L)	Wt. (kg)*
9015	3/4"	3/4"	6	125
9025	3/4"	3/4"	8	175
9030	3/4"	3/4"	10	235
9035	3/4"	3/4"	14	260
9040	1"	1"	18	340
9045	1"	1"	22	410
9050	1"	1"	25	490
9055	1"	1"	35	555

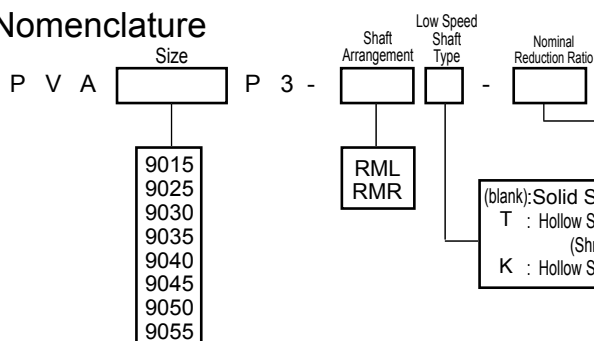
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							C								Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9015	9025	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
MA	MG	MC	MA	MB	MC													
5.5	382	212	315	454	212	315	144	376.5	405.5	457.5	457.5	497.5	497.5			8	43	54
7.5	415	251	315	510	251	315	185	376.5	405.5	457.5	457.5	497.5	497.5	510.5	510.5	8	57	77
11	480	251	350	575	251	350	188	406.5	435.5	487.5	487.5	527.5	527.5	590.5	590.5	11	76	96
15	545	324	350	700	324	350	232	406.5	435.5	487.5	487.5	527.5	527.5	590.5	590.5	11	131	175
18.5	625	394	400	835	394	400	297		435.5	487.5	487.5	527.5	527.5	590.5	590.5	17	213	258
22	625	394	400	835	394	400	297		435.5	487.5	487.5	527.5	527.5	590.5	590.5	17	213	258
30	625	394	400	835	394	400	297			487.5	487.5	527.5	527.5	590.5	590.5	17	224	280
37	715.5	394	450	930.5	394	450	297				517.5	557.5	557.5	620.5	620.5	15	259	320
45	715.5	394	450	930.5	394	450	297					557.5	557.5	620.5	620.5	15	259	320
55	769.5	484	550				412							620.5	620.5	29	276	

Size	Solid Shaft						Key				Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth		X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42		18	7	11	95	328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42		20	7.5	12	125	358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42		22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42		25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50		25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50		28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50		28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50		32	11	18	185	528	323	205	123	120	410	205	205	115	115

Nomenclature

Unit: mm



Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9015	○	○	○	○	○	○	○	○	○							
9025	○	○	○	○	○	○	○	○	○							
9030	○	○	○	○	○	○	○	○	○	○	○	○	○			
9035			○	○	○	○	○	○	○	○	○	○	○	○	○	
9040	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



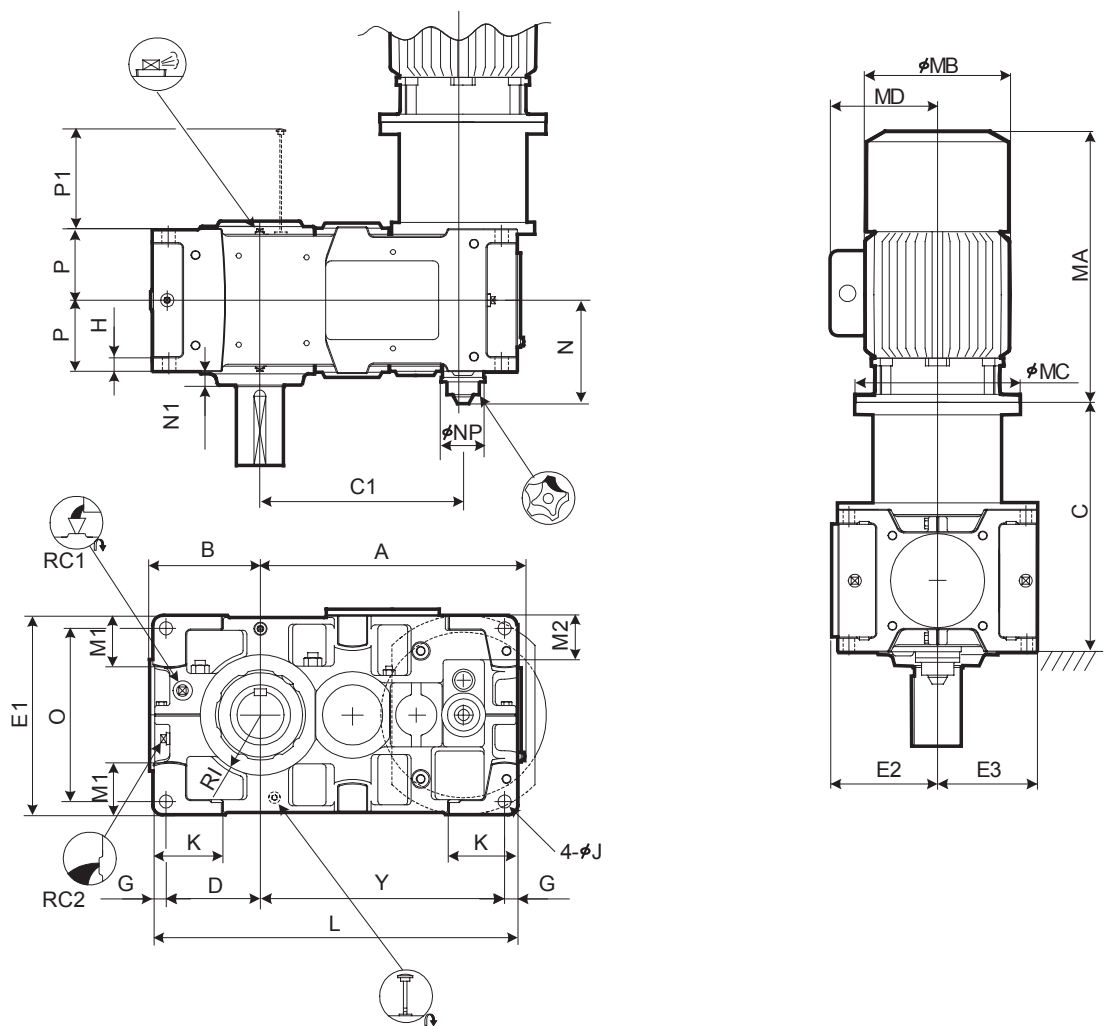
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Standard Shaft Arrangement Configuration

RML	RMR

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)

2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

3. Shaft arrangement RMR is equipped with oil gauge. Refer to the page D-28.
4. Refer to the page D-15 for dimensions not shown in these drawings.

5. Refer to the page D -28 for the dimension of optional parts.

6. Refer to the page D-33 for motor terminal box position.

7. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M	M2	N	N1	NP	O	P	P1	Y
9060	701	299	540		251	530	282	265	35	35	160	35	180	970	140	118	277.5	35	117	460	190	223	649
9065	747	338	586		290	600	317	300	35	35	175	35	180	1055	175	153	277.5	38	117	530	190	223	695
9070	809	336	630	See below	283	600	317	300	40	40	175	42	215	1115	155	128	304	38	117	520	215	253	752
9075	862	383	683		330	670	352	335	40	52	190	42	220	1215	195	163	304	40	117	590	215	253	805
9080	932	378	725		325	670	352	335	40	52	190	42	220	1275	170	140	322.5	45	117	590	230	283	870
9085	988	422	781		369	750	392	375	40	52	215	42	220	1375	210	180	322.5	40	117	670	230	283	926

Size	RC1	RC2	Oil Qty (L)	Wt. (kg) ^{*)}
9060	1"	1"	32	730
9065	1"	1"	35	885
9070	1"	1"	53	1030
9075	1"	1"	67	1255
9080	1"	1"	65	1460
9085	1"	1"	89	1730

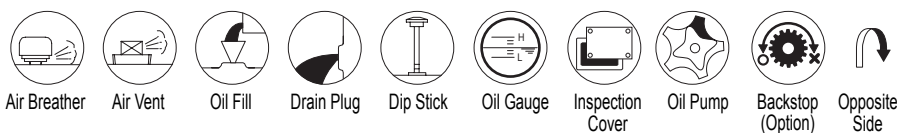
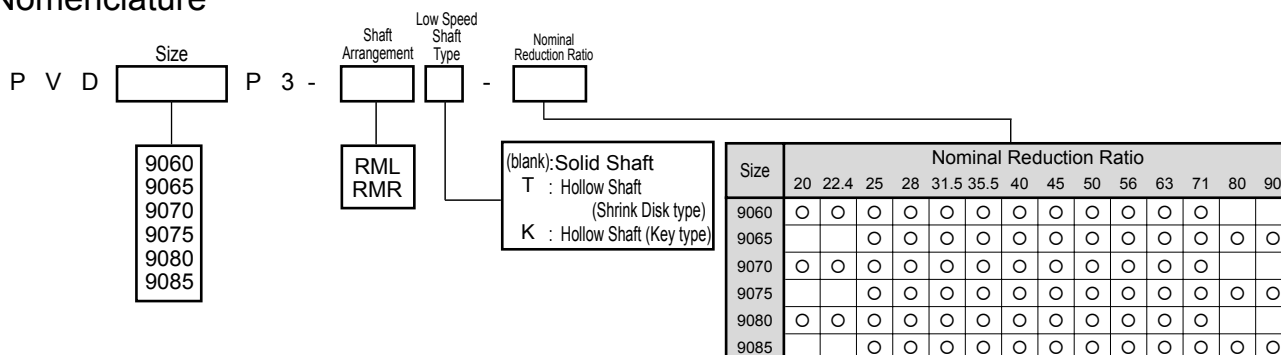
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							C						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	With Brake			Without Brake			MD	9060	9065	9070	9075	9080	9085		Without Brake	With Brake
MA	MG	MC	MA	MB	MC											
11	480	251	350	575	251	350	188	633	633					11	76	96
15	545	324	350	700	324	350	232	633	633					11	131	175
18.5	625	394	400	835	394	400	297	633	633	683	683			17	213	258
22	625	394	400	835	394	400	297	633	633	683	683			17	213	258
30	625	394	400	835	394	400	297	633	633	683	683	749	749	17	224	280
37	715.5	394	450	930.5	394	450	297	663	663	713	713	779	779	15	259	320
45	715.5	394	450	930.5	394	450	297	663	663	713	713	779	779	15	259	320
55	769.5	484	550				412	663	663	713	713	779	779	29	276	
75	799	490	545				485	663	663	713	713	779	779	31	490	
90	799	490	545				485			713	713	779	779	31	540	
110	898	550	655				515				743	809	809	56	675	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9060	440	230	210	125m6	M24/50	X1	Y1	Z1	L1	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Nomenclature



Exact Reduction Ratio Drive Unit Right Angle Shaft

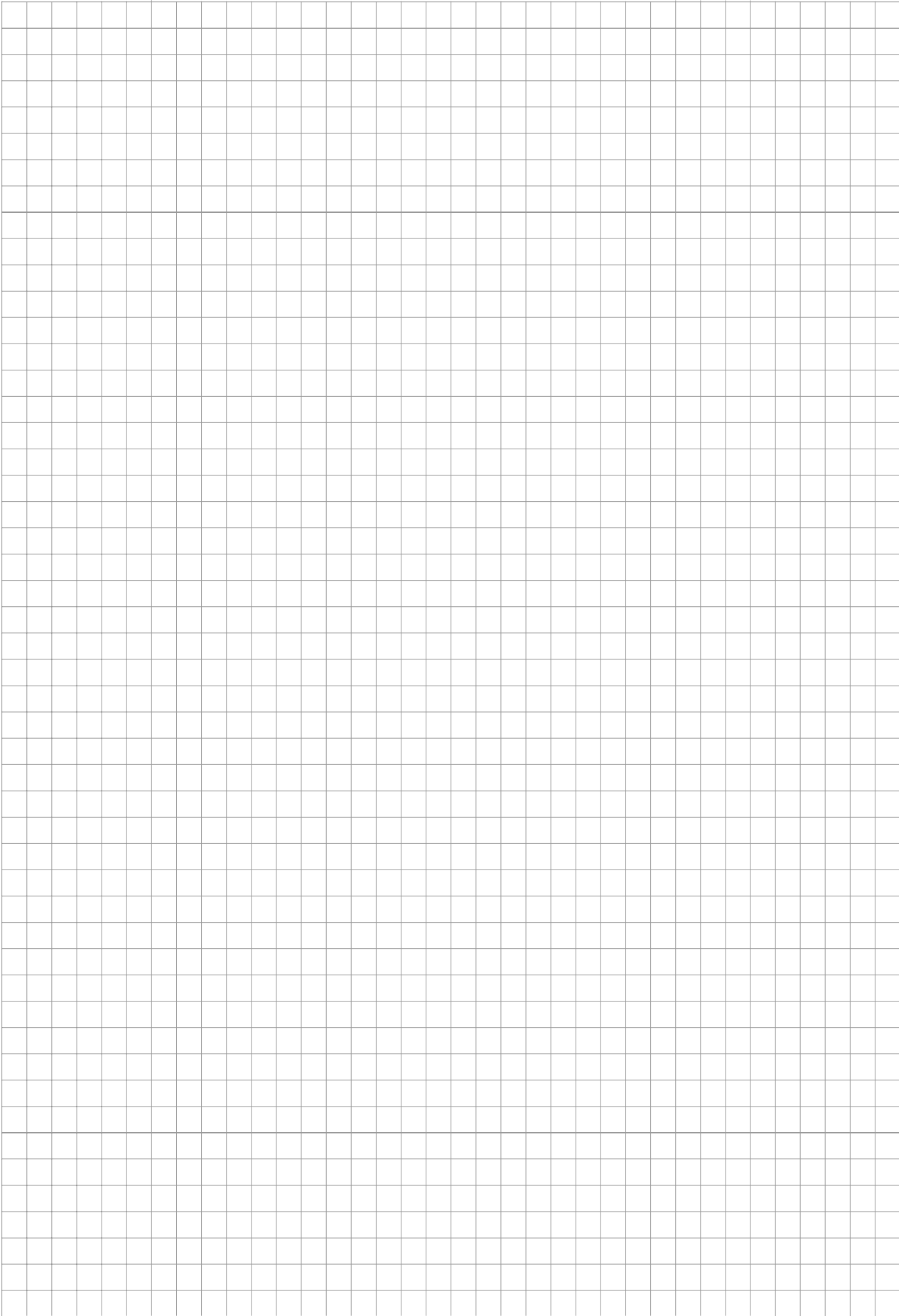
Nominal Reduction Ratio	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	6.378		6.111									
7.1	6.875		6.973									
8	8.118	7.950	7.778	7.770								
9	8.750	8.643	8.875	8.839								
10	10.303	10.118	9.608	9.889								
11.2	11.106	11.000	10.963	11.250								
12.5	12.756	12.842	12.222	12.216								
14	13.750	13.962	13.946	13.897								
16	15.897	15.899	15.556	15.540								
18	17.135	17.286	17.750	17.679								
20	20.091	19.814	19.620	19.778	19.790		19.181		19.950			
22.4	21.656	21.542	22.388	22.500	22.530		22.351		22.353			
25	25.137	25.041	24.444	24.945	25.935	24.662	25.137	24.053	24.938	24.700		
28	27.096	27.225	27.893	28.379	29.526	27.706	29.291	27.509	27.941	27.718		
31.5	32.455	31.331	31.694	31.079	31.969	32.319	30.157	31.521	31.129	30.875		
35.5	34.983	34.063	36.165	35.357	36.395	36.309	35.140	36.050	34.879	34.647		
40	40.607	40.451	39.487	40.296	41.895	39.838	39.520	37.815	38.912	38.541		
45	43.770	43.979	45.058	45.843	47.695	44.756	46.051	43.250	43.599	43.250		
50	51.141	50.611	49.942	50.205	51.869	52.207	50.273	49.557	49.500	48.176		
56	55.125	55.025	56.987	57.115	59.051	58.652	58.582	56.678	55.462	54.062		
63	63.986	53.741	62.222	63.497	64.640	64.637	63.984	63.041	63.000	61.286		
71	68.971	69.300	71.000	72.237	73.590	72.617	74.559	72.101	70.588	68.773		
80		79.751	77.989	79.111	79.341	80.552	78.377	80.234	78.120	78.000	79.124	
90		86.706	88.991	90.000	90.326	90.496	91.330	91.765	87.529	87.529	87.269	
100			99.259	99.158	103.97	98.871	102.71	98.282	97.650	96.720	96.444	96.432
112			113.26	112.81	118.37	111.08	119.69	112.41	109.41	108.54	106.37	105.89
125			122.72	126.20	130.09	129.57	127.97	128.80	127.97	120.90	126.39	117.54
140			140.03	143.57	148.10	145.56	149.12	147.31	143.38	135.67	139.40	129.07
160				156.02	158.68	162.11	156.75	160.47	152.99	158.44	158.25	154.04
180				177.50	180.65	182.13	182.66	183.53	171.41	177.79	174.54	169.14
200					207.95	197.74	205.42	196.56	191.23	189.41	192.89	192.86
224					236.74	222.15	239.37	224.81	214.26	215.55	212.75	211.77
250					260.18	259.14	255.94	257.59	250.61	236.76	252.78	235.08
280					296.20	291.13	298.24	294.61	280.79	265.69	278.80	258.13
315					315.95	324.22	332.51	320.94	322.08	310.27	318.63	308.07
355					367.08	364.25	369.46	367.06	343.56	348.18	355.25	338.28
400						388.53		409.25		399.38		386.60
450						451.41		454.72		426.01		431.03



Exact Reduction Ratio Drive Unit Parallel Shaft

Nominal Reduction Ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	6.257	6.193	6.314		6.049		6.470		6.188		6.246		6.429	
7.1	7.237	7.067	6.806		6.903		7.366		7.210		6.998		7.090	
8	7.889	7.616	8.118	7.869	7.778	7.691	7.956	8.062	7.875	7.759	8.033	7.733	8.167	7.835
9	9.125	8.690	8.750	8.556	8.875	8.750	9.057	9.058	9.176	8.874	9.000	8.677	9.007	8.603
10	10.143	9.722	9.944	10.118	9.528	9.889	10.156	9.914	9.750	9.875	9.665	9.945	9.905	9.953
11.2	11.732	11.094	10.719	11.000	10.872	11.250	11.562	11.138	11.361	11.294	10.829	11.160	10.924	10.929
12.5	12.710	12.407	12.785	12.394	12.485	12.114	12.594	12.656	12.206	12.226	12.600	11.966	12.762	12.071
14	14.701	14.158	13.781	13.475	14.247	13.781	14.337	14.219	14.224	13.983	14.118	13.428	14.076	13.255
16	15.778	15.340	15.997	15.935	15.556	15.874	16.504	15.694	15.996	15.306	15.750	15.600	15.556	15.554
18	18.250	17.503	17.243	17.325	17.750	18.059	18.789	17.631	18.640	17.506	17.647	17.506	17.157	17.078
20	19.894	19.681	20.280	19.938	19.884	19.778	19.590	20.566	18.987	20.059	20.067	19.500	20.054	18.958
22.4	23.011	22.457	21.860	21.676	22.689	22.500	22.303	23.105	22.125	22.941	22.484	21.882	22.119	20.817
25	24.696	24.332	25.374	25.277	24.774	25.281	25.673	24.413	24.883	23.810	25.083	28.844	24.444	24.441
28	28.565	27.764	27.350	27.481	28.269	28.761	29.227	27.426	28.995	27.231	28.105	27.880	26.961	26.838
31.5	31.401	31.905	32.876	31.625	31.213	31.498	30.855	31.992	29.905	31.202	31.500	31.056	31.601	29.792
35.5	36.321	36.406	35.438	34.383	35.617	35.833	35.127	35.942	34.848	35.686	35.294	34.850	34.854	32.712
40	38.980	39.444	41.134	40.976	38.889	39.686	40.435	38.450	39.190	37.500	39.375	39.000	38.519	38.514
45	45.088	45.009	44.338	44.550	44.375	45.148	46.033	43.197	45.667	42.889	44.118	43.765	42.484	42.289
50			51.141	51.268	49.248	49.444	49.634	50.388	48.825	49.144	51.188	48.750	51.845	46.944
56			55.125	55.739	56.195	56.250	56.507	56.608	56.894	56.206	57.353	54.706	57.182	51.547
63			63.986	63.741	61.358	62.615	65.045	61.852	63.984	61.225	63.984	63.375	63.194	63.186
71			68.971	69.300	70.014	71.234	74.051	69.488	74.559	70.024	71.691	71.118	69.700	69.381
80				79.751		78.012		81.056		80.234		79.219		77.018
90				86.706		88.750		91.063		91.765		88.897		84.569

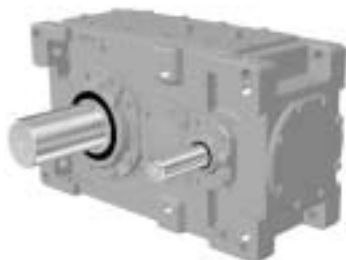






C

<Reducer: Right Angle Shaft Horizontal Mounting>



<Reducer: Parallel Shaft-Horizontal Mounting>

Reducer

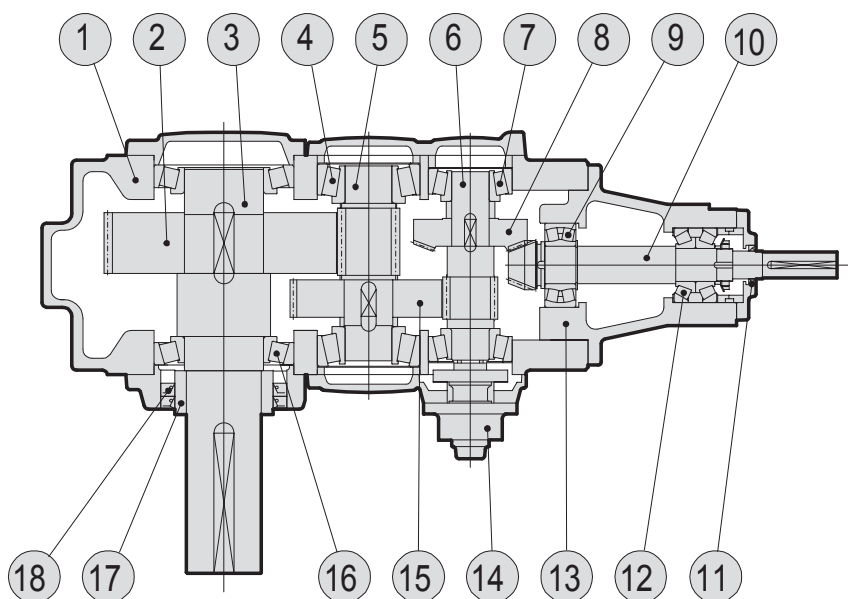
Standard Specifications	...	C- 2
Construction Drawing	...	C- 3
Nomenclature	...	C- 4
Selection Flowchart and Formula		
for Selection	...	C- 6
Service Factor	...	C- 8
Right Angle Shaft	...	C- 11
Parallel Shaft	...	C-105

Reducer Standard Specifications

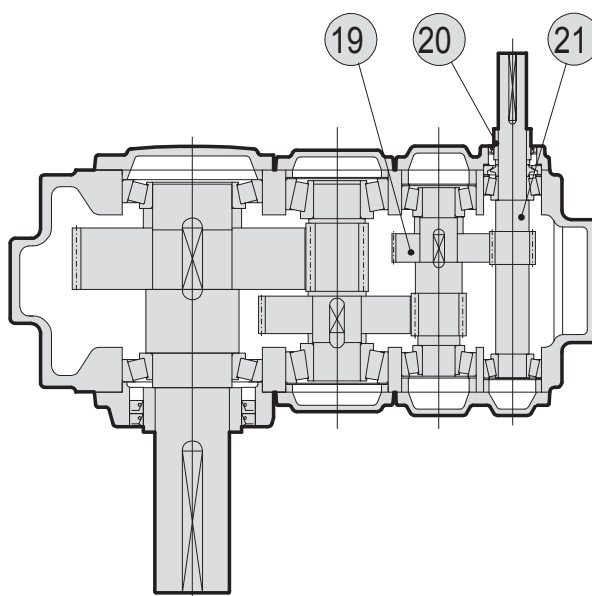
Item		Standard Specification		
		Mounting	High Speed Shaft Speed	
Reducer	Lubrication Method	Horizontal Shaft	750 ~ 1800r/min	Oil bath lubrication In case of high speed shaft speed is less than 750r/min, electric pump lubrication may be used. Consult SUMITOMO for details.
		Vertical Shaft	400 ~ 1800r/min	Pump lubrication (Two different pump lubrication systems are available; shaft connected pump lubrication and electric pump lubrication. For details, refer to the outside dimension drawing.)
		Upright Shaft	750 ~ 1800r/min	Oil bath lubrication Grease lubrication for right angle input shaft.
	Lubricant	Refer to the page D-2.		
	Gear Type	Involute external gear		
Ambient Conditions	Installation Location	Indoor (Minimal dust and humidity)		
	Ambient Temperature	— 10°C ~ 40°C A cooling fan may provided depending on the usage (Note 1)		
	Ambient Humidity	Under 85%		
	Elevation	Under 1,000 meters		
	Atmosphere	Well ventilated location, free of corrosive gases, explosive gases, vapors and dust.		
Installation		Horizontal installation Refer to the page D-2		
Method of Coupling with Driven Machine		Coupling, gears, chain sprocket or belt.		
Painting		Surface preparation: Shot blasting after washing before machining Inside painting: UNI GROUND PTC primer is sprayed once Outside painting: For prime-coating, UNI GROUND PTC primer is sprayed once. For final coating, NEO ALKYS is sprayed once. Painting color: MANSEL 6.5PB 3.6/8.2, Refer to the page D-3.		

Note 1: In general, a heating or cooling system is necessary in case the ambient temperature is lower than -10°C or higher than +50°C.

Reducer Construction Drawing



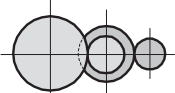
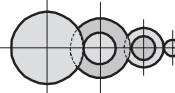
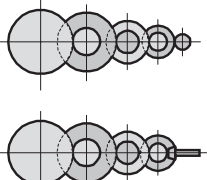
<Reducer: Right Angle Triple Reduction>



<Reducer: Parallel Shaft Triple Reduction>

Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name
1	Housing	7	Taper roller bearing	13	Bearing housing	19	Helical gear
2	Helical gear	8	Bevel gear	14	Oil pump	20	Collar
3	Slow speed shaft	9	Spherical roller bearing	15	Helical gear	21	Helical pinion shaft
4	Taper roller bearing	10	Bevel pinion shaft	16	Taper roller bearing		
5	Helical pinion shaft	11	Oil seal	17	Collar		
6	Helical pinion shaft	12	Taper roller bearing	18	Oil seal		

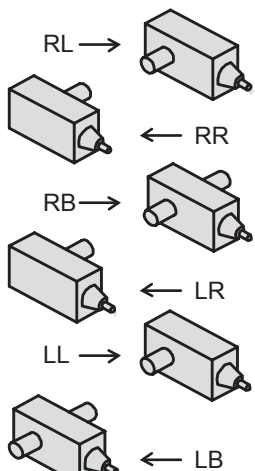
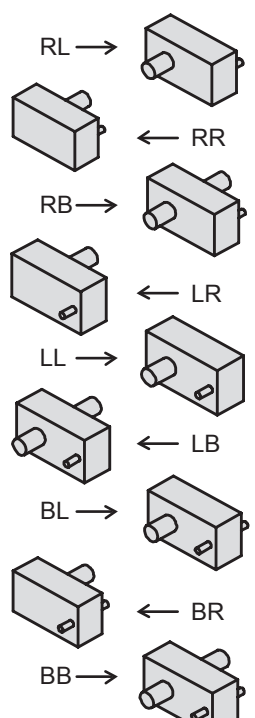
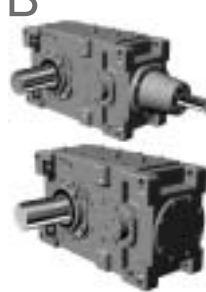
Reducer Nomenclature

P	H	D	9075		R	3		
Series	Mounting	Housing	Size	Torque kNm	Shaft Position	Number of Gear Stages		
P Paramax	H  Horizontal	A Monoblock	9015	2.6	R  Right Angle	2  Double Reduction		
			9025	4.2				
			9030	6.4		3  Triple Reduction		
			9035	8.5				
			9040	10.1				
			9045	13.2				
			9050	15.3				
			9055	19.9				
	V  Vertical	D Split	9060	24.4	P  Parallel	4  Quadruple Reduction		
			9065	31.4				
			9070	38.2				
			9075	47.8				
			9080	58.5				
			9085	73.1				
			9090	85.9				
			9095	101				
	W  Upright		9100	122				
			9105	144				
			9110	174				
			9115	207				
			9118	260				
			9121	301				
			9126	351				
			9128	420				
			9131	473				
			9136	552				

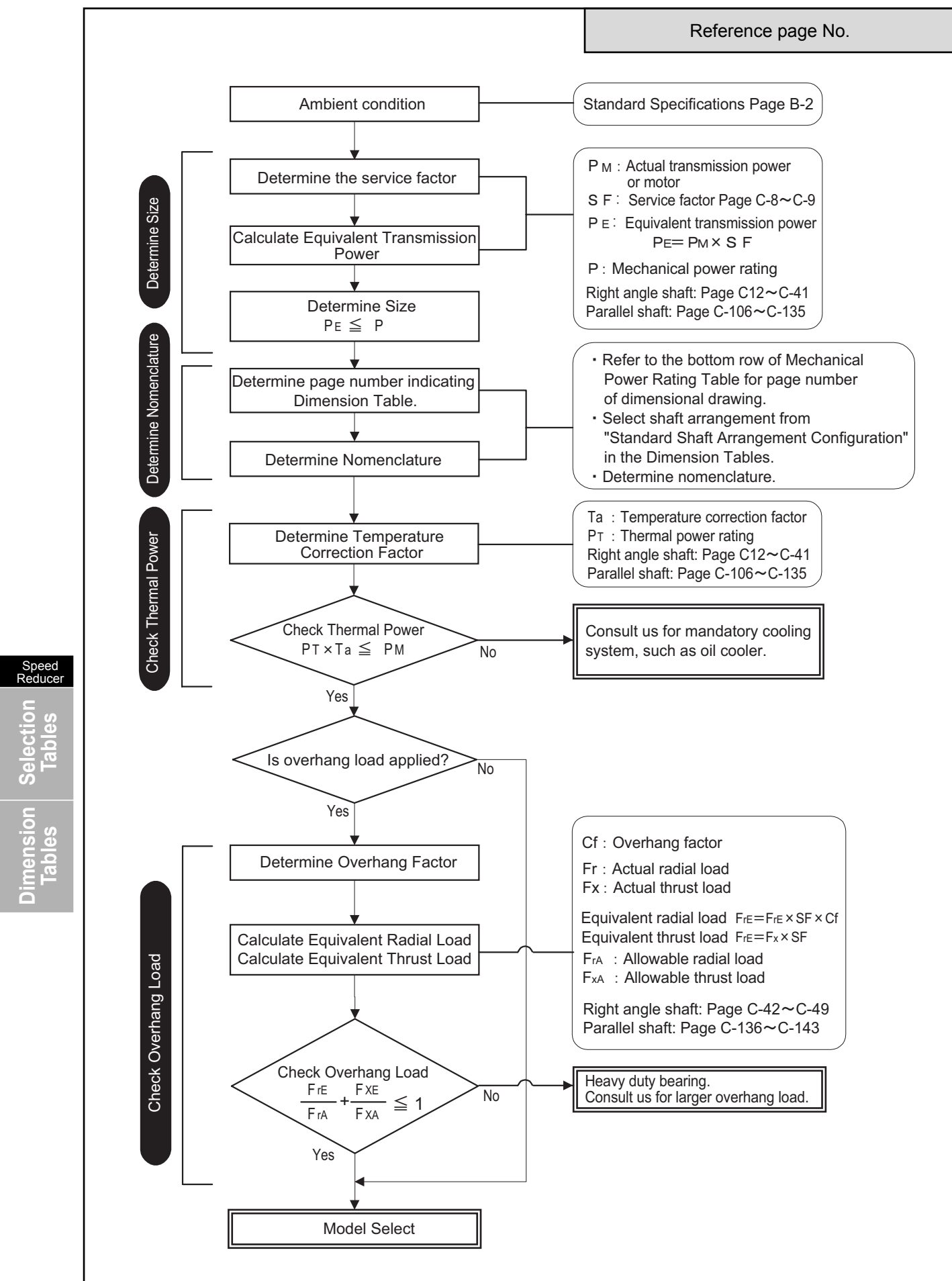
1. For shaft arrangement, refer to the dimension sheets.
2. Consult us for reduction ratios smaller than 6.3.

Reducer Nomenclature

 — RL K F — 35.5

Mounting for Upright	Shaft Arrangement	Slow Speed Shaft	Option	Nominal Ratio	
(Blank) 		(Blank)  Solid Shaft	(Blank)  Without option	Right Angle Shaft	
		T  Hollow Shaft (Shrink Disk Type)	F  With fan	6.3 7.1 8 9 10 11.2 12.5 14 16 18 20 22.4 25 28 31.5 35.5 40 45 50	56 63 71 80 90 100 112 125 140 160 180 200 224 250 280 315 355 400 450
W  Wall Mount (Upright Mounting)		K  Hollow Shaft (Key Type)	B  With backstop	Parallel Shaft	
			FB  With fan & backstop	6.3 7.1 8 9 10 11.2 12.5 14 16 18 20 22.4 25 28 31.5 35.5 40 45 50	56 63 71 80 90 100 112 125 140 160 180 200 224 250 280 315 355 400 450 500

Reducer Selection



Reducer Selection Example

○ : Conditions ■ : Selected item		
○ Ambient Condition	: Indoor, Ambient temperature 40°C	C-2 Standard Specifications
■ Check ambient condition	→ OK	
○ Motor power	: 55 kW	
○ High speed shaft speed	: 1500r/min	
○ Shaft and mounting positions	: Right Angle Shaft · Horizontal Mounting	
Load Condition		
○ Type of load, Operating hours	: Uniform load · 14 hours/day	C-8 Service Factor
■ Determine service factor	→ SF = 1.25	
■ Calculate equivalent transmission power	→ $PE = 55 \times 1.25 = 68.75 \text{ kW}$	
○ Slow speed shaft speed	: 85 r/min	C-4 ~ C-5 Nomenclature
■ Reduction ratio	→ $1500/85 = 17.6$	
Select nominal reduction ratio	→ 17.6 → 18	
■ Determine size	→ Size 9035, Nominal Reduction Ratio 18 Mechanical power rating $P = 72 \text{ kW}$ $PE \leq P \rightarrow \text{OK}$	C-18 Selection Tables
■ Check dimension		C-50 *1 Dimension Tables Standard shaft arrangement configuration in Dimension Tables
■ Check shaft arrangement	→ RL	
■ Check nomenclature	→ PHA9035R2-RLF-18	Nomenclature in Dimension Tables
○ Ambient Temperature	: 40 °C	C-18 Selection Tables
■ Temperature correction factor without fan Ta	→ $T_a = 0.70$	C-18 Selection Tables Standard Specifications
■ Thermal rating without fan PT	→ $P_T = 48 \text{ kW}$	
	→ $P_T \times T_a = 33.6 < 55 = PM \rightarrow \text{OUT}$	
■ Temperature correction factor with fan Ta	→ $T_a = 0.73$	C-18 Selection Tables
■ Thermal rating with fan PT	→ $P_T = 120 \text{ kW}$	
	→ $P_T \times T_a = 87.6 > 55 = PM \rightarrow \text{OK}$	
	→ With fan	
Check overhang load		
○ Overhang member	: Sprocket (Single row)	C-42 Allowable External Load
■ Overhang factor Cf	→ $C_f = 1.0$	
○ Radial load position and direction	: Center of solid shaft, Downward	
○ Radial load Fr	: 8.5 kN	
○ Thrust load Fx	: 0 kN	
■ Equivalent radial load FrE	→ $FrE = 8.5 \times 1.25 \times 1.0 = 10.6$	C-42 Allowable External Load
■ Equivalent axial load FrX	→ $FrX = 0 \times 1.25 = 0$	
■ Allowable radial load	→ 29.4 kN	C-42 Allowable External Load
■ Allowable thrust load	→ 23.1 kN	
	$\frac{10.6}{29.4} + \frac{0}{23.1} = 0.36 < 1$	
	→ OK	
■ Model selected	→ PHA9035R2-RLF-18	
		*1 Page number of the relevant Dimension Table is indicated in the Selection Table.

Reducer Service Factor SF

Service Factor SF

Driven Machine		Operating Hours (hours/day)				
		3 hrs	10 hrs	24 hrs		
CRANES						
Classification of Crane	Hoisting	Traverse Motion	Travel Motion	Slewing Motion	Boom Hoisting	The crane classification is based on JIS B8821-1976 "Calculation standard for the structure of crane."
Group I	1.00	1.50		1.25	1.00	
Group II	1.25		1.50		1.00	
Group III	1.50		1.75		1.25	
Group IV	1.75		2.00		1.50	
CONVEYORS (General purpose)						
Uniformly load or fed				1.00	1.00	1.25
Heavy load						
Not uniformly fed				1.00	1.25	1.50
Reciprocating or shaker				1.50	1.75	2.00
ELEVATORS						
Elevators				1.50	1.50	1.50
Escalators				1.25	1.25	1.25
METAL MILLS						
Draw bench carriage and main drive				1.50	1.50	1.50
Runout table						
Non reversing						
Group drives				1.50	1.50	1.50
Individual drivers				2.00	2.00	2.00
Reversing				2.00	2.00	2.00
Slab pushers				1.50	1.50	1.50
Shears				2.00	2.00	2.00
Wire drawing				1.25	1.25	1.25
Wire winding machine				1.25	1.50	1.50
METAL STRIP PROCESSING MACHINERY						
Bridles				1.50	1.50	1.50
Coilers & uncoilers				1.00	1.25	1.50
Edge trimmers				1.00	1.25	1.50
Flatteners				1.25	1.25	1.50
Loopers (Accumulators)				1.50	1.50	2.00
Pinch rolls				1.25	1.25	1.50
Scrap choppers				2.00	2.00	2.00
Shears				2.00	2.00	2.00
Slitters				1.00	1.25	1.50
MILL, ROTARY TYPE						
Ball and rod				2.00	2.00	2.00
Cement Kilns				2.00	2.00	2.00
Kilns (Except cement klins)				1.50	1.50	1.50
Dryers and coolers				1.50	1.50	1.50
SEWAGE DISPOSAL EQUIPMENT						
Aerators				2.00	2.00	2.00
Bar screens				1.25	1.25	1.25
Chemical feeders				1.25	1.25	1.25
Dewatering screens				1.50	1.50	1.50
Scum breakers				1.50	1.50	1.50
Slow or rapid mixers				1.50	1.50	1.50
Sludge collectors				1.25	1.25	1.25
Thickeners				1.50	1.50	1.50
Vacuum filters				1.50	1.50	1.50
EXTRUDERS						
Plastics				1.25	1.25	1.25
Rubber				1.50	1.50	1.50
FEEDERS						
Apron				1.00	1.25	1.50
Belt				1.00	1.25	1.50
Disk				1.00	1.00	1.25
Reciprocating				1.50	1.75	2.00
Screw				1.00	1.25	1.50

Driven Machine		Operating Hours (hours/day)		
		3 hrs	10 hrs	24 hrs
RUBBER INDUSTRY				
Mixers		1.75	1.75	2.00
Mixing mill -2 smooth rolls		1.50	1.50	1.75
Batch drop mill -2 smooth rolls		1.50	1.50	1.50
Cracker warmer				
-2 roll: 1 corrugated roll		1.75	1.75	1.75
Cracker -2 corrugated rolls		2.00	2.00	2.00
Holding, feed and blend mill				
-2 rolls		1.25	1.25	1.25
Refiner -2 rolls		1.50	1.50	1.50
Calenders		1.50	1.50	1.50
PAPER MILL				
All types incl. Paper making machine		2.00	2.00	2.00
AGITATORS AND MIXERS				
Pure liquids		1.00	1.00	1.25
Liquids and solids		1.00	1.25	1.50
Liquids variable density		1.00	1.25	1.50
MIXERS				
Concrete		1.25	1.25	1.50
CRUSHER				
Stone or ore		2.50	2.50	2.50
BLOWERS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Vane		1.00	1.25	1.50
COMPRESSORS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Reciprocating: multi cylinder		1.50	1.50	1.75
Reciprocating: single cylinder		1.75	1.75	2.00
FANS				
Centrifugal		1.00	1.00	1.25
Cooling towers		※	※	※
Forced draft		1.25	1.25	1.25
Suction draft		1.50	1.50	1.50
Industrial and mine		1.50	1.50	1.50
PUMPS				
Centrifugal		1.00	1.00	1.25
Screw pump		1.25	1.25	1.50
Gear pump		1.25	1.25	1.50
DREDGES				
Cable reels		1.25	1.25	1.50
Conveyors		1.25	1.25	1.50
Cutter head drive		2.00	2.00	2.00
Pumps		2.00	2.00	2.00
Screen drives		1.75	1.75	2.00
Stackers		1.25	1.25	1.50
Winches		1.25	1.25	1.50
GENERATORS AND EXCITERS				
		1.00	1.00	1.25
HAMMER MILLS				
		1.75	1.75	2.00
SUGAR INDUSTRY				
Beet slicer		2.00	2.00	2.00
Cane knives		1.50	1.50	1.50
Crushers		1.50	1.50	1.50
Mills (Slow speed end)		1.75	1.75	1.75

Notes:

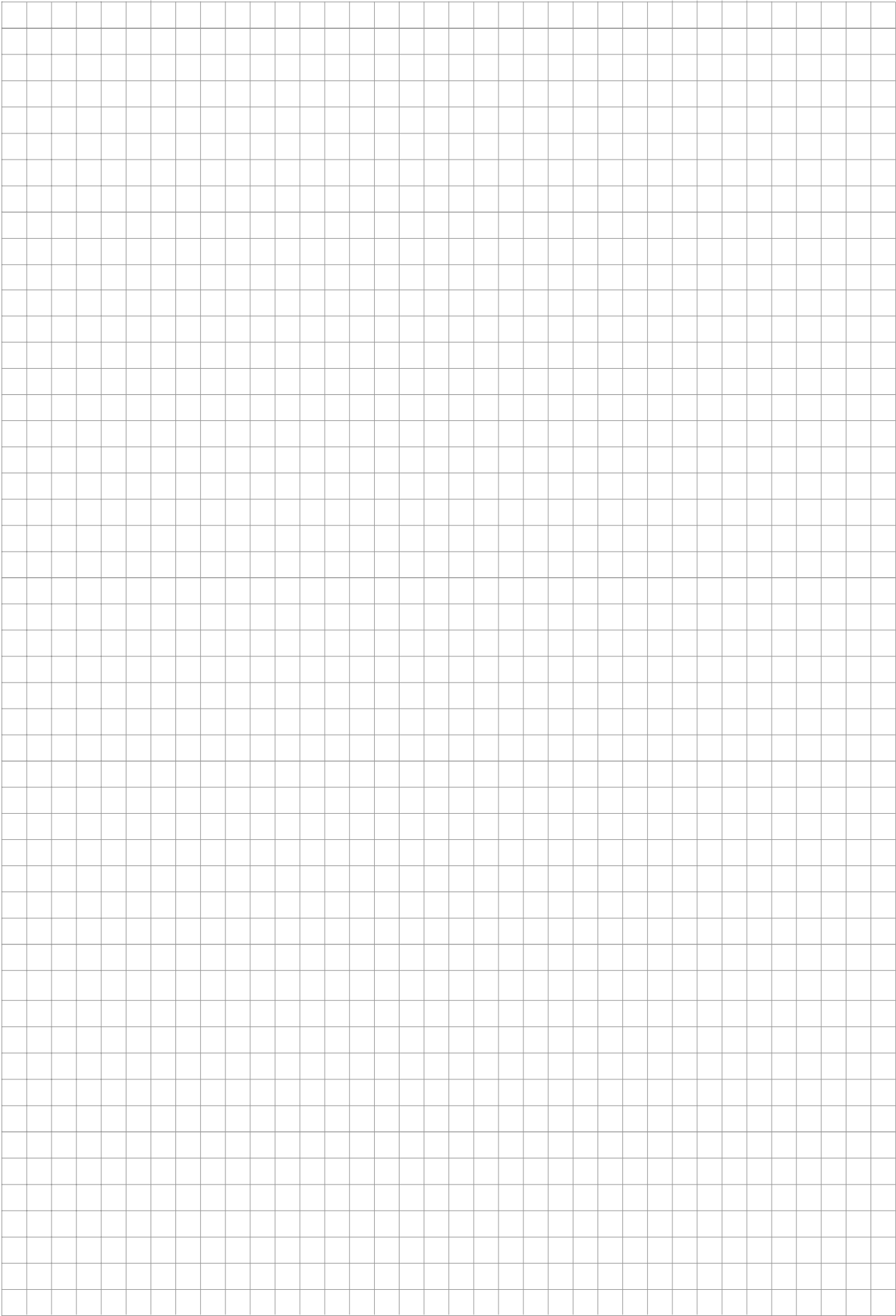
- (1) Values in the above table are based on AGMA standards and SUMITOMO's experience.
- (2) Values in the above table apply for electric motors as prime movers - if prime mover is a multi cylinder combustion engine, 0.25 has to be added to the SF.
- (3) Consult us for special duty or when special safety specifications are needed.
- (4) ※ : For SF, consult us.

Reducer Service Factor SF

Refer to the following for driven machines not shown on the left page.

Prime Mover	Operating Hours	Type of Load		
		Uniform Load	Moderate Shock Load	Heavy Shock Load
		U	M	H
Electric Motor	3 hours/day	1.00	1.00	1.50
	10 hours/day	1.00	1.25	1.75
	24 hours/day	1.25	1.50	2.00
Internal Combustion Engine (multi cylinder)	3 hours/day	1.00	1.25	1.75
	10 hours/day	1.25	1.50	2.00
	24 hours/day	1.50	1.75	2.25

Note: Consult us when the operating hours are less than 3 hours/day or when an internal combustion engine (single cylinder) is used.





<Reducer: Right Angle Shaft-Horizontal Mounting>



<Reducer: Right Angle Shaft Upright Mounting>



<Reducer: Right Angle Shaft Vertical Mounting>

C

Reducer: Right Angle

Selection Tables	... C- 12
Allowable Loads	... C- 42
Dimension Sheets	... C- 50

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
6.3	Exact Reduction Ratio		6.265	6.049	6.539		6.405		6.384		6.188		6.188		6.286		
	1800	286	74	98	152		236		334		568		798		1020 [*]		
	1500	238	62	81	127		197		279		475		667		857		
	1200	190	49	65	102		158		224		381		535		688		
	1000	159	41	54	85		132		187		318		447		575		
	900	143	37	49	76		119		168		287		403		518		
	750	119	31	41	64		99		141		240		337		433		
7.1	Exact Reduction Ratio		7.246	6.903	7.049		7.309		7.268		7.210		6.933		6.933		
	1800	254	62	98	152		228		334		559		798		1020 [*]		
	1500	211	52	81	127		191		279		469		667		857		
	1200	169	42	65	102		153		224		377		535		688		
	1000	141	35	54	85		128		187		316		447		575		
	900	127	31	49	76		116		168		285		403		518		
	750	106	26.5	41	64		97		141		238		337		433		
8	Exact Reduction Ratio		7.889	8.056	8.118	8.150	7.778	8.144	8.125		7.875	7.759	8.082		8.190		
	1800	225	57	76	140	152	217	236	340		544	568	810		1150 [*]		
	1500	188	47	63	117	127	181	197	285		467	475	705		1010		
	1200	150	38	51	94	102	145	158	229		374	381	568		834		
	1000	125	31	42	78	85	120	132	191		312	318	476		699		
	900	113	28.6	38	71	76	108	119	173		280	287	429		630		
	750	94	23.8	31	59	64	90	99	144		234	240	359		528		
Dimension Tables	Horizontal Vertical Upright	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-50		C-52	C-52	C-52		C-52		
		C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-76		C-78	C-78	C-78		C-78		
		C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92		C-94	C-94	C-94		C-94		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Double Reduction Horizontal Type	1800	-	30	39	46	61	73	88	79		108	134	138		160		
			1	75	105	124	171	217	261	233		332	414	372		561		
		1500	-	31	40	49	64	77	92	86		118	146	154		183		
			1	68	95	117	160	203	243	224		326	402	369		574		
		1200	-	31	40	50	66	79	95	90		126	154	165		200		
			1	60	84	106	145	184	223	208		307	376	351		557		
	6.3 ▼ 8	1000	-	30	39	50	65	78	95	91		128	156	169		207		
			1	52	73	94	128	163	198	186		276	337	319		511		
		900	-	29	39	50	65	78	94	91		128	156	169		209		
			1	48	69	89	121	154	187	178		265	323	306		493		
		750	-	28	37	48	63	76	92	89		127	154	169		209		
			1	42	60	79	107	137	167	159		239	290	278		449		
Dimension Tables	Double Reduction Vertical Type	1800	-	30	39	46	61	73	88	79		108	134	138		160		
			1	75	105	124	171	217	261	233		332	414	372		561		
		1500	-	31	40	49	64	77	92	86		118	146	154		183		
			1	68	95	117	160	203	243	224		326	402	369		574		
		1200	-	31	40	50	66	79	95	90		126	154	165		200		
			1	60	84	106	145	184	223	208		307	376	351		557		
	6.3 ▼ 8	1000	-	30	39	50	65	78	95	91		128	156	169		207		
			1	52	73	94	128	163	198	186		276	337	319		511		
		900	-	29	39	50	65	78	94	91		128	156	169		209		
			1	48	69	89	121	154	187	178		265	323	306		493		
		750	-	28	37	48	63	76	92	89		127	154	169		409		
			1	42	60	79	107	137	167	159		239	290	278		449		
Dimension Tables	Double Reduction Upright Type	1800	-	24	31	37	49	58	70	64		86	107	110		128		
			1	60	84	99	137	174	209	186		266	331	297		449		
		1500	-	25	32	39	51	61	74	69		95	117	123		146		
			1	54	76	93	128	162	195	179		260	321	295		459		
		1200	-	24	32	40	52	63	76	72		100	123	132		160		
			1	48	67	85	116	147	178	166		245	301	281		446		
	6.3 ▼ 8	1000	-	24	31	40	52	63	76	73		102	125	135		166		
			1	41	58	75	102	130	158	149		221	270	255		408		
		900	-	23	31	40	52	62	75	72		102	125	136		167		
			1	39	55	71	97	124	150	142		212	258	245		395		
		750	-	23	30	39	50	61	74	71		101	123	135		167		
			1	34	48	63	86	110	133	128		191	232	222		360		

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
											Exact Reduction Ratio			1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation. 2. _____ Consult us when the high speed shaft speed is over 1800r/min.
											286	1800	6.3	
											238	1500		
											190	1200		
											159	1000		
											143	900		
											119	750		
											Exact Reduction Ratio			3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method. 4. _____ When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$
											254	1800	7.1	
											211	1500		
											169	1200		
											141	1000		
											127	900		
											106	750		
											Exact Reduction Ratio			5. _____ Shown in the table are the ratings for the slow speed shaft. 6. _____ Refer to C42-C49 for the allowable radial and axial load on each shaft.
											225	1800	8	
											188	1500		
											150	1200		
											125	1000		
											113	900		
											94	750		
											Horizontal Vertical Upright	Dimension Tables		

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor		Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan	
											-	1800	Double Reduction Horizontal Type	20	1.00	1.00	1. _____ Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan) 2. _____ The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above. 3. _____ When the high speed shaft speed is not shown in the table, find it by interpolation method.
											-	1500		30	0.85	0.87	
											-	1200		40	0.70	0.73	
											1	1000		50	0.55	0.60	
											-	900					
											1	750	6.3				
											-	1800	Double Reduction Vertical Type				
											-	1500					
											-	1200					
											1	1000					
											-	900					
											1	750	8				
											-	1800	Double Reduction Upright Type				
											-	1500					
											-	1200					
											1	1000					
											-	900					
											1	750	8				

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 9 ▶ 11.2

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
9	Exact Reduction Ratio		9.125	9.192	8.750	8.861	8.875	9.265	9.250	8.938	9.176	8.874	9.056	8.597	9.034		
	1800	200	49	76	126	152	188	236	280	334	443	568	704	798	1070 [*]		
	1500	167	41	63	105	127	158	197	234	279	371	475	590	667	897		
	1200	133	33	51	85	102	127	158	188	224	298	381	474	535	722		
	1000	111	28.0	42	71	85	106	132	158	187	250	318	397	447	605		
	900	100	25.3	38	64	76	95	119	142	168	225	287	358	403	546		
	750	83	21.1	31	53	64	80	99	119	141	188	240	300	337	457		
10	Exact Reduction Ratio		10.040	9.899	10.303	10.118	10.171	9.889	10.000	10.125	9.995	9.875	10.125	10.007	9.882	9.982	
	1800	180	43	72	111	143	161	217	278	351	434	546	677	810	1000 [*]	1150 [*]	
	1500	150	36	60	92	119	134	181	232	297	362	469	567	713	863	1010	
	1200	120	29.1	48	74	95	107	145	187	237	289	375	456	577	695	867	
	1000	100	24.3	40	62	79	89	120	156	198	241	313	382	482	582	736	
	900	90	21.9	36	55	71	80	108	141	178	217	281	344	435	525	663	
	750	75	18.2	30	46	59	67	90	118	148	181	234	288	363	439	553	
11.2	Exact Reduction Ratio		11.614	11.295	11.106	11.000	11.606	11.250	11.385	11.375	11.647	11.294	11.345	11.229	10.900	10.961	
	1800	161	39	63	100	133	145	198	229	293	351	462	565	747	892 [*]	1120 [*]	
	1500	134	33	52	83	111	121	166	191	245	294	387	473	626	748	938	
	1200	107	26.5	42	67	89	97	133	154	197	236	311	381	504	602	756	
	1000	89	22.1	35	56	75	81	111	129	165	198	260	319	421	504	633	
	900	80	19.9	31	50	67	73	100	116	149	178	235	287	380	454	571	
	750	67	16.7	26.6	42	56	61	84	97	124	149	196	240	318	380	478	
Dimension Tables	Horizontal	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-52	C-52	C-52	C-52	C-52	C-52	
	Vertical	C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-78	C-78	C-78	C-78	C-78	C-78	
	Upright	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-94	C-94	C-94	C-94	C-94	C-94	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	27 67	36 96	44 118	56 156	69 205	82 244	78 227	99 290	109 337	130 402	142 382	173 467	164 577	203 715		
		1500	-	27 59	36 86	46 109	58 144	71 187	85 225	82 214	105 274	116 319	141 388	153 368	188 452	183 575	226 708		
		1200	-	26 52	36 76	46 98	59 129	71 166	86 202	84 195	108 250	120 292	147 359	160 341	198 422	195 543	242 673		
		1000	-	26 44	35 66	46 85	58 113	70 145	85 177	84 173	108 222	120 260	148 320	161 305	200 379	199 491	248 610		
		9	-	25 41	34 62	45 81	57 107	69 137	84 167	84 164	108 211	119 247	148 306	161 291	200 363	200 471	249 586		
		11.2	-	24 36	33 54	44 71	56 95	66 120	82 149	82 146	105 188	117 221	146 275	158 261	198 326	198 425	247 531		
	Dimension Tables	Double Reduction Vertical Type	1800	-	27 67	36 96	44 118	56 156	69 205	82 244	78 227	99 290	109 337	130 402	142 382	173 467	164 577	203 715	
			1500	-	27 59	36 86	46 109	58 144	71 187	85 225	82 214	105 274	116 319	141 388	153 368	188 452	183 575	226 708	
			1200	-	26 52	36 76	46 98	59 129	71 166	86 202	84 195	108 250	120 292	147 359	160 341	198 422	195 543	242 673	
			1000	-	26 44	35 66	46 85	58 113	70 145	85 177	84 173	108 222	120 260	148 320	161 305	200 379	199 491	248 610	
			9	-	25 41	34 62	45 81	57 107	69 137	84 167	84 164	108 211	119 247	148 306	161 291	200 363	200 471	249 586	
			11.2	-	24 36	33 54	44 71	56 95	66 120	82 149	82 146	105 188	117 221	146 275	158 261	198 326	198 425	247 531	
		Double Reduction Upright Type	1800	-	22 53	29 76	35 95	45 125	55 164	66 195	62 182	79 232	87 270	104 321	113 306	138 373	131 461	163 572	
			1500	-	22 47	29 69	37 87	46 115	57 150	68 180	66 171	84 219	93 255	113 310	123 295	151 362	147 460	181 567	
			1200	-	21 41	29 61	37 78	47 104	57 133	69 161	68 156	86 200	96 234	118 287	128 273	158 338	156 434	194 538	
			1000	-	20 35	28 52	36 68	46 91	56 116	68 141	67 138	87 178	96 208	118 256	129 244	160 303	159 392	198 488	
			9	-	20 33	28 49	36 64	46 86	55 109	67 134	67 131	86 169	96 198	118 245	129 233	160 290	160 377	199 469	
			11.2	-	19 29	26 43	35 57	45 76	53 96	66 119	65 117	84 151	94 176	117 220	127 209	158 261	158 340	198 425	

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 9 ► 11.2

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					
9.000 9.000 8.947											Exact Reduction Ratio			9	1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.
1550 ※ 1880 ※ 2800 ※											200	1800			
1350 ※ 1660 ※ 2460 ※											167	1500			
1120 ※ 1420 ※ 2110 ※											133	1200			
964 ※ 1250 ※ 1850 ※											111	1000			
882 ※ 1160 ※ 1720 ※											100	900			
756 ※ 998 ※ 1500 ※											83	750	10	2. _____ Consult us when the high speed shaft speed is over 1800r/min.	
9.765 9.765 10.235											Exact Reduction Ratio				
1460 ※ 1880 ※ 2800 ※											180	1800			
1280 ※ 1660 ※ 2460 ※											150	1500			
1060 ※ 1420 ※ 2060 ※											120	1200			
911 ※ 1250 ※ 1770 ※											100	1000			
834 ※ 1160 ※ 1620 ※											90	900	11.2	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.	
716 ※ 998 ※ 1390 ※											75	750			
11.382 11.382 11.302											Exact Reduction Ratio				
1230 ※ 1570 ※ 2430 ※											161	1800			
1050 ※ 1380 ※ 2140 ※											134	1500			
877 ※ 1180 ※ 1780 ※											107	1200			
752 ※ 1040 ※ 1520 ※											89	1000	5. _____ Shown in the table are the ratings for the slow speed shaft.	6. _____ Refer to C42-C49 for the allowable radial and axial load on each shaft.	
688 ※ 971 ※ 1390 ※											80	900			
590 ※ 833 ※ 1200 ※											67	750			
C-54	C-54	C-54									Horizontal Vertical Upright	Dimension Tables			

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
490											1	1800	Double Reduction Horizontal Type	20	1.00	1.00
200											1	1500		30	0.85	0.87
538	560	570									1	1200		40	0.70	0.73
220	270	590									1	1000		50	0.55	0.60
525	599	590									1	1000	9 ▼ 11.2			
210	280	320									1	900				
444	551	600									1	900				
210	270	330									1	750				
425	508	593									1	750	Double Reduction Vertical Type			
190	250	320									1	1800				
350	429	523									1	1500				
											1	1200				
											1	1000	9 ▼ 11.2			
											1	900				
											1	750				
											1	750				
											1	1800	Double Reduction Upright Type			
											1	1500				
											1	1200				
											1	1000				
											1	900	9 ▼ 11.2			
											1	750				

- Notes
- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
 - The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
 - When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 12.5 ▶ 16

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
12.5	Exact Reduction Ratio		12.162	12.020	12.545	12.842	12.727	12.932	12.188	12.462	12.469	12.534	12.797	12.536	12.923	12.044
	1800	144	36	58	89	111	122	161	225	284	322	435	512	700	732 *	1000 *
	1500	120	30	48	74	93	102	134	188	237	269	362	428	598	612	863
	1200	96	24.2	39	59	74	82	107	150	189	216	290	343	482	491	715
	1000	80	20.1	32	49	62	68	89	125	158	180	242	286	403	410	600
	900	72	18.1	29.3	44	55	61	80	112	142	162	217	258	364	369	540
	750	60	15.1	24.4	37	46	51	67	94	118	136	181	215	304	308	450
14	Exact Reduction Ratio		14.068	13.716	13.523	13.962	14.523	14.712	13.875	14.000	14.529	14.335	14.338	14.067	14.253	13.225
	1800	129	32	51	82	105	116	152	188	239	283	366	450	600	688 *	933 *
	1500	107	27.3	43	69	88	97	126	158	200	237	306	377	502	576	782
	1200	86	21.9	34	55	71	78	101	127	161	190	246	303	404	463	629
	1000	71	18.3	28.7	46	59	65	84	106	134	159	206	253	338	388	527
	900	64	16.5	25.8	41	53	58	76	95	121	143	186	228	305	350	475
	750	54	13.8	21.5	34	44	49	63	80	101	120	155	191	255	292	398
16	Exact Reduction Ratio		15.778	15.988	16.235	15.636	15.556	16.182	15.881	15.188	15.392	15.635	15.750	15.844	16.000	15.750
	1800	113	27.1	42	67	89	96	122	169	226	261	322	373	512	545 *	732 *
	1500	94	22.6	35	56	74	80	102	141	188	218	269	311	428	455	612
	1200	75	18.1	28.5	45	59	64	82	113	150	175	216	250	343	365	491
	1000	63	15.1	23.7	37	49	54	68	94	125	146	180	208	286	305	410
	900	56	13.5	21.4	33	44	48	61	84	113	131	162	188	258	275	369
	750	47	11.3	17.8	28.2	37	40	51	70	94	109	136	157	215	229	308
Dimension Tables	Horizontal Vertical Upright	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-52	C-52	C-52	C-52	C-52	C-52
		C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-78	C-78	C-78	C-78	C-78	C-78
		C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-94	C-94	C-94	C-94	C-94	C-94

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	23 57	33 88	41 110	54 150	63 187	79 235	73 214	96 282	101 312	130 402	137 369	175 472	172 607	208 731		
		1500	-	23 50	33 77	41 98	55 137	63 166	79 209	74 192	98 256	103 283	133 366	140 336	180 433	178 558	224 702		
		1200	-	22 42	31 66	40 85	55 121	61 144	78 183	73 169	98 227	103 250	134 327	140 298	181 387	180 500	230 641		
		1000	-	21 36	30 56	39 73	54 105	59 123	76 158	71 146	96 198	101 218	132 286	138 260	179 339	178 438	229 565		
		900	-	20 33	29 52	38 68	53 99	58 115	74 147	70 137	95 186	99 205	130 269	136 245	177 321	176 414	227 535		
		16	-	19 28	28 45	36 59	51 86	55 100	71 129	67 120	92 164	95 180	126 237	131 216	172 284	171 367	221 475		
	Dimension Tables	Double Reduction Vertical Type	1800	-	23 57	33 88	41 110	54 150	63 187	79 235	73 214	96 282	101 312	130 402	137 369	175 472	172 607	208 731	
			1500	-	23 50	33 77	41 98	55 137	63 166	79 209	74 192	98 256	103 283	133 366	140 336	180 433	178 558	224 702	
			1200	-	22 42	31 66	40 85	55 121	61 144	78 183	73 169	98 227	103 250	134 327	140 298	181 387	180 500	230 641	
			1000	-	21 36	30 56	39 73	54 105	59 123	76 158	71 146	96 198	101 218	132 286	138 260	179 339	178 438	229 565	
			900	-	20 33	29 52	38 68	53 99	58 115	74 147	70 137	95 186	99 205	130 269	136 245	177 321	176 414	227 535	
			16	-	19 28	28 45	36 59	51 86	55 100	71 129	67 120	92 164	95 180	126 237	131 216	172 284	171 367	221 475	
Dimension Tables		Double Reduction Upright Type	1800	-	18 46	26 70	33 88	43 120	50 150	63 188	58 171	77 225	81 250	104 321	109 295	140 378	138 485	166 585	
			1500	-	18 40	26 62	33 79	44 109	50 133	63 167	59 154	79 205	82 227	106 293	112 269	144 346	142 446	179 562	
			1200	-	17 34	25 53	32 68	44 97	49 115	62 146	58 135	79 182	82 200	107 262	112 239	145 310	144 400	184 513	
			1000	-	17 29	24 45	31 58	43 84	47 99	61 126	57 117	77 158	80 174	106 228	110 208	144 271	142 350	183 452	
			900	-	16 27	23 42	30 55	42 79	46 92	59 118	56 110	76 149	79 164	104 215	108 196	142 257	141 331	182 428	
			16	-	15 23	22 36	29 47	40 69	44 80	57 103	54 96	73 131	76 144	101 190	105 173	138 227	137 293	177 380	

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 12.5 ► 16

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes				
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136								
12.349	12.349	12.929									Exact Reduction Ratio		12.5	1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.				
1180 ※	1570 ※	2310 ※									144	1800		14	2. _____ Consult us when the high speed shaft speed is over 1800r/min.			
1010 ※	1380 ※	1980 ※									120	1500			14	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.		
840 ※	1180 ※	1640 ※									96	1200				14	4. _____ When the high speed shaft speed (N) is lower than 750r/min find the mechanical power rating (PN) according to the following formula.	
721 ※	1040 ※	1410 ※									80	1000					14	$P_N = P_{750} \times \frac{N}{750}$
660 ※	971 ※	1290 ※									72	900						5. _____ Shown in the table are the ratings for the slow speed shaft.
566 ※	830 ※	1110 ※									60	750	16	6. _____ Refer to C42-C49 for the allowable radial and axial load on each shaft.				
14.143	14.344	14.260									Exact Reduction Ratio			16				
993 ※	1280 ※	1980 ※									129	1800			16			
852 ※	1130 ※	1700 ※									107	1500				16		
706 ※	966 ※	1410 ※									86	1200					16	
605 ※	850 ※	1210 ※									71	1000						16
554 ※	790 ※	1110 ※									64	900						
475 ※	678 ※	952 ※									54	750	16					
15.345	15.562	16.312									Exact Reduction Ratio			16				
953 ※	1280 ※	1840 ※									113	1800			16			
817 ※	1130 ※	1580 ※									94	1500				16		
678 ※	966 ※	1310 ※									75	1200					16	
581 ※	850 ※	1120 ※									63	1000						16
532 ※	790 ※	1020 ※									56	900						
456 ※	662 ※	883 ※									47	750						
C-54	C-54	C-54									Horizontal Vertical Upright	Dimension Tables						

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
490											1	1800	Double Reduction Horizontal Type	20	1.00	1.00
200											1	1500		30	0.85	0.87
538	560	570									1	1200		40	0.70	0.73
220	270	590									1	1000		50	0.55	0.60
525	599	590									1	900				
210	280	320									1	750				
444	551	600									1		Double Reduction Vertical Type			
210	270	330									1					
425	508	593									1					
190	250	320									1					
350	429	523									1					
											1					
											1		Double Reduction Upright Type			
											1					
											1					
											1					
											1					
											1					

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
18	Exact Reduction Ratio		18.250	18.243	17.500	17.000	17.750	18.409	18.080	17.062	17.936	17.882	17.647	17.779	17.647	17.294	
	1800	100	25.3	37	64	86	95	117	145	197	230	295	368	478	545 *	719 *	
	1500	83	21.1	31	53	72	79	98	122	165	193	247	308	400	455	602	
	1200	67	17.0	25.1	43	57	63	78	98	132	155	198	247	321	365	484	
	1000	56	14.2	20.9	36	48	53	65	81	111	129	166	207	269	305	405	
	900	50	12.8	18.9	32	43	47	58	73	100	116	149	186	242	275	366	
	750	42	10.7	15.7	27.1	36	39	49	61	83	97	125	156	203	229	306	
20	Exact Reduction Ratio		20.235			19.778			19.790			19.301			19.500		19.500
	1800	90			*	67	*	96	*	170	*	261	*	373	*	545 *	
	1500	75			*	56	*	80	*	141	*	218	*	311	*	455	
	1200	60			*	45	*	64	*	113	*	175	*	250	*	365	
	1000	50			*	37	*	54	*	94	*	146	*	208	*	305	
	900	45			*	33	*	48	*	85	*	131	*	188	*	275	
	750	38			*	28.2	*	40	*	70	*	109	*	157	*	229	
22.4	Exact Reduction Ratio		22.000			22.500			22.233			22.075			21.882		21.412
	1800	80			*	65	*	95	*	152	*	240	*	373	*	545 *	
	1500	67			*	54	*	79	*	127	*	201	*	311	*	455	
	1200	54			*	43	*	63	*	102	*	161	*	250	*	365	
	1000	45			*	36	*	53	*	85	*	135	*	208	*	305	
	900	40			*	32	*	47	*	77	*	121	*	188	*	275	
	750	33			*	27.4	*	39	*	64	*	101	*	157	*	229	
Dimension Tables	Horizontal Vertical Upright	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-50	C-52	C-52	C-52	C-52	C-52	C-52	
		C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-78	C-78	C-78	C-78	C-78	C-78	
		C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-94	C-94	C-94	C-94	C-94	C-94	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	22 55	32 85	40 108	49 136	56 165	69 205	73 213	89 259	103 317	119 368	139 375	165 445	175 617	209 736		
		1500	-	22 48	31 74	40 96	48 120	55 146	69 182	74 192	89 231	104 287	120 330	142 341	167 401	181 567	213 668		
		1200	-	21 41	30 64	39 83	47 103	54 127	67 157	73 169	87 201	104 254	119 290	142 303	165 353	183 507	213 593		
		1000	-	20 35	29 54	38 71	45 88	53 110	64 133	71 146	84 173	102 220	116 251	140 264	162 306	181 445	210 517		
		900	-	19 32	28 50	37 67	44 82	52 103	63 125	70 137	83 162	100 207	114 236	138 249	159 288	178 421	207 487		
		750	-	18 27	27 43	35 58	42 71	50 90	60 109	67 120	79 141	97 182	109 205	133 219	154 253	173 372	200 430		
	18 ▼ 22.4	1800	-	22 55	32 85	40 108	49 136	53 157	69 205	73 213	89 259	103 317	119 368	139 375	165 445	175 617	209 736		
		1500	-	22 48	31 74	40 96	48 120	53 141	69 182	74 192	89 231	104 287	120 330	142 341	167 401	181 567	213 668		
		1200	-	21 41	30 64	39 83	47 103	53 124	67 157	73 169	87 201	104 254	119 290	142 303	165 353	183 507	213 593		
		1000	-	20 35	29 54	38 71	45 88	52 107	64 133	71 146	84 173	102 220	116 251	140 264	162 306	181 445	210 517		
		900	-	19 32	28 50	37 67	44 82	51 101	63 125	70 137	83 162	100 207	114 236	138 249	159 288	178 421	207 487		
		750	-	18 27	27 43	35 58	42 71	49 88	60 109	67 120	79 141	97 182	109 205	133 219	154 253	173 372	200 430		
Dimension Tables	Double Reduction Vertical Type	1800	-	22 55	32 85	40 108	49 136	53 157	69 205	73 213	89 259	103 317	119 368	139 375	165 445	175 617	209 736		
		1500	-	22 48	31 74	40 96	48 120	53 141	69 182	74 192	89 231	104 287	120 330	142 341	167 401	181 567	213 668		
		1200	-	21 41	30 64	39 83	47 103	53 124	67 157	73 169	87 201	104 254	119 290	142 303	165 353	183 507	213 593		
		1000	-	20 35	29 54	38 71	45 88	52 107	64 133	71 146	84 173	102 220	116 251	140 264	162 306	181 445	210 517		
		900	-	19 32	28 50	37 67	44 82	51 101	63 125	70 137	83 162	100 207	114 236	138 249	159 288	178 421	207 487		
		750	-	18 27	27 43	35 58	42 71	49 88	60 109	67 120	79 141	97 182	109 205	133 219	154 253	173 372	200 430		
	18 ▼ 22.4	1800	-	18 44	25 68	32 87	39 109	44 132	55 164	58 171	71 207	82 254	95 294	111 300	132 356	140 494	167 589		
		1500	-	17 38	25 60	32 77	39 96	44 117	55 146	59 154	71 185	84 230	96 264	114 273	133 321	145 453	171 535		
		1200	-	17 33	24 51	32 67	37 82	43 102	54 126	58 135	70 161	83 203	95 232	114 242	132 282	146 406	170 474		
		1000	-	16 28	23 43	30 57	36 70	42 88	51 106	57 116	68 138	82 176	93 201	112 211	130 245	144 356	168 413		
		900	-	15 26	23 40	30 53	35 66	41 82	50 100	56 109	66 130	80 166	91 189	110 199	127 230	143 336	165 390		
		750	-	15 22	21 35	28 46	33 57	40 72	48 87	54 96	63 113	77 146	87 164	107 176	123 202	139 298	160 344		

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio						
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136									
17.625											18.000			17.895			Exact Reduction Ratio		
803 [*]											1040 [*]			1590 [*]			18		
689 [*]											918 [*]			1370 [*]					
571 [*]											785 [*]			1130 [*]					
490 [*]											691 [*]			975 [*]					
448 [*]											642 [*]			892 [*]					
384 [*]											551 [*]			765 [*]					
19.123											19.529			20.471			Exact Reduction Ratio		
771 [*]											1040 [*]			1480 [*]			20		
662 [*]											918 [*]			1270 [*]					
548 [*]											785 [*]			1050 [*]					
470 [*]											691 [*]			905 [*]					
431 [*]											634 [*]			829 [*]					
369 [*]											530 [*]			711 [*]					
																	Exact Reduction Ratio		
*											*			*			22.4		
*											*			*					
*											*			*					
*											*			*					
*											*			*					
C-54											C-54			C-54			Horizontal Vertical Upright		
																	Dimension Tables		

*Marked models are triple reduction units. Refer to C-20 and C-21.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
490											1	1800	Double Reduction Horizontal Type
200											1	1500	
538	560		570								1	1200	
220	270		590								1	1000	
525	599		590								1	900	
210	280		320								1	750	18 ▼ 22.4
444	551		600								1	900	
210	270		330								1	750	
425	508		593								1	750	
190	250		320								1	750	
350	429		523								1	750	
											1	1800	Double Reduction Vertical Type
											1	1500	
											1	1200	
											1	1000	
											1	900	
											1	750	18 ▼ 22.4
											1	750	
											1	750	
											1	750	
											1	750	

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																		
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090				
20	Exact Reduction Ratio		20.091			19.620			19.790			19.181			19.950			20.206		20.548	
	1800	90	61			*	81	*	124	*	194	*	295	*	516	*	735				
	1500	75	51			*	67	*	103	*	162	*	246	*	431	*	616				
	1200	60	41			*	54	*	83	*	130	*	198	*	346	*	495				
	1000	50	34			*	45	*	69	*	108	*	165	*	289	*	413				
	900	45	31			*	40	*	62	*	97	*	149	*	261	*	373				
	750	38	26.1			*	34	*	52	*	81	*	124	*	218	*	311				
22.4	Exact Reduction Ratio		21.656			22.388			22.530			22.351			22.353			22.286		22.353	
	1800	80	55			*	81	*	124	*	194	*	295	*	476	*	696				
	1500	67	46			*	67	*	103	*	162	*	246	*	398	*	582				
	1200	54	37			*	54	*	83	*	130	*	198	*	320	*	468				
	1000	45	31			*	45	*	69	*	108	*	165	*	268	*	391				
	900	40	28.1			*	40	*	62	*	97	*	149	*	241	*	353				
	750	33	23.5			*	34	*	52	*	81	*	124	*	202	*	295				
25	Exact Reduction Ratio		25.137		25.041	24.444		25.935		24.662	25.137		24.938		24.630		24.626	25.685			
	1800	72	49		64	80		117		124	193		295		453		516	625			
	1500	60	41		54	67		98		103	162		246		379		431	528			
	1200	48	33		43	53		78		83	130		198		304		346	424			
	1000	40	27.8		36	45		65		69	108		165		254		289	355			
	900	36	25.0		32	40		59		62	97		149		229		261	320			
	750	30	20.9		27.3	33		49		52	81		124		192		218	267			
Dimension Tables	Horizontal Vertical Upright	C-56		C-56	C-56		C-56		C-56	C-56	C-58		C-58		C-58		C-58	C-58	C-60		
		C-80		C-80	C-80		C-80		C-80	C-80	C-82		C-82		C-82		C-82	C-84			
		C-96		C-96	C-96		C-96		C-96	C-96	C-98		C-98		C-98		C-98				

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-			34	43	53		61	77	84		113		138	172	213	
			-			65	86	93		141	178	177		214		368	459	510	
		1500	-			34	43	53		61	77	85		115		144	178	220	
			-			58	77	83		126	159	160		195		340	421	468	
		1200	-			33	43	52		60	76	85		115		146	180	222	
			-			51	67	72		111	139	141		173		307	377	419	
	20 ▼ 25	1000	-			33	42	50		59	74	83		114		145	178	220	
			-			44	58	62		96	120	122		151		271	332	369	
		900	-			32	41	49		58	73	82		112		144	176	218	
			-			42	54	58		90	113	115		143		257	314	350	
		750	-			31	39	47		56	70	79		109		141	172	213	
			-			36	47	50		79	99	102		126		229	279	311	
Dimension Tables	Triple Reduction Vertical Type	1800	-			31	41	51		57	73	79		105		126	159	181	
			-			61	81	89		133	169	166		200		336	422	433	
		1500	-			32	42	51		59	74	81		109		135	168	195	
			-			55	74	80		121	153	152		185		319	397	416	
		1200	-			32	41	51		59	74	82		111		140	172	205	
			-			49	65	70		107	135	136		167		293	362	386	
	20 ▼ 25	1000	-			32	41	49		58	72	81		111		141	173	207	
			-			43	56	60		93	117	119		147		262	321	346	
		900	-			31	40	48		57	71	80		110		140	172	207	
			-			40	53	57		88	110	113		139		250	306	331	
		750	-			30	38	46		55	69	78		107		138	169	205	
			-			36	47	50		78	97	100		124		224	273	298	
Dimension Tables	Triple Reduction Upright Type	1800	-			34	43	55		61	77	84		113		138	172		
			-			65	86	96		141	178	177		214		368	459		
		1500	-			34	43	55		61	77	85		115		144	178		
			-			58	77	85		126	159	160		195		340	421		
		1200	-			33	43	54		60	76	85		115		146	180		
			-			51	67	74		111	139	141		173		307	377		
	20 ▼ 25	1000	-			33	42	52		59	74	83		114		145	178		
			-			44	58	64		96	120	122		151		271	332		
		900	-			32	41	51		58	73	82		112		144	176		
			-			42	54	60		90	113	115		143		257	314		
		750	-			31	39	49		56	70	79		109		141	172		
			-			36	47	52		79	99	102		126		229	279		

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
20.504											Exact Reduction Ratio		
*	992 [*]	*	1520 [*]	*							90	1800	20
*	829	*	1270	*							75	1500	
*	666	*	1020	*							60	1200	
*	556	*	856	*							50	1000	
*	501	*	772	*							45	900	
*	419	*	645	*							38	750	
22.800	22.004	22.444	22.499	22.222							Exact Reduction Ratio		
735	992 [*]	992 [*]	1360 [*]	1520 [*]							80	1800	22.4
616	829	829	1160	1270							67	1500	
495	666	666	936	1020							54	1200	
413	556	556	783	856							45	1000	
373	501	501	706	772							40	900	
311	419	419	591	645							33	750	
24.737	25.271	24.351	24.166	25.421	24.837						Exact Reduction Ratio		
714	912 [*]	992 [*]	1270 [*]	1360 [*]	1520 [*]						72	1800	25
613	763	829	1090	1170	1270						60	1500	
495	613	666	910	970	1020						48	1200	
413	513	556	771	827	856						40	1000	
373	462	501	696	746	772						36	900	
311	386	419	582	624	645						30	750	
C-60	C-60	C-60	C-60	C-60	C-62						Horizontal Vertical Upright		
C-84	C-84	C-84	C-84	C-84	C-84						Dimension Tables		

*marked models are double reduction units. Refer to C-18 and C-19.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
239	273	306	348	385	426						-	1800	Triple Reduction Horizontal Type
572	767	860	933	1031	703						1	1800	
246	282	317	366	402	443						-	1500	
524	705	792	874	958	730						1	1500	
249	286	321	375	410	450						-	1200	
469	634	711	794	869	743						1	1200	
247	284	319	375	410	449						-	1000	20
413	558	627	703	769	741						1	1000	
244	281	316	373	408	446						-	900	25
391	530	595	669	732	736						1	900	
239	275	309	366	400	437						-	750	25
348	472	530	599	654	722						1	750	
203	230	258	280	316							-	1800	Triple Reduction Vertical Type
485	646	724	750	847							1	1800	
219	249	280	315	350							-	1500	
466	624	700	751	834							1	1500	
229	262	294	340	373							-	1200	
433	582	653	719	791							1	1200	
232	266	299	349	382							-	1000	20
388	524	588	655	717							1	1000	
232	266	299	351	384							-	900	25
371	502	563	630	689							1	900	
229	264	296	350	382							-	750	25
334	453	508	571	625							1	750	
											-	1800	
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
28	Exact Reduction Ratio			27.096	27.225	27.893	28.379	29.526	27.706	29.291	27.509	27.941	27.718	27.165	27.041	27.941
	1800	65		44	58	65	81	96	124	152	194	251	295	392	498	559
	1500	54		37	49	55	67	80	103	127	162	210	246	328	417	468
	1200	43		29.9	39	44	54	64	83	102	130	168	198	263	335	376
	1000	36		25.0	33	36	45	54	69	85	108	141	165	220	280	314
	900	32		22.5	29.7	33	40	48	62	77	97	127	149	198	252	283
	750	27		18.8	24.8	28	34	40	52	64	81	106	124	166	211	237
31.5	Exact Reduction Ratio			32.455	31.331	31.694	31.079	31.969	32.319	30.157	31.521	31.129	30.875	32.280	30.017	32.063
	1800	57		32	51	57	81	92	124	140	194	225	295	331	473	508
	1500	48		26.9	43	48	67	79	103	117	162	190	246	280	399	425
	1200	38		21.5	34	38	54	64	83	94	130	152	198	224	321	341
	1000	32		18.0	29.1	32	45	53	69	78	108	127	165	187	268	285
	900	29		16.2	26.2	29	40	48	62	70	97	114	149	169	242	257
	750	24		13.5	21.9	24.1	34	40	52	59	81	95	124	141	202	215
35.5	Exact Reduction Ratio			34.983	34.063	36.165	35.357	36.395	36.309	35.140	36.050	34.879	34.647	35.603	32.960	34.879
	1800	51		32	47	51	69	78	100	127	159	202	266	301	410	450
	1500	42		26.9	39	42	57	65	84	106	133	169	223	251	343	376
	1200	34		21.5	31	34	46	52	67	85	106	135	179	202	276	302
	1000	28		18.0	26.4	29	38	44	56	71	89	113	149	169	230	253
	900	25		16.2	23.8	25.7	34	39	50	64	80	102	134	152	208	228
	750	21		13.5	19.9	21.5	29.2	33	42	53	67	85	112	127	173	190
Dimension Tables	Horizontal Vertical Upright		C-56	C-56	C-56	C-56	C-56	C-56	C-56	C-58	C-58	C-58	C-58	C-58	C-58	C-60
			C-80	C-80	C-80	C-80	C-80	C-80	C-80	C-82	C-82	C-82	C-82	C-82	C-82	C-84
			C-96	C-96	C-96	C-96	C-96	C-96	C-96	C-98	C-98	C-98	C-98	C-98	C-98	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-			31	40	49	59	58	74	81	99	109	136	137	168	210	
			-			59	79	85	103	135	171	172	209	208	259	364	447	502	
		1500	-			30	40	48	58	58	73	81	100	110	138	139	172	212	
			-			52	71	75	90	120	152	153	188	186	233	328	408	452	
		1200	-			29	39	46	57	57	72	80	98	108	136	138	173	211	
			-			44	61	64	79	104	132	133	163	162	205	289	364	398	
	28 ▼ 35.5	1000	-			28	38	44	55	55	70	78	96	106	134	135	172	207	
			-			38	53	54	67	89	114	115	142	140	178	251	319	346	
		900	-			27	37	43	54	53	69	76	94	104	132	133	170	204	
			-			35	50	51	63	83	106	108	133	132	168	236	302	327	
		750	-			26	36	41	51	51	66	73	91	100	128	128	165	198	
			-			30	43	44	54	72	93	94	117	116	148	208	268	288	
Dimension Tables	Triple Reduction Vertical Type	1800	-			30	38	47	56	56	70	77	94	103	128	128	156	180	
			-			57	75	82	98	129	163	162	198	196	244	341	415	430	
		1500	-			29	38	47	56	56	71	78	96	105	132	132	163	194	
			-			50	68	72	87	115	146	147	180	178	222	313	386	412	
		1200	-			28	38	45	55	55	70	78	95	105	132	133	167	198	
			-			43	60	62	76	101	128	129	158	157	198	279	351	373	
	28 ▼ 35.5	1000	-			27	37	44	54	54	69	76	94	103	131	131	167	197	
			-			37	52	54	66	87	111	112	139	137	174	244	310	330	
		900	-			27	37	43	53	52	67	75	92	102	129	130	165	196	
			-			34	49	50	62	81	105	105	130	129	164	231	295	313	
		750	-			25	35	41	51	50	65	72	89	98	126	126	162	191	
			-			30	43	43	54	71	92	92	115	114	146	204	263	279	
Dimension Tables	Triple Reduction Upright Type	1800	-			31	40	51	59	58	74	81	99	109	136	137	168		
			-			59	79	90	103	135	171	172	209	208	259	364	447		
		1500	-			30	40	50	58	58	73	81	100	110	138	139	172		
			-			52	71	78	90	120	152	153	188	186	233	328	408		
		1200	-			29	39	49	57	57	72	80	98	108	136	138	173		
			-			44	61	67	79	104	132	133	163	162	205	289	364		
	28 ▼ 35.5	1000	-			28	38	47	55	55	70	78	96	106	134	135	172		
			-			38	53	57	67	89	114	115	142	140	178	251	319		
		900	-			27	37	45	54	53	69	76	94	104	132	133	170		
			-			35	50	53	63	83	106	108	133	132	168	236	302		
		750	-			26	36	43	51	51	66	73	91	100	128	128	165		
			-			30	43	46	54	72	93	94	117	116	148	208	268		

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
28.500	27.119	27.662	27.730	27.389		28.500	28.500		27.737	27.737	Exact Reduction Ratio		
625	812 *	970 *	1130 *	1280 *		1930 *	2060 *		3110 *	3260 *	65	1800	28
536	679	825	949	1090		1610 *	1770 *		2600 *	2800 *	54	1500	
444	546	663	763	910		1300	1460		2090 *	2320 *	43	1200	
379	456	554	638	781		1080	1250		1750	1990	36	1000	
341	411	500	575	715		982	1140		1580	1820	32	900	
285	344	418	481	612		821	955		1320	1560	27	750	
30.922	32.716	30.012	31.413	31.331	31.500	30.922	30.922		31.729	31.729	Exact Reduction Ratio		
589	708 *	877 *	988 *	1140 *	1380 *	1780 *	1920 *		2730 *	2910 *	57	1800	31.5
498	592	734	823	978	1150	1490 *	1640 *		2280 *	2500 *	48	1500	
400	476	590	658	806	923	1200	1360		1840 *	2070 *	38	1200	
335	398	493	548	674	769	1000	1160		1530	1770	32	1000	
302	359	445	494	608	692	906	1050		1380	1620	29	900	
252	300	372	411	508	576	758	882		1160	1360	24	750	
35.576	35.108	35.811	36.045	35.601	36.176	36.000	36.000	36.500	35.036	35.036	Exact Reduction Ratio		
522	630 *	766 *	878 *	988 *	1330 *	1530 *	1690 *	2110 *	2480 *	2680 *	51	1800	35.5
448	527	640	734	823	1110	1280 *	1450 *	1760 *	2070 *	2300 *	42	1500	
364	424	514	590	658	895	1030	1200	1420 *	1670 *	1910 *	34	1200	
304	354	430	493	548	748	866	1000	1180	1390	1630	28	1000	
274	319	388	445	494	675	780	908	1070	1260	1480	25	900	
229	267	324	372	411	564	652	759	895	1050	1240	21	750	
C-60	C-60	C-60	C-60	C-60	C-62	C-62	C-62	C-64	C-64	C-64	Horizontal Vertical Upright	Dimension Tables	
C-84	C-84	C-84	C-84	C-84									

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
229	272	298	340	376	417	500	500	455	537	537	-	1800	Triple Reduction Horizontal Type
547	764	839	912	1007	688	824	824	751	886	886	1	1500	
230	275	303	348	389	428	529	529	488	586	586	-	1200	
490	688	758	830	929	706	872	872	805	966	966	1	1000	
228	274	300	348	390	431	546	546	509	619	619	-	900	
430	607	666	736	825	712	901	901	841	1021	1021	1	750	28 ▼ 35.5
223	269	294	343	383	428	543	543	516	630	630	-	1800	
373	529	579	643	719	706	895	895	851	1040	1040	1	1500	
220	265	290	338	378	424	538	538	516	629	629	-	1200	
352	499	546	607	679	700	888	888	851	1038	1038	1	1000	
213	257	281	329	367	415	526	526	511	622	622	-	900	28 ▼ 35.5
310	441	481	538	600	684	868	868	843	1026	1026	1	750	
200	232	255	280	315							-	1800	Triple Reduction Vertical Type
477	651	717	750	844							1	1500	
212	251	274	310	343							-	1200	
450	627	685	738	819							1	1000	
215	256	282	324	363							-	900	
405	569	627	686	768							1	750	28 ▼ 35.5
213	256	281	325	365							-	1800	
357	503	552	609	684							1	1500	
211	254	278	323	362							-	1200	
338	478	524	580	651							1	1000	
206	248	272	317	355							-	900	28 ▼ 35.5
300	426	466	519	581							1	750	
											-	1800	Triple Reduction Upright Type
											1	1500	
											-	1200	
											1	1000	
											-	900	
											1	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
40	Exact Reduction Ratio		40.607	40.451	39.487	40.296	41.895	39.838	39.520	37.815	38.912	38.541	39.346	39.341	40.078	
	1800	45	30	32	50	57	73	92	124	140	194	225	286	331	408	
	1500	38	25.8	26.9	41	48	61	79	103	117	162	190	239	280	341	
	1200	30	20.7	21.5	33	38	49	65	83	94	130	152	192	224	274	
	1000	25	17.3	18.0	28.0	32	40	56	69	78	109	127	160	187	229	
	900	23	15.6	16.2	25.3	28.9	36	51	62	70	98	114	144	169	206	
	750	19	13.0	13.5	21.1	24.1	30	42	52	59	82	95	121	141	172	
45	Exact Reduction Ratio		43.770	43.979	45.058	45.843	47.695	44.756	46.051	43.250	43.599	43.250	43.397	43.198	43.599	
	1800	40	27.8	32	41	53	60	82	97	133	162	214	248	315	362	
	1500	33	23.2	26.9	34	44	50	68	81	111	135	179	207	263	302	
	1200	27	18.6	21.5	28	35	40	55	65	89	108	144	166	211	243	
	1000	22	15.6	18.0	23.0	30	33	46	54	74	91	120	139	176	203	
	900	20	14.0	16.2	20.7	27.0	20	41	49	67	82	108	125	159	183	
	750	17	11.7	13.5	17.3	22.6	25.3	34	41	56	68	90	104	133	152	
50	Exact Reduction Ratio		51.141	50.611		50.205	51.869	52.207	50.273	49.557	49.500	48.176	48.889	47.953	50.984	
	1800	36	19.3	32		51	59	78	97	130	153	199	231	295	322	
	1500	30	16.1	26.9		42	49	65	81	110	128	170	193	252	269	
	1200	24	12.9	21.5		34	39	52	65	88	102	137	155	202	216	
	1000	20	10.8	18.0		28.6	33	43	54	73	86	115	129	169	180	
	900	18	9.7	16.2		25.7	39.9	39	49	66	77	103	116	152	162	
	750	15	8.1	13.5		21.4	24.9	32	41	55	64	86	97	127	136	
Dimension Tables	Horizontal Vertical Upright		C-56	C-56	C-56	C-56	C-56	C-56	C-56	C-58	C-58	C-58	C-58	C-58	C-58	C-60
			C-80	C-80	C-80	C-80	C-80	C-80	C-80	C-82	C-82	C-82	C-82	C-82	C-82	C-84
			C-96	C-96	C-96	C-96	C-96	C-96	C-96	C-96	C-96	C-96	C-96	C-96	C-96	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-			26	37	44	54	53	67	74	91	102	126	129	159	196	
			-			51	73	76	94	123	155	155	192	194	240	342	422	468	
		1500	-			26	36	42	53	52	66	73	90	101	125	128	159	195	
			-			44	63	66	83	108	136	136	169	171	212	304	376	415	
		1200	-			24	34	40	51	50	64	70	87	98	122	126	156	191	
			-			37	54	55	70	92	117	117	145	147	184	264	328	360	
	40 ▼ 50	1000	-			23	33	38	49	48	61	68	85	95	119	122	152	186	
			-			31	46	46	60	78	100	100	126	126	158	227	283	310	
		900	-			22	32	37	48	47	60	66	83	93	117	120	149	182	
			-			29	42	43	57	73	93	93	117	118	148	213	266	291	
		750	-			21	30	34	45	45	57	63	79	89	112	115	144	175	
			-			24	36	37	48	63	81	81	102	103	130	186	233	255	
Dimension Tables	Triple Reduction Vertical Type	1800	-			26	36	43	53	51	64	71	87	98	121	123	151	179	
			-			49	71	74	93	119	149	149	184	186	229	326	401	427	
		1500	-			25	35	41	52	51	64	70	87	98	121	124	153	182	
			-			43	62	64	81	105	132	132	163	165	205	293	362	387	
		1200	-			24	34	39	50	49	62	69	85	96	119	122	152	182	
			-			36	53	54	69	90	114	115	142	144	179	257	319	343	
	40 ▼ 50	1000	-			23	32	37	48	48	60	67	83	93	117	120	149	179	
			-			30	45	46	59	77	98	98	123	124	155	223	277	299	
		900	-			22	31	36	47	46	59	65	81	91	115	117	147	176	
			-			28	42	42	55	72	92	92	115	116	146	209	261	282	
		750	-			20	30	34	45	44	56	62	78	87	110	113	142	170	
			-			24	36	36	48	62	80	80	100	101	128	184	230	248	
Dimension Tables	Triple Reduction Upright Type	1800	-			26	37	47	54	53	67	74	91	102	126	129	159		
			-			51	73	83	95	123	155	155	192	194	240	342	422		
		1500	-			26	36	47	53	52	66	73	90	101	125	128	159		
			-			44	63	72	83	108	136	136	169	171	212	304	376		
		1200	-			24	34	45	51	50	64	70	87	98	122	126	156		
			-			37	54	62	71	92	117	117	145	147	184	264	328		
	40 ▼ 50	1000	-			23	33	43	49	48	61	68	85	95	119	122	152		
			-			31	46	53	60	78	100	100	126	126	158	227	283		
		900	-			22	32	42	48	47	60	66	83	93	117	120	149		
			-			29	42	49	56	73	93	93	117	118	148	213	266		
		750	-			21	30	40	45	45	57	63	79	89	112	115	144		
			-			24	36	42	48	63	81	81	102	103	130	186	233		

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
38.599	40.322	38.853	38.716	40.726	38.824	39.059	39.059	39.601	40.079	40.079	Exact Reduction Ratio			40
479	577 *	682 *	861 *	917 *	1240 *	1420 *	1570 *	1940 *	2170 *	2390 *	45	1800		
401	483	570	723	775	1030	1180 *	1350 *	1630 *	1820 *	2050 *	38	1500		
322	388	458	581	623	835	955	1110	1310 *	1460 *	1700 *	30	1200		
269	324	383	486	521	698	799	930	1090	1220	1440	25	1000		
242	292	345	438	469	630	720	839	988	1100	1300	23	900		
202	244	288	366	392	526	602	701	826	923	1080	19	750	45	
44.471	43.271	44.136	44.425	43.878	45.882	45.529	45.529	46.162	44.206	44.206	Exact Reduction Ratio			
430	514 *	624 *	715 *	861 *	1050 *	1220 *	1390 *	1670 *	1970 *	2200 *	40	1800		
364	429	522	598	739	882	1020 *	1190 *	1400 *	1650 *	1890 *	33	1500		
292	345	419	480	610	709	822	957	1120 *	1330 *	1560 *	27	1200		
244	288	350	402	508	593	687	800	943	1110	1310	22	1000		
220	260	315	362	457	534	620	721	850	1000	1180	20	900	50	
184	217	264	302	381	446	518	603	710	838	988	17	750		
48.249	50.875	47.886	48.680	50.194	49.040	49.398	49.398	50.084	50.569	50.569	Exact Reduction Ratio			
385	459 *	555 *	691 *	755 *	988 *	1120 *	1290 *	1540 *	1730 *	1970 *	36	1800		
322	384	464	578	632	827	945 *	1090 *	1290 *	1450 *	1690 *	30	1500		
258	308	373	464	507	664	759	883	1040 *	1160 *	1370 *	24	1200		
216	257	312	388	424	555	634	738	870	974	1140	20	1000	Dimension Tables	
194	232	281	349	382	500	572	666	785	878	1030	18	900		
162	194	234	292	319	416	478	556	656	734	866	15	750		
C-60	C-60	C-60	C-60	C-60	C-62	C-62	C-62	C-64	C-64	C-64	Horizontal Vertical Upright			
C-84	C-84	C-84	C-84	C-84	C-84									

1. _____
For ※ marked values, the forced oil lubrication is required at continuous operation.

2. _____
Consult us when the high speed shaft speed is over 1800r/min.

3. _____
When the high speed shaft speed is not shown in the table, find it by the interpolation method.

4. _____
When the high speed shaft speed (N) is lower than 750r/min find the mechanical power rating (PN) according to the following formula.

PN = P750 X $\frac{N}{750}$

5. _____
Shown in the table are the ratings for the slow speed shaft.

6. _____
Refer to C42-C49 for the allowable radial and axial load on each shaft.

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
219	258	285	330	362	399	524	524	450	552	552	-	1800	Triple Reduction Horizontal Type	40
524	724	801	885	969	658	864	864	743	911	911	1	1800		
220	257	287	335	365	401	529	529	481	586	586	-	1500		
468	642	717	798	870	662	872	872	793	966	966	1	1500		
217	252	283	330	362	397	525	525	490	593	593	-	1200		
410	558	629	700	767	655	866	866	809	978	978	1	1200		
213	245	277	323	356	389	516	516	490	590	590	-	1000	40	▼
356	482	545	606	667	642	852	852	808	973	973	1	1000		
209	240	273	317	351	383	509	509	487	585	585	-	900	50	▼
335	453	514	570	630	633	840	840	803	965	965	1	900		
202	232	264	306	340	372	495	495	478	573	573	-	750	50	▼
295	397	453	501	556	613	817	817	788	945	945	1	750		
197	233	256	291	322							-	1800	Triple Reduction Vertical Type	40
471	656	720	779	862							1	1800		
203	239	265	305	335							-	1500		
432	599	661	727	799							1	1500		
205	239	268	312	341							-	1200		
387	531	594	661	721							1	1200		
203	236	265	310	340							-	1000	40	▼
340	463	522	581	637							1	1000		
201	232	263	306	337							-	900	50	▼
322	438	495	550	605							1	900		
196	225	256	298	330							-	750	50	▼
286	386	439	487	539							1	750		

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 56 ▶ 71

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
56	Exact Reduction Ratio		55.125	55.025	56.987	57.115	59.051	58.652	58.582	56.678	55.462	54.062	53.922	52.655	55.462	
	1800	32	19.3	29.4	31	43	48	62	77	102	128	172	200	259	285	
	1500	27	16.1	24.6	26.1	36	40	52	64	85	107	144	167	216	238	
	1200	21	12.9	19.7	20.9	28.9	32	42	51	68	85	115	134	174	191	
	1000	18	10.8	16.5	17.5	24.1	27.3	35	43	57	71	96	112	145	160	
	900	16	9.7	14.8	15.7	21.7	24.6	31	38	51	64	87	101	131	144	
	750	13	8.1	12.4	13.1	18.1	20.5	26.5	32	43	54	72	84	109	120	
63	Exact Reduction Ratio		63.986		62.222		64.640	64.637	63.984	63.041	63.000	61.286	62.222	59.583	64.889	
	1800	29	19.3		31		47	63	75	97	111	156	172	238	254	
	1500	24	16.1		26.1		39	52	63	81	92	132	143	202	212	
	1200	19	12.9		20.9		31	42	50	65	74	106	115	162	170	
	1000	16	10.8		17.5		26.6	35	42	54	62	88	96	135	142	
	900	14	9.7		15.7		24.0	31	38	49	55	80	86	122	128	
	750	12	8.1		13.1		20.0	26.6	31	41	46	66	72	102	107	
71	Exact Reduction Ratio		68.971	69.300	71.000	72.237	73.590	72.617	74.559	72.101	70.588	68.773	68.627	65.425	70.588	
	1800	25	17.7	19.3	26	31	39	50	60	80	101	135	158	209	225	
	1500	21	14.8	16.1	21.9	26.1	32	42	50	67	84	113	132	175	188	
	1200	17	11.9	12.9	17.5	20.9	26.3	34	40	53	67	91	105	140	151	
	1000	14	9.9	10.8	14.6	17.5	21.9	28.5	34	45	56	76	88	117	126	
	900	13	8.9	9.7	13.2	15.7	19.7	25.6	30	40	50	68	79	105	113	
	750	11	7.4	8.1	11.0	13.1	16.5	21.4	25.6	33	42	57	66	88	95	
Dimension Tables	Horizontal Vertical Upright		C-56	C-56	C-56	C-56	C-56	C-56	C-58	C-58	C-58	C-58	C-58	C-58	C-60	
			C-80	C-80	C-80	C-80	C-80	C-80	C-82	C-82	C-82	C-82	C-82	C-82	C-84	
			C-96	C-96	C-96	C-96	C-96	C-96	C-98	C-98	C-98	C-98	C-98	C-98		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-			25 48	31 62	41 71	48 84	49 114	64 148	68 143	86 181	93 177	121 230	118 314	153 408	182 436	
		1500	-			24 41	30 53	39 61	46 72	48 98	62 129	66 124	84 158	91 154	119 202	116 276	152 359	180 382	
		1200	-			23 35	28 44	37 51	44 61	46 83	60 109	63 106	81 135	88 132	115 173	113 237	148 310	174 328	
		1000	-			22 29	27 37	35 43	41 50	43 70	57 93	61 89	78 115	84 112	111 148	109 202	143 266	168 281	
		900	-			21 27	26 34	34 40	40 47	42 65	56 86	59 83	76 107	82 104	109 138	106 189	140 249	164 262	
		750	-			19 23	24 29	32 34	37 39	40 56	53 74	56 72	72 93	78 90	103 120	101 164	134 217	156 228	
	Dimension Tables	Triple Reduction Vertical Type	1800	-			24 47	30 60	40 69	47 82	47 110	62 143	65 138	83 175	90 171	117 222	113 301	147 391	169 405
			1500	-			24 40	29 52	38 60	45 70	46 96	61 125	64 121	82 154	89 150	116 196	113 267	147 348	170 361
			1200	-			22 34	28 43	37 50	43 59	45 82	59 107	62 103	80 133	86 129	113 170	110 232	144 303	167 315
			1000	-			21 29	26 36	35 43	41 50	43 69	56 91	60 88	77 114	83 110	109 146	107 199	140 261	162 272
			900	-			21 27	25 34	34 39	39 46	42 65	55 85	58 82	75 106	81 103	107 136	104 186	138 245	159 255
			750	-			19 23	24 29	32 34	37 39	39 55	52 74	55 71	72 93	77 89	102 119	100 162	132 215	153 223
Dimension Tables		Triple Reduction Upright Type	1800	-			25 48	31 62	43 74	48 84	49 114	64 148	68 143	86 181	93 177	121 230	118 314	153 408	
			1500	-			24 41	30 53	41 64	46 72	48 98	62 129	66 124	84 158	91 154	119 202	116 276	152 359	
			1200	-			23 35	28 44	39 54	44 61	46 83	60 109	63 106	81 135	88 132	115 173	113 237	148 310	
			1000	-			22 29	27 37	37 45	41 50	43 70	57 93	61 89	78 115	84 112	111 148	109 202	143 266	
			900	-			21 27	26 34	36 42	40 47	42 65	56 86	59 83	76 107	82 104	109 138	106 189	140 249	
			750	-			19 23	24 29	33 36	37 39	40 56	53 74	56 72	72 93	78 90	103 120	101 164	134 217	

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 56 ▶ 71

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio			
56.571	54.596	55.688	55.858	55.170	57.957	56.571	56.571	58.172	55.474	55.474	Exact Reduction Ratio			
344	409*	497*	571*	706*	839*	989*	1150*	1330*	1580*	1820*	32	1800	56	
287	342	415	478	588	702	827*	962*	1110*	1320*	1560*	27	1500		
231	274	333	383	470	563	664	773	899*	1060*	1250*	21	1200		
193	229	278	320	392	471	555	646	751	889	1040	18	1000		
173	206	251	289	353	424	500	582	677	802	946	16	900		
145	172	209	241	294	354	418	487	566	670	790	13	750		
61.378	63.843	60419	61.300	63.112	61.661	61.378	61.378	63.115	63.459	63.459	Exact Reduction Ratio			
304	367*	442*	548*	603*	763*	913*	1060*	1230*	1380*	1620*	29	1800	63	
254	307	369	456	504	638	763*	888*	1030*	1160*	1360*	24	1500		
204	246	296	365	405	512	613	713	829*	932*	1100*	19	1200		
170	206	248	304	338	427	512	596	693	779	919	16	1000		
153	185	223	274	305	384	462	537	625	702	828	14	900		
128	155	186	228	255	320	386	449	522	587	692	12	750		
72.000	68.512	69.882	70.339	69.474	72.872	70.500	70.500	73.000				Exact Reduction Ratio		
271	327*	397*	456*	548*	660*	797*	927*	1070*	*	*	25	1800	71	
226	273	332	381	456	550	666*	775*	895*	*	*	21	1500		
182	219	266	305	365	440	535	622	719*	*	*	17	1200		
152	183	222	255	304	367	447	520	601	*	*	14	1000		
137	165	200	230	274	330	403	469	541	*	*	13	900		
114	138	167	192	228	275	336	391	452	*	*	11	750		
C-60	C-60	C-60	C-60	C-60	C-62	C-62	C-62	C-64	C-64	C-64	Horizontal Vertical Upright			
C-84	C-84	C-84	C-84	C-84								Dimension Tables		

* marked models are quadruple reduction units. Refer to C-30 and C-31.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Triple Reduction Horizontal Type		
197	243	267	306	344	387	489	489	454	554	554	-	1800	56
472	683	750	821	921	639	806	806	748	914	914	1	1500	
194	240	263	303	339	385	483	483	457	562	562	-	1200	
412	600	657	723	810	634	797	797	754	928	928	1	1000	
187	233	255	296	330	376	470	470	452	561	561	-	900	
353	517	565	626	698	621	776	776	746	925	925	1	750	
180	225	246	287	319	366	456	456	443	553	553	-	1800	71
302	443	483	537	599	604	752	752	731	912	912	1	1500	
176	220	240	281	313	359	447	447	437	546	546	-	1200	
282	415	452	504	561	593	737	737	720	900	900	1	1000	
168	211	230	269	300	346	430	430	423	530	530	-	900	
245	361	394	440	490	571	709	709	697	875	875	1	750	
184	225	249	283	319							-	1800	56
441	633	699	757	855							1	1500	
184	226	249	285	321							-	1200	
391	566	623	680	765							1	1000	
180	223	245	283	317							-	900	
340	495	543	598	670							1	750	
175	218	238	277	309							-	1800	71
293	429	469	519	580							1	1500	
172	214	234	272	304							-	1200	
275	403	440	489	546							1	1000	
164	206	225	263	293							-	900	
240	353	386	430	479							1	750	
											-	1800	56
											1	1500	
											-	1200	
											1	1000	
											-	900	
											1	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 80 ► 90

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090		
80	Exact Reduction Ratio		79.751			79.111			80.552			80.234			78.000			75.833	77.090
	1800	23	19.3			*	31	*	51	*	75	*	111	*	172	206			
	1500	19	16.1			*	26.1	*	42	*	63	*	92	*	143	172			
	1200	15	12.9			*	20.9	*	34	*	50	*	74	*	115	138			
	1000	13	10.8			*	17.5	*	28.5	*	42	*	62	*	96	115			
	900	11	9.7			*	15.7	*	25.7	*	38	*	55	*	86	104			
	750	9.4	8.1			*	13.1	*	21.4	*	31	*	46	*	72	87			
90	Exact Reduction Ratio		86.706			90.000			90.496			91.765			87.529			83.268	
	1800	20	18.8			*	27.5	*	41	*	63	*	107	*	165	*			
	1500	17	15.7			*	23.0	*	34	*	53	*	89	*	138	*			
	1200	13	12.6			*	18.4	*	27.4	*	42	*	71	*	110	*			
	1000	11	10.5			*	15.4	*	22.9	*	35	*	59	*	92	*			
	900	10	9.4			*	13.8	*	20.6	*	32	*	54	*	83	*			
	750	8.3	7.9			*	11.6	*	17.2	*	26.7	*	45	*	69	*			
Dimension Tables	Horizontal Vertical Upright		C-56			C-56			C-56			C-58			C-58			C-60	
			C-80			C-80			C-80			C-82			C-82			C-84	
			C-96			C-96			C-96			C-98			C-98				

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-				30		46		59		79		110		140	185	
			-				59		81		136		167		210		372	443	
		1500	-				29		44		57		77		108		137	183	
			-				51		69		117		145		182		325	388	
	1200	-				27		42		54		73		103		132	177		
		-				42		58		99		122		155		278	334		
	80	-				25		39		51		70		99		127	171		
Dimension Tables	80 ▼ 90		-				35		48		83		103		131		237	285	
		900	-				24		38		50		68		96		124	167	
			-				33		45		77		96		122		221	267	
		750	-				23		36		47		64		91		118	159	
		-				28		38		66		82		105		191	232		
	Triple Reduction Vertical Type	1800	-				29		45		57		76		107		135	173	
			-				58		79		132		160		203		359	412	
1500		-				28		43		56		75		105		134	173		
		-				50		67		115		141		178		316	367		
1200		-				27		41		53		72		101		130	170		
		-				42		57		97		120		152		272	320		
1000		-				25		39		51		69		97		125	165		
80 ▼ 90		-				35		48		82		102		129		233	276		
	900	-				24		38		49		67		95		122	162		
		-				32		45		76		95		121		218	259		
	750	-				23		35		46		63		90		117	156		
	-				27		37		66		81		104		189	227			
Triple Reduction Upright Type	1800	-				30		46		59		79		110		140			
		-				59		81		136		167		210		372			
	1500	-				29		44		57		77		108		137			
		-				51		69		117		145		182		325			
	1200	-				27		42		54		73		103		132			
		-				42		58		99		122		155		278			
	1000	-				25		39		51		70		99		127			
80 ▼ 90		-				35		48		83		103		131		237			
	900	-				24		38		50		68		96		124			
		-				33		45		77		96		122		221			
	750	-				23		36		47		64		91		118			
	-				28		38		66		82		105		191				

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 80 ► 90

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
78.118	77.451	75.820	83.128	79.474	77.647	76.490	76.490	79.203			Exact Reduction Ratio	
240	290 *	353 *	386 *	481 *	587 *	735 *	856 *	988 *	*	*	23	1800
200	242	295	323	402	490	615 *	716 *	826 *	*	*	19	1500
160	194	237	259	323	393	493	574	663 *	*	*	15	1200
134	162	198	216	269	328	412	480	554	*	*	13	1000
121	146	178	195	243	296	372	432	499	*	*	11	900
101	122	149	163	203	247	310	361	417	*	*	9.4	750
85.313	85.712			93.924	91.765						Exact Reduction Ratio	
220	*	313 *	*	408 *	512 *	*	*	*	*	*	20	1800
183	*	262	*	341	427	*	*	*	*	*	17	1500
147	*	210	*	273	341	*	*	*	*	*	13	1200
123	*	175	*	228	284	*	*	*	*	*	11	1000
111	*	158	*	206	256	*	*	*	*	*	10	900
92	*	132	*	172	213	*	*	*	*	*	8.3	750
C-60	C-60	C-60	C-60	C-60	C-62	C-62	C-62	C-64			Horizontal Vertical Upright	Dimension Tables
C-84	C-84	C-84	C-84	C-84								

* marked models are quadruple reduction units. Refer to C-30 and C-31.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
197	245	263	304	330	363	487	487	447			-	1800
471	689	738	814	885	599	803	803	737			1	1800
194	242	259	300	326	357	481	481	450			-	1500
412	605	647	717	778	590	793	793	742			1	1500
187	235	251	293	317	346	468	468	445			-	1200
353	521	556	619	671	571	772	772	734			1	1200
180	227	242	284	307	335	454	454	436			-	1000
301	447	476	532	575	553	749	749	719			1	1000
176	222	237	278	300	328	445	445	429			-	900
282	418	445	499	539	540	734	734	708			1	900
168	213	226	267	288	314	427	427	416			-	750
244	364	388	436	470	517	705	705	686			1	750

184	228	245	281	308							-	1800
440	640	689	753	825							1	1800
184	229	245	283	309							-	1500
391	572	613	675	737							1	1500
180	225	241	280	304							-	1200
340	500	535	593	644							1	1200
175	220	235	274	297							-	1000
292	433	462	515	558							1	1000
171	216	230	270	292							-	900
274	407	433	484	524							1	900
164	208	221	261	282							-	750
239	357	380	426	460							1	750

											-	1800
											1	1800
											-	1500
											1	1500
											-	1200
											1	1200
											-	1000
											1	1000
											-	900
											1	900
											-	750
											1	750

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 71 ► 90

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
71	Exact Reduction Ratio																	
	1800	25		*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1500	21		*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1200	17		*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1000	14		*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	900	13		*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	750	11		*	*	*	*	*	*	*	*	*	*	*	*	*	*	
80	Exact Reduction Ratio						77.989		79.341				78.120		79.124			
	1800	23			*		26	*	30	*		*	80	*	127	*	*	
	1500	19			*		21	*	25.3	*		*	66	*	106	*	*	
	1200	15			*		17	*	20.3	*		*	53	*	84	*	*	
	1000	13			*		14	*	16.9	*		*	44	*	70	*	*	
	900	11			*		13	*	15.2	*		*	40	*	63	*	*	
	750	9.4			*		11	*	12.7	*		*	33	*	53	*	*	
90	Exact Reduction Ratio						88.991		90.326		91.330		87.529		87.269		90.353	
	1800	20			*		21.0	*	30	*		45	*	80	*	124	*	176
	1500	17			*		17.5	*	25.3	*		37	*	66	*	104	*	147
	1200	13			*		14.0	*	20.3	*		30	*	53	*	83	*	118
	1000	11			*		11.7	*	16.9	*		25.0	*	44	*	69	*	98
	900	10			*		10.5	*	15.2	*		22.5	*	40	*	62	*	89
	750	8.3			*		8.8	*	12.7	*		18.8	*	33	*	52	*	74
Dimension Tables	Horizontal Vertical Upright					C-66		C-66		C-68		C-68		C-68		C-70		
						C-86		C-86		C-88		C-88		C-88		C-90		
						C-100		C-100		C-102		C-102		C-102				

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-					40		50		70		94		119		157
		1500	-					40		49		69		93		118		157
		1200	-					39		47		66		90		115		155
		1000	-					38		45		63		87		112		151
		900	-					37		44		62		85		109		149
		750	-					36		42		59		82		105		143
Dimension Tables	Quadruple Reduction Vertical Type	1800	-					44		54		75		103		130		175
		1500	-					43		52		73		99		127		171
		1200	-					41		49		69		95		121		165
		1000	-					40		47		66		91		116		159
		900	-					39		45		64		88		113		155
		750	-					37		43		60		84		108		148
	Quadruple Reduction Upright Type	1800	-					43		50		70		94		118		
		1500	-					43		49		68		93		117		
		1200	-					42		47		66		90		115		
		1000	-					41		45		63		87		111		
		900	-					40		44		62		85		109		
		750	-					38		41		59		81		105		

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 71 ▶ 90

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
											68.889	68.889	Exact Reduction Ratio	
*	*	*	*	*	*	*	*	*	*	1280 [*]	1510 [*]	25	1800	71
*	*	*	*	*	*	*	*	*	*	1070	1260	21	1500	
*	*	*	*	*	*	*	*	*	*	860	1010	17	1200	
*	*	*	*	*	*	*	*	*	*	718	848	14	1000	
*	*	*	*	*	*	*	*	*	*	648	764	13	900	
*	*	*	*	*	*	*	*	*	*	541	638	11	750	
											78.568	78.568	Exact Reduction Ratio	
*	*	*	*	*	*	*	*	*	*	1120 [*]	1320 [*]	23	1800	80
*	*	*	*	*	*	*	*	*	*	941	1110	19	1500	
*	*	*	*	*	*	*	*	*	*	755	891	15	1200	
*	*	*	*	*	*	*	*	*	*	631	745	13	1000	
*	*	*	*	*	*	*	*	*	*	569	671	11	900	
*	*	*	*	*	*	*	*	*	*	475	560	9.4	750	
88.676			89.695		91.800		91.800	91.022	87.371	87371	Exact Reduction Ratio			
*	254	*	379	*	*	615	715	862 [*]	1010 [*]	1190 [*]	20	1800	90	
*	212	*	316	*	*	514	598	720	848	1000	17	1500		
*	170	*	254	*	*	412	480	578	680	803	13	1200		
*	142	*	212	*	*	344	401	483	568	670	11	1000		
*	128	*	191	*	*	310	361	435	512	604	10	900		
*	106	*	159	*	*	259	301	363	428	505	8.3	750		
C-70 C-90		C-70 C-90		C-72		C-72	C-74	C-74	C-74	Horizontal Vertical Upright		Dimension Tables		

* marked models are triple reduction units. Refer to C-26 ~ C-29.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio		
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					
202				259		359		359	386	472	472	-	1800	Quadruple Reduction Horizontal Type 71 ▼ 90	
204				259		361		361	395	484	484	-	1500		
202				255		356		356	397	488	488	-	1200		
199				250		349		349	394	484	484	-	1000		
196				246		344		344	390	480	480	-	900		
190				237		334		334	381	469	469	-	750	90	
													-	1800	Quadruple Reduction Vertical Type 71 ▼ 90
228				288								-	1500		
224				281								-	1200		
216				271								-	1000		
209				262								-	900		
205				256								-	750		
													-	1800	Quadruple Reduction Upright Type 71 ▼ 90
													-	1500	
													-	1200	
													-	1000	
													-	900	
													-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 100 ▶ 125

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
100	Exact Reduction Ratio						90.259	99.158	103.97	98.871	102.71		97.650	96.720	96.444	96.432	103.82
	1800	18					20.1	26.0	29.8	30	45		78	80	118	127	160
	1500	15					16.8	21.7	24.9	25.3	37		65	66	99	106	133
	1200	12					13.5	17.4	19.9	20.3	30		52	53	79	84	107
	1000	10					11.2	14.5	16.6	16.9	25.0		43	44	66	70	89
	900	9.0					10.1	13.0	15.0	15.2	22.5		39	40	59	63	80
	750	7.5					8.4	10.8	12.5	12.7	18.8		33	33	49	53	67
112	Exact Reduction Ratio						113.26	112.81	118.37	111.08	119.69	112.41	109.41	108.54	106.37	105.89	112.94
	1800	16					16.5	22.0	24.5	30	38	45	65	80	102	127	141
	1500	13					13.8	18.4	20.4	25.3	31	37	54	66	85	106	118
	1200	11					11.0	14.7	16.4	20.3	25.5	30	43	53	68	84	95
	1000	8.9					9.2	12.3	13.7	16.9	21.3	25.0	36	44	57	70	79
	900	8.0					8.3	11.1	12.3	15.2	19.2	22.5	33	40	51	63	71
	750	6.7					6.9	9.2	10.3	12.7	16.0	18.8	27.5	33	43	53	59
125	Exact Reduction Ratio						122.72	126.20	130.09	129.57	127.97	128.80	127.97	120.90	126.39	117.54	129.78
	1800	14					16.3	20.4	23.9	30	38	45	60	80	90	124	128
	1500	12					13.6	17.0	19.9	25.3	32	37	50	66	75	104	107
	1200	9.6					10.6	13.6	16.0	20.3	26.0	30	40	53	60	83	86
	1000	8.0					9.1	11.4	13.3	16.9	21.7	25.0	33	44	50	69	71
	900	7.2					8.2	10.2	12.0	15.2	19.6	22.5	30	40	45	62	64
	750	6.0					6.8	8.5	10.0	12.7	16.3	18.8	25.2	33	38	52	53
Dimension Tables	Horizontal Vertical Upright						C-66	C-66	C-66	C-66	C-68	C-68	C-68	C-68	C-68	C-68	C-70
							C-86	C-86	C-86	C-86	C-88	C-88	C-88	C-88	C-88	C-88	C-90
							C-100	C-100	C-100	C-100	C-102	C-102	C-102	C-102	C-102	C-102	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-					39	45	46	57	64	78	87	107	110	135	147	
		1500	-					38	44	45	55	63	76	86	105	109	133	147	
		1200	-					36	42	43	53	60	72	83	102	106	129	144	
		1000	-					35	40	41	50	58	69	80	98	103	125	140	
		900	-					34	39	40	49	56	68	78	96	100	122	138	
		750	-					32	37	38	46	54	64	74	91	96	117	133	
Dimension Tables	Quadruple Reduction Vertical Type	1800	-					41	48	49	60	69	82	94	115	120	146	162	
		1500	-					40	46	47	58	66	79	91	111	116	142	158	
		1200	-					38	44	45	55	63	75	86	106	111	135	152	
		1000	-					36	42	43	52	60	71	83	101	107	130	147	
		900	-					35	40	41	50	58	69	80	98	104	126	143	
		750	-					33	38	39	47	55	65	76	93	99	120	137	
	Quadruple Reduction Upright Type	1800	-					41	45	46	56	64	78	87	107	110	135		
		1500	-					40	44	45	55	63	76	85	105	109	133		
		1200	-					38	42	43	53	60	72	83	101	106	129		
		1000	-					37	40	41	50	58	69	80	98	103	125		
		900	-					36	39	40	49	56	68	78	95	100	122		
		750	-					34	37	38	46	54	64	74	91	96	117		

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 100 ▶ 125

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio		
99.991	101.85	98.135	97.789	101.65	98.060	99.600	99.600	98.756	99.948	99.948	100		
188	232	274	348	401	500	567	660	796 *	889 *	1040 *			
157	194	229	290	335	418	474	552	665	742	876			
126	155	184	233	269	335	380	443	534	596	703			
105	129	153	194	224	280	318	370	446	498	587			
94	117	138	175	202	252	286	333	402	448	529	112		
79	97	115	146	169	210	239	278	335	374	442			
115.20	109.29	111.48	112.21	110.83	113.61	115.20	115.20	112.18	110.36	110.36	Exact Reduction Ratio		
170	206	251	287	368	433	492	572	702 *	806 *	951 *	125		
142	172	209	240	308	362	411	478	586	673	794			
114	138	168	192	247	290	329	383	470	540	637			
95	115	140	161	206	242	275	320	393	451 *	532 *			
86	104	126	145	186	218	248	288	354	406	480			
71	86	105	121	155	181	207	241	295	339	400	Exact Reduction Ratio		
124.99	124.14	120.95	119.20	126.78	123.87	124.99	124.99	121.72	126.25	126.25			
151	191	223	286	304	397	454	528	648 *	706 *	833 *			
126	159	186	239	253	332	349	441	541	590	696			
101	127	149	191	203	266	304	354	434	473	558			
84	106	124	160	170	222	254	295	362	395	466	125		
76	96	112	144	153	200	229	266	327	356	420			
63	80	94	120	127	167	191	222	273	297	350			
C-70	C-70	C-70	C-70	C-70	C-72	C-72	C-72	C-74	C-74	C-74	Horizontal Vertical Upright		
C-90	C-90	C-90	C-90	C-90	C-90								

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
164	189	211	252	275	302	355	355	374	470	470	-	1800	Quadruple Reduction Horizontal Type 100 ▼ 125
163	190	212	250	273	300	355	355	380	470	470	-	1500	
160	188	209	245	268	293	350	350	380	464	464	-	1200	
156	184	205	239	261	285	342	342	375	454	454	-	1000	
153	181	202	235	256	280	337	337	371	447	447	-	900	
148	176	195	227	247	270	326	326	362	433	433	-	750	

180	211	236	275	300	-	1800	Quadruple Reduction Vertical Type 100 ▼ 125
176	207	230	268	293	-	1500	
169	200	223	258	282	-	1200	
163	193	215	249	272	-	1000	
159	189	210	243	265	-	900	
152	181	202	233	254	-	750	

-	1800	Quadruple Reduction Upright Type 100 ▼ 125
-	1500	
-	1200	
-	1000	
-	900	
-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 140 ► 180

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
140	Exact Reduction Ratio						140.03	143.57	148.10	145.56	149.12	147.31	143.38	135.67	139.40	129.07	141.18
	1800	13					13.4	17.3	19.6	25.6	30	39	50	69	78	107	113
	1500	11					11.2	14.5	16.4	21.4	25.6	33	41	58	65	89	95
	1200	8.6					8.9	11.6	13.1	17.1	20.5	26.6	33	46	52	71	76
	1000	7.1					7.5	9.7	10.9	14.3	17.1	22.2	28.0	38	43	59	63
	900	6.4					6.7	8.7	9.9	12.9	15.4	20.0	25.2	35	39	54	57
	750	5.4					5.6	7.3	8.2	10.7	12.9	16.7	21.0	29.2	32	45	47
160	Exact Reduction Ratio						156.02	158.68	162.11	156.75	160.47	152.99	158.44	158.25	154.04	163.15	
	1800	11					16.5	17.1	25.5	25.7	40	39	63	68	95	102	
	1500	9.4					13.8	14.3	21.3	21.4	34	33	53	57	79	85	
	1200	7.5					11.0	11.4	17.1	17.1	27.2	26.6	42	46	64	68	
	1000	6.3					9.2	9.5	14.2	14.3	22.7	22.1	35	38	53	57	
	900	5.6					8.3	8.6	12.8	12.8	20.4	19.9	31	34	48	51	
	750	4.7					6.9	7.1	10.7	10.7	17.0	16.6	26.6	28.7	40	43	
180	Exact Reduction Ratio						177.50	180.65	182.13	182.66	183.53	171.41	177.79	174.54	169.14	177.48	
	1800	10					14.0	16.1	20.5	25.1	32	39	53	62	82	90	
	1500	8.3					11.7	13.4	17.1	20.9	26.7	33	44	52	68	75	
	1200	6.7					9.4	10.8	13.7	16.8	21.4	26.6	35	42	54	60	
	1000	5.6					7.8	9.0	11.4	14.0	17.8	22.1	29.7	35	45	50	
	900	5.0					7.1	8.1	10.3	12.6	16.1	19.9	26.7	31	41	45	
	750	4.2					5.9	6.7	8.6	10.5	13.4	16.6	22.3	26.4	34	38	
Dimension Tables	Horizontal Vertical Upright					C-66	C-66	C-66	C-66	C-68	C-68	C-68	C-68	C-68	C-68	C-68	C-70
						C-86	C-86	C-86	C-86	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-90
						C-100	C-100	C-100	C-100	C-102	C-102	C-102	C-102	C-102	C-102	C-102	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-					38	42	40	55	59	75	81	102	101	130	144
		1500	-					37	41	38	53	56	73	78	100	98	127	140
		1200	-					35	39	36	51	53	70	73	97	93	123	135
	140	1000	-					34	38	34	48	50	67	70	93	89	119	129
	▼	900	-					33	37	32	47	48	65	67	91	86	117	126
Dimension Tables	180	750	-					31	35	30	45	45	62	63	86	81	111	120
	Quadruple Reduction Vertical Type	1800	-					40	45	42	58	61	79	84	109	107	139	152
		1500	-					39	43	39	55	58	76	81	105	102	135	147
		1200	-					37	41	37	52	54	72	75	100	96	129	139
	140	1000	-					35	39	34	50	51	68	71	96	91	123	133
	▼	900	-					34	38	33	48	49	66	69	93	88	120	129
	180	750	-					32	36	30	45	46	63	64	88	82	114	122
	Quadruple Reduction Upright Type	1800	-					39	42	40	54	59	75	81	102	101	129	
		1500	-					38	41	38	53	56	73	78	100	98	127	
		1200	-					37	39	36	51	53	70	73	96	93	123	
	140	1000	-					35	38	33	48	50	67	70	93	89	119	
	▼	900	-					34	37	32	47	48	65	67	91	86	116	
	180	750	-					33	35	30	44	45	62	63	86	81	111	

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 140 ► 180

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
144.00	133.22	135.88	136.77	135.09	146.39	142.31	142.31	145.23	136.02	136.02	Exact Reduction Ratio		
137	170	206	236	303	337	399	464	544 *	656 *	774 *	140	13	1800
114	141	172	197	253	281	333	388	454	548	646		11	1500
91	113	138	158	203	226	267	311	364	439	518		8.6	1200
76	95	115	132	169	188	223	260	304	367	433		7.1	1000
69	85	104	119	152	170	201	234	274	330	390		6.4	900
57	71	86	99	127	142	168	195	229	276	325		5.4	750
156.24	158.28	147.43	153.67	154.53	150.98	154.40	154.40	157.57	155.60	155.60	Exact Reduction Ratio		
121	150	183	222	250	327	368	429	502 *	574 *	678 *	160	11	1800
101	125	153	186	208	273	307	358	419	480	566		9.4	1500
81	100	123	149	167	219	246	287	336	385	454		7.5	1200
67	84	102	124	139	183	206	240	281	321	379		6.3	1000
61	75	92	112	126	165	185	216	253	289	341		5.6	900
50	63	77	93	105	137	155	180	211	241	285		4.7	750
181.03	169.85	173.25	181.61	174.16	178.43	177.88	177.88	179.00	171.03	171.03	Exact Reduction Ratio		
109	133	162	189	236	277	320	373	443 *	523 *	617 *	180	10	1800
91	111	135	157	197	231	267	311	370	437	515		8.3	1500
73	89	108	126	158	185	214	249	296	350	413		6.7	1200
61	74	90	105	131	155	179	208	247	292	345		5.6	1000
55	67	81	95	118	139	161	187	223	263	311		5.0	900
45	56	68	79	99	116	134	156	186	220	259		4.2	750
C-70	C-70	C-70	C-70	C-70	C-72	C-72	C-72	C-74	C-74	C-74	Horizontal	Dimension Tables	
C-90	C-90	C-90	C-90	C-90							Vertical Upright		

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
155	188	205	242	265	291	339	339	372	457	457	-	1800	Quadruple Reduction Horizontal Type 140 ▼ 180
151	184	201	237	258	288	334	334	369	456	456	-	1500	
145	178	194	228	248	281	325	325	361	444	444	-	1200	
139	171	186	219	238	273	316	316	352	431	431	-	1000	
135	167	182	213	232	268	309	309	346	422	422	-	900	
129	160	174	204	221	258	298	298	334	406	406	-	750	180
											-	1800	Quadruple Reduction Vertical Type 140 ▼ 180
164 200 218 256 279											-	1500	
158 194 211 247 269											-	1200	
150 184 200 235 255											-	1000	
143 176 192 224 244											-	900	
138 172 186 218 237											-	750	180
131 163 177 207 225											-	750	180
											-	1800	Quadruple Reduction Upright Type 140 ▼ 180
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	180

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 200 ▶ 250

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
200	Exact Reduction Ratio							207.95	197.74	205.42	196.56	191.23				192.89	192.86	207.64
	1800	9.0						15.0	17.1	24.3	25.7	39				59	68	80
	1500	7.5						12.5	14.3	20.3	21.4	33				49	57	67
	1200	6.0						10.0	11.4	16.3	17.1	26.6				39	46	53
	1000	5.0						8.4	9.5	13.6	14.3	22.1				33	38	45
	900	4.5						7.5	8.6	12.2	12.8	19.9				30	34	40
	750	3.8						6.3	7.1	10.2	10.7	16.6				25.0	28.7	33
224	Exact Reduction Ratio							236.74	222.15	239.37	224.81	214.27	212.55	212.75	211.77	225.88		
	1800	8.0						12.3	16.8	19.2	25.7	33	39	51	65	71		
	1500	6.7						10.3	14.0	16.0	21.4	28.1	33	43	54	59		
	1200	5.4						8.2	11.3	12.8	17.1	22.5	26.6	34	44	47		
	1000	4.5						6.9	9.4	10.7	14.3	18.8	22.1	28.8	36	39		
	900	4.0						6.2	8.5	9.6	12.9	16.9	19.9	25.9	33	35		
	750	3.3						5.2	7.1	8.0	10.7	14.1	16.6	21.6	27.6	30		
250	Exact Reduction Ratio							260.18	259.14	255.94	257.59	250.61	236.76	252.78	235.08	259.56		
	1800	7.2						12.0	16.0	19.6	25.5	30	39	45	62	64		
	1500	6.0						10.0	13.4	16.3	21.2	25.8	33	38	52	53		
	1200	4.8						8.0	10.7	13.1	17.0	20.6	26.6	30	42	43		
	1000	4.0						6.7	8.9	10.9	14.1	17.2	22.2	25.5	35	36		
	900	3.6						6.0	8.0	9.8	12.7	15.5	19.9	22.9	31	32		
	750	3.0						5.0	6.7	8.2	10.6	12.9	16.6	19.1	26.4	27.1		
Dimension Tables	Horizontal							C-66	C-66	C-68	C-68	C-68	C-68	C-68	C-68	C-68	C-70	
	Vertical							C-86	C-86	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-90	
	Upright							C-100	C-100	C-102	C-102	C-102	C-102	C-102	C-102	C-102		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-								37	45	54	65	74	91	94	114	128
		1500	-								35	43	52	62	71	87	91	110	124
		1200	-								33	40	48	58	67	82	86	104	118
	200	1000	-							31	38	46	55	64	78	82	99	112	
	▼	900	-							30	36	44	53	62	75	79	96	109	
Dimension Tables	250	750	-							28	34	41	49	58	71	75	90	103	
	Quadruple Reduction Vertical Type	1800	-								38	47	56	67	77	94	98	119	134
		1500	-								36	44	53	63	74	90	94	114	129
		1200	-								34	41	50	59	69	84	88	107	121
	200	1000	-							31	38	47	55	65	79	84	101	115	
		▼	900	-							30	37	45	53	63	76	81	98	111
		250	750	-							28	34	42	50	59	72	76	92	105
	Quadruple Reduction Upright Type	1800	-								37	45	54	65	74	91	94	114	
		1500	-								35	43	52	62	71	87	91	110	
		1200	-								33	40	48	58	67	82	86	104	
		200	1000	-							31	38	46	55	64	78	82	99	
		▼	900	-							30	36	44	53	62	75	79	96	
		250	750	-							28	34	41	49	58	71	75	90	

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 200 ▶ 250

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
196.41	203.69	187.97	195.58	205.82	190.95	193.00	193.00	194.21	195.65	195.65	Exact Reduction Ratio		
96	117	144	172	200	259	295	344	408 [*]	458 [*]	540 [*]	200	9.0	1800
80	97	120	143	167	216	246	287	341	382	451		7.5	1500
64	78	96	115	133	173	198	230	273	307	362		6.0	1200
53	65	80	96	111	145	165	192	228	256	302		5.0	1000
48	58	72	86	100	130	148	173	205	230	272		4.5	900
40	49	60	72	84	109	124	144	171	192	227		3.8	750
230.40	218.59	222.96	224.42	221.65	230.04	226.29	226.29	229.95	215.37	215.37	Exact Reduction Ratio		
86	104	126	145	172	215	252	294	345 [*]	417 [*]	491 [*]	224	8.0	1800
71	86	105	121	143	180	211	245	288	348	410		6.7	1500
57	69	84	97	115	144	169	196	231	279	329		5.4	1200
48	58	70	81	96	120	141	164	193	233	274		4.5	1000
43	52	63	73	86	108	127	148	174	209	247		4.0	900
36	43	53	60	72	90	106	123	145	175	206		3.3	750
249.98	248.28	241.90	238.39	253.56	237.26	245.51	245.51	249.49	246.37	246.37	Exact Reduction Ratio		
76	96	112	144	153	209	233	271	319 [*]	365 [*]	430 [*]	250	7.2	1800
63	80	94	120	127	174	194	226	266	304	359		6.0	1500
50	64	75	96	102	140	156	181	213	244	288		4.8	1200
42	53	62	80	85	117	130	151	178	203	240		4.0	1000
38	48	56	72	77	105	117	136	160	183	216		3.6	900
31	40	47	60	64	87	97	113	134	153	180		3.0	750
C-70	C-70	C-70	C-70	C-70	C-72	C-72	C-72	C-74	C-74	C-74	Horizontal		Dimension Tables
C-90	C-90	C-90	C-90	C-90							Vertical Upright		

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
142	167	186	217	237	273	325	325	352	426	426	-	1800	Quadruple Reduction Horizontal Type 200 ▼ 250
137	162	180	210	229	265	317	317	344	417	417	-	1500	
131	155	173	200	218	254	306	306	331	402	402	-	1200	
125	149	165	191	208	244	294	294	318	388	388	-	1000	
121	145	161	186	203	238	287	287	310	379	379	-	900	
114	137	152	176	192	226	275	275	296	362	362	-	750	
149 176 196 226 247											-	1800	Quadruple Reduction Vertical Type 200 ▼ 250
143 169 188 217 237											-	1500	
134 160 178 205 224											-	1200	
128 153 169 195 213											-	1000	
123 148 164 189 206											-	900	
116 140 155 179 195											-	750	
											-	1800	Quadruple Reduction Upright Type 200 ▼ 250
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 280 ► 355

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
280	Exact Reduction Ratio		296.20 291.13 298.24 294.61 280.79 265.69 278.80 258.13 282.35														
	1800	6.4	9.9 12.9 15.4 20.0 25.7 35 39 54 57														
	1500	5.4	8.2 10.7 12.9 16.7 21.5 29.8 32 45 47														
	1200	4.3	6.6 8.6 10.3 13.4 17.2 23.9 26.4 36 38														
	1000	3.6	5.5 7.2 8.6 11.1 14.4 19.9 22.0 30 31														
	900	3.2	4.9 6.5 7.7 10.0 12.9 17.9 19.8 27.1 28.8														
	750	2.7	4.1 5.4 6.4 8.4 10.8 15.0 16.5 22.6 24.0														
315	Exact Reduction Ratio		315.95 324.22 332.51 320.94 322.08 310.27 318.63 308.07 308.36														
	1800	5.7	9.2 12.8 13.8 20.4 22.5 32 34 48 52														
	1500	4.8	7.7 10.7 11.5 17.0 18.7 27.2 28.9 40 43														
	1200	3.8	6.2 8.6 9.2 13.6 15.0 21.8 23.1 32 35														
	1000	3.2	5.2 7.1 7.7 11.4 12.5 18.2 19.3 26.8 29.3														
	900	2.9	4.6 6.4 6.9 10.2 11.3 16.4 17.4 24.2 26.3														
	750	2.4	3.9 5.4 5.8 8.5 9.4 13.6 14.5 20.2 22.0														
355	Exact Reduction Ratio		367.08 364.25 369.46 367.06 343.56 348.18 355.25 338.28 353.71														
	1800	5.1	8.0 10.3 12.5 16.1 21.1 27.3 31 41 45														
	1500	4.2	6.6 8.6 10.4 13.4 17.6 22.8 25.9 34 38														
	1200	3.4	5.3 6.9 8.3 10.7 14.1 18.3 20.7 27.6 30														
	1000	2.8	4.4 5.7 6.9 9.0 11.7 15.2 17.3 23.0 25.5														
	900	2.5	4.0 5.2 6.2 8.1 10.6 13.7 15.6 20.7 23.0														
	750	2.1	3.3 4.3 5.2 6.7 8.8 11.4 13.0 17.3 19.2														
Dimension Tables	Horizontal Vertical Upright	C-66 C-66 C-68 C-68 C-68 C-68 C-68 C-68 C-68 C-70															
		C-86 C-86 C-88 C-88 C-88 C-88 C-88 C-88 C-88 C-90															
		C-100 C-100 C-102 C-102 C-102 C-102 C-102 C-102 C-102															

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-							37	43	54	62	75	87	94	109	127	
		1500	-							35	41	52	59	72	83	91	105	123	
		1200	-							33	39	49	56	68	78	86	100	117	
	280	1000	-						31	36	46	52	64	74	82	94	112		
	▼	900	-						30	35	44	50	62	72	80	91	109		
	355	750	-						28	32	42	47	58	67	75	86	103		
Dimension Tables	Quadruple Reduction Vertical Type	1800	-							38	45	56	64	78	90	99	114	133	
		1500	-							36	42	54	61	74	85	95	109	128	
		1200	-							34	39	50	57	70	80	89	102	121	
	280	1000	-						31	37	47	53	66	75	84	96	114		
	▼	900	-						30	35	45	51	63	73	81	93	111		
	355	750	-						28	33	42	48	59	68	76	87	104		
		Quadruple Reduction Upright Type	1800	-							37	43	54	62	75	87	94	109	
			1500	-							35	41	52	59	72	83	91	105	
			1200	-							33	39	49	56	68	78	86	99	
		280	1000	-						31	36	46	52	64	74	82	94		
		▼	900	-						30	35	44	50	62	71	80	91		
		355	750	-						28	32	42	47	58	67	75	86		

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 280 ► 355

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
288.00	266.44	271.77	273.54	270.18	280.39	288.00	288.00	283.41	291.16	291.16	Exact Reduction Ratio			
69	85	104	119	152	177	199	231	281 [*]	309 [*]	365 [*]	280	6.4	1800	
57	71	86	99	127	148	166	193	234	258	304		5.4	1500	
46	57	69	79	102	118	133	155	188	207	244		4.3	1200	
38	47	58	66	85	99	111	129	157	172	203		3.6	1000	
34	43	52	60	76	89	100	116	141	155	183		3.2	900	
28.9	35	43	50	64	74	83	97	118	129	153		2.7	750	
312.47	301.20	294.86	323.28	309.07	320.45	312.47	312.47	307.49				Exact Reduction Ratio		
61	75	92	101	126	155	183	213	259 [*]				315	5.7	1800
50	63	77	84	105	129	153	178	216					4.8	1500
40	50	61	67	84	104	122	142	173					3.8	1200
34	42	51	56	70	86	102	119	144					3.2	1000
30	38	46	50	63	78	92	107	130					2.9	900
25.5	31	38	42	52	65	77	89	108					2.4	750
341.25	344.23	333.33	369.46	365.26	356.86	341.25	341.25	347.61				Exact Reduction Ratio		
55	66	81	88	106	139	168	195	229 [*]				355	5.1	1800
46	55	68	73	89	116	140	163	191					4.2	1500
37	44	54	59	71	93	112	131	153					3.4	1200
31	37	45	49	59	78	93	109	128					2.8	1000
28.1	33	41	44	53	70	84	98	115					2.5	900
23.4	27.8	34	37	44	58	70	82	96					2.1	750
C-70	C-70	C-70	C-70	C-70	C-72	C-72	C-72	C-74	C-74	C-74	Horizontal Vertical Upright		Dimension Tables	
C-90	C-90	C-90	C-90	C-90										

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
137	167	180	208	228	248	304	304	340	421	421	-	1800	Quadruple Reduction Horizontal Type 280 ▼ 355
132	162	175	202	220	240	295	295	332	412	412	-	1500	
126	155	167	192	210	228	282	282	319	397	397	-	1200	
120	149	160	184	200	218	270	270	306	383	383	-	1000	
116	145	155	179	195	212	263	263	299	374	374	-	900	
110	138	147	169	184	200	250	250	285	358	358	-	750	
143 176 189 217 237											-	1800	Quadruple Reduction Vertical Type 280 ▼ 355
137 169 182 208 227											-	1500	
129 160 172 197 215											-	1200	
123 153 164 188 204											-	1000	
119 148 159 182 198											-	900	
112 140 150 172 187											-	750	
											-	1800	Quadruple Reduction Upright Type 280 ▼ 355
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 400 ▶ 450

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
400	Exact Reduction Ratio							388.53			409.25			399.38			386.60	
	1800	4.5						9.7			14.4			23.8			36	
	1500	3.8						8.1			12.0			19.9			30	
	1200	3.0						6.5			9.6			15.9			24.2	
	1000	2.5						5.4			8.0			13.3			20.2	
	900	2.3						4.8			7.2			12.0			18.2	
	750	1.9						4.0			6.0			10.0			15.1	
450	Exact Reduction Ratio							451.41			454.72			426.01			431.03	
	1800	4.0						8.3			13.0			22.4			32	
	1500	3.3						6.9			10.8			18.6			27.1	
	1200	2.7						5.6			8.7			14.9			21.7	
	1000	2.2						4.6			7.2			12.5			18.1	
	900	2.0						4.2			6.5			11.2			16.3	
	750	1.7						3.5			5.4			9.4			13.6	
Dimension Tables	Horizontal							C-66			C-68			C-68			C-68	
	Vertical							C-86			C-88			C-88			C-88	
	Upright							C-100			C-102			C-102			C-102	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-								45		64		86		110		
		1500	-								43		61		83		106		
		1200	-								40		58		78		100		
		400	1000	-							37		54		74		95		
		▼	900	-							36		52		71		92		
Dimension Tables	450	750	-								33		49		67		87		
	Quadruple Reduction Vertical Type	1800	-								46		66		89		114		
		1500	-								44		63		85		109		
		1200	-								41		59		80		103		
		400	1000	-							38		55		75		97		
		▼	900	-							36		53		72		94		
	450	750	-								34		49		68		88		
	Quadruple Reduction Upright Type	1800	-								45		64		86		110		
		1500	-								43		61		83		106		
		1200	-								40		58		78		100		
		400	1000	-							37		54		74		95		
		▼	900	-							36		52		71		92		
		450	750	-							33		49		67		87		

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 400 ► 450

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
391.44	380.94			417.44	407.84						Exact Reduction Ratio	
48	71			93	122						4.5	1800
40	59			78	102						3.8	1500
32	48			62	81						3.0	1200
27.2	40			52	68						2.5	1000
24.5	36			47	61						2.3	900
20.4	30			39	51						1.9	750
										Exact Reduction Ratio		
										4.0		1800
										3.3		1500
										2.7		1200
										2.2		1000
										2.0		900
										1.7		750
C-70	C-70			C-70	C-72						Horizontal Vertical Upright	Dimension Tables
C-90	C-90			C-90								

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

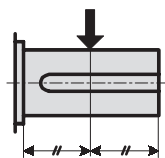
Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
137	179			225	246						-	1800
133	174			218	238						-	1500
127	166			208	226						-	1200
121	159			198	216						-	1000
117	155			193	210						-	900
111	147			183	198						-	750
												Quadruple Reduction Horizontal Type
144	188			234							-	1800
138	181			225							-	1500
130	171			213							-	1200
123	163			202							-	1000
119	158			196							-	900
113	149			185							-	750
												Quadruple Reduction Vertical Type
												400
												▼
												450
												Quadruple Reduction Upright Type
												400
												▼
												450

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: Double Reduction RR, LL/

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	11.8	17.7	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	77.0	100.1	100.1	137.8
	160	11.8	17.7	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	89.0	108.9	108.9	145.7
	100	11.8	17.7	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	54.4	99.0	99.0	122.1	122.1	147.6
	63	11.8	17.7	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	131.5	125.6	125.6	143.7
	40	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	141.0	125.1	125.1	137.8
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	139.5	122.6	122.6	135.4
Heavy duty bearing model	250								71.1	93.7	70.1	122.5	122.5	141.8	141.8	158.9	181.0
	160								78.0	94.7	77.5	137.5	137.5	132.4	132.4	151.6	174.6
	100								81.4	98.1	92.2	149.5	149.5	127.0	127.0	147.6	166.8
	63								81.4	98.1	114.8	149.0	149.0	125.6	125.6	143.7	165.8
	40								81.4	98.1	117.7	148.5	148.5	125.1	125.1	137.8	165.3
	≤ 25								81.4	98.1	117.7	147.0	147.0	122.6	122.6	135.4	163.8

Sheet 2

Applicable to configurations: Double Reduction RL, LR/

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	8.3	15.2	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	44.0	58.4	58.4	97.6
	160	9.8	17.7	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	55.5	64.3	64.3	103.0
	100	11.8	17.7	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	63.5	74.6	74.6	110.9
	63	11.8	17.7	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	95.0	104.5	104.5	148.1
	40	11.8	17.7	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	129.0	146.7	146.7	172.2
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	60.8	68.7	67.7	167.0	167.0	171.2	171.2	215.3
Heavy duty bearing model	250								46.1	74.6	40.2	90.0	90.0	114.8	114.8	156.0	150.6
	160								52.0	72.1	45.6	103.5	103.5	125.1	125.1	164.8	170.7
	100								60.3	79.0	59.4	116.0	116.0	140.8	140.8	176.1	187.4
	63								81.4	96.6	80.0	152.5	152.5	174.1	174.1	186.9	218.8
	40								81.4	98.1	108.9	192.0	192.0	191.8	191.8	193.7	241.8
	≤ 25								81.4	98.1	117.7	180.5	180.5	171.2	171.2	171.2	214.8

Allowable Axial Load (kN)



L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	9.3	11.4	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	28.0	23.5	23.5	31.4	52.0
	160	9.3	11.4	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	28.4	27.5	27.5	34.3	53.0
	100	9.3	11.4	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	39.7	32.9	32.9	43.2	59.4
	63	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	52.5	45.6	45.6	54.0	59.8
	40	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	63.3	60.3	59.8	83.4
	≤ 25	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	67.7	60.3	59.8	83.4
Heavy duty bearing model	250								23.1	34.8	18.6	18.6	56.9	56.9	59.8	59.8	83.4
	160								25.0	33.4	21.1	21.1	56.9	56.9	59.8	59.8	83.4
	100								29.4	36.8	27.5	27.5	56.9	56.9	59.8	59.8	83.4
	63								39.2	43.2	36.3	36.3	56.9	56.9	59.8	59.8	83.4
	40								39.2	43.2	49.1	49.1	56.9	56.9	59.8	59.8	83.4
	≤ 25								39.2	43.2	56.9	56.9	56.9	56.9	59.8	59.8	83.4

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Triple Reduction RL, LR/Quadruple Reduction RR, LL

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
192.3	167.8	222.7							250	Standard bearing model
200.6	174.1	234.9							160	
183.9	184.9	245.7	391.9	352.7	330.6	315.4	403.2	391.9	100	
178.1	190.8	303.1	387.5	369.3	341.4	328.6	462.5	430.7	63	
173.6	194.7	320.8	460.1	449.3	401.2	409.6	572.4	511.1	40	
167.3	184.9	316.4	448.3	554.8	497.4	534.6	733.8	638.6	≤ 25	
213.9	250.6	316.9							250	Heavy duty bearing model
200.6	214.8	334.5							160	
183.9	195.2	340.9							100	
178.1	190.8	333.5							63	
173.6	194.7	320.8							40	
167.3	184.9	316.4							≤ 25	

Unit: kN

Triple Reduction RR, LL/Quadruple Reduction RL, LR

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
131.5	94.2	152.5							250	Standard bearing model
138.3	92.2	155.0							160	
146.7	101.0	167.3	312.0	228.1	197.7	159.4	203.6	190.3	100	
200.1	144.7	220.7	292.3	244.3	206.0	170.7	260.9	218.8	63	
235.4	199.1	250.2	373.3	322.7	257.0	250.2	369.3	286.5	40	
304.1	272.7	353.2	460.1	427.2	348.7	373.3	528.3	398.3	≤ 25	
213.4	191.3	248.7							250	Heavy duty bearing model
223.2	197.7	261.4							160	
236.9	210.4	274.2							100	
301.7	267.8	341.9							63	
304.1	323.7	382.1							40	
304.1	323.7	374.7							≤ 25	

Unit: kN

Overhang Factor

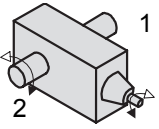
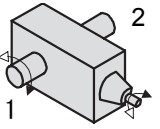
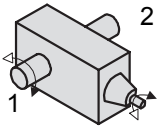
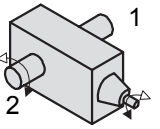
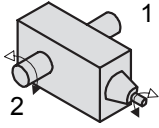
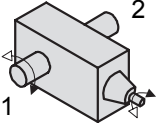
Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RB, LB)
 - See sheet 1 when the radial load is applied only to the shaft 1.
 - See sheet 2 when the radial load is applied only to the shaft 2.
 - Consult us when the radial load is applied to both shafts.

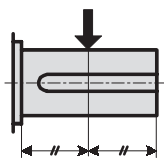
Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
50.0	50.0	76.5							250	Standard bearing model
49.5	49.5	76.5							160	
54.0	54.0	83.4	119.7	121.6	116.7	91.2	113.3	107.9	100	
74.6	74.6	83.4	119.7	121.6	121.6	96.6	140.3	122.6	63	
83.4	83.4	83.4	119.7	121.6	121.6	134.9	191.3	155.5	40	
83.4	83.4	83.4	119.7	121.6	121.6	144.2	192.3	192.3	≤ 25	
83.4	83.4	83.4							250	Heavy duty bearing model
83.4	83.4	83.4							160	
83.4	83.4	83.4							100	
83.4	83.4	83.4							63	
83.4	83.4	83.4							40	
83.4	83.4	83.4							≤ 25	

Unit: kN

	RB	LB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: Double Reduction RR, LL/

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	1200	1800	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200	10200	14050
	160	1200	1800	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100	11100	14850
	100	1200	1800	2550	3600	3950	4000	4800	5450	4850	5550	5550	10100	10100	12450	12450	15050
	63	1200	1800	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800	12800	14650
	40	1200	1800	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750	12750	14050
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500	12500	13800
Heavy duty bearing model	250								7250	9550	7150	12500	12500	14450	14450	16200	18450
	160								7950	9650	7900	14000	14000	13500	13500	15450	17800
	100								8300	10000	9400	15250	15250	12950	12950	15050	17000
	63								8300	10000	11700	15200	15200	12800	12800	14650	16900
	40								8300	10000	12000	15150	15150	12750	12750	14050	16850
	≤ 25								8300	10000	12000	15000	15000	12500	12500	13800	16700

Sheet 2

Applicable to configurations: Double Reduction RL, LR/

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	850	1550	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950	5950	8200
	160	1000	1800	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550	6550	9800
	100	1200	1800	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	6450	7600	7600	10800
	63	1200	1800	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650	10650	15100
	40	1200	1800	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950	14950	17550
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450	17450	21950
Heavy duty bearing model	250								4700	7600	4100	9150	9150	11700	11700	15900	15350
	160								5300	7350	4650	10550	10550	12750	12750	16800	17400
	100								6150	8050	6050	11800	11800	14350	14350	17950	19100
	63								8300	9850	8150	15550	15550	17750	17750	19050	22300
	40								8300	10000	11100	19550	19550	19550	19550	19750	24650
	≤ 25								8300	10000	12000	18400	18400	17450	17450	17450	21900

Allowable Axial Load (kgf)



L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	950	1160	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400	3200	4600
	160	950	1160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2900	2800	2800	3500	5400
	100	950	1160	2500	2350	3350	3200	3800	3250	3500	4400	4050	4050	3350	3350	4400	5950
	63	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650	5500	8300
	40	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150	6100	8500
	≤ 25	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150	6100	8500
Heavy duty bearing model	250								2350	3550	1900	1900	5800	5800	6100	6100	8500
	160								2550	3400	2150	2150	5800	5800	6100	6100	8500
	100								3000	3750	2800	2800	5800	5800	6100	6100	8500
	63								4000	4400	3700	3700	5800	5800	6100	6100	8500
	40								4000	4400	5000	5000	5800	5800	6100	6100	8500
	≤ 25								4000	4400	5800	5800	5800	5800	6100	6100	8500

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Triple Reduction RL, LR/Quadruple Reduction RR, LL

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
19600	17100	22700							250	Standard bearing model
20450	17750	23950							160	
18750	18850	25050	39950	35950	33700	32150	41100	39950	100	
18150	19450	30900	39500	37650	34800	33500	47150	43900	63	
17700	19850	32700	46900	45800	40900	41750	58350	52100	40	
17050	18850	32250	45700	56550	50700	54500	74800	65100	≤ 25	Heavy duty bearing model
21800	25550	32300							250	
20450	21900	34100							160	
18750	19900	34750							100	
18150	19450	34000							63	
17700	19850	32700							40	
17050	18850	32250							≤ 25	

Unit: kgf

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Triple Reduction RR, LL/Quadruple Reduction RL, LR

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
13400	9600	15550							250	Standard bearing model
14100	9400	15800							160	
14950	10300	17050	31800	23250	20150	16250	20750	19400	100	
20400	14750	22500	29800	24900	21000	17400	26600	22300	63	
24000	20300	25500	38050	32900	26200	25500	37650	29200	40	
31000	27800	36000	46900	43550	35550	38050	53850	40600	≤ 25	Heavy duty bearing model
21750	19500	25350							250	
22750	20150	26650							160	
24150	21450	27950							100	
30750	27300	34850							63	
31000	33000	38950							40	
31000	33000	38200							≤ 25	

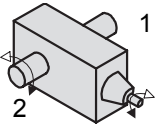
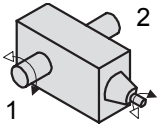
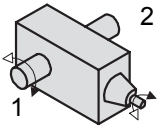
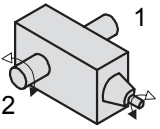
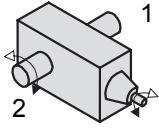
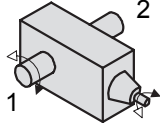
Unit: kgf

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
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 - See sheet 1 when the radial load is applied only to the shaft 1.
 - See sheet 2 when the radial load is applied only to the shaft 2.
 - Consult us when the radial load is applied to both shafts.

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
5100	5100	7800							250	Standard bearing model
5050	5050	7800							160	
5500	5500	8500	12200	12400	11900	9300	11550	11000	100	
7600	7600	8500	12200	12400	12400	9850	14300	12500	63	
8500	8500	8500	12200	12400	12400	13750	19500	15850	40	
8500	8500	8500	12200	12400	12400	14700	19600	19600	≤ 25	Heavy duty bearing model
8500	8500	8500							250	
8500	8500	8500							160	
8500	8500	8500							100	
8500	8500	8500							63	
8500	8500	8500							40	
8500	8500	8500							≤ 25	

Unit: kgf

	RB	LB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		

SELECTION Allowable Radial Load on High Speed Shaft Right Angle shaft

Double Reduction (kN)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
6.3	1800	5.4	6.4	7.4	7.4	11.8	11.8	10.3	10.3	9.8	9.8	11.8	11.8	9.3	9.3			
	1500	5.9	6.9	8.3	8.3	13.2	13.2	11.8	11.8	11.8	11.8	14.2	14.2	9.8	9.8			
8	1200	5.9	7.8	9.3	9.3	14.7	14.7	14.2	14.2	14.7	14.7	18.1	18.1	14.2	14.2			
	1000	5.9	8.3	10.3	10.3	16.2	16.2	15.2	15.2	16.7	16.7	21.1	21.1	19.1	19.1			
	900	5.9	8.8	10.3	10.3	16.7	16.7	16.2	16.2	17.7	17.7	22.1	22.1	21.6	21.6			
	750	5.9	8.8	11.3	11.3	17.7	17.7	17.2	17.2	18.6	18.6	23.5	23.5	23.5	23.5			
9	1800	6.4	7.4	9.3	9.3	14.2	14.2	12.8	12.8	14.7	14.7	15.2	15.2	11.3	11.3			28.4
	1500	6.4	7.8	10.3	10.3	15.7	15.7	14.2	14.2	16.7	16.7	18.1	18.1	13.7	13.7			30.4
10	1200	6.4	8.8	11.3	11.3	17.7	17.7	16.2	16.2	19.6	19.6	21.6	21.6	19.6	19.6			33.8
	1000	6.4	8.8	11.8	11.8	18.6	18.6	17.7	17.7	22.1	22.1	24.5	24.5	24.0	24.0			37.3
	900	6.4	8.8	11.8	11.8	19.1	19.1	18.1	18.1	23.1	23.1	25.5	25.5	26.0	26.0			39.2
	750	6.4	8.8	11.8	11.8	20.1	20.1	19.1	19.1	24.5	24.5	27.5	27.5	28.0	28.0			41.7
11.2	1800	6.9	7.8	10.3	10.3	15.2	15.2	13.2	13.2	17.2	17.2	18.1	18.1	19.6	19.6			31.9
	1500	6.9	8.8	11.3	11.3	16.7	16.7	15.2	15.2	19.1	19.1	20.6	20.6	22.6	22.6			34.8
22.4	1200	6.9	9.3	12.3	12.3	18.6	18.6	17.2	17.2	22.1	22.1	24.5	24.5	26.5	26.5			38.7
	1000	6.9	9.3	12.3	12.3	19.6	19.6	18.6	18.6	24.5	24.5	27.5	27.5	30.4	30.4			42.2
22.4	900	6.9	9.3	12.3	12.3	20.1	20.1	19.1	19.1	25.0	25.0	28.4	28.4	32.4	32.4			44.1
	750	6.9	9.3	12.3	12.3	21.1	21.1	20.1	20.1	26.5	26.5	30.4	30.4	34.3	34.3			46.6

Triple Reduction (kN)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
20	1800			6.4	6.4	8.8	8.8	10.8	10.8	14.7	14.7	13.7	13.7	14.2	14.2	10.3	10.3	11.3
	1500			6.4	6.4	8.8	8.8	11.8	11.8	16.2	16.2	15.2	15.2	16.7	16.7	14.2	14.2	15.7
25	1200			6.4	6.4	8.8	8.8	12.8	12.8	18.1	18.1	17.7	17.7	19.1	19.1	18.1	18.1	21.1
	1000			6.4	6.4	8.8	8.8	12.8	12.8	19.1	19.1	19.1	19.1	21.6	21.6	21.1	21.1	24.5
	900			6.4	6.4	8.8	8.8	12.8	12.8	20.1	20.1	19.6	19.6	22.1	22.1	21.6	21.6	26.0
	750			6.4	6.4	8.8	8.8	12.8	12.8	21.1	21.1	20.6	20.6	23.5	23.5	23.5	23.5	28.0
28	1800			6.9	6.9	9.3	9.3	12.3	12.3	16.7	16.7	15.2	15.2	20.1	20.1	20.6	17.7	22.1
	1500			6.9	6.9	9.3	9.3	12.8	12.8	18.6	18.6	17.2	17.2	22.1	22.1	23.1	19.1	25.0
50	1200			6.9	6.9	9.3	9.3	13.2	13.2	20.1	20.1	19.1	19.1	25.0	25.0	26.5	21.6	28.9
	1000			6.9	6.9	9.3	9.3	13.2	13.2	21.6	21.6	20.6	20.6	27.5	27.5	29.4	24.0	32.4
56	900			6.9	6.9	9.3	9.3	13.2	13.2	21.6	21.6	21.1	21.1	28.0	28.0	30.4	25.0	33.8
	750			6.9	6.9	9.3	9.3	13.2	13.2	21.6	21.6	22.1	22.1	29.4	29.4	31.9	26.5	35.8
90	1800			6.9	6.9	9.3	9.3	13.7	13.7	19.1	19.1	19.6	19.6	24.5	24.5	27.0	27.0	28.9
	1500			6.9	6.9	9.3	9.3	13.7	13.7	20.6	20.6	21.6	21.6	27.0	27.0	29.4	29.4	32.4
450	1200			6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	24.0	24.0	29.9	29.9	32.9	32.9	36.3
	1000			6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	25.0	25.0	31.9	31.9	35.8	35.8	39.7
450	900			6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	26.0	26.0	32.9	32.9	36.8	36.8	41.7
	750			6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	27.0	27.0	34.3	34.3	36.7	36.7	43.7

Quadruple Reduction (kN)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
71	1800					6.9	6.9	6.9	6.9	9.3	9.3	13.7	13.7	18.6	18.6	20.6	19.6	27.0
	1500					6.9	6.9	6.9	6.9	9.3	9.3	13.7	13.7	20.1	20.1	22.6	21.6	28.9
450	1200					6.9	6.9	6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	24.5	24.0	32.4
	1000					6.9	6.9	6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	26.0	25.0	34.3
450	900					6.9	6.9	6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	26.5	26.0	35.3
	750					6.9	6.9	6.9	6.9	9.3	9.3	13.7	13.7	22.1	22.1	27.5	27.0	36.8

SELECTION Allowable Radial Load on High Speed Shaft Right Angle shaft

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
									1800	6.3
									1500	
									1200	
									1000	8
									900	
									750	
									1800	9
									1500	
									1200	
									1000	10
									900	
									750	
									1800	11.2
									1500	
									1200	
									1000	22.4
									900	
									750	

SELECTION Allowable Radial Load on High Speed Right Angle shaft

Double Reduction (kgf)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
6.3	1800	550	650	750	750	1200	1200	1050	1050	1000	1000	1200	1200	950	950			
	1500	600	700	850	850	1350	1350	1200	1200	1200	1200	1450	1450	1000	1000			
▼	1200	600	800	950	950	1500	1500	1450	1450	1500	1500	1850	1850	1450	1450			
	1000	600	850	1050	1050	1650	1650	1550	1550	1700	1700	2150	2150	1950	1950			
	900	600	900	1050	1050	1700	1700	1650	1650	1800	1800	2250	2250	2200	2200			
	750	600	900	1150	1150	1800	1800	1750	1750	1900	1900	2400	2400	2400	2400			
9	1800	650	750	950	950	1450	1450	1300	1300	1500	1500	1550	1550	1150	1150			2900
	1500	650	800	1050	1050	1600	1600	1450	1450	1700	1700	1850	1850	1400	1400			3100
▼	1200	650	900	1150	1150	1800	1800	1650	1650	2000	2000	2200	2200	2000	2000			3450
	1000	650	900	1200	1200	1900	1900	1800	1800	2250	2250	2500	2500	2450	2450			3800
	900	650	900	1200	1200	1950	1950	1850	1850	2350	2350	2600	2600	2650	2650			4000
	750	650	900	1200	1200	2050	2050	1950	1950	2500	2500	2800	2800	2850	2850			4250
11.2	1800	700	800	1050	1050	1550	1550	1350	1350	1750	1750	1850	1850	2000	2000			3250
	1500	700	900	1150	1150	1700	1700	1550	1550	1950	1950	2100	2100	2300	2300			3550
▼	1200	700	950	1250	1250	1900	1900	1750	1750	2250	2250	2500	2500	2700	2700			3950
	1000	700	950	1250	1250	2000	2000	1900	1900	2500	2500	2800	2800	3100	3100			4300
	900	700	950	1250	1250	2050	2050	1950	1950	2550	2550	2900	2900	3300	3300			4500
	750	700	950	1250	1250	2150	2150	2050	2050	2700	2700	3100	3100	3500	3500			4750

Triple Reduction (kgf)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
20 ▼	1800			650	650	900	900	1100	1100	1500	1500	1400	1400	1450	1450	1050	1050	1150
	1500			650	650	900	900	1200	1200	1650	1650	1550	1550	1700	1700	1450	1450	1600
	1200			650	650	900	900	1300	1300	1850	1850	1800	1800	1950	1950	1850	1850	2150
	1000			650	650	900	900	1300	1300	1950	1950	1950	1950	2200	2200	2150	2150	2500
25	900			650	650	900	900	1300	1300	2050	2050	2000	2000	2250	2250	2200	2200	2650
	750			650	650	900	900	1300	1300	2150	2150	2100	2100	2400	2400	2400	2400	2850
28 ▼ 50	1800			700	700	950	950	1250	1250	1700	1700	1550	1550	2050	2050	2100	1800	2250
	1500			700	700	950	950	1300	1300	1900	1900	1750	1750	2250	2250	2350	1950	2550
	1200			700	700	950	950	1350	1350	2050	2050	1950	1950	2550	2550	2700	2200	2950
	1000			700	700	950	950	1350	1350	2200	2200	2100	2100	2800	2800	3000	2450	3300
	900			700	700	950	950	1350	1350	2200	2200	2150	2150	2850	2850	3100	2550	3450
	750			700	700	950	950	1350	1350	2200	2200	2250	2250	3000	3000	3250	2700	3650
56 ▼ 90	1800			700	700	950	950	1400	1400	1950	1950	2000	2000	2500	2500	2750	2750	2950
	1500			700	700	950	950	1400	1400	2100	2100	2200	2200	2750	2750	3000	3000	3300
	1200			700	700	950	950	1400	1400	2250	2250	2450	2450	3050	3050	3350	3350	3700
	1000			700	700	950	950	1400	1400	2250	2250	2550	2550	3250	3250	3650	3650	4050
	900			700	700	950	950	1400	1400	2250	2250	2650	2650	3350	3350	3750	3750	4250
	750			700	700	950	950	1400	1400	2250	2250	2750	2750	3500	3500	3950	3950	4450

Quadruple Reduction (kgf)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
71	1800					700	700	700	700	950	950	1400	1400	1900	1900	2100	2000	2750
	1500					700	700	700	700	950	950	1400	1400	2050	2050	2300	2200	2950
▼	1200					700	700	700	700	950	950	1400	1400	2250	2250	2500	2450	3300
	1000					700	700	700	700	950	950	1400	1400	2250	2250	2650	2550	3500
450	900					700	700	700	700	950	950	1400	1400	2250	2250	2700	2650	3600
	750					700	700	700	700	950	950	1400	1400	2250	2250	2800	2750	3750

SELECTION Allowable Radial Load on High Speed Shaft Right Angle shaft

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
									1800	6.3
									1500	
									1200	
									1000	8
									900	
									750	
									1800	9
									1500	
									1200	
									1000	10
									900	
									750	
650									1800	11.2
									1500	
									1200	
									1000	22.4
									900	
1300									750	
1700									900	22.4
									750	
2450										

Unit: kgf

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
1150	950	950	950						1800	20
1600	1500	1500	1500						1500	
2150	2250	2250	2250						1200	
2500	2800	2800	2800						1000	25
2650	3050	3050	3050						900	
2850	3300	3300	3300						750	
1300	2900	2400	1300	2900	2150	5250	8200	7800	1800	28
1650	3300	2650	1900	3350	2500	5800	9050	8450	1500	
2150	3800	3000	2700	3900	3000	6600	10150	9350	1200	
2550	4250	3300	3250	4350	3550	7250	11100	10100	1000	50
2700	4500	3450	3500	4650	3850	7650	11700	10550	900	
2900	4750	3600	3800	5000	4200	8150	12750	11400	750	
2950	3550	3400	3150	3400	2400	5750	9350	8400	1800	56
3250	3950	3750	3550	3800	3000	6350	10200	9050	1500	
3700	4450	4300	4050	4350	3650	7150	11350	10200	1200	
4050	4900	4750	4500	4850	4100	7800	12350	11150	1000	90
4250	5150	5000	4800	5100	4400	8200	12900	11750	900	
4450	5400	5300	5050	5500	4800	8550	14000	12850	750	

Unit: kgf

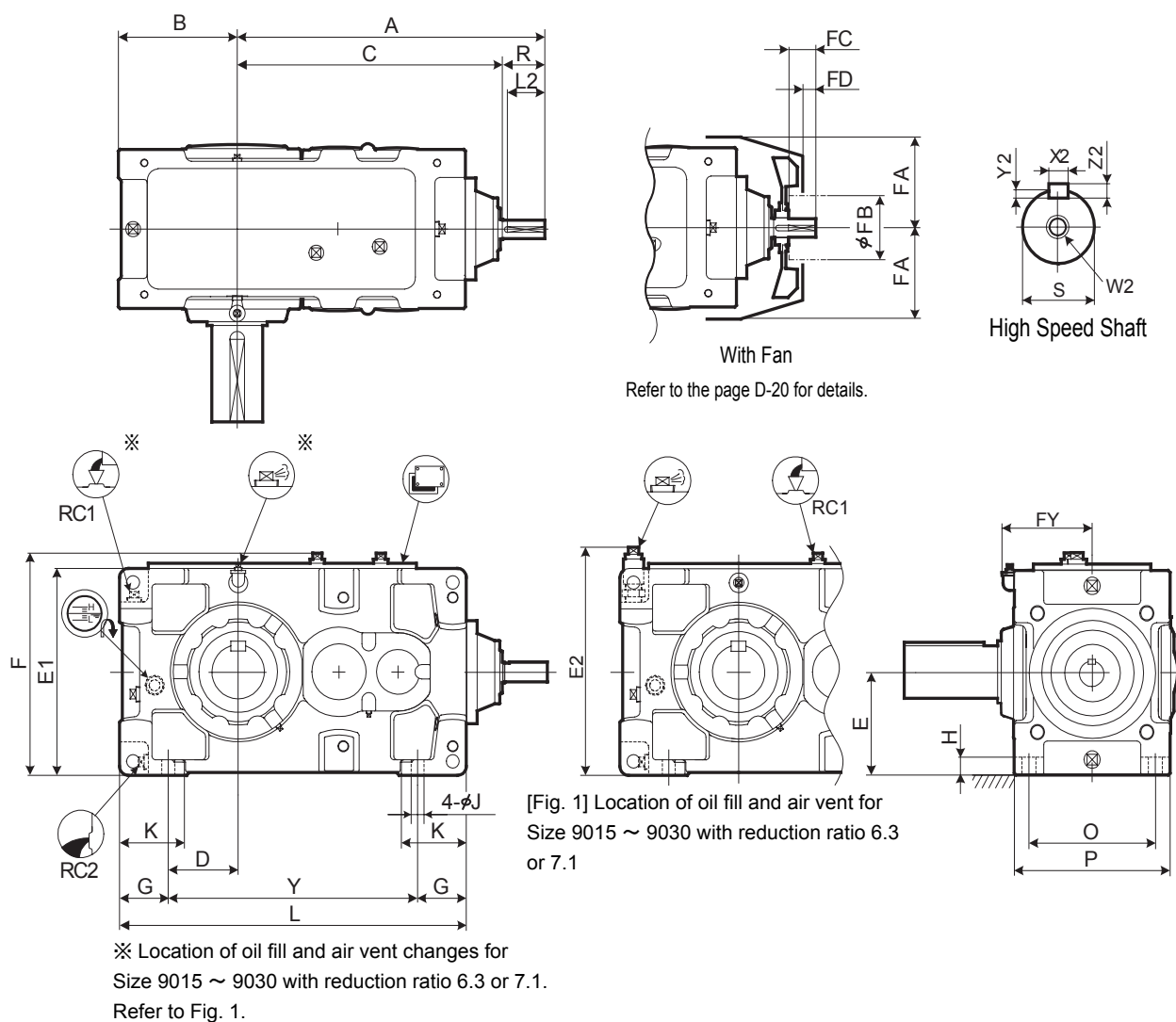
Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
2650	2200	2050	1550	2000	1400	2000	2400	1050	1800	71
2850	2400	2300	1750	2250	1750	2300	2750	1600	1500	
3150	2700	2600	2050	2600	2150	2750	3250	2350	1200	
3400	2950	2800	2300	2900	2450	3100	3700	2850	1000	450
3450	3000	2900	2350	3000	2500	3250	3950	3100	900	
3600	3150	3050	2500	3150	2700	3450	4250	3350	750	

Unit: kgf

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft.
Consult us when a load is not in the center.
- Consult us when the radial load due to pulley driving, etc. is to be applied in the blanks in the table.

DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9015 ▶ 9055



Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9015	507	160	427	90	135	270	309	299	129	70	22	15	95	440	170	205	300
9025	545	175	465	95	155	310	346	339	142	80	25	19	110	505	195	235	345
9030	645	200	535	110	160	320	353	349	154	90	28	24	120	590	215	265	410
9035	676	219	566	129	185	370		399	154	90	28	24	120	640	215	265	460
9040	705	235	595	120	200	400		431	172	115	30	28	150	685	255	315	455
9045	744	256	634	141	220	440		471	172	115	30	28	150	745	255	315	515
9050	755	255	645	138.5	210	420		451	192	116.5	32	28	150	775	285	345	542
9055	794	286	684	171	245	490		521	192	115	32	28	150	845	285	345	615

Size	High Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9015	80	28k6	M12/28	8	4	7	70	125	125	50	30	3/4"	3/4"	95	5
9025	80	35k6	M12/28	10	5	8	70	135	140	50	30	3/4"	3/4"	140	7
9030	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	205	10
9035	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	225	12
9040	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	305	16
9045	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	365	18
9050	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	435	21
9055	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	495	28

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9015 ▶ 9055

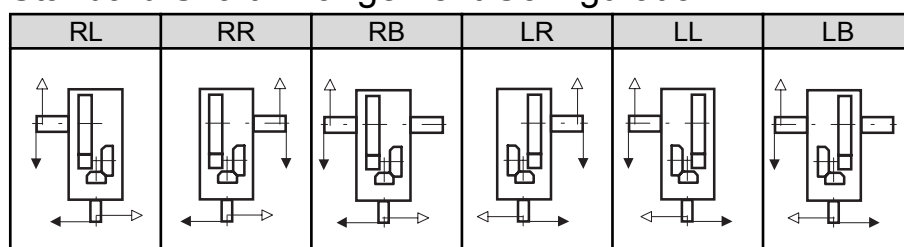
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55	
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P H A Size R 2 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

9015
9025
9030
9035
9040
9045
9050
9055

RL
RR
RB
LR
LL
LB

(blank) : Without Fan
F : With Fan

(blank) : Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055				○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

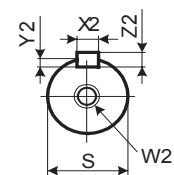
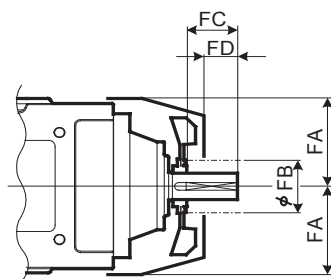
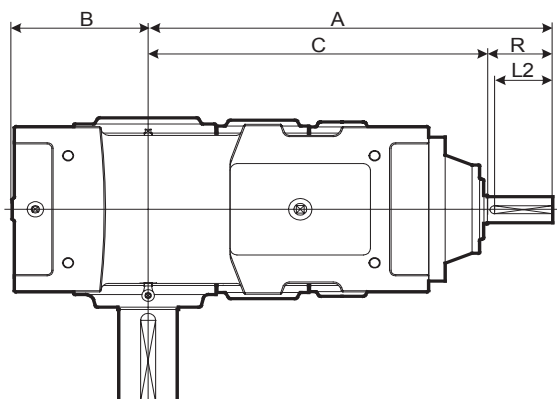


Backstop (Option)



Opposite Side

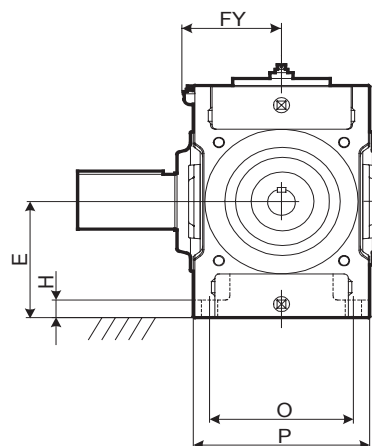
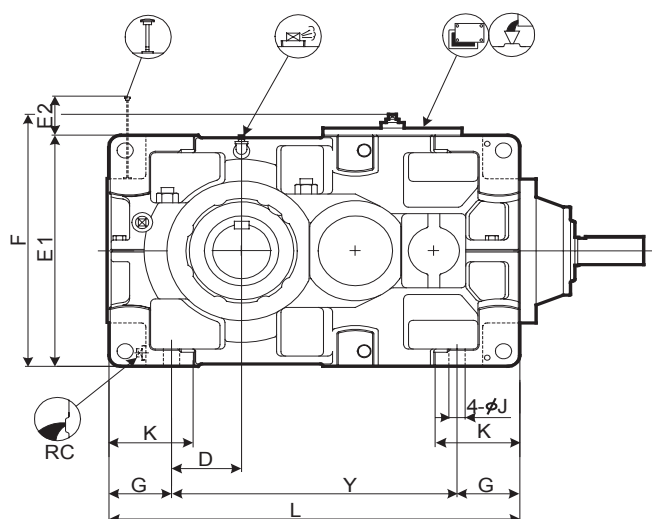
DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9060 ▶ 9085



With Fan

High Speed Shaft

Refer to the page D-20 for details.



Speed Reducer

Selection Tables

Dimension Tables

Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9060	865	299	725	151	265	530	183	578	212	135	35	35	180	885	310	380	615
9065	911	338	771	190	300	600	148	648	212	135	35	35	180	970	310	380	700
9070	965	336	825	163	300	600	213	648	237	160	40	42	215	1020	350	430	700
9075	1018	383	878	210	335	670	178	718	237	160	52	42	220	1120	350	430	800
9080	1080	378	940	205	335	670	236	718	257	160	52	42	220	1155	380	460	835
9085	1136	422	996	249	375	750	196	798	257	160	52	42	220	1255	380	460	935

Size	High Speed Shaft							Fan				RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9060	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	600	25
9065	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	725	29
9070	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	920	37
9075	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1170	46
9080	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1300	53
9085	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1560	67

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-14 for dimensions not shown in these drawings.

4. Refer to the page D-27 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9060 ▶ 9085

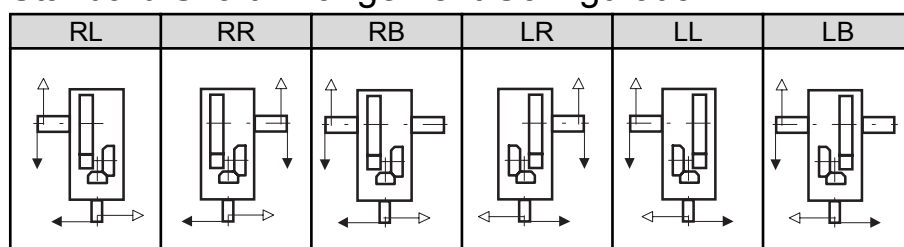
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

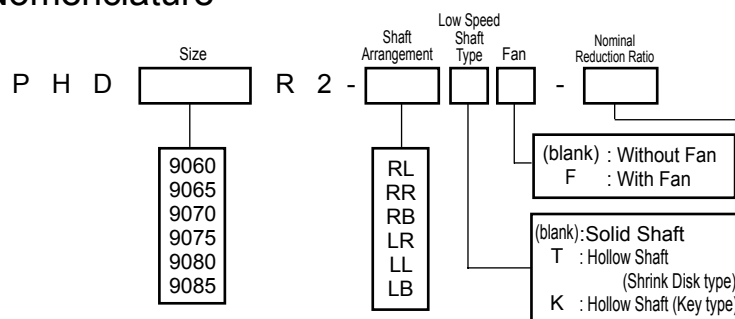
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○		
9075				○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○		
9085					○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

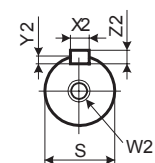
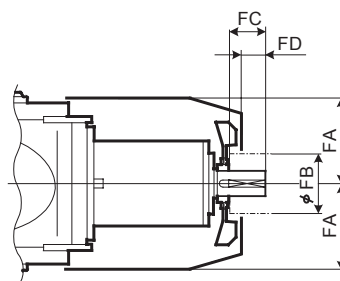
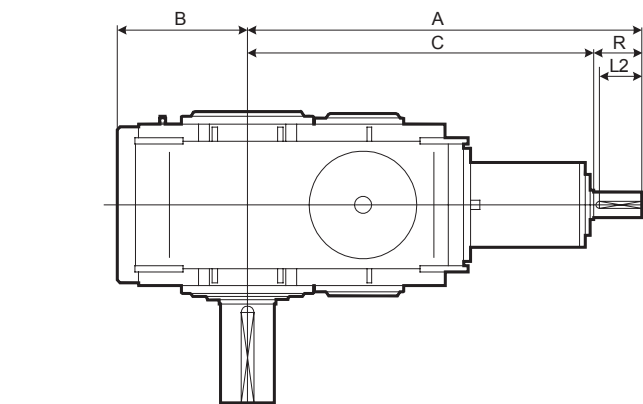


Backstop (Option)



Opposite Side

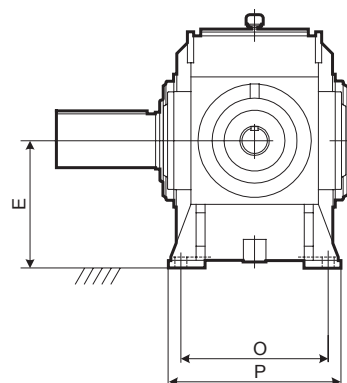
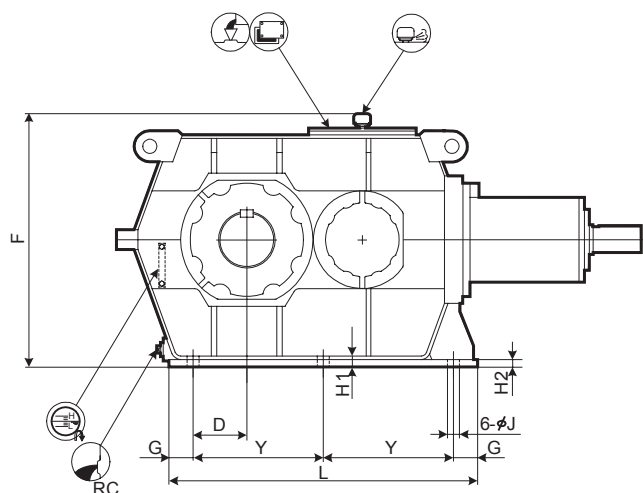
DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9095 ▶ 9115



With Fan

Refer to the page D-20 for details.

High Speed Shaft

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	F	G	H1	H2	J	L	O	P	Y
9095	1393	460	1223	190	450	895	85	39	27	42	1090	520	610	460
9105	1589	500	1379	210	500	995	90	39	27	42	1220	570	660	520
9115	1802	560	1592	240	560	1120	100	46	34	48	1390	630	730	595

Size	High Speed Shaft							Fan				RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9095	170	90m6	M24/50	25	9	14	150	340	250	135	90	1 1/2"	2050	100
9105	210	100m6	M24/50	28	10	16	190	380	250	175	130	1 1/2"	2800	150
9115	210	110m6	M24/50	28	10	16	190	410	250	175	130	1 1/2"	3800	200

• In case of continuous load, the forced oil lubrication is necessary. For details, consult us.

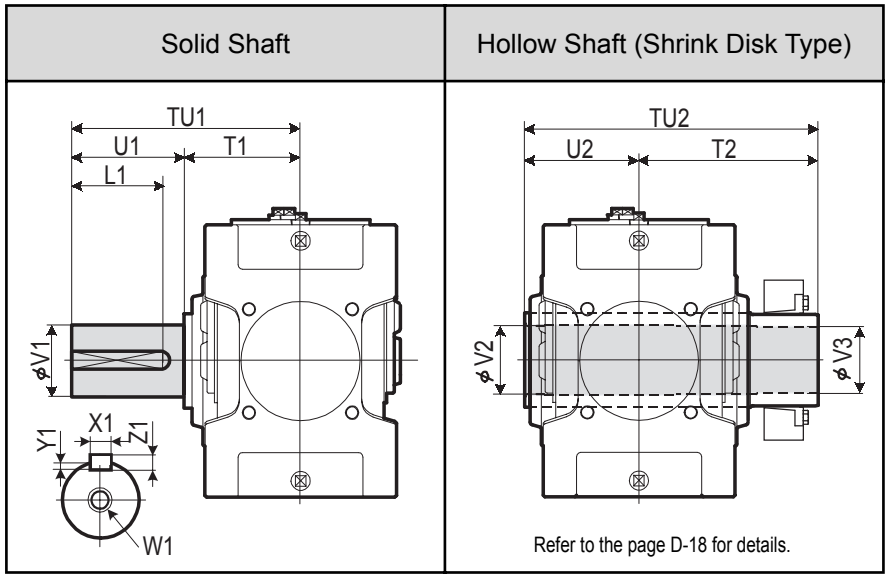
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
 2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
 3. Consult us for the dimensions not shown in these drawings.

4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9095 ▶ 9115

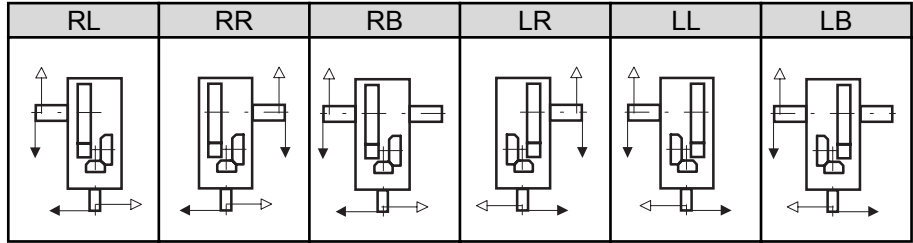
Slow Speed Shaft



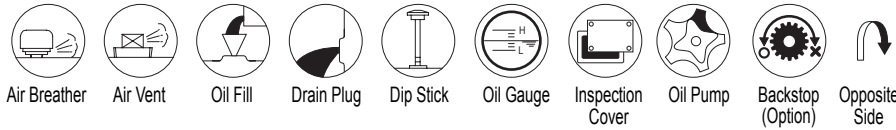
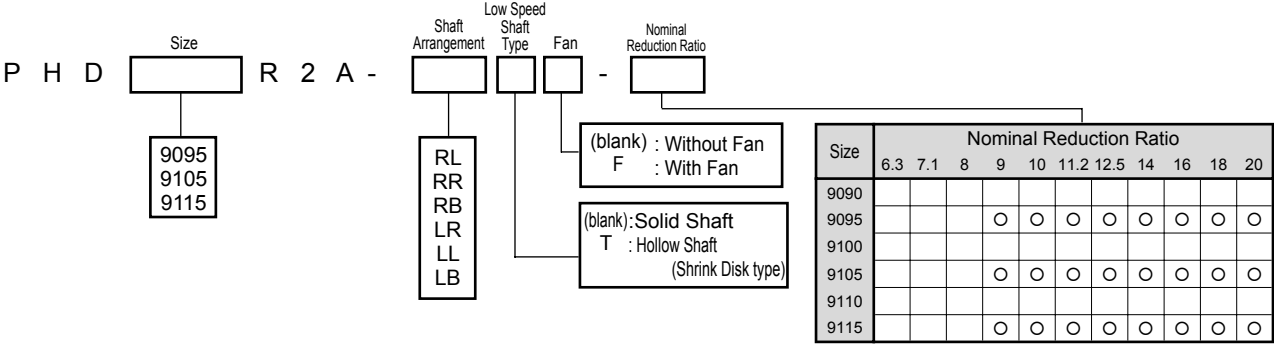
Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3
						X1	Y1	Z1	L1					
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

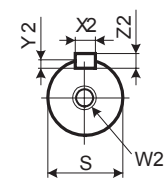
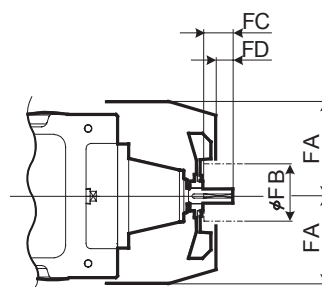
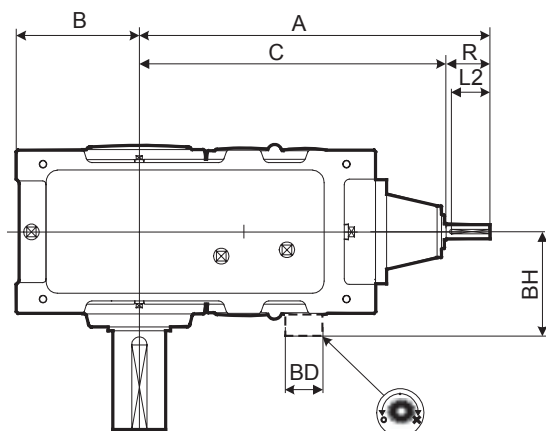
Standard Shaft Arrangement Configuration



Nomenclature



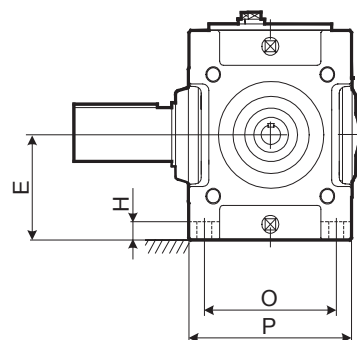
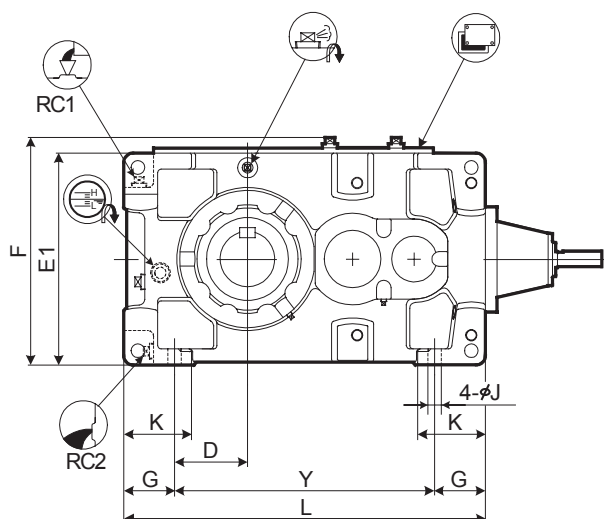
DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9030 ▶ 9055



High Speed Shaft

With Fan

Refer to the page D-21 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9030	656	200	576	110	160	320	349	90	28	24	120	590	215	265	410
9035	687	219	607	129	185	370	399	90	28	24	120	640	215	265	460
9040	716	235	636	120	200	400	431	115	30	28	150	685	255	315	455
9045	755	256	675	141	220	440	471	115	30	28	150	745	255	315	515
9050	808	255	728	138.5	210	420	451	116.5	32	28	150	775	285	345	542
9055	847	286	767	171	245	490	521	115	32	28	150	845	285	345	615

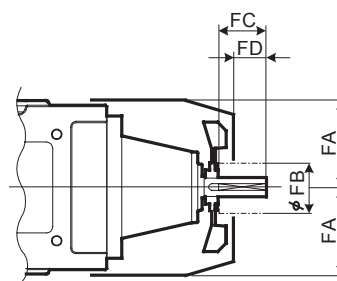
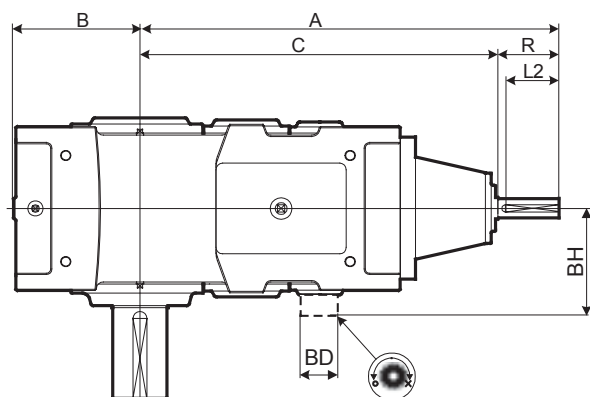
Size	High Speed Shaft							Fan				Backstop		RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD	BD	BH				
9030	80	28k6	M10/22	8	4	7	70	150	125	50	30			3/4"	3/4"	210	10
9035	80	28k6	M10/22	8	4	7	70	150	125	50	30			3/4"	3/4"	230	12
9040	80	30k6	M10/22	8	4	7	70	170	125	50	30			1"	1"	305	16
9045	80	30k6	M10/22	8	4	7	70	170	125	50	30			1"	1"	365	18
9050	80	35k6	M12/28	10	5	8	70	190	140	50	22	150	263	1"	1"	445	21
9055	80	35k6	M12/28	10	5	8	70	190	140	50	22	150	263	1"	1"	505	28

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.

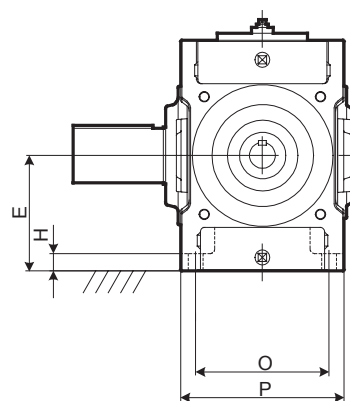
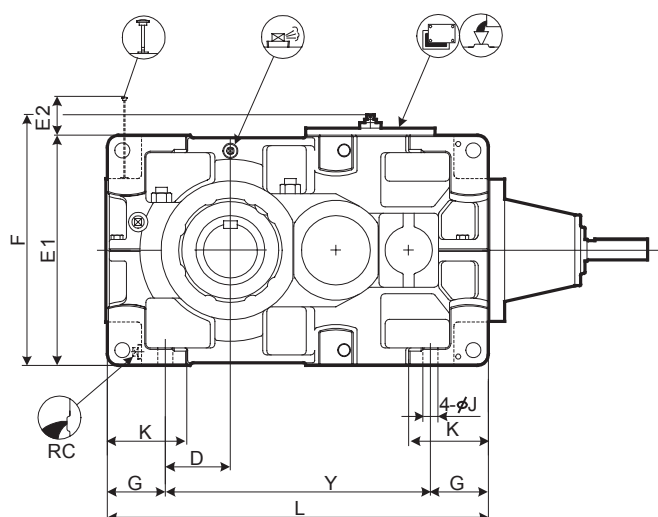
DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9060 ▶ 9085



High Speed Shaft

With Fan

Refer to the page D-21 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	939	299	829	151	265	530	158	578	135	35	35	180	885	310	380	615
9065	985	338	875	190	300	600	123	648	135	35	35	180	970	310	380	700
9070	1027	336	917	163	300	600	183	648	160	40	42	215	1020	350	430	700
9075	1080	383	970	210	335	670	148	718	160	52	42	220	1120	350	430	800
9080	1176	378	1036	205	335	670	208	718	160	52	42	220	1155	380	460	835
9085	1232	422	1092	249	375	750	168	798	160	52	42	220	1255	380	460	935

Size	High Speed Shaft							Fan				Backstop		RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD	BD	BH			
				X2	Y2	Z2	L2									
9060	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	175	308	1"	660	29
9065	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	175	308	1"	785	33
9070	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	190	330	1"	940	45
9075	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	190	330	1"	1190	52
9080	140	60m6	M20/42	18	7	11	125	270	160	105	65	210	365	1"	1350	60
9085	140	60m6	M20/42	18	7	11	125	270	160	105	65	210	365	1"	1610	75

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-14 for dimensions not shown in these drawings.

4. Refer to the page D-27 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9060 ▶ 9085

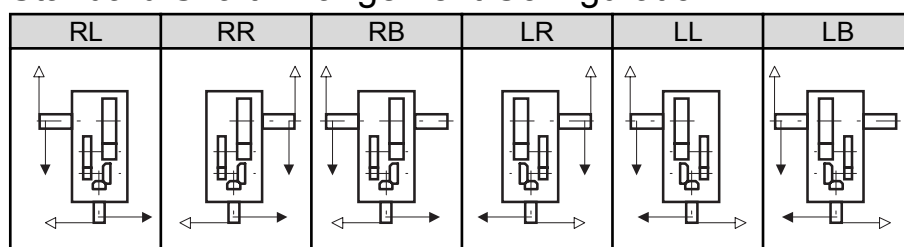
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

Size	Shaft Arrangement	Low Speed Shaft Type	Option	Nominal Reduction Ratio																																																																																																									
P H D R 3 - - 	RL RR RB LR LL LB	(blank) : Without Fan F : With Fan B : With Backstop FB : With Fan & Backstop	(blank) : Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)	<table border="1"> <thead> <tr> <th>Size</th><th>20</th><th>22.4</th><th>25</th><th>28</th><th>31.5</th><th>35.5</th><th>40</th><th>45</th><th>50</th><th>56</th><th>63</th><th>71</th><th>80</th><th>90</th></tr> </thead> <tbody> <tr><td>9060</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9065</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9070</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9075</td><td></td><td></td><td></td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9080</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9085</td><td></td><td></td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> </tbody> </table>	Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9075				○	○	○	○	○	○	○	○	○	○	○	9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9085			○	○	○	○	○	○	○	○	○	○	○	○
Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90																																																																																															
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																															
9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																															
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																															
9075				○	○	○	○	○	○	○	○	○	○	○																																																																																															
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																															
9085			○	○	○	○	○	○	○	○	○	○	○	○																																																																																															



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

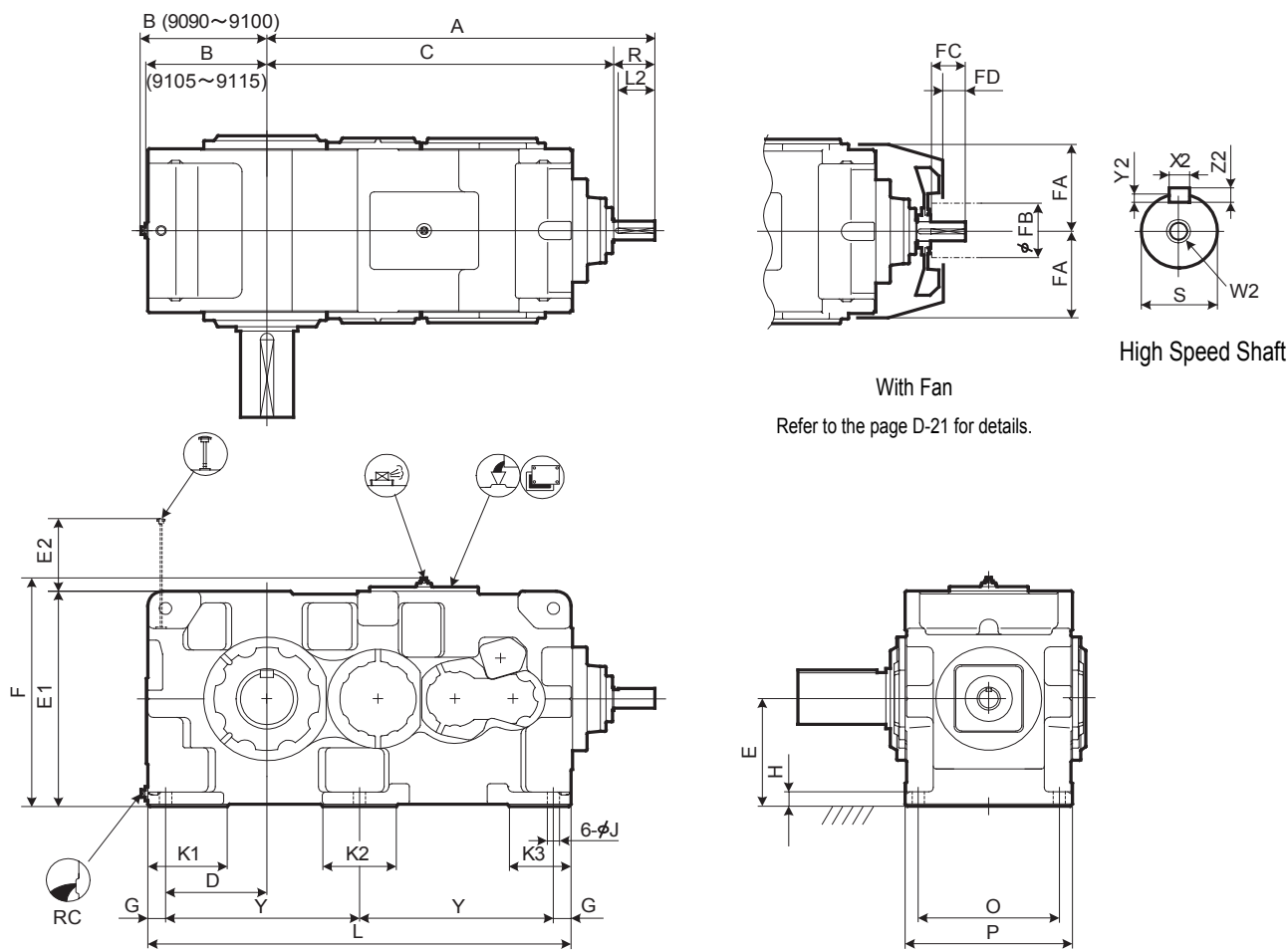


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115



Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1320	428	1180	345	375	750	253	797	60	50	42	270	250	210	1440	480	570	660
9095	1350	458	1210	375	400	800	258	847	60	50	42	290	250	210	1500	480	570	690
9100	1474	468	1334	375	425	850	282	897	70	55	48	300	280	240	1610	560	650	735
9105	1508	493	1368	410	450	900	287	947	70	55	48	320	280	240	1680	560	650	770
9110	1684	508	1514	420	475	950	303	997	75	60	56	340	310	260	1810	610	710	830
9115	1733	558	1563	470	500	1000	302	1047	75	60	56	350	310	260	1910	610	710	880

Size	Hight Speed Shaft							Fan				RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD			
				X2	Y2	Z2	L2							
9090	140	65m6	M20/42	18	7	11	125	340	200	105	65	1 1/2"	2150	120
9095	140	65m6	M20/42	18	7	11	125	340	200	105	65	1 1/2"	2400	155
9100	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1 1/2"	2880	180
9105	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1 1/2"	3440	220
9110	170	85m6	M20/42	22	9	14	150	410	225	135	90	1 1/2"	4160	250
9115	170	85m6	M20/42	22	9	14	150	410	225	135	90	1 1/2"	4610	310

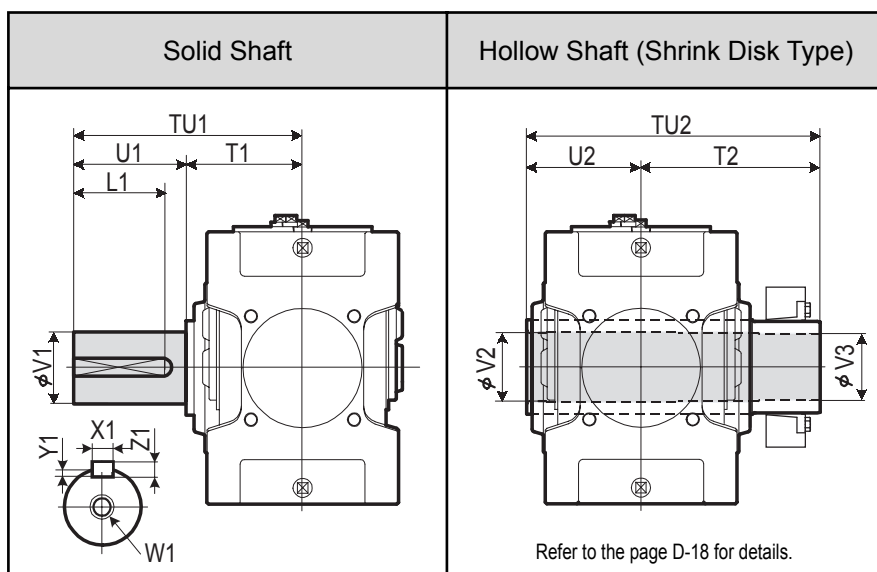
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-16 for dimensions shown in these drawings.

4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115

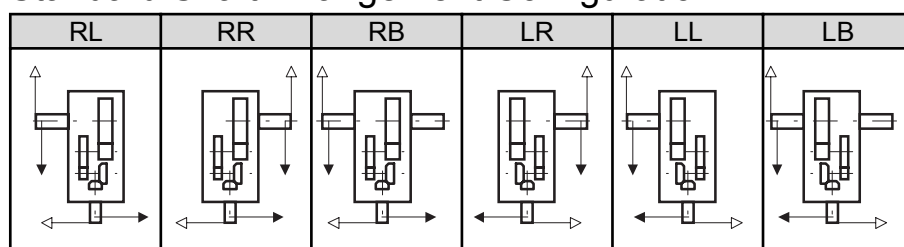
Slow Speed Shaft



Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P H D Size R 3 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

Size: 9090, 9095, 9100, 9105, 9110, 9115

Shaft Arrangement: RL, RR, RB, LR, LL, LB

Low Speed Shaft Type: (blank) : Without Fan, F : With Fan

Nominal Reduction Ratio: (blank) : Solid Shaft, T : Hollow Shaft (Shrink Disk type)

Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9090	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9095	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9100	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9105	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9110	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9115	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

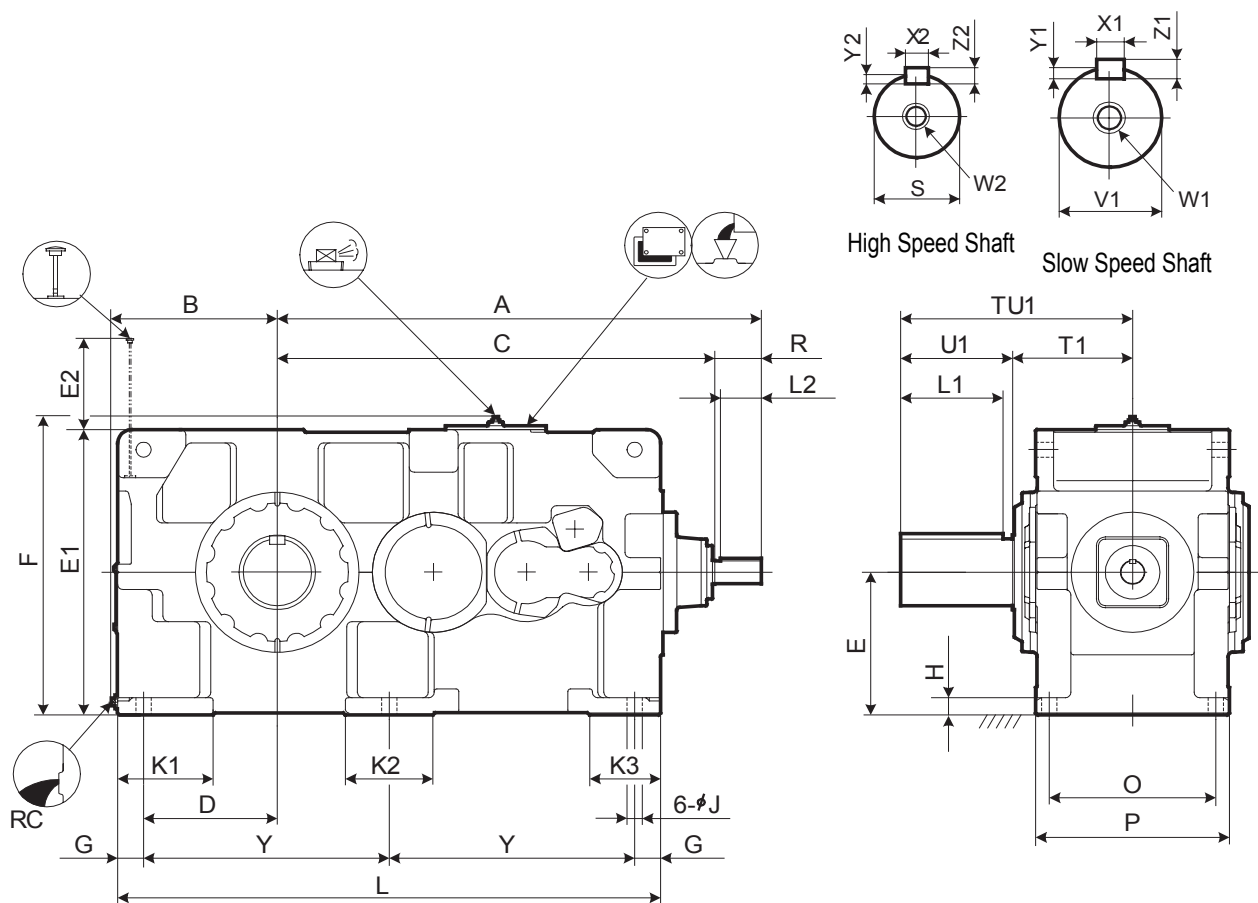


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9118 ▶ 9126

Speed
ReducerSelection
TablesDimension
Tables

Size	Ratio	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9118	ALL	1774	608	1604	490	535	1070	343	1117	95	65	56	350	320	260	1990	610	710	900
9121	≤ 31.5	2053	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995
	≥ 35.5	2013	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995
9126	≤ 31.5	2053	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995
	≥ 35.5	2013	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995

Size	Ratio	High Speed Shaft								RC	Wt. kg	Oil Qty. L
		R	S	W2/Depth		Key			L2			
9118	ALL	170	85m6	M20/42		X2	Y2	Z2	150	1 1/2"	5200	350
9121	≤ 31.5	210	110m6	M24/50		28	10	16	190	1 1/2"	6200	460
	≥ 35.5	170	90m6	M24/50		25	9	14	150	1 1/2"	6200	460
9126	≤ 31.5	210	110m6	M24/50		28	10	16	190	1 1/2"	6550	460
	≥ 35.5	170	90m6	M24/50		25	9	14	150	1 1/2"	6550	460

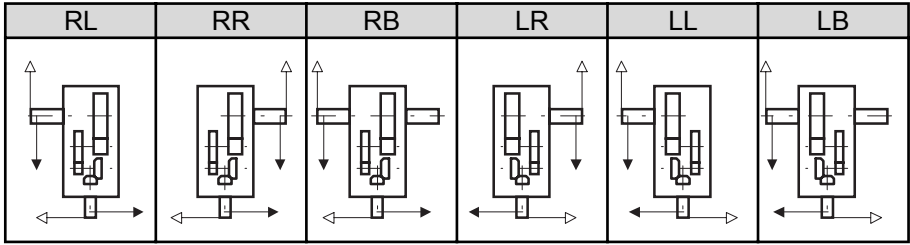
Size	Ratio	Solid Shaft						Key			
		TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	
9118	ALL	850	440	410	260m6	M36/70	56	20	32	375	
9121	≤ 31.5	935	465	470	280m6	M36/70	63	20	32	425	
	≥ 35.5	935	465	470	280m6	M36/70	63	20	32	425	
9126	≤ 31.5	935	465	470	300m6	M36/70	70	22	36	425	
	≥ 35.5	935	465	470	300m6	M36/70	70	22	36	425	

Unit: mm

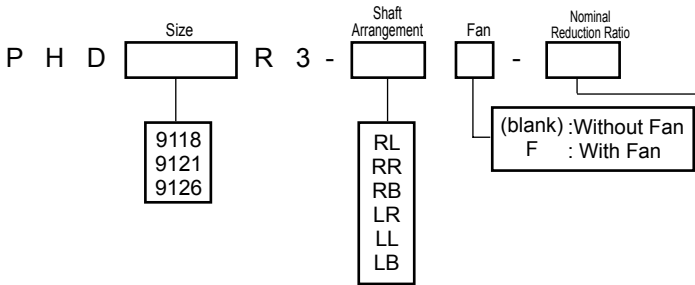
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9118 ▶ 9126

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio											
	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9118	○		○	○	○	○	○	○	○	○	○	○
9121		○	○	○	○	○	○	○	○	○	○	
9126		○	○	○	○	○	○	○	○	○	○	

PARAMAX

Horizontal

Split

9118
9126

Right Angle

Triple Reduction

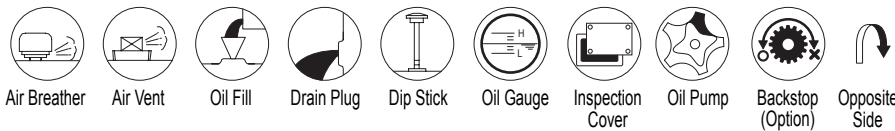
P

H

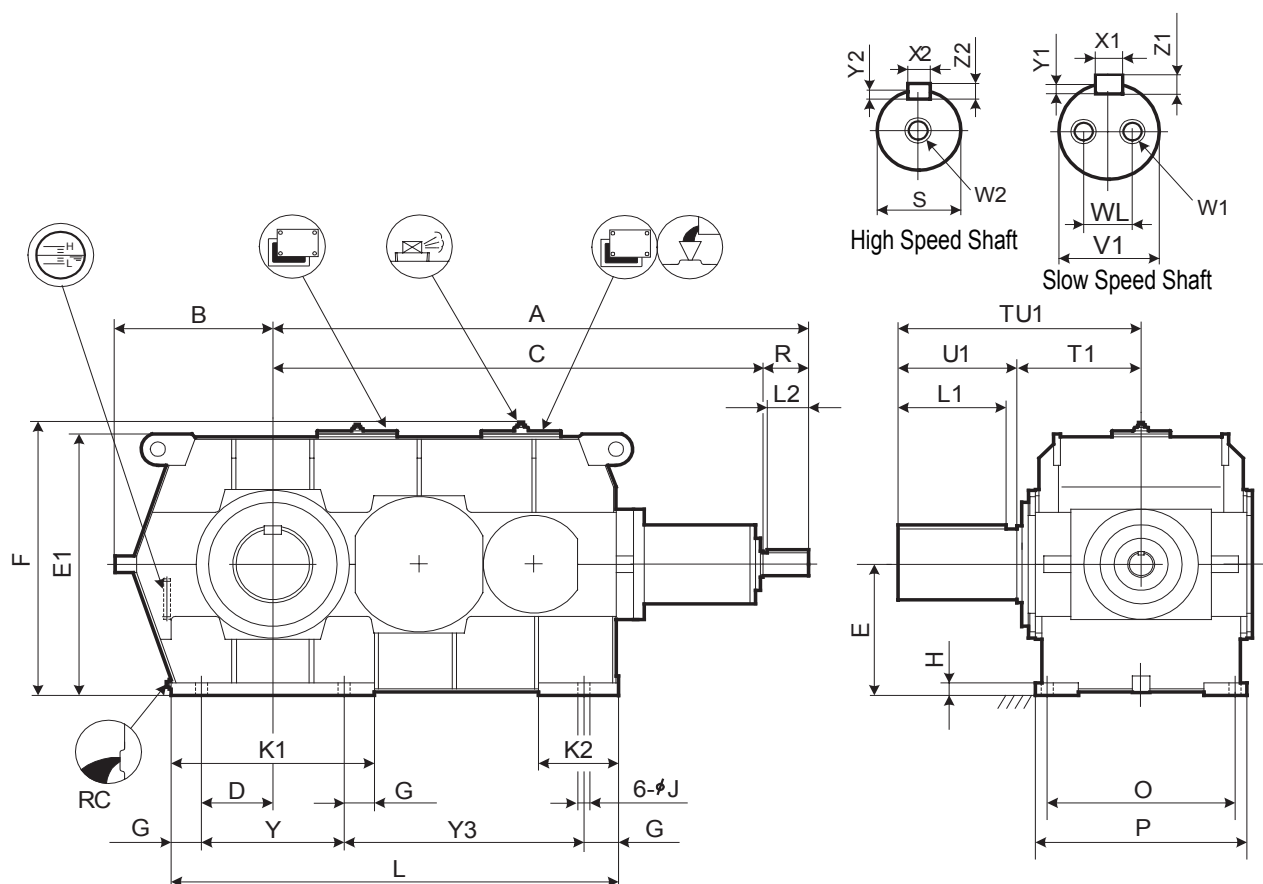
D

R

3



DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9128 ▶ 9136

Speed
ReducerSelection
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K1	K2	L	O	P	Y	Y3
9128	2244	680	2034	330	600	1194	1241	140	55	66	940	280	1930	710	840	660	990
9131	2479	730	2269	330	630	1256	1303	140	60	66	940	280	2070	850	980	660	1130
9136	2479	730	2269	330	630	1256	1303	140	60	66	940	280	2070	850	980	660	1130

Dimension
Tables

Size	High Speed Shaft							RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2			
9128	210	100m6	M24/50	28	10	16	190	1 1/2"	7400	350
9131	210	110m6	M24/50	28	10	16	190	1 1/2"	9850	510
9136	210	110m6	M24/50	28	10	16	190	1 1/2"	10200	500

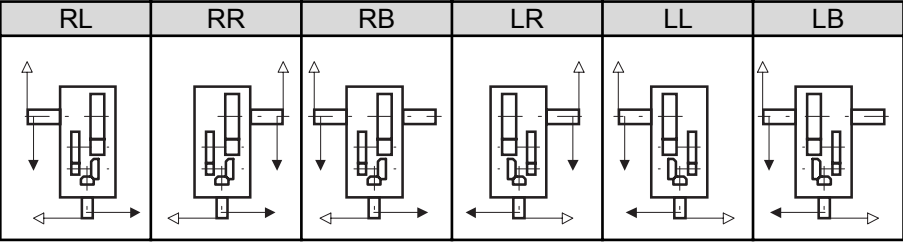
Size	Solid Shaft							Key			
	TU1	T1	U1	V1	W1/Depth	WL		X1	Y1	Z1	L1
9128	950	480	470	320m6	M36/70	200		70	22	36	425
9131	1100	550	550	340m6	M36/70	215		80	25	40	500
9136	1110	560	550	360m6	M36/70	230		80	25	40	500

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9128 ▶ 9136

Standard Shaft Arrangement Configuration



Nomenclature

P

H

D

Size

9128
9131
9136

R

3

A

-

Shaft Arrangement

RL
RR
RB
LR
LL
LB

Fan

-

Nominal Reduction Ratio

(blank) : Without Fan
F : With Fan

Size	28	31.5	35.5	40	45	50	56	63	71	80
9128			○	○	○	○	○	○	○	○
9131	○	○	○	○	○	○	○	○		
9136	○	○	○	○	○	○	○	○		

PARAMAX

Horizontal

Split

9128
9136

Right Angle

Triple Reduction

Steel Housing

P

H

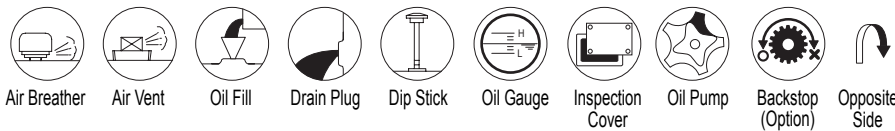
D

9128
9136

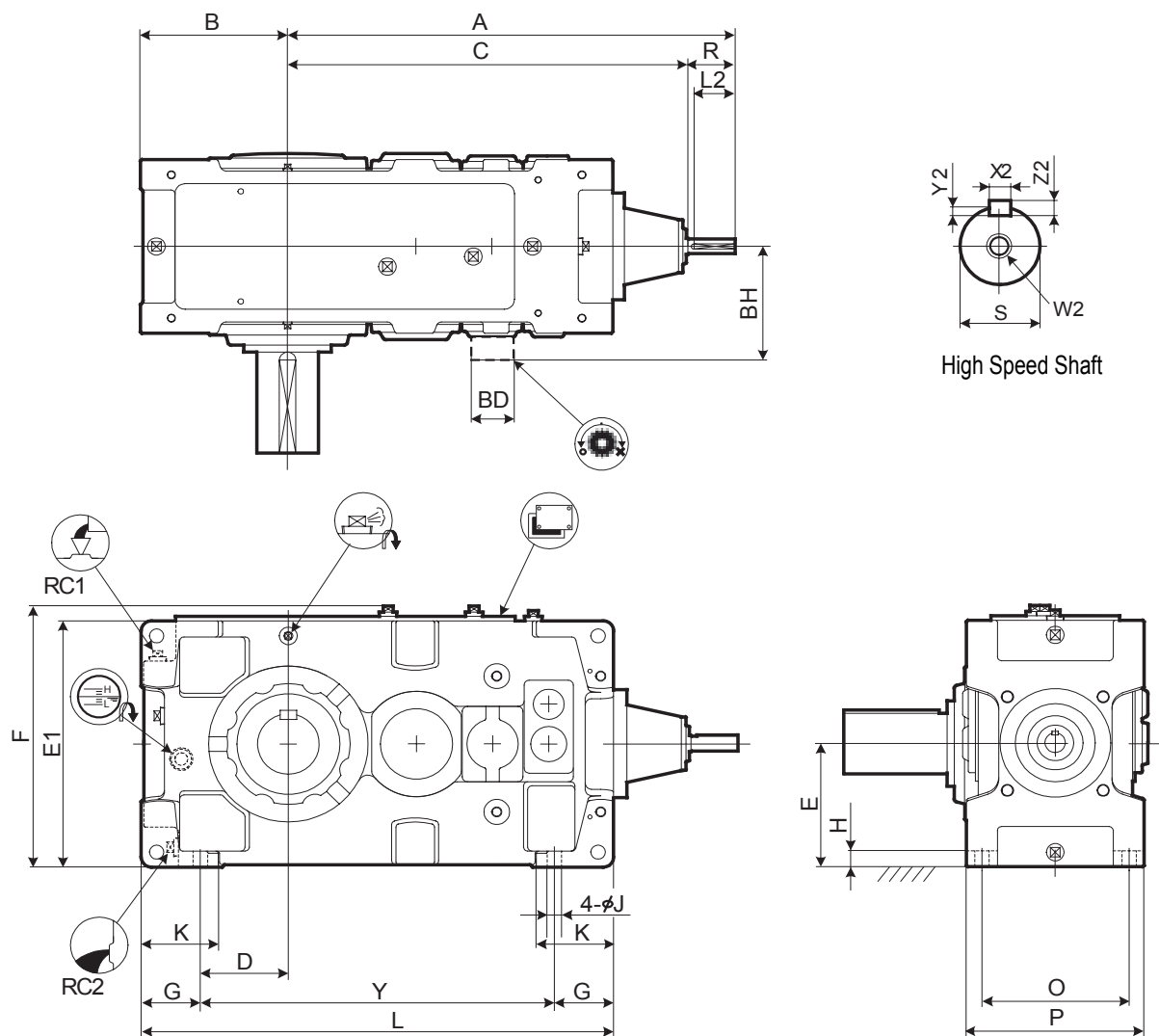
R

3

A



DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9040 ▶ 9055



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9040	790	235	710	120	200	400	431	115	30	28	150	759	255	315	529
9045	829	256	749	141	220	440	471	115	30	28	150	819	255	315	589
9050	859	255	779	138.5	210	420	451	116.5	32	28	150	848	285	345	615
9055	898	286	818	171	245	490	521	115	32	28	150	918	285	345	688

Size	High Speed Shaft							Backstop		RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	BD	BH				
9040	80	28k6	M10/22	8	4	7	70			1"	1"	325	19
9045	80	28k6	M10/22	8	4	7	70			1"	1"	395	21
9050	80	28k6	M10/22	8	4	7	70	150	263	1"	1"	460	24
9055	80	28k6	M10/22	8	4	7	70	150	263	1"	1"	520	29

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9040 ▶ 9055

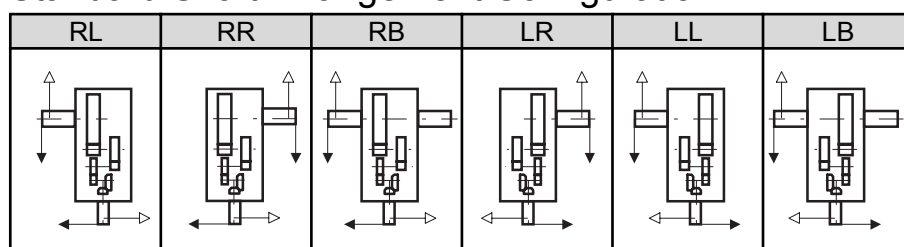
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

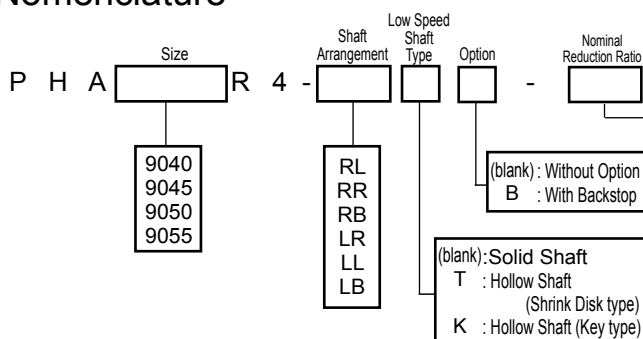
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9040	○	○	○	○	○	○												
9045	○	○	○	○	○	○	○	○										
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

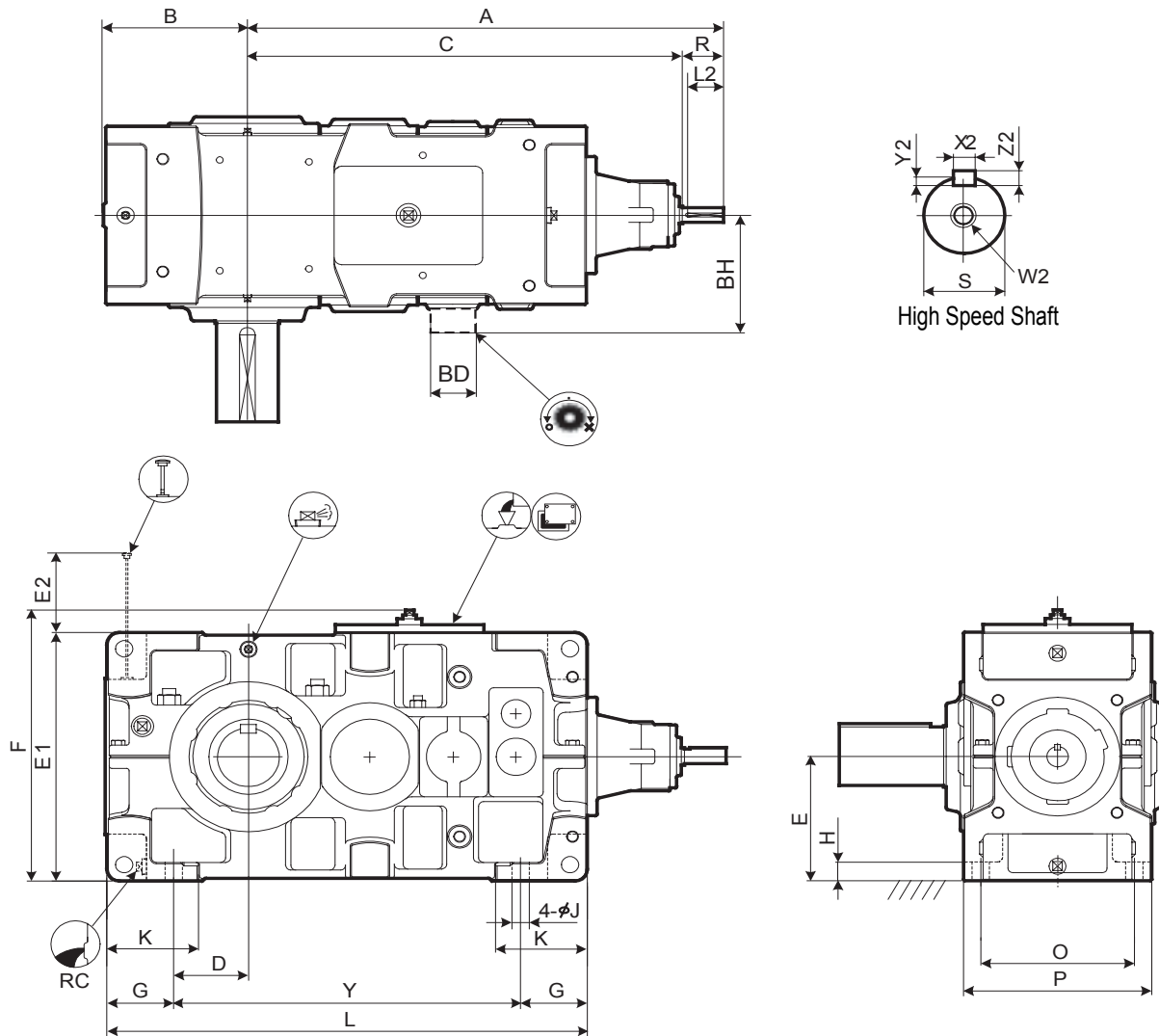


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	950	299	870	151	265	530	121	578	135	35	35	180	970	310	380	700
9065	996	338	916	190	300	600	86	648	135	35	35	180	1055	310	380	785
9070	1080	336	1000	163	300	600	140	648	160	40	42	215	1115	350	430	795
9075	1133	383	1053	210	335	670	105	718	160	52	42	220	1215	350	430	895
9080	1250	378	1140	205	335	670	162	718	160	52	42	220	1275	380	460	955
9085	1306	422	1196	249	375	750	122	798	160	52	42	220	1375	380	460	1055

Size	High Speed Shaft							Backstop		RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Key	Z2	L2	BD	BH		
9060	80	30k6	M10/22	8	4	7	70	70	175	308	1"	38
9065	80	30k6	M10/22	8	4	7	70	70	175	308	1"	43
9070	80	35k6	M12/28	10	5	8	70	70	190	330	1"	57
9075	80	35k6	M12/28	10	5	8	70	70	190	330	1"	67
9080	110	45k6	M16/36	14	5.5	9	95	95	210	365	1"	73
9085	110	45k6	M16/36	14	5.5	9	95	95	210	365	1"	90

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-15 for dimensions shown in these drawings.
4. Refer to the page D-27 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9060 ▶ 9085

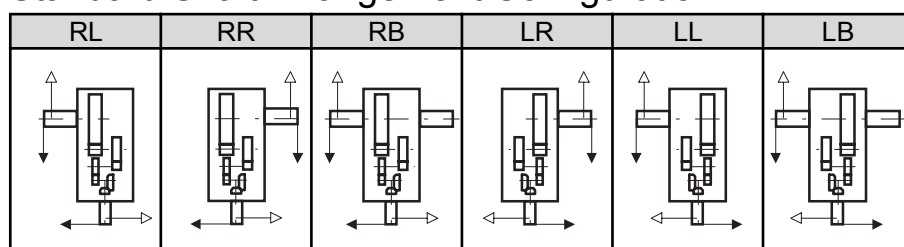
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

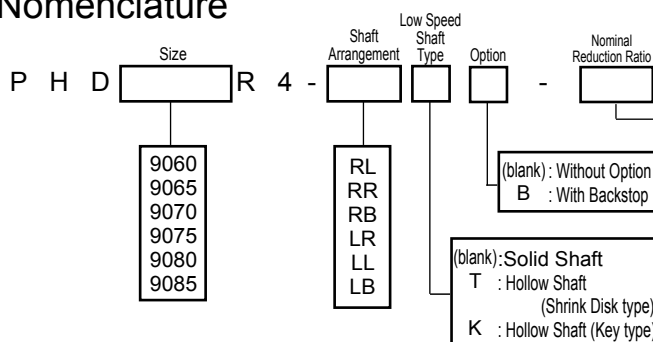
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9060		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9065			○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9070	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

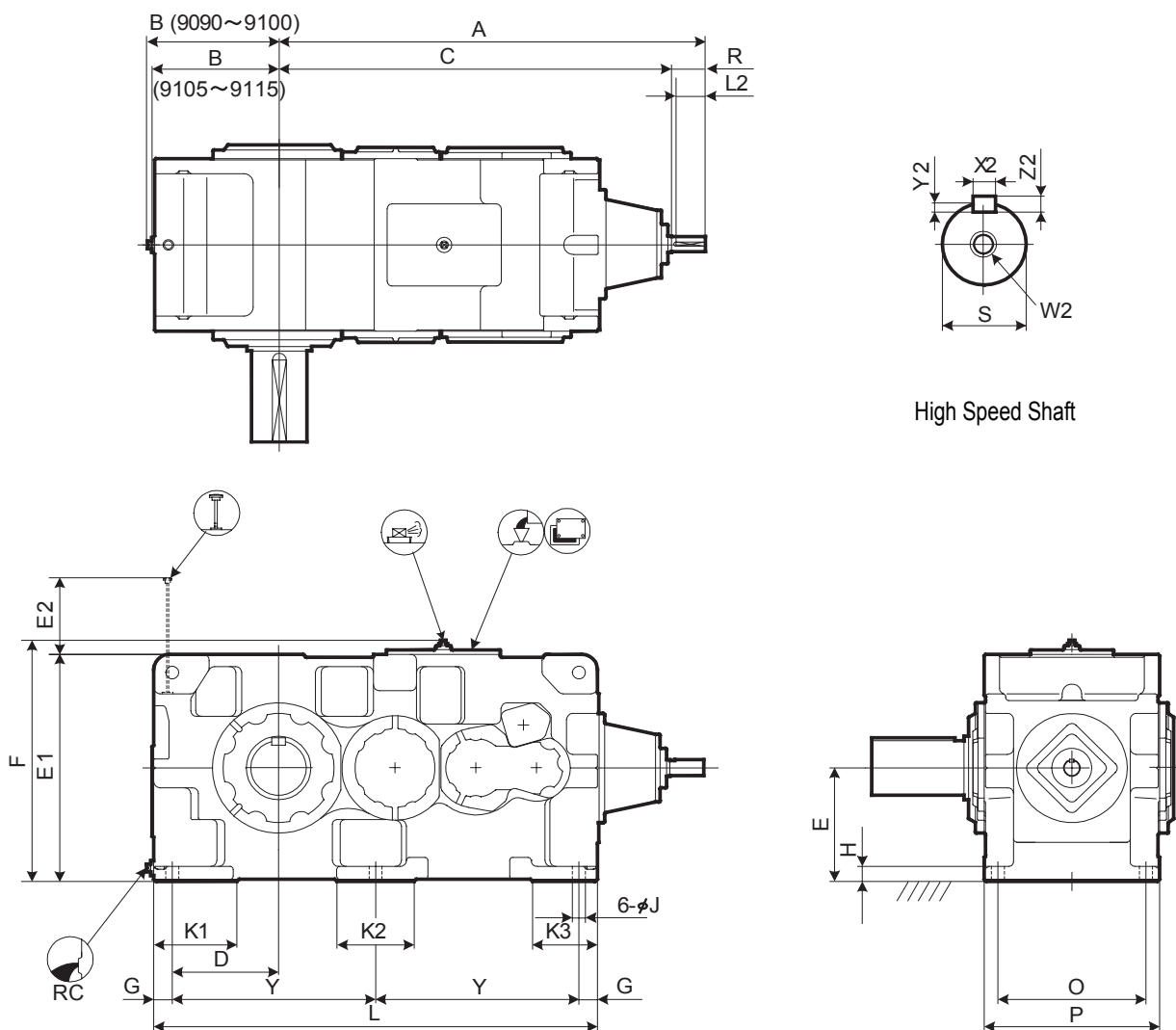


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9090 ▶ 9115



Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1382	428	1272	345	375	750	198	797	60	50	42	270	250	210	1440	480	570	660
9095	1412	458	1302	375	400	800	203	847	60	50	42	290	250	210	1500	480	570	690
9100	1570	468	1430	375	425	850	215	897	70	55	48	300	280	240	1610	560	650	735
9105	1604	493	1464	410	450	900	220	947	70	55	48	320	280	240	1680	560	650	770
9110	1670	508	1530	420	475	950	225	997	75	60	56	340	310	260	1810	610	710	830
9115	1719	558	1579	470	500	1000	224	1047	75	60	56	350	310	260	1910	610	710	880

Size	Hight Speed Shaft							RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2			
9090	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2150	150
9095	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2400	180
9100	140	60m6	M20/42	18	7	11	125	1 1/2"	2880	210
9105	140	60m6	M20/42	18	7	11	125	1 1/2"	3440	255
9110	140	60m6	M20/42	18	7	11	125	1 1/2"	4060	300
9115	140	60m6	M20/42	18	7	11	125	1 1/2"	4510	360

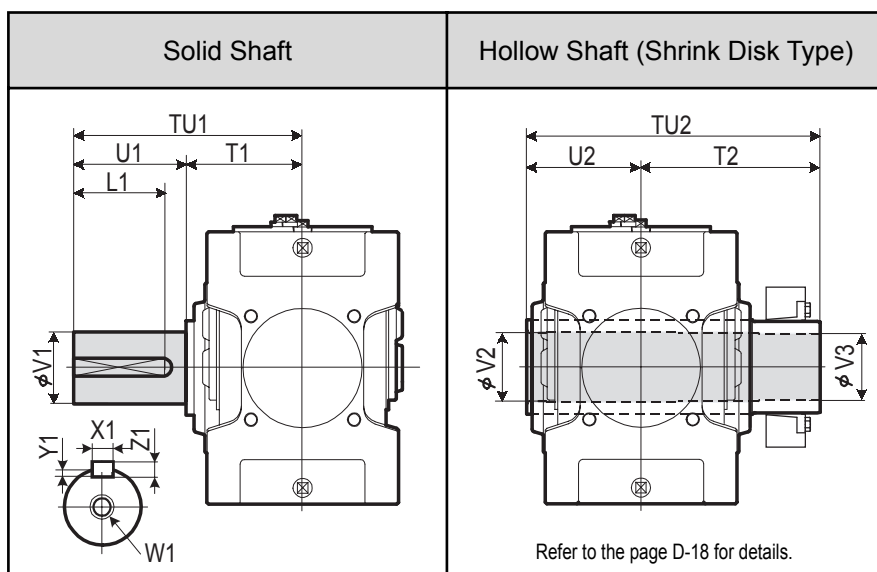
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-16 for dimensions shown in these drawings.

4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9090 ▶ 9115

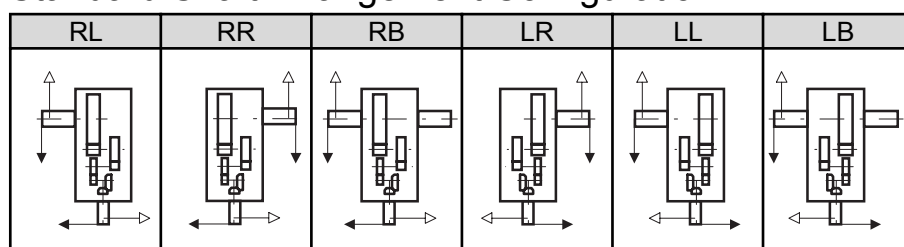
Slow Speed Shaft



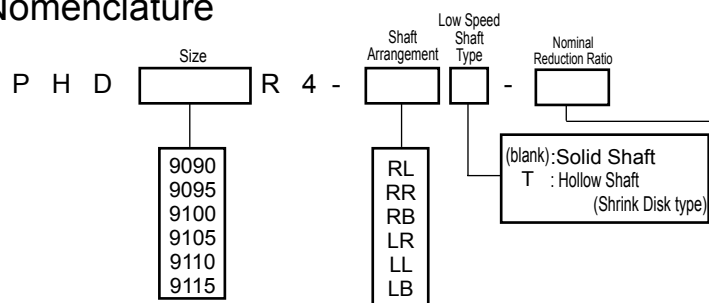
Size	Solid Shaft					Hollow Shaft (Shrink Disk Type)									
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190	
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200	
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210	
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220	
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240	
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio														
	90	100	112	125	140	160	180	200	224	250	280	315	355	400	
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9095	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9105	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9115	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

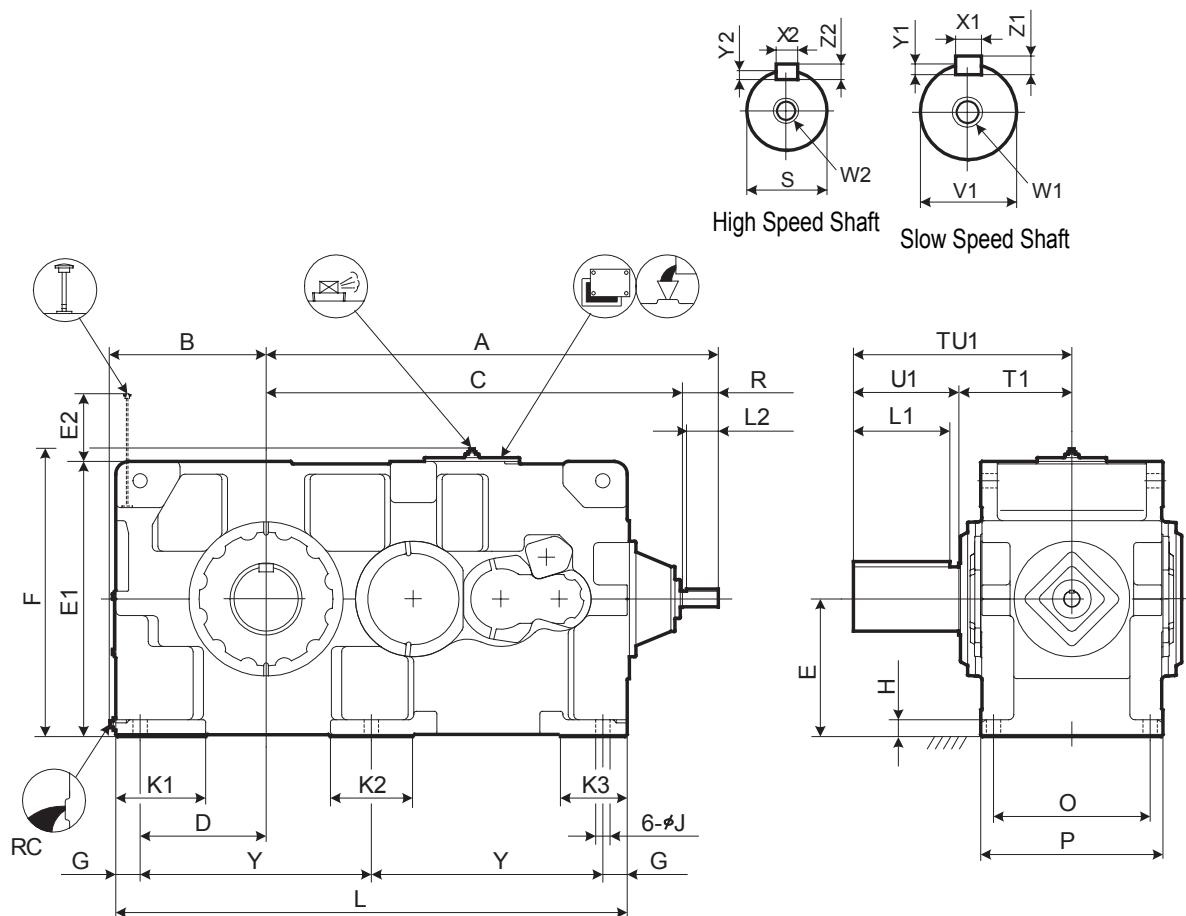


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9118 ▶ 9126

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9118	1760	608	1620	490	535	1070	263	1117	95	65	56	350	320	260	1990	610	710	900
9121	1970	663	1830	545	580	1160	257	1207	95	70	56	390	300	270	2180	680	780	995
9126	1970	663	1830	545	580	1160	257	1207	95	70	56	390	300	270	2180	680	780	995

Size	Hight Speed Shaft							RC	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key						
				X2	Y2	Z2	L2			
9118	140	60m6	M20/42	18	7	11	125	1 1/2"	5100	390
9121	140	65m6	M20/42	18	7	11	125	1 1/2"	6150	540
9126	140	65m6	M20/42	18	7	11	125	1 1/2"	6450	530

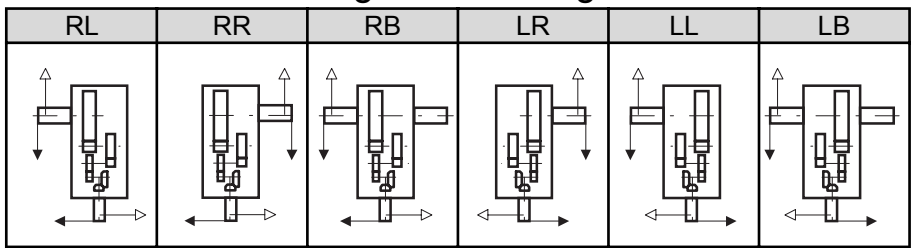
Size	Solid Shaft						Key			
	TU1	T1	U1	V1	W1/Depth		X1	Y1	Z1	L1
9118	850	440	410	260m6	M36/70		56	20	32	375
9121	935	465	470	280m6	M36/70		63	20	32	425
9126	935	465	470	300m6	M36/70		70	22	36	425

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9118 ▶ 9126

Standard Shaft Arrangement Configuration



Nomenclature

P

H

D

Size

9118
9121
9126

R 4

-

Shaft Arrangement

RL
RR
RB
LR
LL
LB

-

Nominal Reduction Ratio

Size	Nominal Reduction Ratio															
	90	100	112	125	140	160	180	200	224	250	280	315	355	400		
9118		○	○	○	○	○	○	○	○	○	○	○	○	○		
9121	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9126	○	○	○	○	○	○	○	○	○	○	○	○	○	○		

PARAMAX

Horizontal

Split

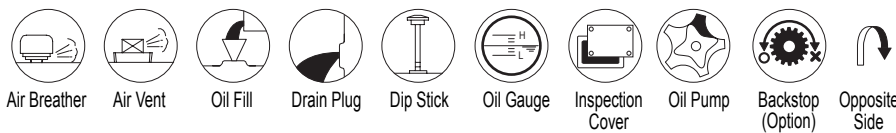
9118
9126

Right Angle

Quadruple Reduction

R

4



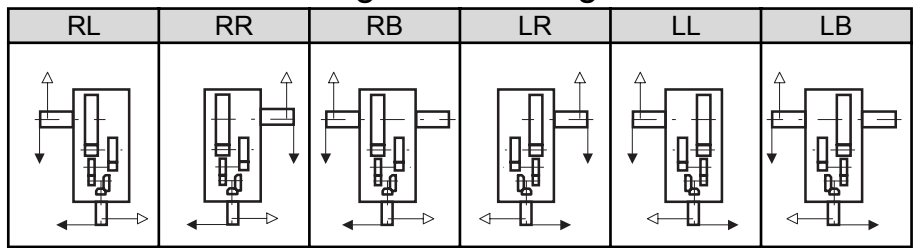


Size	Solid Shaft						Key			
	TU1	T1	U1	V1	W1/Depth	WL	X1	Y1	Z1	L1
9128	950	480	470	320m6	M36/70	200	70	22	36	425
9131	1100	550	550	340m6	M36/70	215	80	25	40	500
9136	1110	560	550	360m6	M36/70	230	80	25	40	500

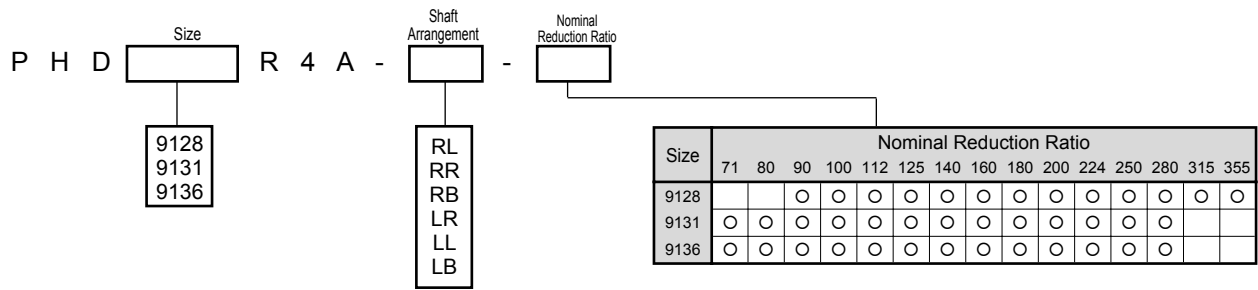
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9128 ▶ 9136

Standard Shaft Arrangement Configuration



Nomenclature



PARAMAX

Horizontal

Split

9128
9136

Right Angle

Quadruple Reduction

Steel Housing

P

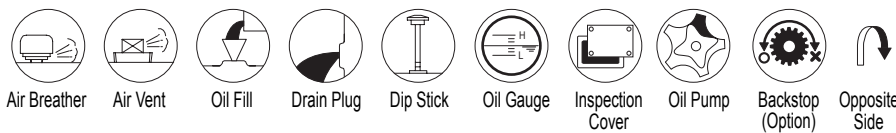
H

D

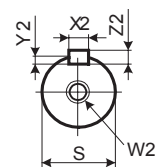
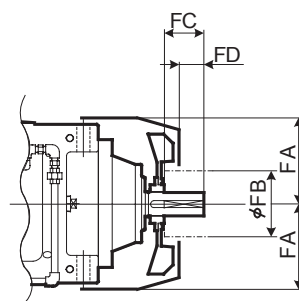
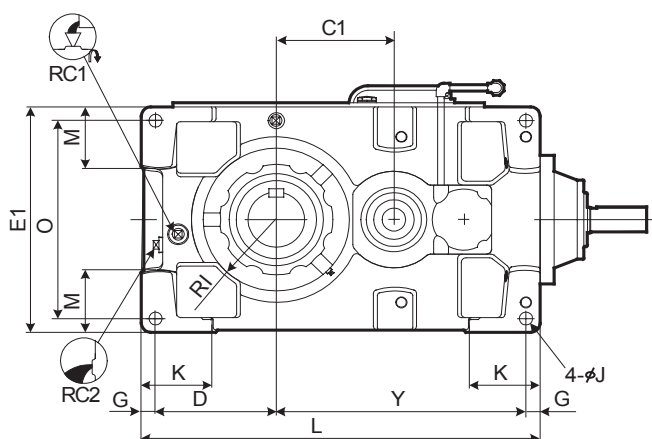
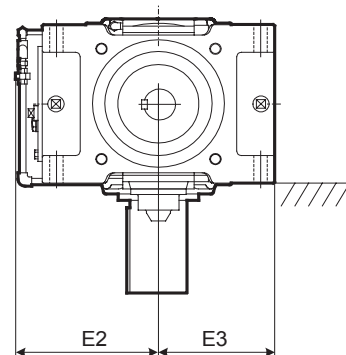
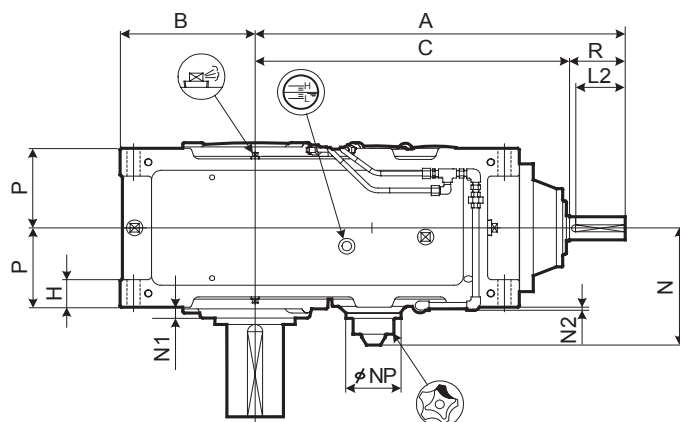
R

4

A



DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9015 ▶ 9055



High Speed Shaft

With Fan

Refer to the page D-20 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9015	507	160	427	115	140	270	195	135	20	35	80	15	95	440	70	189	25	14	100	230	102.5	260
9025	545	175	465	135	155	310	215	155	20	40	87.5	19	110	505	75	201.5	23	12	100	270	117.5	310
9030	645	200	535	155	175	320	220	160	25	50	105	24	120	590	85	224	22	9	117	270	132.5	365
9035	676	219	566	186	194	370	245	185	25	50	120	24	120	640	100	224	22	9	117	320	132.5	396
9040	705	235	595	180	205	400	260	200	30	60	120	28	150	685	100	243	15	2	117	340	157.5	420
9045	744	256	634	219	226	440	266	220	30	60	140	28	150	745	120	243	17.5	2	117	380	157.5	459
9050	755	255	645	210	225	420	270	210	30	60	140	28	150	775	110	259	23	7	137	360	172.5	490
9055	794	286	684	249	256	490	305	245	30	60	155	28	150	845	135	259	23	7	137	430	172.5	529

Size	High Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD				
9015	80	28k6	M12/28	8	4	7	70	125	125	50	30	3/4"	3/4"	95	5
9025	80	35k6	M12/28	10	5	8	70	135	140	50	30	3/4"	3/4"	140	7
9030	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	205	7
9035	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	225	9
9040	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	305	19
9045	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	365	23
9050	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	435	20
9055	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	495	26

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9015 ▶ 9055

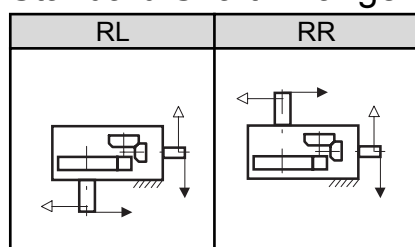
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

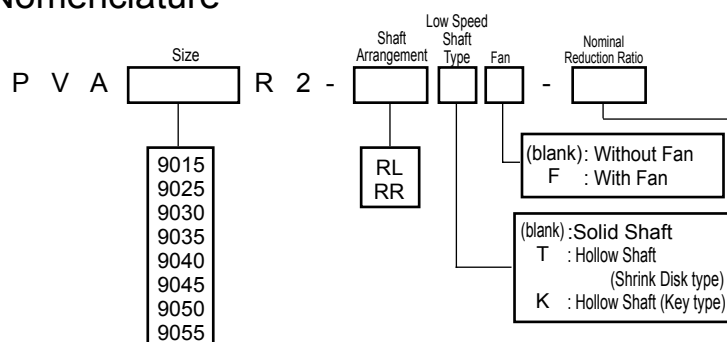
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

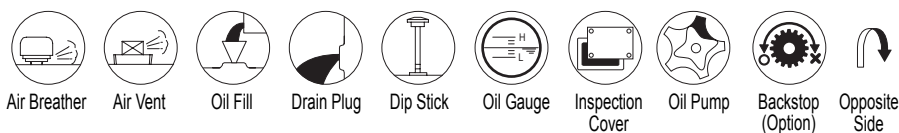
Standard Shaft Arrangement Configuration



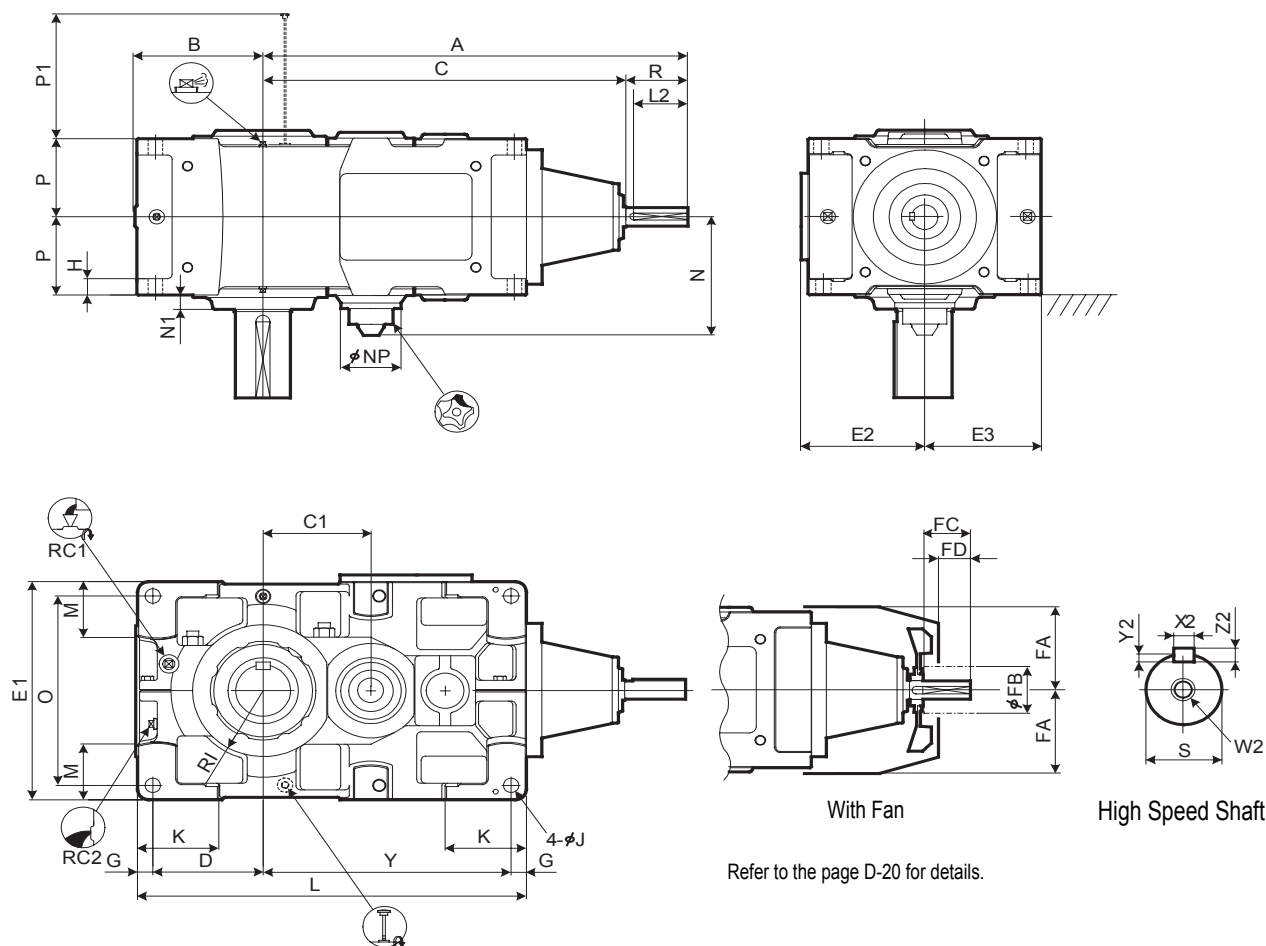
Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○	○	○
9055				○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9060 ▶ 9085

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	865	299	725	245	251	530	282	265	35	35	160	35	180	885	140	279	35	137	460	190	229	564
9065	911	338	771	291	290	600	317	300	35	35	175	35	180	970	175	279	38	137	530	190	229	610
9070	965	336	825	285	283	600	317	300	40	40	175	42	215	1020	155	310	38	137	520	215	262	657
9075	1018	383	878	338	330	670	352	335	40	52	190	42	220	1120	195	310	40	137	590	215	262	710
9080	1080	378	940	330	325	670	352	335	40	52	190	42	220	1155	170	330	45	137	590	230	295	750
9085	1136	422	996	386	369	750	392	375	40	52	215	42	220	1255	210	330	40	137	670	230	295	806

Size	High Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD				
9060	140	60m6	M20/42	X2	Y2	Z2	L2	220	160	105	65	1"	1"	600	Refer to the next page.
9065	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	1"	725	
9070	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	920	
9075	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	1170	
9080	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1300	
9085	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1560	

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-14 for dimensions shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9060 ▶ 9085

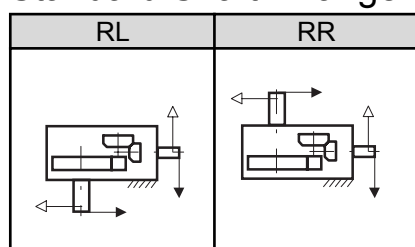
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Shaft Arrangement Configuration

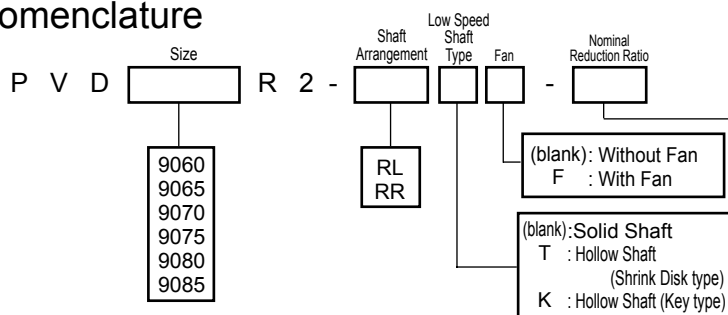


Approx. Oil Qty.

Size	Nominal Reduction Ratio			
	6.3-9	10-18	8-11.2	12.5-22.4
9060	25	25		
9065			32	32
9070	35	41		
9075			47	54
9080	46	55		
9085			58	68

Unit: liters

Nomenclature



Size	Nominal Reduction Ratio										
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20 22.4
9060	○	○	○	○	○	○	○	○	○	○	
9065				○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	
9075				○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	
9085				○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

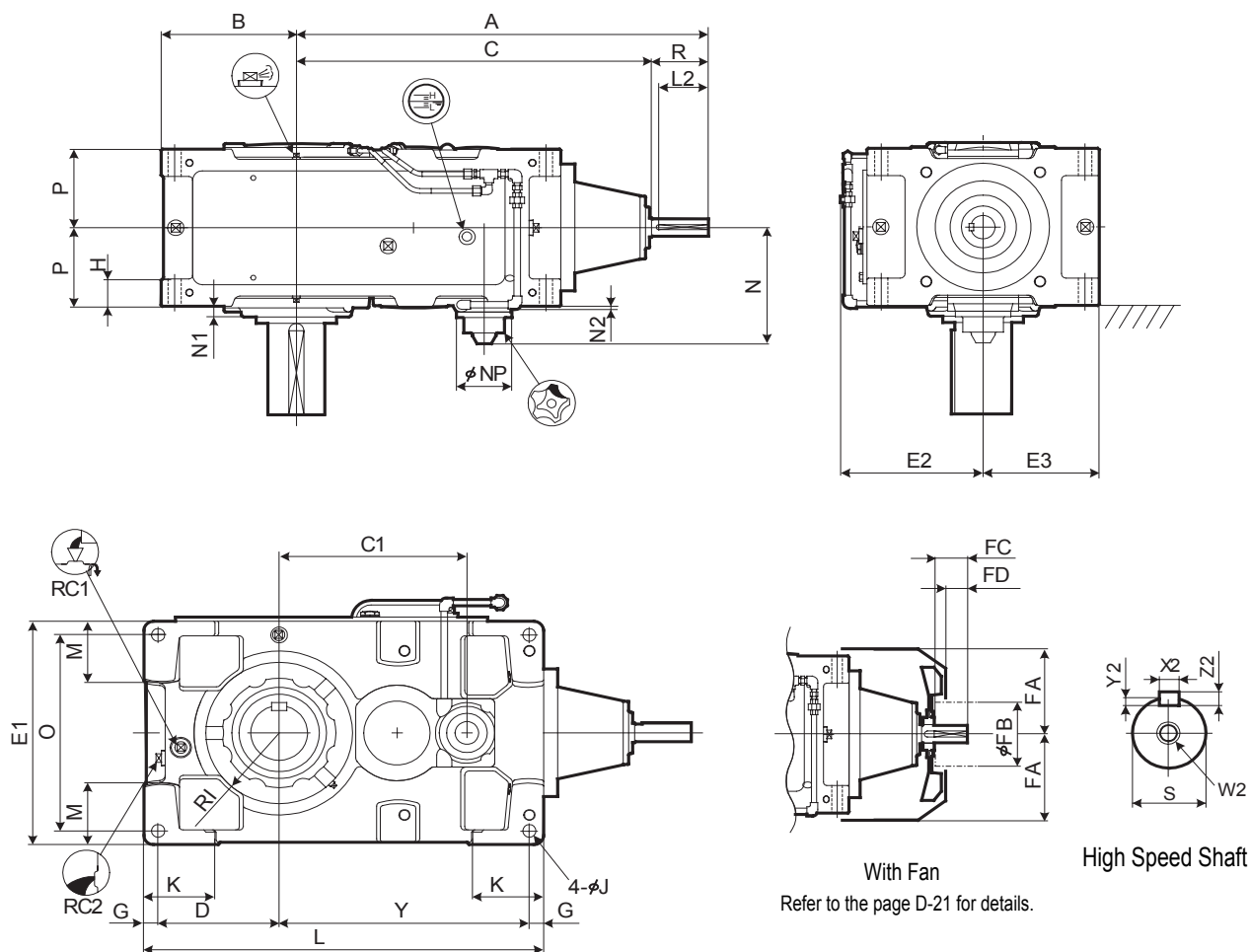


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9030 ▶ 9055



Speed Reducer

Selection Tables

Dimension Tables

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9030	656	200	576	264	175	320	220	160	25	50	105	24	120	590	85	208	22	9	100	270	132.5	365
9035	687	219	607	295	194	370	245	185	25	50	120	24	120	640	100	208	22	9	100	320	132.5	396
9040	716	235	636	306	205	400	260	200	30	60	120	28	150	685	100	235	15	2	117	340	157.5	420
9045	755	256	675	345	226	440	266	220	30	60	140	28	150	745	120	239	17.5	2	117	380	157.5	459
9050	808	255	728	358	225	420	270	210	30	60	140	28	150	775	110	255	23	7	117	360	172.5	490
9055	847	286	767	397	256	490	305	245	30	60	155	28	150	845	135	255	23	7	117	430	172.5	529

Size	High Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Key Z2	L2	FA	FB	FC	FD				
9030	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	210	9
9035	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	230	12
9040	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	305	18
9045	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	365	22
9050	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	445	21
9055	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	505	30

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9030 ▶ 9055

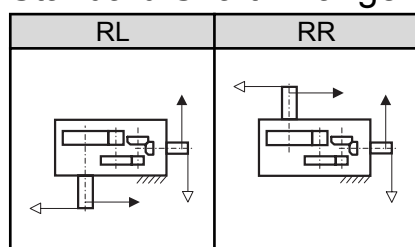
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

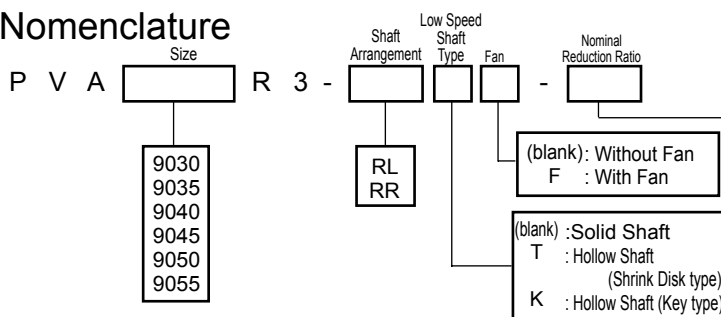
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

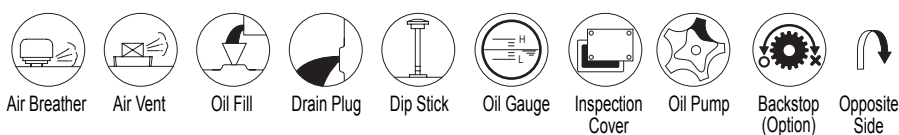
Standard Shaft Arrangement Configuration



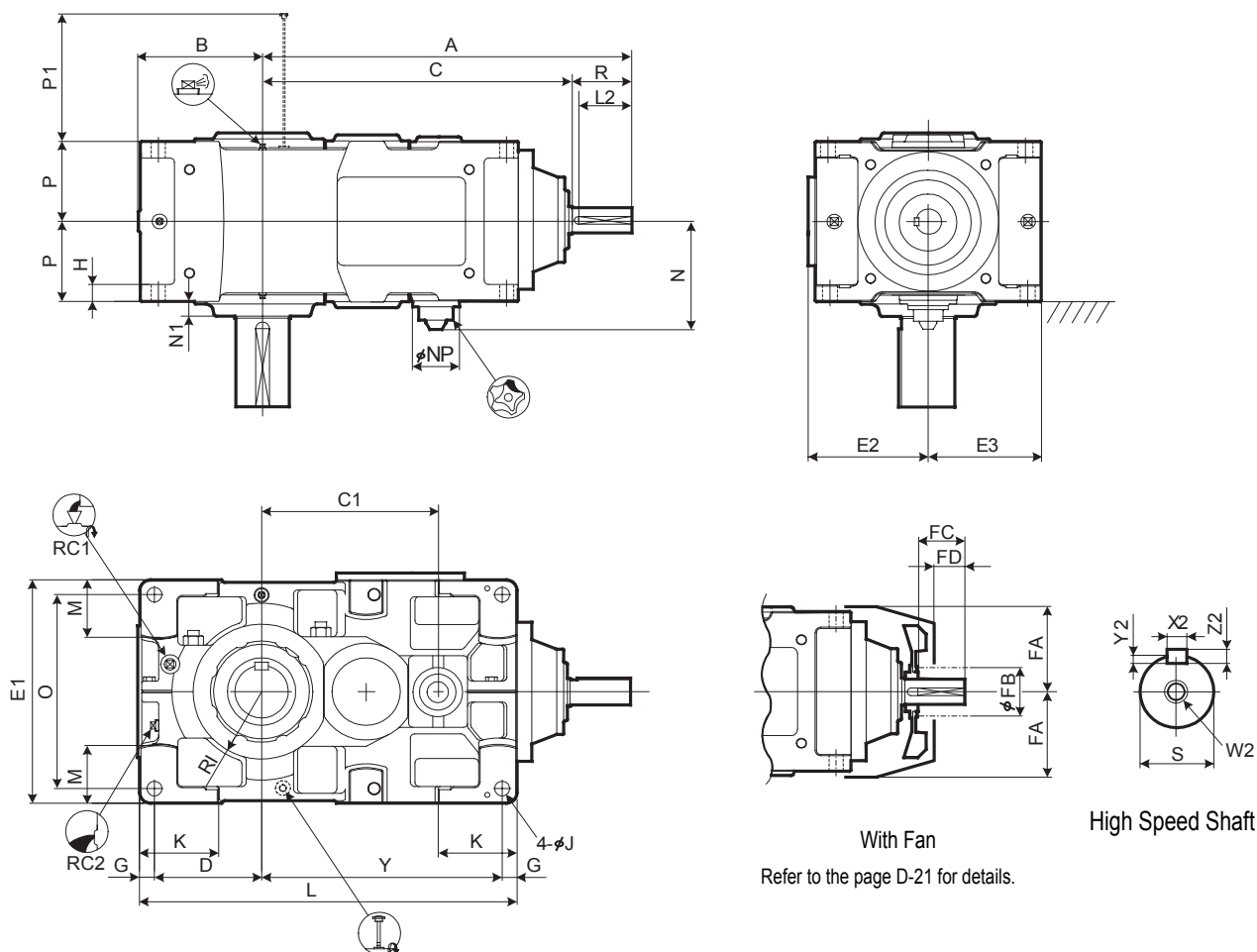
Nomenclature



Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9030	○	○	○	○	○	○	○	○	○	○	○	○			
9035			○	○	○	○	○	○	○	○		○	○	○	
9040	○	○	○	○	○	○	○	○		○	○	○			
9045				○	○	○	○	○	○	○		○	○	○	
9050	○	○	○	○	○	○	○	○	○	○					
9055			○	○	○	○	○	○	○	○	○	○	○	○	



DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085



Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	939	299	829	414	251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	213	564
9065	985	338	875	460	290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	213	610
9070	1027	336	917	482	283	600	317	300	40	40	175	42	215	1020	155	304	38	117	520	215	233	657
9075	1080	383	970	535	330	670	352	335	40	52	190	42	220	1120	195	304	40	117	590	215	233	710
9080	1176	378	1036	556	325	670	352	335	40	52	190	42	220	1155	170	322.5	45	117	590	230	268	750
9085	1232	422	1092	612	369	750	392	375	40	52	215	42	220	1255	210	322.5	40	117	670	230	268	806

Size	Hight Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Key Z2	L2	FA	FB	FC	FD				
9060	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	1"	1"	660	28
9065	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	1"	1"	785	35
9070	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	1"	1"	940	46
9075	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	1"	1"	1190	59
9080	140	60m6	M20/42	18	7	11	125	270	160	105	65	1"	1"	1350	60
9085	140	60m6	M20/42	18	7	11	125	270	160	105	65	1"	1"	1610	80

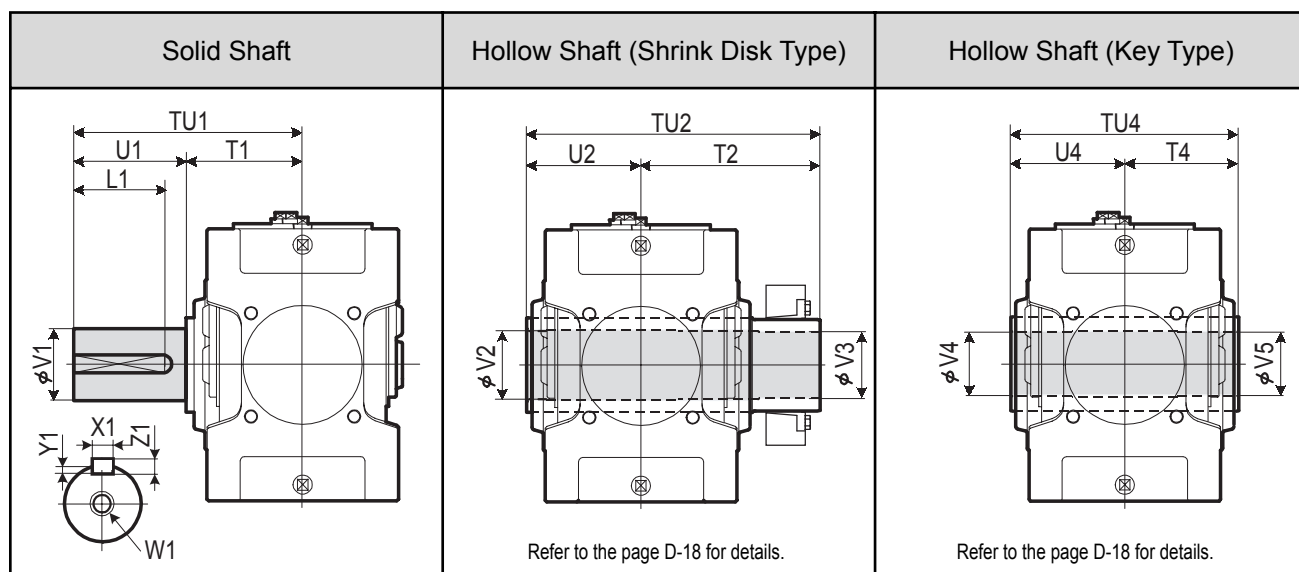
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-14 for dimensions shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085

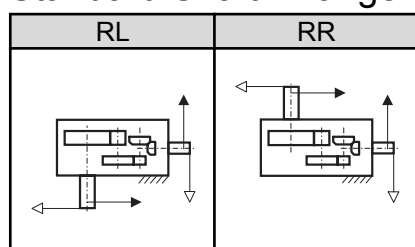
Slow Speed Shaft



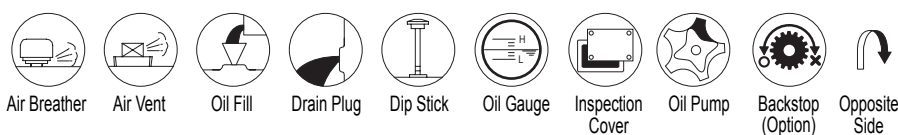
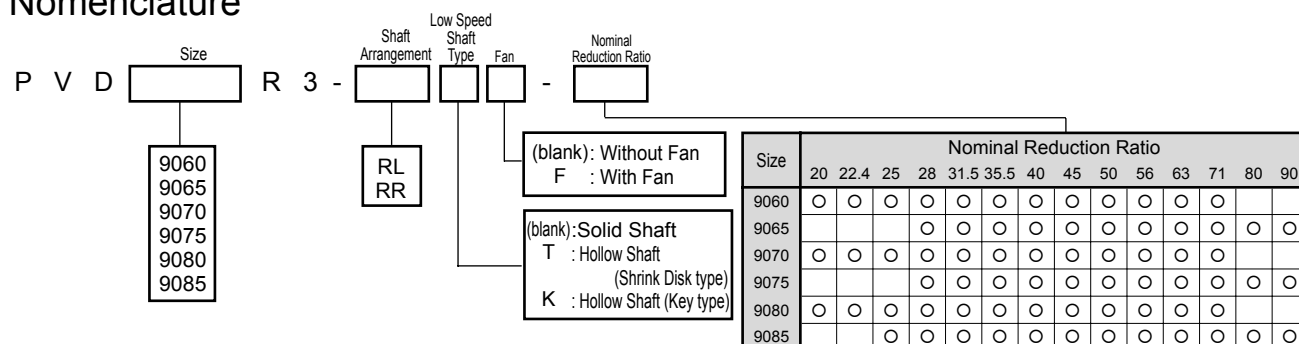
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

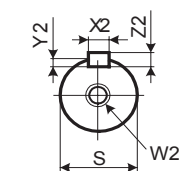
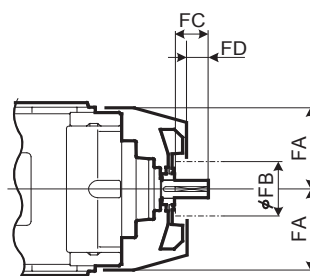
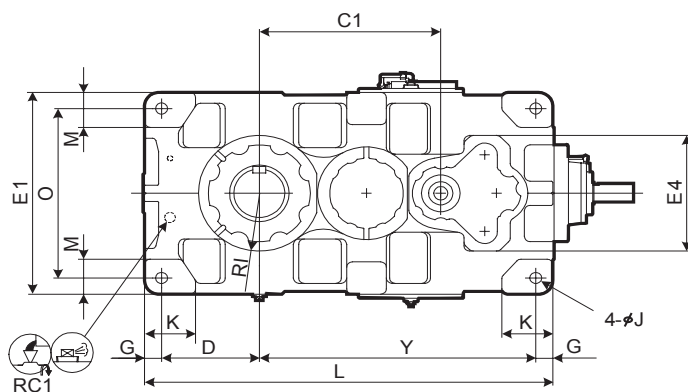
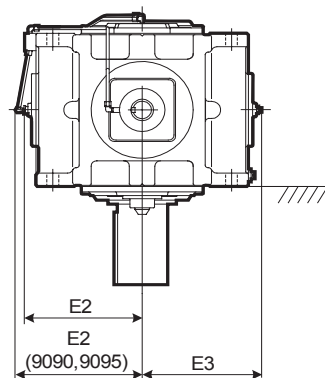
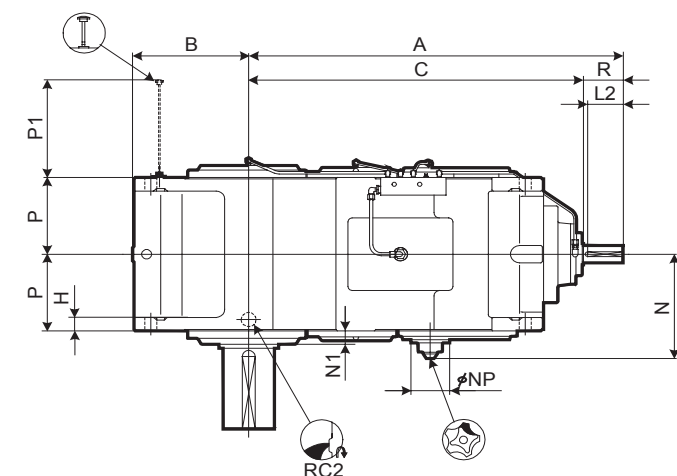
Standard Shaft Arrangement Configuration



Nomenclature



DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9090 ▶ 9115



With Fan

High Speed Shaft

Refer to the page D-21 for details.

Size	A	B	C	C1	D	E1	E2	E3	E4	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9090	1320	410	1180	640	345	750	449	421	430	60	50	215	42	180	1440	130	388	50	137	630	285	363	975
9095	1350	440	1210	670	375	800	474	446	430	60	50	235	42	200	1500	140	388	50	137	680	285	363	1005
9100	1474	450	1334		375	850	471	471	500	70	55	235	48	200	1610	150		60		710	325	411	1095
9105	1508	485	1368		410	900	496	496	500	70	55	260	48	220	1680	160		60		760	325	411	1130
9110	1684	500	1514		420	950	521	521	500	75	60	265	56	220	1810	170		55		800	355	446	1240
9115	1733	550	1563		470	1000	546	546	500	75	60	280	56	250	1910	180		55		850	355	446	1290

Size	Hight Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9090	140	65m6	M20/42	18	7	11	125	340	200	105	65	1"	1 1/2"	2170	120
9095	140	65m6	M20/42	18	7	11	125	340	200	105	65	1"	1 1/2"	2430	145
9100	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1"	1 1/2"	2970	170
9105	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1"	1 1/2"	3450	210
9110	170	85m6	M20/42	22	9	14	140	410	225	135	90	1"	1 1/2"	4150	230
9115	170	85m6	M20/42	22	9	14	140	410	225	135	90	1"	1 1/2"	4670	290

※ 9100 ~ 9115 are equipped with motor driven pumps. For details consult us.

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
 2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
 3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-31.

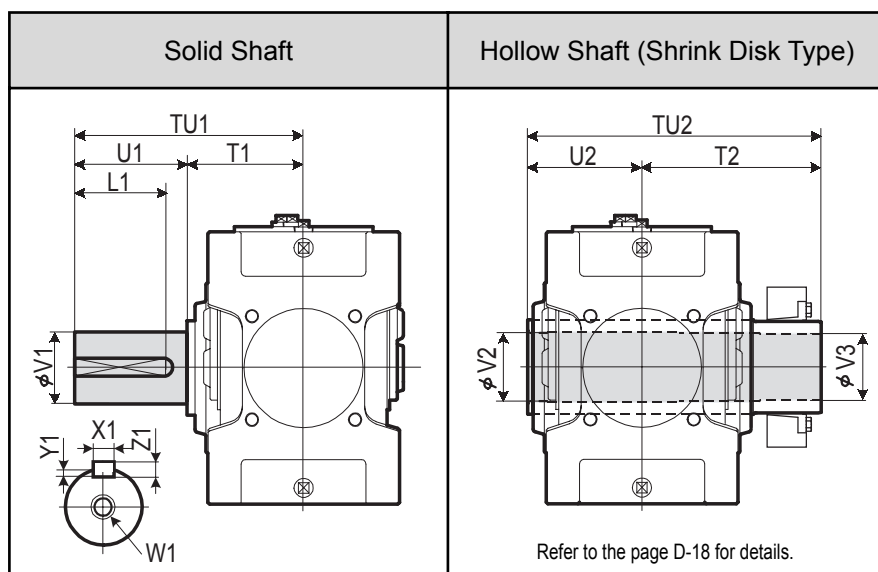
4. Refer to the page D-16 for dimensions shown in these drawings.
 5. Refer to the page D-31 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9090 ▶ 9115

PARAMAX Vertical Split Right Angle Triple Reduction

P V D 9090 9115 R 3

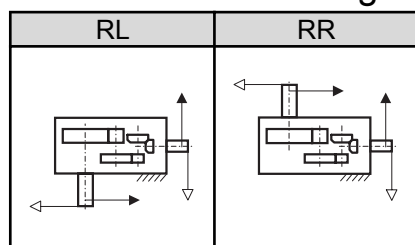
Slow Speed Shaft



Size	Solid Shaft					Hollow Shaft (Shrink Disk Type)								
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P V D Size R 3 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

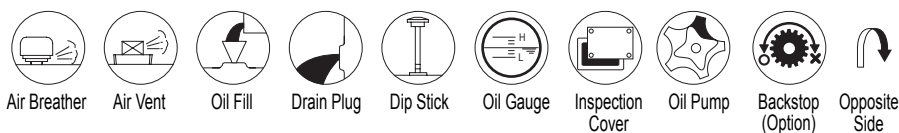
Size: 9090, 9095, 9100, 9105, 9110, 9115

Shaft Arrangement: RL, RR

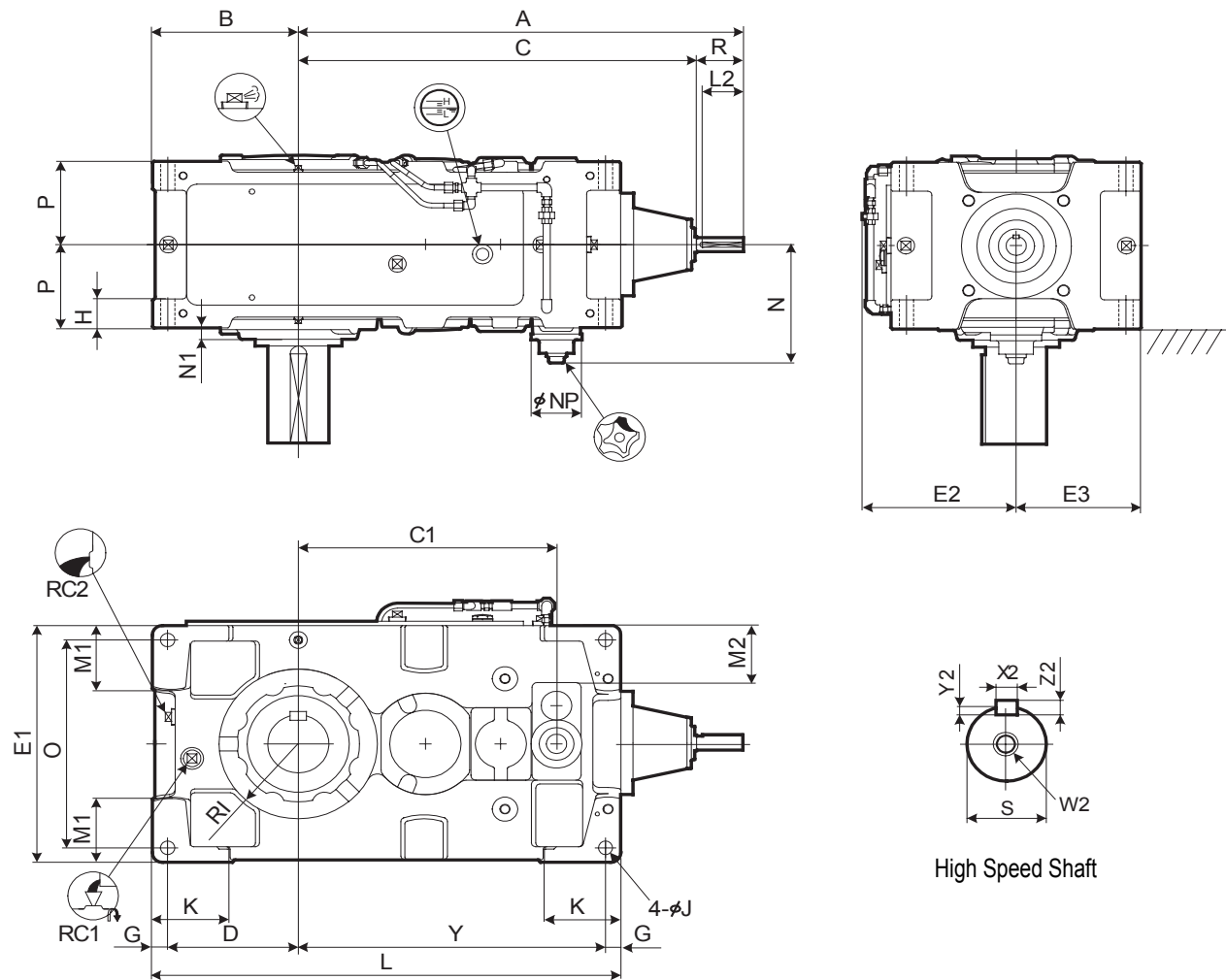
Low Speed Shaft Type: (blank): Without Fan, F: With Fan

Nominal Reduction Ratio: (blank): Solid Shaft, T: Hollow Shaft (Shrink Disk type)

Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095		○	○	○	○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9105		○	○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9115		○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9040 ▶ 9055



Speed Reducer

Selection Tables

Dimension Tables

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9040	790	235	710	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	829	256	749	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050	859	255	779	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055	898	286	818	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

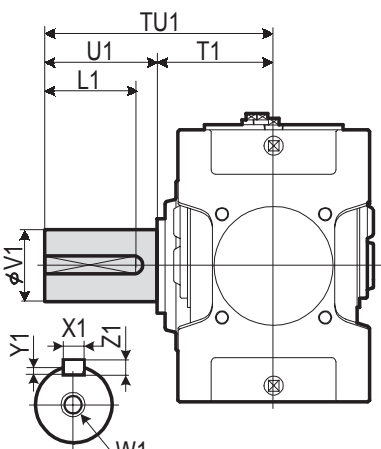
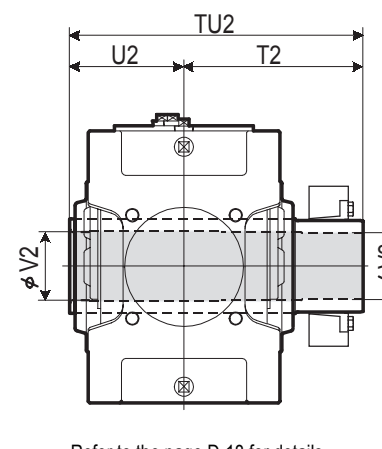
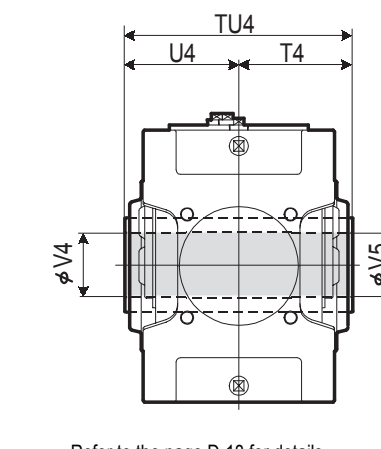
Size	High Speed Shaft							RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2				
9040	80	28k6	M10/22	8	4	7	70	1"	1"	325	18
9045	80	28k6	M10/22	8	4	7	70	1"	1"	395	22
9050	80	28k6	M10/22	8	4	7	70	1"	1"	460	24
9055	80	28k6	M10/22	8	4	7	70	1"	1"	520	34

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions shown in these drawings.
4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9040 ▶ 9055

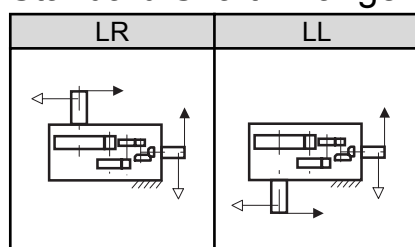
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	 Refer to the page D-18 for details.	 Refer to the page D-18 for details.

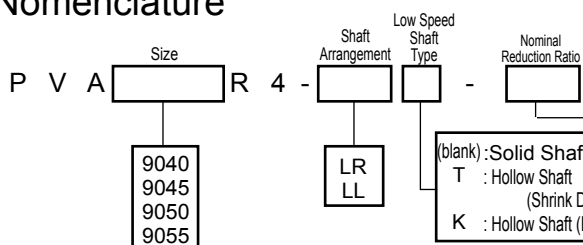
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9040	○	○	○	○	○	○	○											
9045				○	○	○	○	○										
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



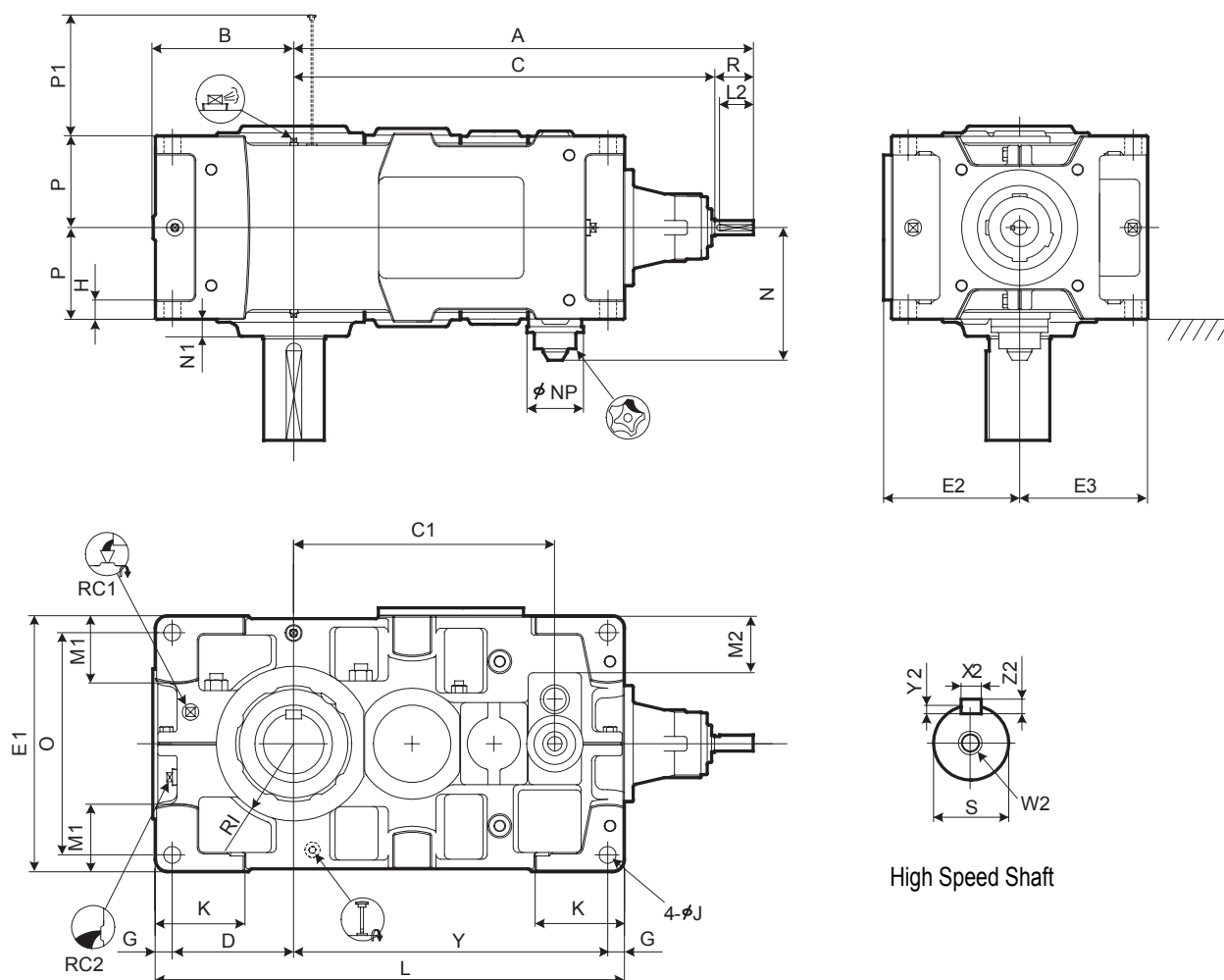
Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9060 ▶ 9085



High Speed Shaft

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	P1	Y
9060	950	299	870	540	251	530	282	265	35	35	160	35	180	970	140	118	277.5	35	117	460	190	203	649
9065	996	338	916	586	290	600	317	300	35	35	175	35	180	1055	175	153	277.5	38	117	530	190	203	695
9070	1080	336	1000	630	283	600	317	300	40	40	175	42	215	1115	155	128	304	38	117	520	215	233	752
9075	1133	383	1053	683	330	670	352	335	40	52	190	42	220	1215	195	163	304	40	117	590	215	233	805
9080	1250	378	1140	725	325	670	352	335	40	52	190	42	220	1275	170	140	322.5	45	117	590	230	263	870
9085	1306	422	1196	781	369	750	392	375	40	52	215	42	220	1375	210	180	322.5	40	117	670	230	263	926

Size	High Speed Shaft							RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	80	30k6	M10/22	8	4	7	70	1"	1"	670	36
9065	80	30k6	M10/22	8	4	7	70	1"	1"	825	45
9070	80	35k6	M12/28	10	5	8	70	1"	1"	960	54
9075	80	35k6	M12/28	10	5	8	70	1"	1"	1180	68
9080	110	45k6	M16/36	14	5.5	9	95	1"	1"	1390	69
9085	110	45k6	M16/36	14	5.5	9	95	1"	1"	1650	94

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-15 for dimensions shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9060 ▶ 9085

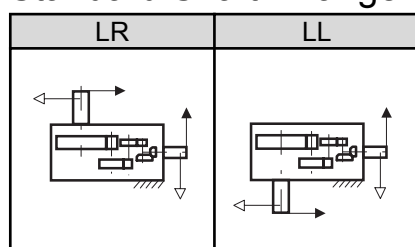
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

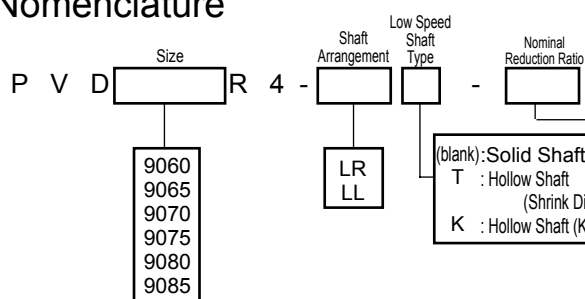
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9060		○			○	○	○	○	○	○	○	○	○	○		
9065			○		○	○	○	○	○	○	○	○	○	○		
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○		○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

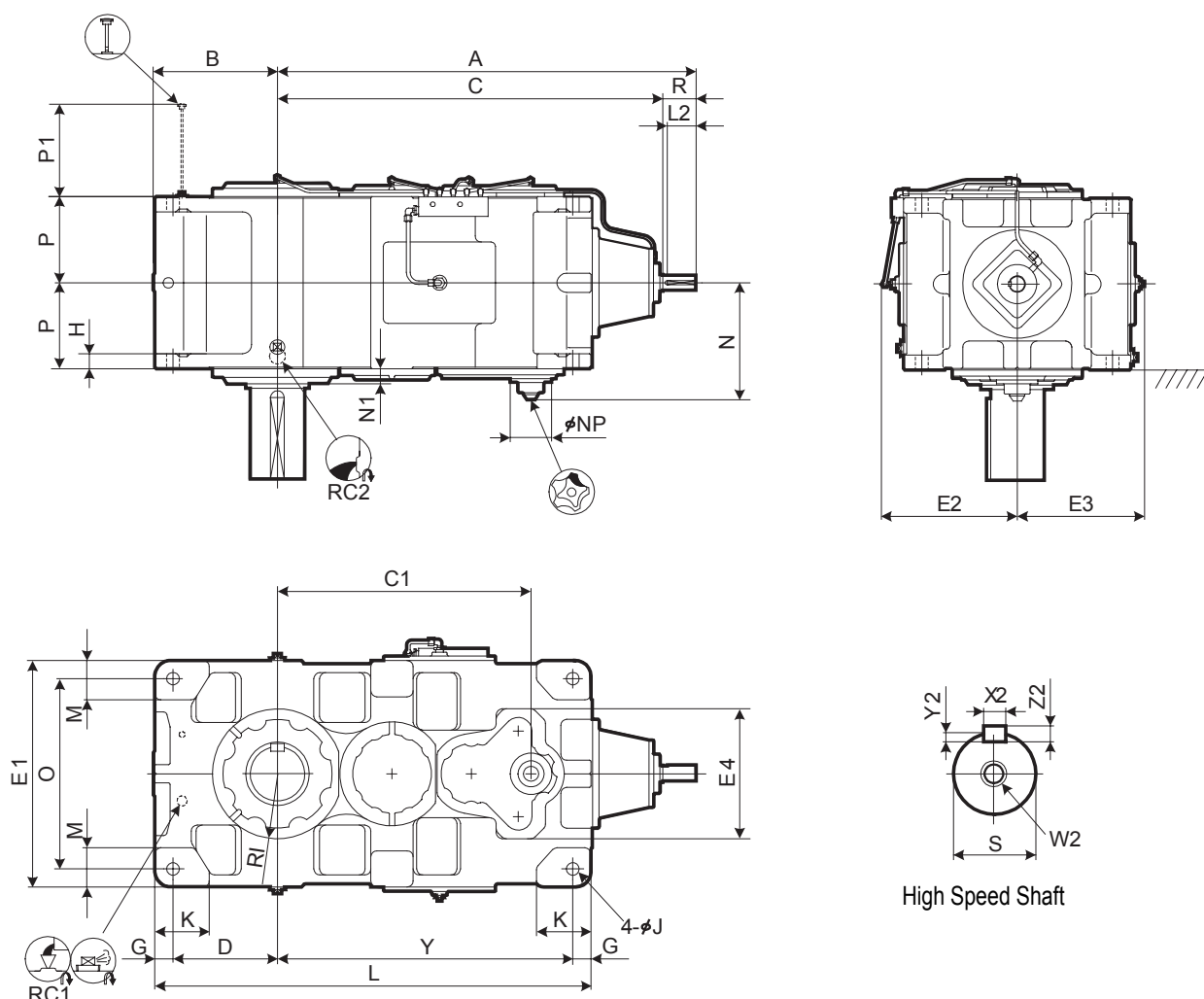


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115



High Speed Shaft

Size	A	B	C	C1	D	E1	E2	E3	E4	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9090	1382	410	1272	837	345	750	449	421	430	60	50	215	42	180	1440	130	388	50	137	630	285	354	975
9095	1412	440	1302	867	375	800	474	446	430	60	50	235	42	200	1500	140	388	50	137	680	285	354	1005
9100	1570	450	1430	950	375	850	499	471	500	70	55	235	48	200	1610	150	428	60	137	710	325	399	1095
9105	1604	485	1464	984	410	900	524	496	500	70	55	260	48	220	1680	160	428	60	137	760	325	399	1130
9110	1670	500	1530	1050	420	950	559	521	500	75	60	265	56	220	1810	170	458	55	137	800	355	429	1240
9115	1719	550	1579	1099	470	1000	584	546	500	75	60	280	56	250	1910	180	458	55	137	850	355	429	1290

Size	High Speed Shaft							RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Key Z2	L2				
9090	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2170	120
9095	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2430	155
9100	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	2970	180
9105	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	3450	220
9110	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4100	250
9115	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4620	315

Unit: mm

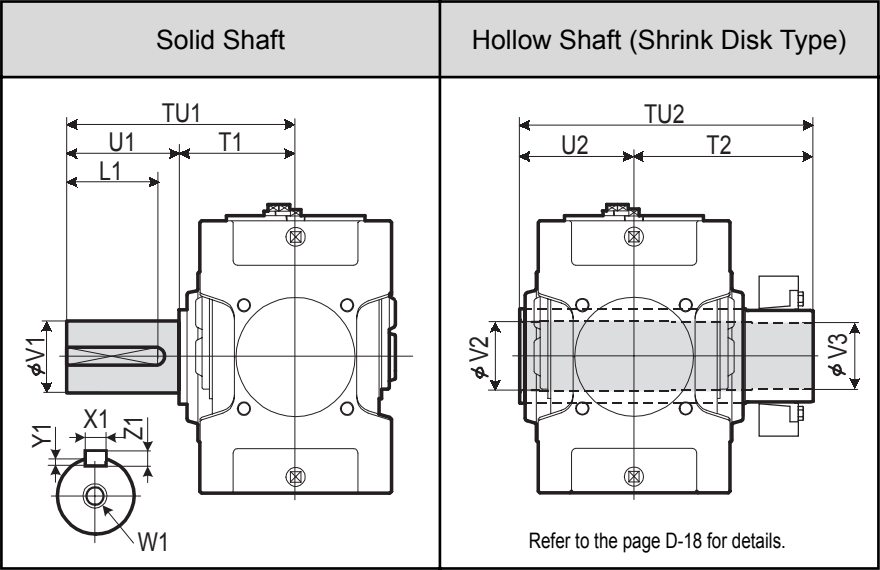
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-31.

4. Refer to the page D-16 for dimensions shown in these drawings.
5. Refer to the page D-31 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115

P
PARAMAX
Vertical
Split
D
9090
9115
R
Right Angle
Quadruple
Reduction
4

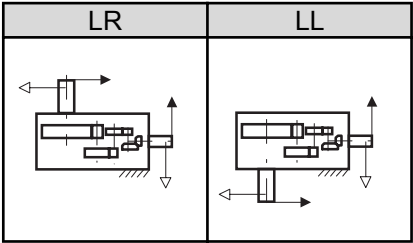
Slow Speed Shaft



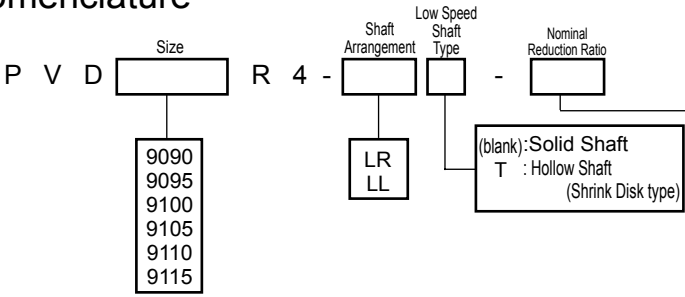
Size	Solid Shaft					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270		844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320		859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320		934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320		949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320		1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375		1065	645	420	253	250

Unit: mm

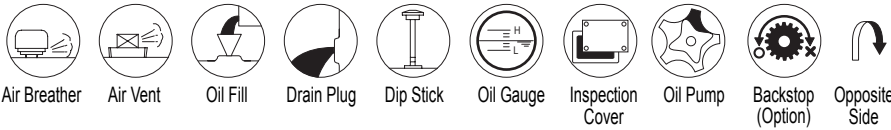
Standard Shaft Arrangement Configuration



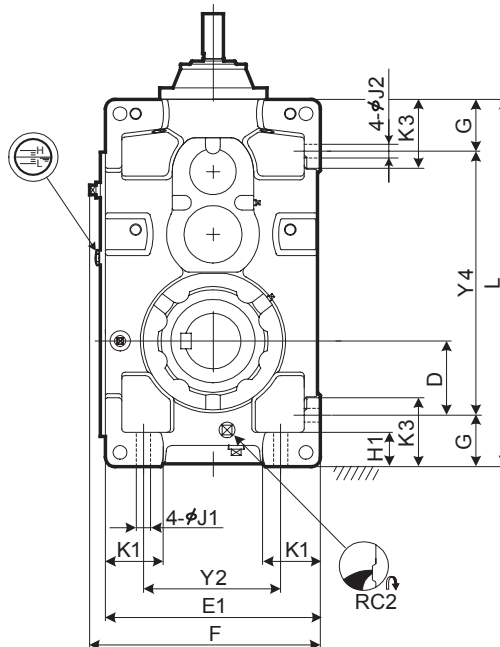
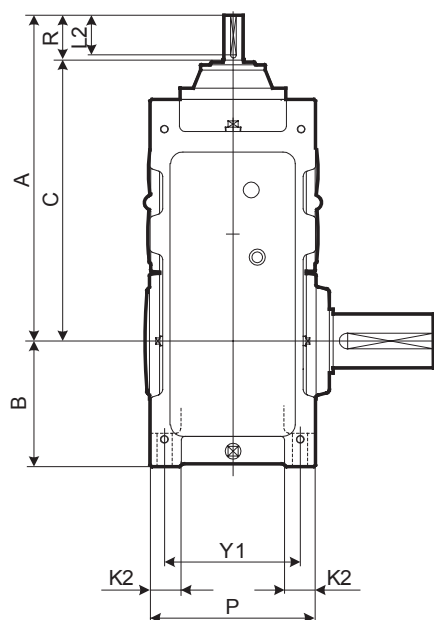
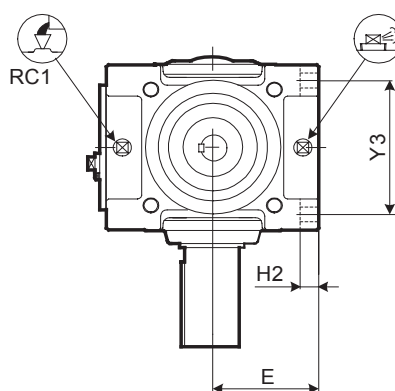
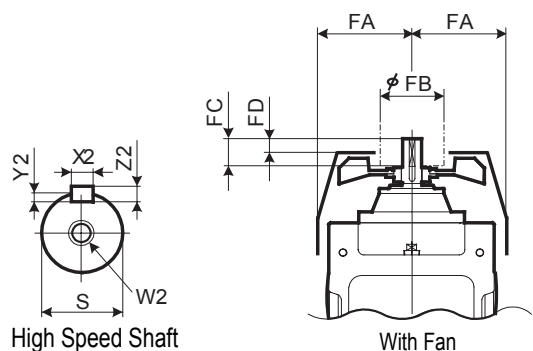
Nomenclature



Size	Nominal Reduction Ratio															
	90	100	112	125	140	160	180	200	224	250	280	315	355	400		
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9095	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9105		○	○	○	○	○	○	○	○	○	○	○	○	○		
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9115		○	○	○	○	○	○	○	○	○	○	○	○	○		



DIMENSIONS Right Angle Shaft Double Reduction Upright Mounting 9015 ▶ 9055



Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9015	507	160	427	90	135	270	298	70	50	22	15	15	70	35	95	440	205	170	180	170	300
9025	545	175	465	95	155	310	338	80	55	25	19	19	75	40	110	505	235	195	210	195	345
9030	645	200	535	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	676	219	566	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	705	235	595	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045	744	256	634	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050	755	255	645	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055	794	286	684	171	245	490	520	115	75	32	28	28	135	60	150	845	345	285	350	285	615

Size	Hight Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD				
				X2	Y2	Z2	L2								
9015	80	28k6	M12/28	8	4	7	70	125	125	50	30	3/4"	3/4"	95	7
9025	80	35k6	M12/28	10	5	8	70	135	140	50	30	3/4"	3/4"	140	11
9030	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	205	14
9035	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	225	19
9040	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	305	24
9045	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	365	30
9050	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	435	31
9055	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	495	45

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Upright Mounting 9015 ▶ 9055

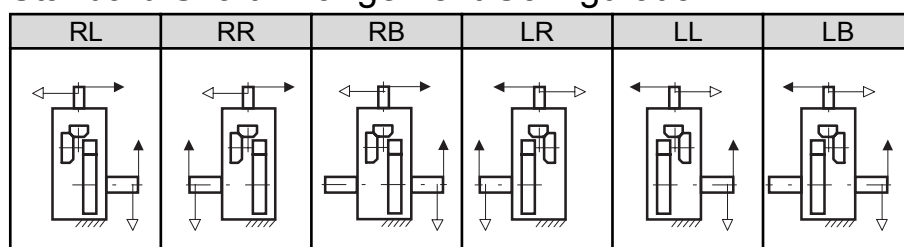
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

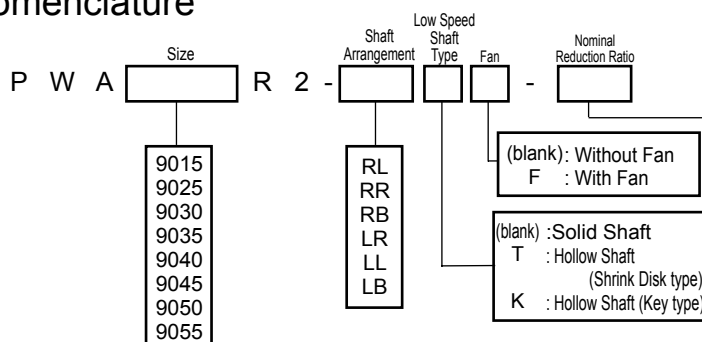
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

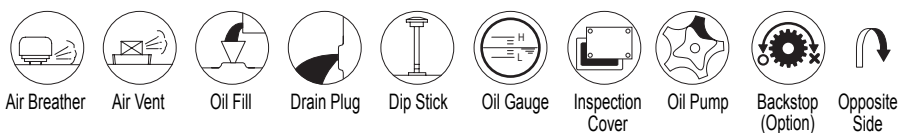
Standard Shaft Arrangement Configuration



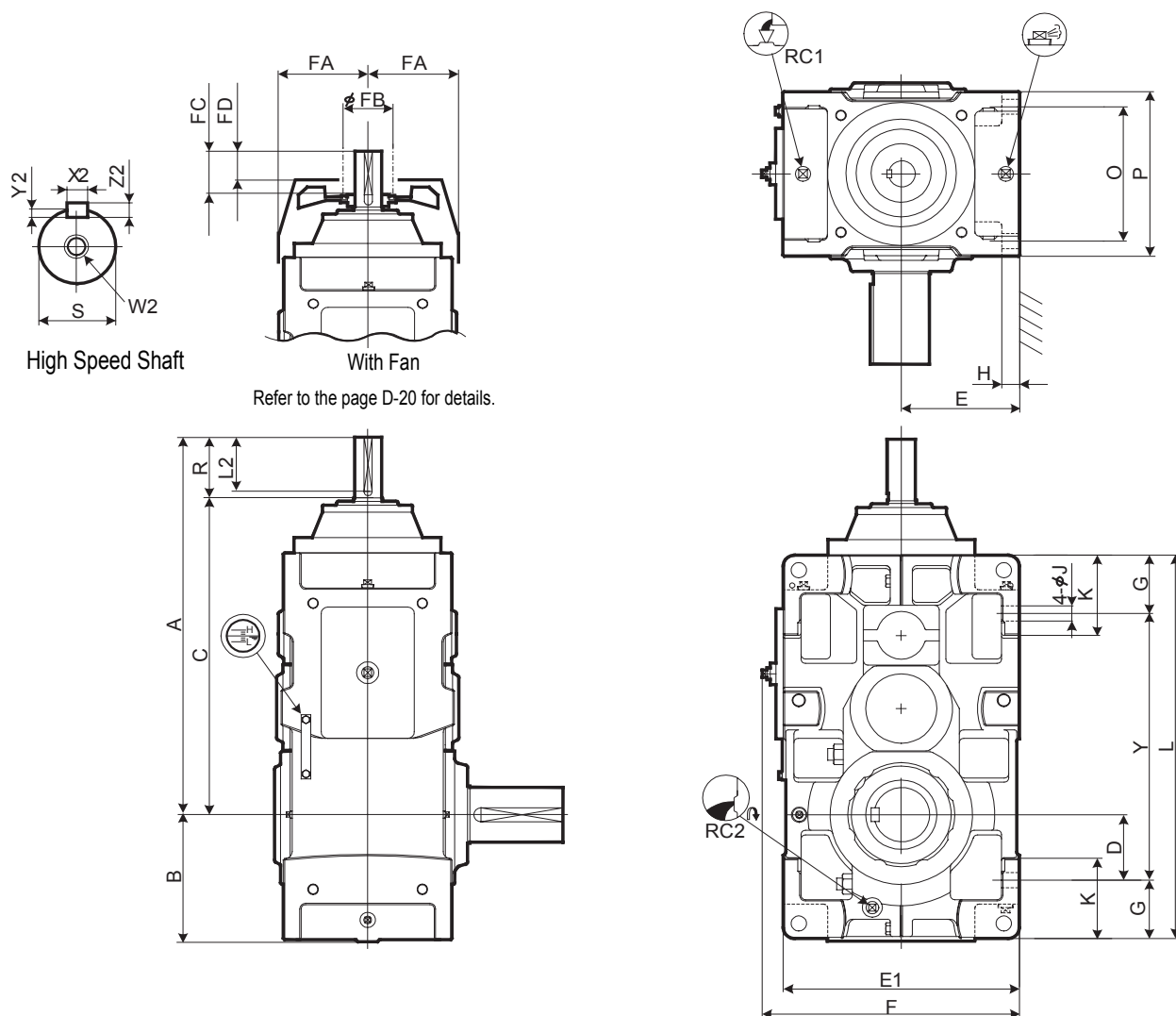
Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055				○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Double Reduction Upright Mounting 9060 ▶ 9085



Speed Reducer

Selection Tables

Dimension Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9060	865	299	725	151	265	530	577	135	35	35	180	885	310	380	615
9065	911	338	771	190	300	600	647	135	35	35	180	975	310	380	700
9070	965	336	825	163	300	600	647	160	40	42	215	1020	350	430	700
9075	1018	383	878	210	335	670	717	160	52	42	220	1120	350	430	800
9080	1080	378	940	205	335	670	717	160	52	42	220	1155	380	460	835
9085	1136	422	996	249	375	750	797	160	52	42	220	1255	380	460	935

Size	High Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9060	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	1"	600	44
9065	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	1"	725	56
9070	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	920	65
9075	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	1170	87
9080	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1300	90
9085	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1560	126

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-14 for dimensions shown in these drawings.

4. Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Upright Mounting 9060 ▶ 9085

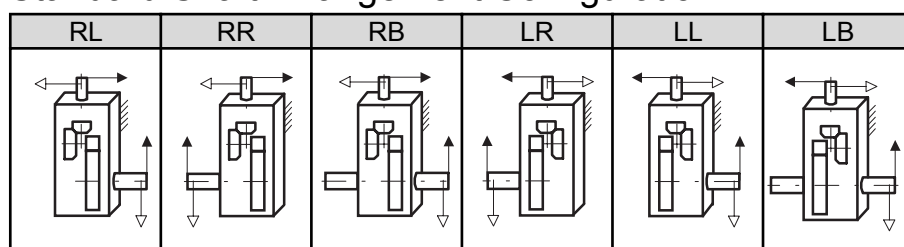
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P	W	D	Size	R	2	W	-	Shaft Arrangement	Low Speed Shaft Type	Fan	-	Nominal Reduction Ratio
			9060 9065 9070 9075 9080 9085					RL RR RB LR LL LB	(blank): Without Fan F : With Fan			
								(blank): Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)				

Size	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○	○	○
9065	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○
9075	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○
9085	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

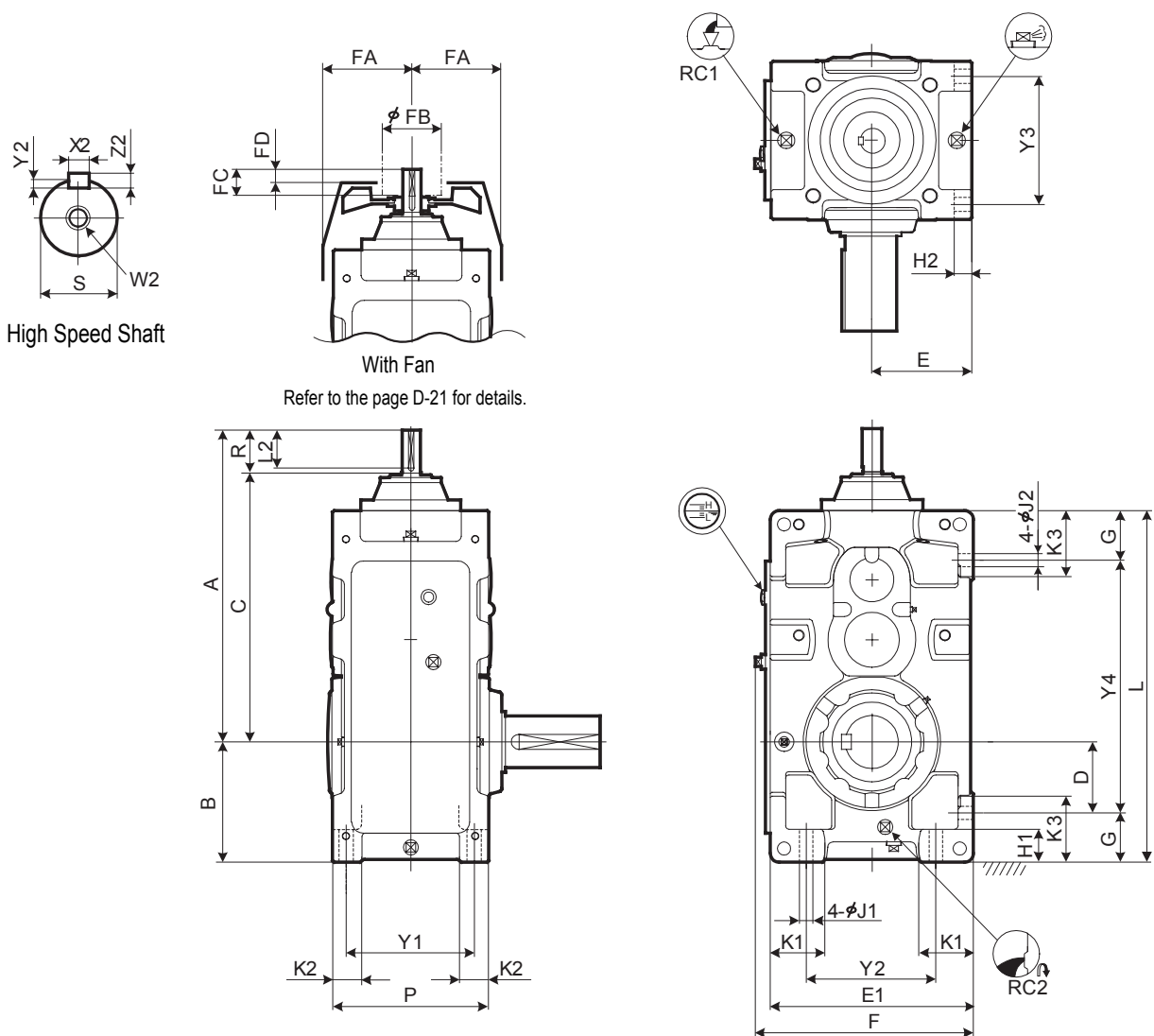


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Triple Reduction Upright Mounting 9030 ▶ 9055



Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9030	656	200	576	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	687	219	607	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	716	235	636	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045	755	256	675	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050	808	255	728	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055	847	286	797	171	245	490	520	115	75	32	28	28	135	60	150	845	345	285	350	285	615

Size	High Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9030	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	210	16
9035	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	230	21
9040	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	305	29
9045	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	365	36
9050	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	445	35
9055	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	505	46

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Upright Mounting 9030 ▶ 9055

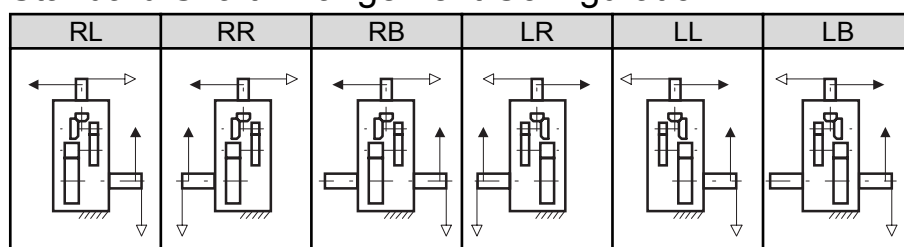
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P W A Size R 3 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

9030
9035
9040
9045
9050
9055

RL
RR
RB
LR
LL
LB

(blank): Without Fan
F : With Fan

(blank): Solid Shaft
T : Hollow Shaft (Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9030	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9035	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9040	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9045	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9055	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

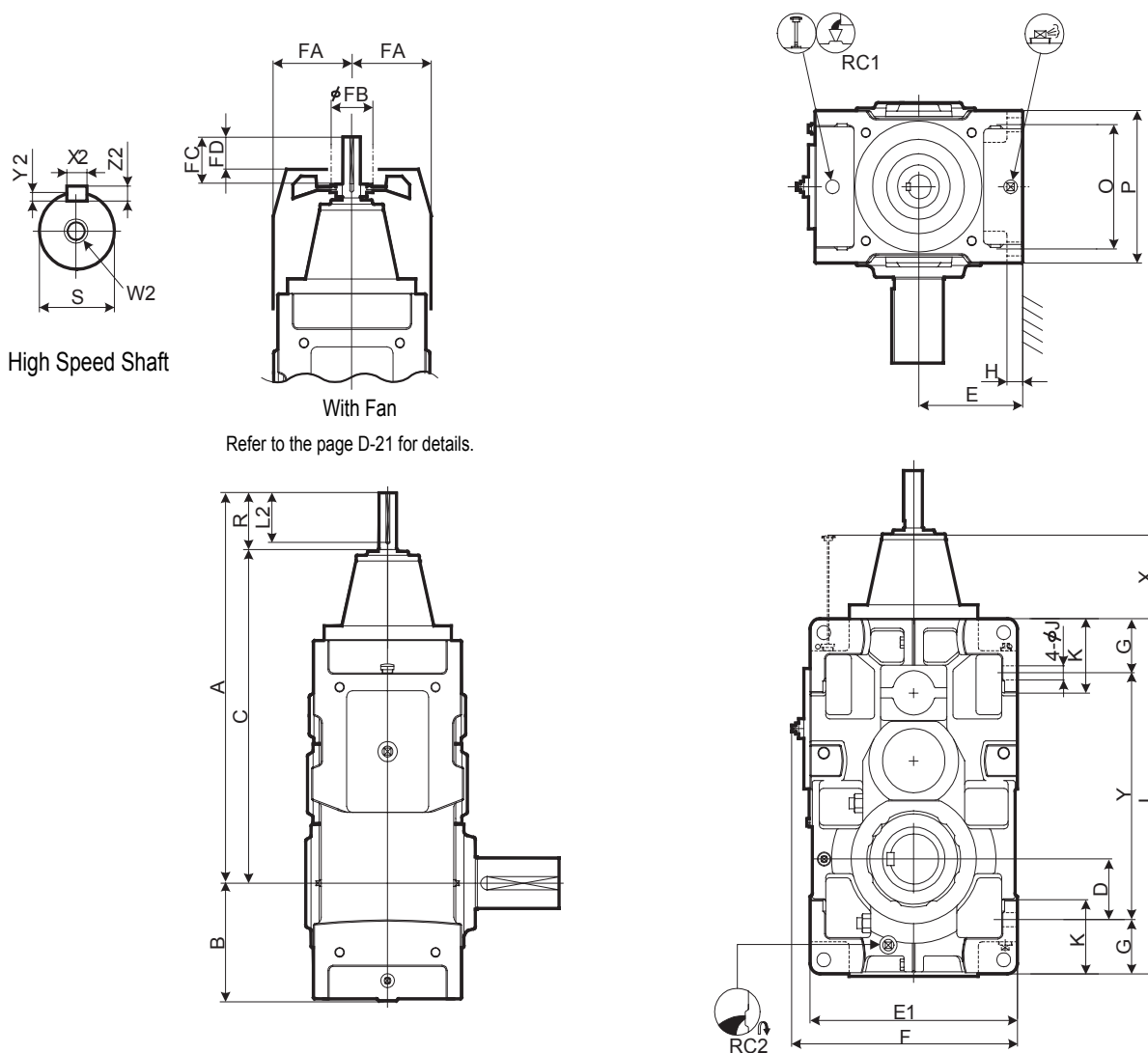


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Triple Reduction Upright Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9060	939	299	829	151	265	530	577	135	35	35	180	885	310	380	131	615
9065	985	338	875	190	300	600	647	135	35	35	180	975	310	380	131	700
9070	1027	336	917	163	300	600	647	160	40	42	215	1020	350	430	138	700
9075	1080	383	970	210	335	670	717	160	52	42	220	1120	350	430	138	800
9080	1176	378	1036	205	335	670	717	160	52	42	220	1155	380	460	165	835
9085	1232	422	1092	249	375	750	797	160	52	42	220	1255	380	460	165	935

Size	High Speed Shaft							Fan				RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9060	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	1"	1"	660	56
9065	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	1"	1"	785	65
9070	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	1"	1"	940	83
9075	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	1"	1"	1190	100
9080	140	60m6	M20/42	18	7	11	125	270	160	105	65	1"	1"	1350	115
9085	140	60m6	M20/42	18	7	11	125	270	160	105	65	1"	1"	1610	144

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-14 for dimensions shown in these drawings.

4. Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Upright Mounting 9060 ▶ 9085

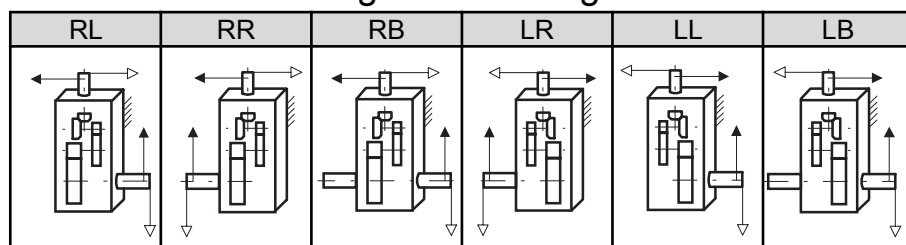
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

Nomenclature

PWD

Size

R3W

Shaft Arrangement

Low Speed Shaft Type

Fan

Nominal Reduction Ratio

9060
9065
9070
9075
9080
9085

RL
RR
RB
LR
LL
LB

(blank) : Without Fan
F : With Fan

(blank) : Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio													
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9060	○	○	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○		
9075				○	○	○	○	○	○	○	○	○	○	○
9080	○	○		○	○	○	○	○	○	○	○	○	○	
9085			○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

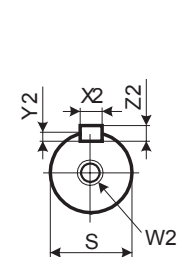


Backstop (Option)

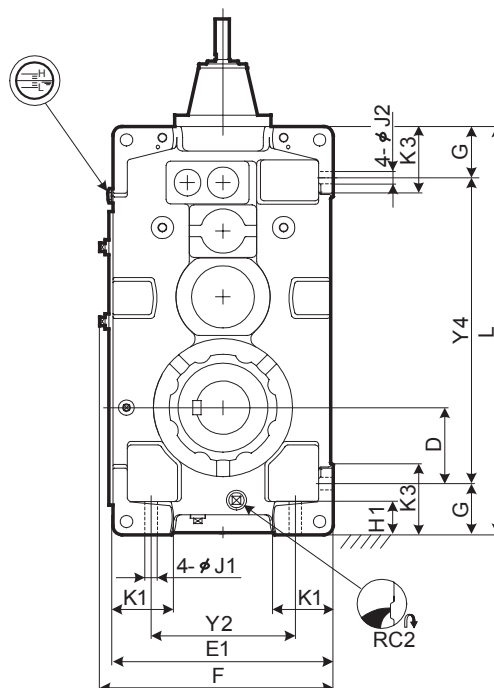
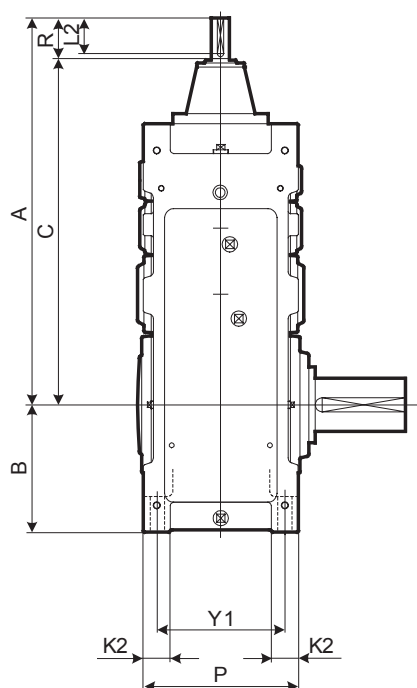
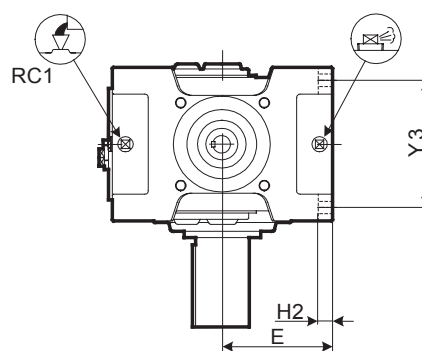


Opposite Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Upright Mounting 9040 ▶ 9055



High Speed Shaft

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9040	790	235	710	120	200	400	430	115	75	30	28	28	100	60	150	759	315	255	260	255	529
9045	829	256	749	141	220	440	470	115	75	30	28	28	120	60	150	819	315	255	300	255	589
9050	859	255	779	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	285	280	285	615
9055	898	286	818	171	245	490	520	115	75	32	28	28	135	60	150	918	345	285	350	285	688

Size	High Speed Shaft							RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2				
9040	80	28k6	M10/22	8	4	7	70	1"	1"	325	35
9045	80	28k6	M10/22	8	4	7	70	1"	1"	395	43
9050	80	28k6	M10/22	8	4	7	70	1"	1"	460	46
9055	80	28k6	M10/22	8	4	7	70	1"	1"	520	59

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions shown in these drawings.

4. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Upright Mounting 9040 ▶ 9055

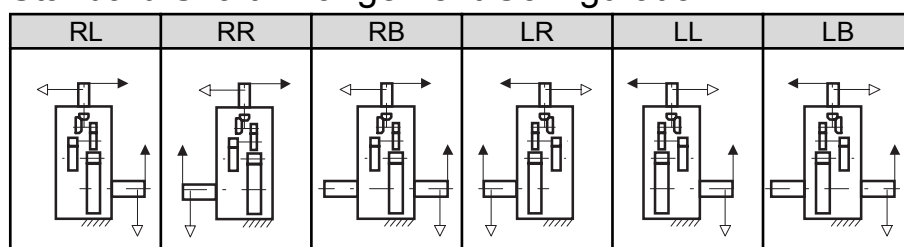
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

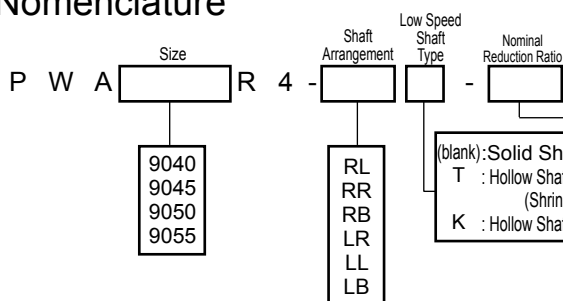
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9040	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9045				○	○	○	○	○	○	○	○	○	○	○	○	○		
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055				○	○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

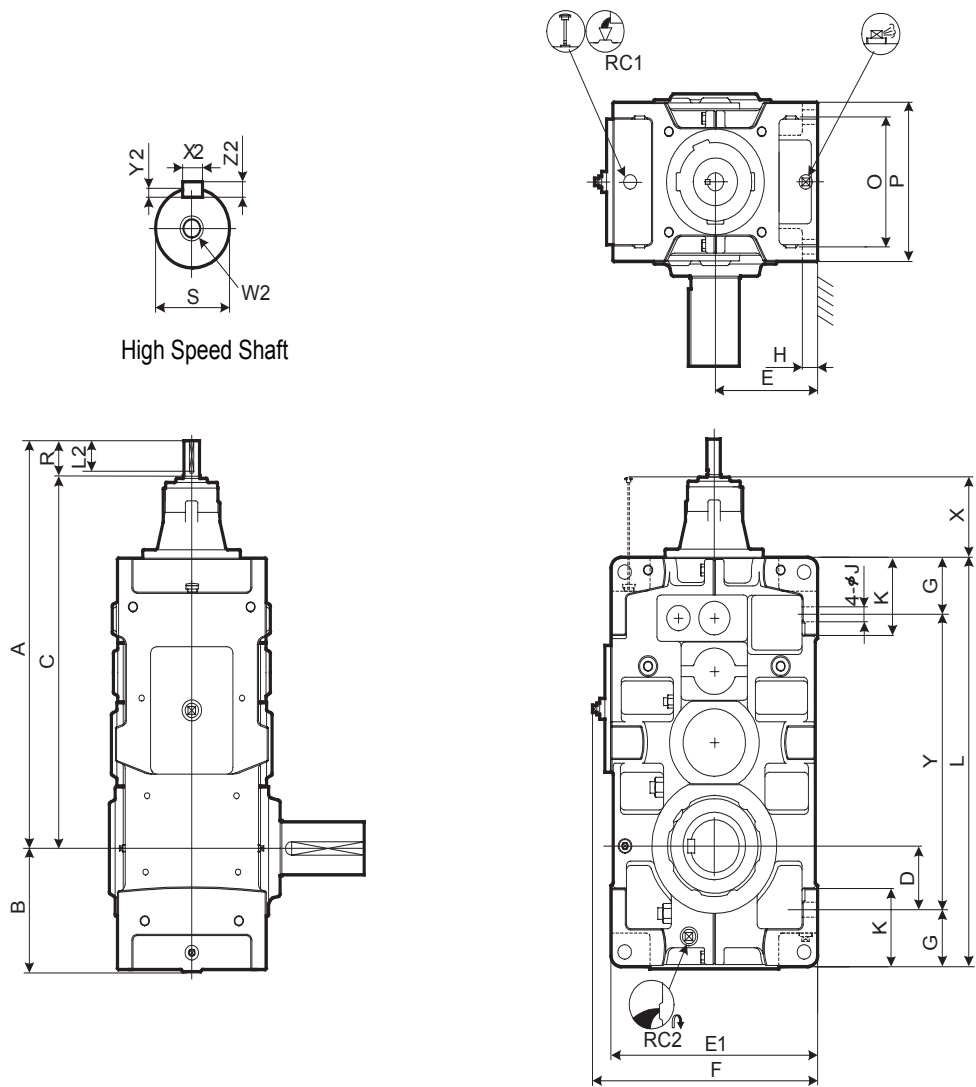


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Upright Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9060	950	299	870	151	265	530	577	135	35	35	180	970	310	380	79	700
9065	991	338	916	190	300	600	648	135	35	35	180	1055	310	380	79	785
9070	1080	336	1000	163	300	600	647	160	40	42	215	1115	350	430	70	795
9075	1133	383	1053	210	335	670	717	160	52	42	220	1215	350	430	70	895
9080	1250	378	1140	205	335	670	717	160	52	42	220	1275	380	460	101	955
9085	1306	422	1196	249	375	750	797	160	52	42	220	1375	380	460	101	1055

Size	High Speed Shaft							RC1	RC2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	80	30k6	M10/22	8	4	7	70	1"	1"	670	68
9065	80	30k6	M10/22	8	4	7	70	1"	1"	825	85
9070	80	35k6	M12/28	10	5	8	70	1"	1"	960	107
9075	80	35k6	M12/28	10	5	8	70	1"	1"	1180	122
9080	110	45k6	M16/36	14	5.5	9	95	1"	1"	1390	128
9085	110	45k6	M16/36	14	5.5	9	95	1"	1"	1650	174

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-15 for dimensions shown in these drawings.
4. Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Upright Mounting 9060 ▶ 9085

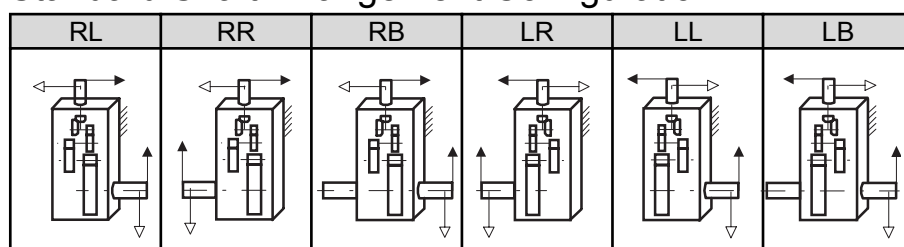
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

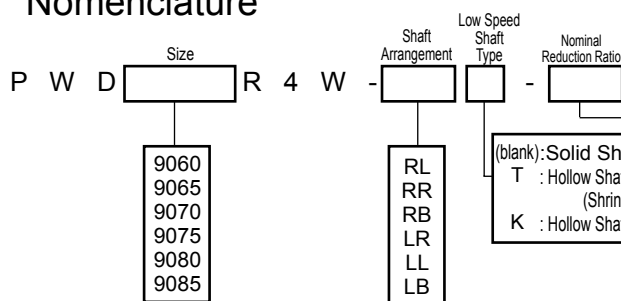
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9060		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9065		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9075		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick

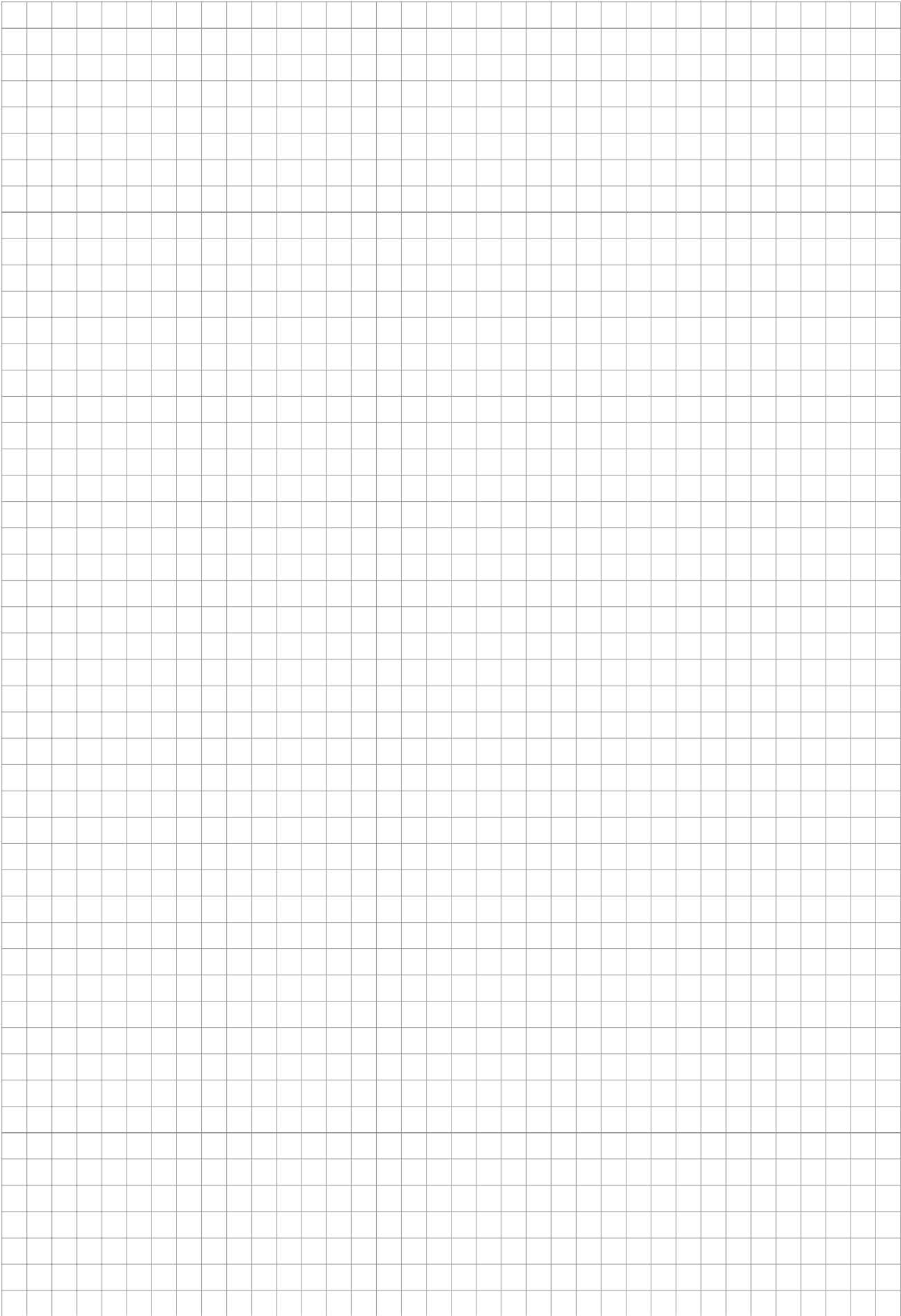


Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side

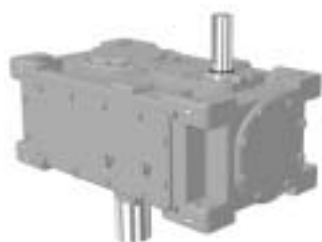




,Reducer: Parallel Shaft Horizontal Mounting>



<Reducer: Parallel Shaft Upright Mounting>



<Reducer: Parallel Shaft Vertical Mounting>

C

Reducer: Parallel shaft

Selection Tables	... C- 106
Allowable Loads	... C- 136
Dimension Sheets	... C- 144

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
6.3	Exact Reduction Ratio		6.257	6.193	6.314	6.049		6.470		6.188		6.246		6.429		6.609	
	1800	286	76	122	179	257		350		603		900		1430		1950	
	1500	238	64	102	149	223		305		530		792		1250		1710	
	1200	190	51	82	120	187		256		448		677		1050		1450	
	1000	159	43	68	100	162		222		388		588		884		1240	
	900	143	39	62	91	148		203		355		538		798		1120	
	750	119	32	51	76	125		174		302		462		668		943	
7.1	Exact Reduction Ratio		7.237	7.067	6.806	6.903		7.366		7.210		6.998		7.090		7.190	
	1800	254	62	100	161	241		349		559		900		1350		1830	
	1500	211	52	83	135	201		293		469		757		1130		1610	
	1200	169	42	67	108	162		235		377		610		914		1320	
	1000	141	35	56	90	136		197		316		511		766		1100	
	900	127	31	50	82	122		178		285		461		691		999	
	750	106	26.5	42	68	102		149		238		386		579		836	
8	Exact Reduction Ratio		7.889	7.616	8.118	7.869	7.778	7.691	7.956	8.062	7.875	7.759	8.033	7.733	8.167	7.835	8.111
	1800	225	61	99	140	187	219	257	311	350	517	603	781	900	1230	1430	1660
	1500	188	51	83	117	156	190	223	271	305	455	530	687	792	1030	1250	1450
	1200	150	41	67	94	126	154	187	227	256	378	448	571	677	836	1070	1200
	1000	125	34	56	78	105	129	162	195	222	317	388	478	588	700	932	1020
	900	113	31	50	71	95	116	148	176	203	286	355	432	538	632	841	923
	750	94	25.9	42	59	79	97	127	147	174	239	304	361	462	529	704	773
Dimension Tables	Horizontal	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-146	C-146	C-146	C-146	C-146	C-146	C-148
	Vertical	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-172	C-172	C-172	C-172	C-172	C-172	C-174
	Upright	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190	C-190

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	40	51	57	73	88	108	103	127	147	174	184	225	214	263	340	
				111	132	143	193	216	265	250	308	415	491	479	531	510	709	1048	
		1500	-	39	50	58	75	89	110	106	131	151	180	192	238	232	284	360	
				97	117	130	176	195	240	228	282	378	452	446	500	492	679	986	
		1200	-	38	49	58	75	88	110	106	131	151	182	196	245	240	296	370	
				83	101	115	156	171	213	202	251	337	405	404	456	452	629	901	
	6.3 ▼ 8	1000	-	36	47	56	74	86	108	104	130	149	180	195	245	241	299	371	
				71	86	100	136	148	185	176	220	294	355	356	405	402	562	799	
		900	-	35	46	55	73	85	107	103	128	147	178	193	243	240	298	369	
				66	81	94	128	139	176	166	208	277	336	337	385	382	537	761	
		750	-	33	44	53	70	81	103	99	124	142	173	188	239	235	293	362	
				57	70	82	113	122	154	146	183	245	298	300	343	342	481	680	
Dimension Tables	Double Reduction Vertical Type	1800	-	39	49	54	69	84	102	98	120	135	158	163	200	182	229	220	
		1500	-	38	49	56	72	86	106	102	125	142	168	182	219	210	258	277	
		1200	-	37	48	56	73	86	107	103	128	145	174	194	231	231	278	317	
		1000	-	36	46	55	72	85	106	102	127	144	174	195	235	239	285	330	
		900	-	35	45	54	71	83	105	101	126	143	173	193	235	240	286	334	
		750	-	33	43	52	69	80	101	98	122	139	169	188	232	235	284	336	
	Double Reduction Upright Type	6.3 ▼ 8	1800	-	32	40	45	59	70	86	82	102	118	139	147	180	171	211	
					89	106	115	154	173	212	200	246	332	393	383	425	408	567	
			1500	-	31	40	46	60	71	88	85	105	121	144	154	190	186	227	
					78	94	104	141	156	192	182	225	303	361	357	400	394	543	
			1200	-	30	39	46	60	71	88	85	105	121	146	157	196	192	237	
					66	81	92	125	137	170	162	201	269	324	323	365	361	503	
6.3 ▼ 8		1000	-	29	38	45	59	69	86	83	104	119	144	156	196	193	239		
				56	69	80	109	118	148	141	176	235	284	285	324	321	450		
		900	-	28	37	44	58	68	86	82	102	117	142	154	195	192	238		
				53	65	75	103	111	141	133	166	222	269	270	308	306	429		
		750	-	26	35	43	56	65	82	79	99	114	138	151	191	188	235		
				45	56	66	90	97	123	117	147	196	238	240	275	273	385		

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio		6.3	
6.460				6.203				Exact Reduction Ratio						
2970 *				3900 *				286 1800						
2610				3440 *				238 1500						
2160				2940				190 1200						
1810				2550				159 1000						
1630				2340				143 900						
1370				2000				119 750						
7.333	6.933	7.071	7.118	7.030	Exact Reduction Ratio							7.1		
1950	2790 *	2970 *	3460 *	3910 *	254 1800									
1710	2380	2610	3050 *	3440 *	211 1500									
1450	1920	2230	2600	2940	169 1200									
1240	1610	1930	2240	2550	141 1000									
1140	1450	1760	2020	2340	127 900									
978	1220	1480	1690	2000	106 750									
7.956	8.222	7.672	8.059	8.042	Exact Reduction Ratio							8		
1830	2480 *	2790 *	3200 *	3460 *	225 1800									
1610	2120	2450	2820 *	3050 *	188 1500									
1360	1710	2080	2350	2610	150 1200									
1170	1430	1740	2020	2260	125 1000									
1060	1290	1570	1850	2070	113 900									
891	1080	1310	1580	1780	94 750									
C-148	C-148	C-148	C-148	C-148	Horizontal							Dimension Tables		
C-174	C-174	C-174	C-174	C-174	Vertical Upright									

1. _____

For ⌘ marked values, the forced oil lubrication is required at continuous operation.

2. _____

Consult us when the high speed shaft speed is over 1800r/min.

3. _____

When the high speed shaft speed is not shown in the table, find it by the interpolation method.

4. _____

When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

PN = P750

×

N

750

5. _____

Shown in the table are the ratings for the slow speed shaft.

6. _____

Refer to C42-C49 for the allowable radial and axial load on each shaft.

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
376	415	471	504	575							-	1800	Double Reduction Horizontal Type	20	1.00	1.00
1113	1179	1291	1337	1471							1	1500		30	0.85	0.87
401	454	509	567	633							1	1200		40	0.70	0.73
1056	1148	1241	1336	1443							1	1000		50	0.55	0.60
415	471	533	610	673							1	900				
970	1056	1153	1277	1362							1	750				
417	474	539	621	687							1		6.3 ▼ 8			
864	942	1034	1152	1231							1					
415	472	538	621	689							1					
823	898	988	1103	1182							1					
408	465	532	616	685							1					
737	805	889	995	1069							1					

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor		
256	221	280	188	258											-	1800	Double Reduction Vertical Type
311	311	367	339	407							-	1500	30				
351	382	432	452	515							-	1200	40				
369	412	463	507	567							-	1000	50				
375	419	474	529	587							-	900					
378	425	484	549	608							-	750					

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor		
															-	1800	Double Reduction Upright Type
											-	1500	30				
											-	1200	40				
											-	1000	50				
											-	900					
											-	750					

Notes

1. _____
Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)

2. _____
The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.

3. _____
When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 9 ▶ 11.2

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
9	Exact Reduction Ratio		9.125	8.690	8.750	8.556	8.875	8.750	9.057	9.058	9.176	8.874	9.000	8.677	9.007	8.603	8.824
	1800	200	49	81	126	170	188	253	286	350	443	583	708	900	1070	1410	1560
	1500	167	41	68	105	142	158	212	239	305	371	489	593	792	900	1180	1340
	1200	133	33	55	85	114	127	170	192	246	298	393	477	647	725	956	1080
	1000	111	28.0	46	71	96	106	142	161	206	250	329	400	542	607	801	907
	900	100	25.3	41	64	86	95	128	145	186	225	297	361	489	548	723	818
	750	83	21.1	34	53	72	80	107	121	155	188	249	302	409	458	605	685
10	Exact Reduction Ratio		10.143	9.722	9.944	10.118	9.528	9.889	10.156	9.914	9.750	9.875	9.665	9.945	9.905	9.953	10.342
	1800	180	47	78	115	146	188	219	259	311	452	517	689	781	1020	1230	1380
	1500	150	40	65	96	122	158	190	226	271	382	455	593	687	861	1080	1180
	1200	120	32	52	77	98	127	159	184	227	307	384	477	588	693	881	964
	1000	100	26.9	44	64	82	106	136	154	197	257	333	399	505	580	738	807
	900	90	24.2	39	58	74	95	123	139	180	232	304	360	456	524	666	728
	750	75	20.2	33	48	62	80	103	116	155	194	255	301	381	438	558	610
11.2	Exact Reduction Ratio		11.732	11.094	10.719	11.000	10.872	11.250	11.562	11.138	11.361	11.294	10.829	11.160	10.924	10.929	11.250
	1800	161	39	64	103	133	154	198	225	299	360	462	592	751	891	1120	1260
	1500	134	32	53	86	111	129	166	188	250	301	387	495	629	746	941	1060
	1200	107	26.2	43	69	89	104	133	151	201	242	311	399	507	600	758	855
	1000	89	21.9	36	58	75	87	111	127	168	202	260	334	424	503	635	716
	900	80	19.7	32	52	67	78	100	114	152	183	235	301	383	453	573	646
	750	67	16.5	27.3	43	56	65	84	95	127	153	196	252	320	379	479	540
Dimension Tables	Horizontal	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-146	C-146	C-146	C-146	C-146	C-146	C-148
	Vertical	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-172	C-172	C-172	C-172	C-172	C-172	C-174
	Upright	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	35 97	46 119	53 134	67 175	81 199	100 245	99 240	124 300	141 397	171 482	180 469	222 523	216 515	266 716	333 1024	
		1500	-	34 84	45 104	53 120	67 158	81 177	100 218	100 215	126 271	143 358	174 437	185 431	229 481	226 479	279 669	344 942	
		1200	-	32 71	43 89	52 105	66 138	79 154	99 192	98 188	125 239	142 315	173 385	187 385	231 431	230 433	286 607	347 844	
		1000	-	31 60	41 76	51 90	65 119	77 132	96 165	96 163	122 207	139 273	170 336	185 337	229 378	229 382	285 536	344 741	
		900	-	30 56	40 70	50 85	63 112	75 124	94 154	94 153	120 195	136 257	167 316	182 319	226 357	227 362	283 509	340 702	
		750	-	28 48	38 61	48 74	61 98	72 108	90 135	90 133	116 171	131 226	162 279	177 282	220 316	222 322	276 453	331 622	
	Dimension Tables	Double Reduction Vertical Type	1800	-	35	46	53	64	81	96	98	118	139	158	180	203	216	238	241
			1500	-	34	45	53	65	81	97	100	121	143	164	185	221	226	266	284
			1200	-	32	43	52	65	79	97	98	122	142	166	187	231	230	285	306
			1000	-	31	41	51	63	77	94	96	120	139	165	185	229	229	285	313
			900	-	30	40	50	62	75	93	94	118	136	163	182	226	227	283	314
			750	-	28	38	48	60	72	89	90	115	131	159	177	220	222	276	311
9 ▼ 11.2		1800	-	28 78	36 96	42 107	53 140	65 159	80 196	79 192	99 240	113 317	137 386	144 375	177 419	173 412	213 573		
		1500	-	27 68	36 84	43 96	54 126	65 141	80 174	80 172	101 217	114 287	139 349	148 345	183 385	181 383	224 535		
		1200	-	26 57	34 71	42 84	53 110	64 123	79 153	79 150	100 191	113 252	138 308	149 308	185 345	184 346	228 485		
		1000	-	25 48	33 61	41 72	52 95	62 106	77 132	77 130	98 166	111 219	136 268	148 270	183 302	183 305	228 429		
		900	-	24 45	32 56	40 68	51 89	60 99	75 123	75 122	96 156	109 206	134 252	146 255	181 286	182 290	226 407		
		750	-	22 38	30 48	38 59	49 78	58 86	72 108	72 107	93 137	105 181	130 223	142 225	176 253	177 257	221 362		

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 9 ► 11.2

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
9.000	8.824	9.000	9.248	9.134							Exact Reduction Ratio		1. _____
1660	2250 *	2480 *	2840 *	3200 *							200	1800	9
1450	1890	2190	2500 *	2820 *							167	1500	
1200	1520	1820	2070	2350							133	1200	
1030	1270	1550	1740	2020							111	1000	
948	1150	1390	1570	1850							100	900	
813	965	1170	1310	1580							83	750	
9.765	9.984	9.765	9.774	10.449							Exact Reduction Ratio		2. _____
1560	2090 *	2330 *	2780 *	2850 *							180	1800	10
1370	1760	2040	2400 *	2500 *							150	1500	
1130	1410	1640	1990	2090							120	1200	
966	1180	1380	1700	1790							100	1000	
872	1070	1240	1560	1640							90	900	
730	897	1040	1310	1390							75	750	
11.475	10.714	10.929	11.216	11.078							Exact Reduction Ratio		3. _____
1380	1860 *	2150 *	2470 *	2780 *							161	1800	11.2
1180	1560	1850	2130 *	2400 *							134	1500	
981	1260	1530	1720	1990							107	1200	
842	1050	1280	1440	1710							89	1000	
770	954	1150	1300	1560							80	900	
651	799	970	1090	1340							67	750	
C-148	C-148	C-148	C-148	C-148							Horizontal Vertical Upright	Dimension Tables	4. _____
C-174	C-174	C-174	C-174	C-174									5. _____
													6. _____

1. _____
For ※ marked values, the forced oil lubrication is required at continuous operation.
2. _____
Consult us when the high speed shaft speed is over 1800r/min.
3. _____
When the high speed shaft speed is not shown in the table, find it by the interpolation method.
4. _____
When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.
- $$PN = P_{750} \times \frac{N}{750}$$
5. _____
Shown in the table are the ratings for the slow speed shaft.
6. _____
Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				Without Fan	With Fan	
365	423	476	511	578							-	1800	Double Reduction Horizontal Type	20	1.00	1.00
1079	1200	1303	1354	1480							1			30	0.85	0.87
374	443	496	544	619							-			40	0.70	0.73
986	1119	1210	1282	1411							1			50	0.55	0.60
376	452	504	563	644							-	1200	9 ▼ 11.2			
879	1015	1090	1178	1302							1					
371	451	500	565	646							-					
770	897	960	1049	1157							1					
367	448	496	563	642							-	900	11.2			
728	852	910	1000	1102							1					
357	438	484	554	631							-					
644	759	809	896	985							1					
											-	1800	Double Reduction Vertical Type			
274	279	326	276	338							-	1500		9		
315	344	388	379	441							-	1200		▼		
335	384	434	456	518							-	1000		11.2		
340	400	448	485	554							-	900				
340	404	451	495	566							-	750				
337	405	451	502	575							-					
											-	1800	Double Reduction Upright Type			
											-	1500		9		
											-	1200		▼		
											-	1000		11.2		
											-	900				
											-	750				

Notes

1. _____
Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)

2. _____
The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.

3. _____
When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 12.5 ▶ 16

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
12.5	Exact Reduction Ratio		12.710	12.407	12.785	12.394	12.485	12.114	12.594	12.656	12.206	12.226	12.600	11.966	12.762	12.071	12.978
	1800	144	38	61	89	120	145	191	222	259	366	452	547	689	804	1060	1110
	1500	120	32	51	75	100	121	165	185	226	307	398	458	607	673	908	959
	1200	96	25.8	41	60	80	97	133	149	190	246	328	368	504	542	731	773
	1000	80	21.5	34	50	67	81	111	125	164	206	274	308	422	453	612	647
	900	72	19.4	31	45	61	73	101	112	148	186	247	278	380	409	552	584
	750	60	16.2	26.2	38	51	61	84	94	124	155	207	232	318	342	462	488
14	Exact Reduction Ratio		14.701	14.158	13.781	13.475	14.247	13.781	14.337	14.219	14.224	13.983	14.118	13.428	14.076	13.255	14.118
	1800	129	31	50	81	109	118	162	183	235	289	375	457	628	696	931	1010
	1500	107	26.1	42	67	91	99	136	153	197	242	314	383	526	583	780	851
	1200	86	21.0	34	54	73	79	109	123	158	194	252	308	423	469	628	685
	1000	71	17.5	28.5	45	61	66	91	102	132	162	211	257	354	392	526	573
	900	64	15.8	25.7	41	55	60	82	92	119	146	190	232	319	354	474	517
	750	54	13.2	21.4	34	46	50	69	77	100	122	159	194	267	296	397	433
16	Exact Reduction Ratio		15.778	15.340	15.997	15.935	15.556	15.874	16.504	15.694	15.996	15.306	15.750	15.600	15.556	15.554	16.222
	1800	113	31	50	72	94	116	152	170	237	281	389	440	565	663	846	920
	1500	94	25.9	42	60	78	97	127	142	198	235	327	368	484	555	709	773
	1200	75	20.8	33	48	63	78	102	114	159	189	263	296	389	446	571	622
	1000	63	17.4	28.2	40	52	65	85	95	133	158	220	248	325	373	478	520
	900	56	15.7	25.4	36	47	59	77	86	120	142	198	223	293	337	431	469
	750	47	13.1	21.2	30	39	49	64	72	100	119	166	187	245	281	360	392
Dimension Tables	Horizontal Vertical Upright	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-146	C-146	C-146	C-146	C-146	C-146	C-148
		C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-172	C-172	C-172	C-172	C-172	C-172	C-174
		C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190	C-190

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	30 85	42 111	51 130	63 167	74 182	95 233	89 214	116 281	125 353	159 448	163 425	210 495	206 489	261 701	311 959	
		1500	-	29 72	41 95	50 113	63 148	73 159	94 205	87 188	115 248	124 311	159 399	164 380	211 444	209 442	265 635	315 862	
		1200	-	27 60	39 80	48 96	62 129	70 135	91 176	85 162	112 214	121 268	155 345	161 332	209 389	208 390	264 561	311 757	
		1000	-	26 50	37 67	46 81	60 110	67 115	88 151	81 138	108 183	116 230	150 296	157 286	204 336	204 339	259 488	304 656	
		900	-	25 46	36 62	44 75	59 103	65 107	85 140	79 128	106 171	113 214	147 278	154 269	200 316	200 319	255 460	299 617	
		750	-	23 39	33 53	42 64	56 90	62 92	81 121	75 111	101 149	108 186	141 243	147 235	192 277	193 280	247 404	288 542	
	Dimension Tables	Double Reduction Vertical Type	1800	-	31	43	52	63	75	95	90	116	130	159	170	210	216	261	258
			1500	-	29	41	51	63	74	95	88	115	127	159	169	211	220	265	274
			1200	-	27	39	48	62	71	92	85	112	123	155	165	209	216	264	283
			1000	-	26	37	46	60	67	88	82	108	118	150	160	204	210	259	283
			900	-	25	36	45	59	65	86	80	106	115	147	156	200	205	255	281
			750	-	23	33	42	56	62	81	76	101	109	141	149	192	197	247	274
Double Reduction Upright Type		12.5 ▼ 16	1800	-	24 68	34 89	41 104	51 133	59 145	76 186	71 171	93 225	100 283	127 359	130 340	168 396	164 391	209 561	
			1500	-	23 58	33 76	40 90	51 119	58 127	75 164	70 151	92 198	99 249	127 319	131 304	169 355	167 354	212 508	
			1200	-	22 48	31 64	38 77	50 103	56 108	73 141	68 129	90 171	96 215	124 276	129 266	167 311	166 312	211 449	
			1000	-	20 40	29 54	37 65	48 88	54 92	70 121	65 110	87 147	93 184	120 237	125 229	163 269	163 271	207 390	
			900	-	20 37	28 50	35 60	47 83	52 85	68 112	63 103	85 137	91 171	118 222	123 215	160 253	160 255	204 368	
			750	-	18 31	27 42	33 51	45 72	49 74	65 97	60 89	81 119	86 149	113 194	118 188	154 221	154 224	197 324	

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 12.5 ► 16

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes			
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136							
12.450	12.950	11.857	12.434	12.672							Exact Reduction Ratio		12.5	1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.			
1290	1630 ※	2020 ※	2240 ※	2470 ※							144	1800		14	2. _____ Consult us when the high speed shaft speed is over 1800r/min.		
1110	1360	1690 ※	1920 ※	2130 ※							120	1500			16	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.	
910	1100	1360	1590	1770							96	1200				16	4. _____ When the high speed shaft speed (N) is lower than 750r/min find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$
762	922	1140	1360	1520							80	1000					5. _____ Shown in the table are the ratings for the slow speed shaft.
688	832	1030	1240	1370							72	900					
576	696	864	1040	1150							60	750					
14.400	13.897	14.175	14.268	14.092							Exact Reduction Ratio		14				
1110	1450 ※	1700 ※	1990 ※	2240 ※							129	1800		14			
958	1210	1460	1690 ※	1920 ※							107	1500			16		
794	980	1190	1360	1590							86	1200				16	
681	821	996	1140	1370							71	1000					5. _____ Shown in the table are the ratings for the slow speed shaft.
623	740	899	1030	1250							64	900					
521	619	752	862	1070							54	750					
15.624	15.961	15.379	15.325	16.121							Exact Reduction Ratio		16				
1050	1330 ※	1570 ※	1870 ※	2000 ※							113	1800		16			
902	1110	1310	1600 ※	1710 ※							94	1500			16		
730	898	1060	1330	1420							75	1200				16	
611	752	887	1120	1200							63	1000					5. _____ Shown in the table are the ratings for the slow speed shaft.
551	678	800	1010	1080							56	900					
461	567	670	850	911							47	750					
C-148	C-148	C-148	C-148	C-148							Horizontal Vertical Upright	Dimension Tables					
C-174	C-174	C-174	C-174	C-174													

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Double Reduction Horizontal Type
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
359	399	462	505	565							-	1800	12.5 ▼ 16	Double Reduction Vertical Type
1064	1133	1265	1338	1446							1	1800		
364	405	471	522	585							-	1500		
959	1024	1149	1230	1332							1	1500		
362	404	471	527	592							-	1200		
847	905	1020	1103	1197							1	1200		
355	396	464	522	588							-	1000	12.5 ▼ 16	Double Reduction Vertical Type
736	788	890	968	1053							1	1000		
350	390	458	516	582							-	900		
694	743	841	916	998							1	900		
338	378	444	502	568							-	750		
611	654	743	812	887							1	750		
289	315	344	343	373							-	1800	12.5 ▼ 16	Double Reduction Vertical Type
316	342	392	406	452							-	1500		
328	359	417	449	504							-	1200		
329	362	423	463	521							-	1000		
328	361	423	466	525							-	900		
322	356	418	464	525							-	750		
											-	1800	12.5 ▼ 16	Double Reduction Upright Type
											1	1800		
											-	1500		
											1	1500		
											-	1200		
											1	1200		
											-	1000	12.5 ▼ 16	Double Reduction Upright Type
											1	1000		
											-	900		
											1	900		
											-	750		
											1	750		

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes	
1. _____	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
2. _____	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
3. _____	When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																	
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090			
18	Exact Reduction Ratio		18.250	17.503	17.243	17.325	17.750	18.059	18.789	17.631	18.640	17.506	17.647	17.506	17.157	17.078	17.647			
	1800	100	25.3	41	65	85	95	124	140	191	222	301	368	485	574	728	818			
	1500	83	21.1	34	54	71	80	104	117	159	185	252	308	406	481	610	685			
	1200	67	17.0	27.6	43	57	64	84	94	128	149	203	247	326	386	490	551			
	1000	56	14.2	23.1	36	48	53	70	78	107	124	169	207	273	323	410	461			
	900	50	12.8	20.8	32	43	48	63	71	96	112	153	186	246	291	370	416			
	750	42	10.7	17.4	27.5	36	40	52	59	81	94	128	156	206	244	310	348			
20	Exact Reduction Ratio		19.938				19.778			20.566			20.059			19.500			18.958	
	1800	90	*	*	*	75	*	123	*	182	*	300	*	465	*	699	*			
	1500	75	*	*	*	63	*	103	*	152	*	251	*	389	*	585	*			
	1200	60	*	*	*	50	*	82	*	122	*	202	*	313	*	470	*			
	1000	50	*	*	*	42	*	69	*	102	*	169	*	261	*	393	*			
	900	45	*	*	*	38	*	62	*	92	*	152	*	236	*	355	*			
	750	38	*	*	*	31	*	52	*	77	*	127	*	197	*	297	*			
22.4	Exact Reduction Ratio		21.676				22.500			23.105			22.941			21.882			20.817	
	1800	80	*	*	*	68	*	100	*	146	*	231	*	390	*	601	*			
	1500	67	*	*	*	57	*	84	*	122	*	193	*	326	*	503	*			
	1200	54	*	*	*	46	*	67	*	98	*	155	*	262	*	404	*			
	1000	45	*	*	*	38	*	56	*	82	*	130	*	219	*	338	*			
	900	40	*	*	*	34	*	51	*	74	*	117	*	198	*	305	*			
	750	33	*	*	*	29.1	*	42	*	62	*	98	*	165	*	255	*			
Dimension Tables	Horizontal Vertical Upright	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-144	C-146	C-146	C-146	C-146	C-146	C-146	C-148			
		C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-170	C-172	C-172	C-172	C-172	C-172	C-172	C-174		
		C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190			

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	29 81	41 106	50 127	60 156	66 162	83 203	88 213	106 255	127 358	153 431	166 433	194 459	209 498	247 664	309 950	
		1500	-	28 69	39 91	49 110	58 135	65 142	81 177	87 187	104 223	126 316	150 376	167 387	194 407	213 450	249 595	311 854	
		1200	-	26 58	37 77	47 93	55 114	63 121	78 151	84 161	100 190	122 272	145 323	164 338	189 353	211 397	245 521	308 750	
		1000	-	25 48	35 65	45 79	52 96	60 103	74 127	81 137	96 162	118 233	140 276	160 291	184 303	207 345	239 450	301 650	
		900	-	24 44	34 60	43 73	51 89	59 97	72 118	79 128	93 151	115 217	136 257	156 273	180 284	204 325	235 423	296 611	
		750	-	22 37	32 51	41 63	48 76	56 84	68 102	75 110	88 130	110 188	129 222	150 239	172 247	196 285	226 370	285 536	
	18 ▼ 22.4																		
Dimension Tables	Double Reduction Vertical Type	1800	-	29	41	51	60	62	85	90	107	131	149	173	201	224	262	256	
		1500	-	28	40	49	58	62	82	88	105	129	146	172	199	224	260	272	
		1200	-	26	37	47	55	61	79	85	100	124	140	168	193	219	253	280	
		1000	-	25	35	45	53	59	75	82	96	120	135	162	186	213	246	280	
		900	-	24	34	43	51	57	73	79	93	116	131	159	182	209	240	278	
		750	-	22	32	41	48	55	68	75	88	111	124	152	174	200	230	272	
	18 ▼ 22.4																		
Double Reduction Upright Type	1800	-	23	32	40	48	53	66	71	84	102	122	133	156	168	198			
		-	65	85	102	125	130	163	171	204	287	345	346	367	399	532			
		1500	-	22	31	39	46	52	65	70	83	101	120	133	155	170	199		
		-	55	73	88	108	114	141	150	178	253	301	310	326	360	476			
		1200	-	21	30	37	44	50	62	67	80	98	116	131	152	169	196		
		-	46	61	75	91	97	121	129	152	218	258	270	282	318	417			
	18 ▼ 22.4	1000	-	20	28	36	42	48	59	65	76	94	112	128	147	166	191		
		-	38	52	63	77	83	102	110	129	186	221	233	243	276	360			
		900	-	19	27	35	40	47	58	63	74	92	109	125	144	163	188		
		-	35	48	59	71	77	95	102	121	174	206	219	227	260	339			
		750	-	18	25	32	38	45	54	60	70	88	103	120	138	157	181		
		-	30	41	50	61	67	81	88	104	151	178	191	198	228	296			

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
18.000	17.128	17.471	17.585	17.368							Exact Reduction Ratio	
920	1180 *	1420 *	1650 *	1870 *							100	1800
789	994	1200	1380 *	1610 *							83	1500
654	799	971	1110	1330							67	1200
555	669	812	931	1140							56	1000
501	603	733	840	1040							50	900
419	505	613	703	899							42	750
19.529		18.955		19.869							Exact Reduction Ratio	
867	*	1280 *	*	1670 *							90	1800
730	*	1070	*	1430 *							75	1500
587	*	864	*	1170							60	1200
491	*	723	*	983							50	1000
443	*	652	*	887							45	900
370	*	546	*	742							38	750
											Exact Reduction Ratio	
*	*	*	*	*							80	1800
*	*	*	*	*							67	1500
*	*	*	*	*							54	1200
*	*	*	*	*							45	1000
*	*	*	*	*							40	900
*	*	*	*	*							33	750
C-148	C-148	C-148	C-148	C-148							Horizontal Vertical Upright	Dimension Tables
C-174	C-178	C-174	C-174	C-174								

* marked models are triple reduction units. Refer to C-114 and C-115.

Notes

- For * marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
336	402	437	485	537							-	1800
995	1141	1198	1285	1375							1	1500
338	408	441	500	550							-	1500
889	1032	1076	1179	1252							1	1200
332	406	437	504	551							-	1200
777	911	946	1056	1114							1	1000
324	399	428	499	543							-	1000
672	793	821	926	973							1	900
318	393	421	493	536							-	900
631	747	773	876	920							1	750
306	380	406	480	521							-	750
553	658	679	776	813							1	750
284	319	355	349	402							-	1800
298	346	380	397	447							-	1500
305	362	393	431	478							-	1200
303	365	395	444	488							-	1000
300	364	393	446	489							-	900
293	358	385	444	485							-	750
											-	1800
											-	1500
											-	1200
											-	1000
											-	900
											-	750

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
20	Exact Reduction Ratio		19.894	19.681	20.280		19.884		19.590		18.987		20.067		20.054		20.585
	1800	90	26.4	39	61	*	98	*	154	*	254	*	356	*	554	*	758
	1500	75	22.1	33	51	*	82	*	129	*	213	*	310	*	463	*	650
	1200	60	17.7	27.8	41	*	66	*	103	*	171	*	250	*	372	*	527
	1000	50	14.8	23.6	34	*	55	*	86	*	143	*	209	*	311	*	441
	900	45	13.3	21.2	30	*	49	*	78	*	129	*	188	*	281	*	397
	750	38	11.1	17.7	25.8	*	41	*	65	*	107	*	157	*	235	*	332
22.4	Exact Reduction Ratio		23.011	22.457	21.860		22.689		22.303		22.125		22.484		22.119		22.394
	1800	80	21.5	34	55	*	80	*	127	*	201	*	310	*	480	*	694
	1500	67	18.0	28.8	46	*	67	*	106	*	168	*	260	*	401	*	581
	1200	54	14.4	23.1	37	*	54	*	85	*	135	*	208	*	322	*	467
	1000	45	12.1	19.3	30	*	45	*	71	*	112	*	174	*	269	*	391
	900	40	10.9	17.4	27.9	*	40	*	64	*	101	*	157	*	243	*	352
	750	33	9.1	14.5	23.3	*	34	*	53	*	85	*	131	*	203	*	294
25	Exact Reduction Ratio		24.696	24.332	25.374	25.277	24.774	25.281	25.673	24.413	24.883	23.810	25.083	24.844	24.444	24.441	25.732
	1800	72	21.4	32	49	64	79	100	118	165	195	261	299	356	456	572	624
	1500	60	17.8	28.2	41	53	66	83	98	138	163	226	250	310	382	488	527
	1200	48	14.3	22.9	32	43	53	67	79	110	131	182	201	260	307	392	423
	1000	40	12.0	19.1	27.5	35	44	55	66	92	109	152	168	220	256	328	354
	900	36	10.8	17.2	24.8	32	40	50	59	83	99	137	151	199	231	296	319
	750	30	9.0	14.4	20.7	27.0	33	41	50	69	82	114	126	166	193	247	267
Dimension Tables	Horizontal Vertical Upright	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-152	C-152	C-152	C-152	C-152	C-152	C-154
		C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-178	C-178	C-178	C-178	C-178	C-178	C-180
		C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-194	C-194	C-194	C-194	C-194	C-194	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-	24 66	36 93	42 78	54 114	63 155	77 189	77 187	97 234	107 210	131 257	145 269	179 309	184 437	225 605	235 556	
		1500	-	23 58	35 81	42 68	53 99	62 135	76 166	76 164	95 205	106 185	130 227	145 238	178 273	185 391	226 540	238 501	
		1200	-	22 49	34 70	40 58	51 85	60 115	73 141	74 141	92 176	104 160	126 195	142 207	175 237	183 343	223 473	237 443	
		1000	-	21 41	32 59	38 50	49 72	57 98	70 120	71 121	89 151	101 138	123 169	138 179	170 204	179 298	217 409	233 386	
		900	-	20 38	31 55	37 46	47 67	56 91	68 112	70 113	87 141	98 129	120 158	135 168	166 192	176 280	214 385	229 364	
		750	-	19 33	30 48	36 40	45 58	53 79	64 96	67 98	83 122	94 113	115 137	130 147	160 168	170 247	206 338	223 322	
	Dimension Tables	Triple Reduction Vertical Type	1800	-	22	33	40	51	60	73	73	91	100	122	135	167	168	206	212
			1500	-	22	33	40	50	59	73	73	91	101	123	137	169	173	212	221
			1200	-	21	32	39	49	58	70	71	89	100	122	136	168	174	212	225
			1000	-	21	31	37	47	56	68	69	87	97	119	134	165	172	210	223
			900	-	20	31	37	46	55	66	68	85	96	117	132	162	170	207	222
			750	-	19	29	35	44	52	63	65	81	92	113	127	156	166	201	217
Selection Tables	Triple Reduction Upright Type	1800	-	24 66	36 93	42 78	54 113	69 168	77 189	76 185	96 231	106 208	131 257	144 266	178 306	182 434	223 601		
		1500	-	23 57	35 81	41 68	53 99	67 147	76 166	76 163	94 203	105 184	130 227	144 236	177 271	184 389	225 537		
		1200	-	22 49	34 70	40 58	51 85	65 126	73 141	73 140	92 175	103 159	126 195	141 206	174 236	182 342	222 471		
		1000	-	21 41	32 59	38 50	48 72	62 107	70 120	71 120	89 150	100 137	123 169	137 178	169 203	178 297	217 408		
		900	-	20 38	31 55	37 46	47 67	61 100	68 112	69 112	86 140	98 129	120 158	135 167	166 191	175 280	213 384		
		750	-	19 33	30 48	35 40	45 58	58 86	64 96	66 98	83 122	94 112	115 137	130 146	159 167	170 246	206 338		

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio				
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136							
20.812		19.984									Exact Reduction Ratio			20			
*	1100	*	1500	*							90	1800					
*	922	*	1290	*							75	1500					
*	742	*	1070	*							60	1200					
*	620	*	919	*							50	1000					
*	559	*	838	*							45	900					
*	468	*	701	*							38	750					
22.841	22.335	22.781	22.930	22.648						21.793	21.793	Exact Reduction Ratio			22.4		
758	981	1140	1340	1500								80	1800				
650	821	982	1140	1290						3290 [*]	3430 [*]	67	1500				
539	660	801	919	1070						2650 [*]	2840 [*]	54	1200				
462	552	670	769	919						2220 [*]	2440 [*]	45	1000				
423	498	605	693	841						2000	2230	40	900				
355	416	506	580	708						1670	1910	33	750				
24.782	25.651	24.717	24.630	25.908	25.312						24.930	24.930	Exact Reduction Ratio			25	
713	898	1060	1250	1340	1590								72	1800			
612	752	888	1080	1150	1400						2890 [*]	3060 [*]	60	1500			
497	604	714	895	954	1190						2320 [*]	2530 [*]	48	1200			
416	505	597	757	812	1050						1940 [*]	2170 [*]	40	1000			
375	456	538	683	732	955						1750	1990	36	900			
313	381	450	571	612	796						1470	1710	30	750			
C-154	C-154	C-154	C-154	C-154	C-156						C-158	C-158	Horizontal	Dimension Tables			
C-180	C-180	C-180	C-180	C-180													
											Vertical						
											Upright						

* marked models are double reduction units. Refer to C-112 and C-113.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
264 603	296 651	333 713	391 813	429 867	481 794				663 1095	663 1095	- 1	1800	Triple Reduction Horizontal Type
267 545	301 590	340 647	399 738	436 784	486 801				701 1157	701 1157	- 1	1500	
266 481	301 524	340 575	397 653	435 694	481 794				723 1193	723 1193	- 1	1200	
262 419	297 458	336 503	391 569	428 605	472 779				726 1199	726 1199	- 1	1000	
258 396	294 433	332 475	386 538	423 572	465 768				724 1195	724 1195	- 1	900	
250 349	285 383	322 421	375 475	410 506	451 744				714 1178	714 1178	- 1	750	20 ▼ 25
											-	1800	Triple Reduction Vertical Type
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	
											- 1 - 1 - 1 - 1 - 1	1800 1500 1200 1000 900 750	Triple Reduction Upright Type 20 ▼ 25

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
28	Exact Reduction Ratio		28.565	27.764	27.350	27.481	28.269	28.761	29.227	27.426	28.995	27.231	28.105	27.880	26.961	26.838	27.992
	1800	64	17.4	28.0	44	58	65	84	97	132	154	209	249	329	395	502	558
	1500	54	14.5	23.4	37	48	54	70	81	111	129	175	208	275	330	420	467
	1200	43	11.7	18.8	29.7	39	43	56	65	89	103	140	167	221	265	337	375
	1000	36	9.7	15.7	24.8	32	36	47	54	74	86	117	140	185	222	282	314
	900	32	8.8	14.1	22.3	29.5	32	42	49	67	78	106	126	167	200	254	283
	750	27	7.3	11.8	18.6	24.6	27	35	41	56	65	88	105	139	167	212	236
31.5	Exact Reduction Ratio		31.401	31.905	32.876	31.625	31.213	31.498	30.855	31.992	29.905	31.202	31.500	31.056	31.601	29.792	31.855
	1800	57	16.9	26.1	38	51	63	81	98	126	163	208	239	315	355	481	511
	1500	48	14.1	21.8	31	42	52	68	82	105	136	174	200	264	297	402	427
	1200	38	11.3	17.4	25.5	34	42	54	66	84	109	140	160	212	238	323	343
	1000	32	9.4	14.5	21.3	28.8	35	45	55	71	91	117	134	177	199	270	287
	900	29	8.5	13.1	19.2	25.9	31	40	49	64	82	105	121	159	179	244	259
	750	24	7.1	10.9	16.0	21.7	26.6	34	41	53	69	88	101	133	150	203	216
35.5	Exact Reduction Ratio		36.321	36.406	35.438	34.383	35.617	35.833	35.127	35.942	34.848	35.686	35.294	34.850	34.854	32.712	34.652
	1800	51	13.7	21.4	34	46	51	68	81	101	128	160	199	265	307	413	453
	1500	42	11.5	17.9	28.6	39	43	57	68	85	107	134	167	221	257	346	379
	1200	34	9.2	14.4	23.0	31	34	45	54	68	86	107	134	178	206	278	304
	1000	28	7.7	12.0	19.2	26.2	29.0	38	45	57	72	90	112	148	172	232	254
	900	25	6.9	10.8	17.3	23.6	26.1	34	41	51	65	81	101	134	155	209	229
	750	21	5.8	9.0	14.4	19.7	21.8	28.8	34	43	54	67	84	112	130	175	191
Dimension Tables	Horizontal Vertical Upright	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-152	C-152	C-152	C-152	C-152	C-152	C-154
		C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-178	C-178	C-178	C-178	C-178	C-178	C-180
		C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-194	C-194	C-194	C-194	C-194	C-194	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-	21 60	32 84	39 72	49 104	58 142	70 172	74 179	92 222	104 203	124 243	140 258	171 295	177 422	218 586	230 545	
		1500	-	21 51	31 72	38 62	48 91	56 122	69 150	72 156	90 194	102 178	123 215	137 226	170 260	176 372	218 521	229 484	
		1200	-	19 43	30 61	36 52	46 77	53 103	66 128	69 132	87 166	98 152	119 184	133 194	165 225	171 322	214 454	225 421	
		1000	-	18 36	28 51	34 44	44 65	51 87	64 110	66 112	84 142	94 129	115 158	128 166	161 193	166 277	208 392	219 363	
		900	-	18 33	27 48	33 41	43 61	49 81	62 102	64 104	82 132	92 121	113 148	125 155	157 181	162 259	205 369	215 341	
		750	-	17 28	26 41	31 35	41 52	46 69	59 88	61 90	78 115	87 104	108 129	119 135	151 158	156 226	197 323	206 298	
	Dimension Tables	Triple Reduction Vertical Type	1800	-	21	31	37	47	55	68	70	87	98	117	132	161	165	201	211
			1500	-	20	30	36	46	54	67	69	86	97	117	131	162	167	205	217
			1200	-	19	29	35	45	52	65	67	84	95	115	129	160	165	205	216
			1000	-	18	27	33	43	50	62	65	82	92	112	125	156	161	202	212
			900	-	17	27	32	42	48	61	63	80	90	110	122	153	158	199	209
			750	-	16	25	30	40	46	58	60	76	86	106	117	148	152	193	202
Triple Reduction Upright Type		1800	-	21 60	32 84	39 72	49 104	65 158	70 172	74 179	91 220	104 203	124 243	140 258	170 292	177 422	216 582		
		1500	-	21 51	31 72	38 62	48 90	62 136	69 150	72 156	89 193	102 178	123 215	137 226	169 258	176 372	216 518		
		1200	-	19 43	30 61	36 52	46 77	59 115	66 128	69 132	86 165	98 152	119 184	133 194	165 224	171 322	213 452		
		1000	-	18 36	28 51	34 44	44 65	56 97	64 110	66 112	83 141	94 129	115 158	128 166	160 193	166 277	208 391		
		900	-	18 33	27 48	33 41	43 61	55 90	62 102	64 104	81 132	92 121	113 148	125 155	157 181	162 259	204 368		
		750	-	17 28	26 41	31 35	41 52	51 77	59 88	61 90	77 114	87 104	108 129	119 135	151 158	156 226	197 323		

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
28.552	27.527	28.078	28.261	27.914		29.333	29.333	28.679	28.315	28.315	Exact Reduction Ratio		
624	800	957	1110	1260		1870 *	2000 *	2640 *			64	1800	28
535	669	813	932	1080		1570 *	1720 *	2230 *	2550 *	2750 *	54	1500	
444	538	653	749	896		1260	1430	1790 *	2050 *	2280 *	43	1200	
378	450	546	626	768		1050	1220	1500	1720 *	1960 *	36	1000	
341	405	492	565	703		954	1110	1350	1550	1790	32	900	
285	339	412	472	603		798	929	1130	1290	1530	27	750	
30.978	32.067	30.463	30.789	31.932	31.197	31.826	31.826	31.115	32.390	32.390	Exact Reduction Ratio		
588	722	865	1040	1120	1530	1730 *	1870 *	2460 *			57	1800	31.5
497	604	724	898	963	1280	1450 *	1600 *	2060 *	2240 *	2450 *	48	1500	
400	485	581	727	791	1030	1160	1330	1660 *	1800 *	2030 *	38	1200	
334	406	486	608	661	865	977	1130	1380	1500 *	1740 *	32	1000	
301	366	438	548	596	780	881	1020	1250	1360	1590	29	900	
252	306	366	458	499	653	736	857	1040	1130	1340	24	750	
35.345	34.412	35.100	35.329	34.895	36.870	36.000	36.000	36.500	34.341	34.341	Exact Reduction Ratio		
525	643	781	895	1040	1300	1530 *	1690 *	2110 *			51	1800	35.5
450	538	653	749	899	1090	1280 *	1450 *	1760 *	2110 *	2340 *	42	1500	
366	432	525	602	745	878	1030	1200	1420 *	1700 *	1940 *	34	1200	
306	361	439	503	639	735	866	1000	1180	1420 *	1660 *	28	1000	
276	325	395	454	581	662	780	908	1070	1280	1510	25	900	
231	272	330	379	485	554	652	759	895	1070	1260	21	750	
C-154	C-154	C-154	C-154	C-154	C-156	C-156	C-156	C-158	C-158	C-158	Horizontal	Dimension Tables	
C-180	C-180	C-180	C-180	C-180	C-180						Vertical Upright		

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Triple Reduction Horizontal Type		
250	294	323	378	417	467	508	508	564	657	657	-	1800	28 ▼ 35.5
572	647	691	786	842	770	838	838	931	1084	1084	1	1500	
248	295	325	377	421	466	515	515	577	682	682	-	1200	
506	577	618	697	757	769	849	849	952	1125	1125	1	1000	
243	290	319	369	415	458	512	512	579	689	689	-	900	
439	504	538	607	661	756	845	845	955	1137	1137	1	750	
236	283	310	359	403	448	504	504	572	683	683	-	1800	28 ▼ 35.5
378	436	465	523	570	739	831	831	943	1128	1128	1	1500	
231	278	305	353	395	440	497	497	565	677	677	-	1200	
355	410	437	491	535	726	820	820	933	1117	1117	1	1000	
222	268	294	340	380	426	483	483	551	661	661	-	900	
310	360	383	431	468	702	796	796	909	1091	1091	1	750	
231	267	292	344	380							-	1800	28 ▼ 35.5
235	277	304	356	393							-	1500	
233	277	306	355	398							-	1200	
229	273	301	348	391							-	1000	
225	270	296	343	385							-	900	
218	262	287	332	373							-	750	
											-	1800	28 ▼ 35.5
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
40	Exact Reduction Ratio		38.980	39.444	41.134	40.976	38.889	39.686	40.435	38.450	39.190	37.500	39.375	39.000	38.519	38.514	39.818
	1800	45	13.6	21.2	30	39	50	64	75	105	125	174	192	252	292	374	411
	1500	38	11.4	17.7	25.5	33	42	53	63	88	104	145	160	211	244	313	343
	1200	30	9.1	14.2	20.4	26.7	34	42	50	70	84	116	129	169	196	251	276
	1000	25	7.6	11.9	17.1	22.3	28.5	35	42	59	70	96	107	141	164	210	230
	900	23	6.9	10.7	15.4	20.1	25.6	32	38	53	63	87	97	127	147	189	207
	750	19	5.7	8.9	12.8	16.8	21.4	26.7	31	44	52	72	81	106	123	158	173
45	Exact Reduction Ratio		45.088	45.009	44.338	44.550	44.375	45.148	46.033	43.197	45.667	42.889	44.118	43.765	42.484	42.289	43.316
	1800	40	11.1	17.4	27.5	36	41	54	62	85	98	134	160	212	253	321	364
	1500	33	9.3	14.5	22.9	30	34	45	52	71	82	112	134	177	211	269	304
	1200	27	7.4	11.6	18.4	24.3	27.9	36	41	57	66	90	107	142	170	216	244
	1000	22	6.2	9.7	15.4	20.3	23.3	30	34	47	55	75	89	118	142	180	204
	900	20	5.6	8.7	13.8	18.3	21.0	27.4	31	42	49	67	81	107	128	162	184
	750	17	4.7	7.3	11.5	15.3	17.5	22.9	26.2	35	41	56	67	89	106	135	153
50	Exact Reduction Ratio				51.141	51.268	49.248	49.444	49.634	50.388	48.825	49.144	51.188	48.750	51.845	46.944	51.911
	1800	36			24.6	31	40	51	61	81	100	133	148	203	218	308	316
	1500	30			20.5	26.7	33	43	51	67	84	111	124	169	182	257	264
	1200	24			16.5	21.4	27.0	34	41	54	67	89	99	136	146	207	212
	1000	20			13.8	17.9	22.5	28.9	34	45	56	74	83	113	122	173	177
	900	18			12.4	16.1	20.3	26.0	31	40	50	67	74	102	110	155	160
	750	15			10.3	13.4	16.9	21.6	26.0	34	42	56	62	85	92	130	133
Dimension Tables	Horizontal Vertical Upright	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-152	C-152	C-152	C-152	C-152	C-152	C-154
		C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-178	C-178	C-178	C-178	C-178	C-178	C-180
		C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-194	C-194	C-194	C-194	C-194	C-194	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-	20	31	34	46	53	66	66	83	92	113	125	157	159	201	210
		1500	-	57	80	63	97	130	162	159	200	180	221	230	270	377	540	497
		1200	-	20	30	33	44	51	63	64	80	89	110	121	154	155	198	206
		1000	-	49	69	54	83	111	137	137	173	155	192	199	235	328	473	434
		900	-	18	28	30	42	48	60	60	77	84	106	115	148	148	191	198
		750	-	41	58	44	70	92	116	115	146	130	164	168	201	279	406	371
	40 ▼ 50	1800	-	17	27	29	39	45	57	57	73	80	101	110	142	142	185	191
		1500	-	34	49	37	58	77	98	96	124	110	139	142	171	237	348	317
		1200	-	17	26	27	38	43	55	55	71	78	99	106	138	138	180	186
		1000	-	31	45	34	54	71	90	89	115	102	130	132	159	220	325	295
		900	-	16	24	25	36	40	52	51	67	73	94	101	132	131	172	177
		750	-	27	39	29	46	60	78	76	99	87	112	113	138	190	283	256
Dimension Tables	Triple Reduction Vertical Type	1800	-	20	29	33	44	51	64	64	80	88	108	119	150	151	190	199
		1500	-	19	29	32	43	50	62	62	78	86	107	117	148	149	189	198
		1200	-	18	27	30	41	47	59	59	75	82	103	112	144	144	185	192
		1000	-	17	26	28	39	44	56	56	72	78	99	108	139	139	180	186
		900	-	16	25	27	37	43	54	54	70	76	97	105	136	136	177	182
		750	-	15	24	25	35	40	51	51	66	72	92	99	130	129	170	174
	40 ▼ 50	1800	-	20	31	34	46	59	66	66	83	92	113	125	157	159	201	
		1500	-	57	80	63	97	145	162	159	200	180	221	230	270	377	540	
		1200	-	20	30	33	44	57	63	64	80	89	110	121	154	155	198	
		1000	-	49	69	54	83	125	137	137	173	155	192	199	235	328	473	
		900	-	18	28	30	42	54	60	60	77	84	106	115	148	148	191	
		750	-	41	58	44	70	105	116	115	146	130	164	168	201	279	406	
Dimension Tables	Triple Reduction Upright Type	1800	-	17	27	29	39	52	57	57	73	80	101	110	142	142	185	
		1500	-	34	49	37	58	88	98	96	124	110	139	142	171	237	348	
		1200	-	17	26	27	38	50	55	55	71	78	99	106	138	138	180	
		1000	-	31	45	34	54	82	90	89	115	102	130	132	159	220	325	
		900	-	16	24	25	36	47	52	51	67	73	94	101	132	131	172	
		750	-	27	39	29	46	70	78	76	99	87	112	113	138	190	283	

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio		
38.349	39.522	38.082	37.948	39.918	39.000	39.059	39.059	39.601	39.284	39.284	40		
482	589	695	875	933	1190	1420 *	1570 *	1940 *					
403	492	581	738	791	1030	1180 *	1350 *	1630 *	1850 *	2080 *			
324	395	467	593	635	831	955	1110	1310 *	1490 *	1730 *			
271	330	390	495	531	695	799	930	1090	1240 *	1470 *			
244	298	352	447	479	627	720	839	988	1120	1320			
204	249	294	373	400	524	602	701	826	941	1110	19 750		
44.182	42.412	43.261	43.543	43.008	46.838	45.900	45.900	44.321	43.686	43.686	Exact Reduction Ratio		
432	524	636	730	876	1030	1210 *	1380 *	1740 *			45		
366	438	532	610	751	865	1010 *	1180 *	1460 *	1670 *	1910 *			
294	352	427	490	623	695	816	949	1170 *	1340 *	1580 *			
246	294	357	410	524	581	682	794	981	1120 *	1320 *			
222	265	322	369	473	523	615	715	885	1010	1190			
185	221	269	308	395	437	514	598	740	848	1000			
47.936	50.361	46.936	48.355	49.198	48.067	49.800	49.800	48.087	49.974	49.974	Exact Reduction Ratio		
388	464	566	695	770	1000	1120 *	1280 *	1610 *			50		
324	388	474	581	644	843	937 *	1090 *	1340 *	1460 *	1700 *			
260	311	380	467	517	677	753	876	1080 *	1170 *	1390 *			
217	260	318	390	432	566	629	732	906	986 *	1160 *			
196	234	286	352	390	510	567	660	817	889	1040			
163	196	239	294	326	426	474	552	682	742	876			
C-154	C-154	C-154	C-154	C-154	C-156	C-156	C-156	C-158	C-158	C-158	Horizontal Vertical Upright		
C-180	C-180	C-180	C-180	C-180	C-180						Dimension Tables		

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Triple Reduction Horizontal Type		
238	274	307	363	396	440	488	488	545	631	631	-	1800	40
545	603	656	756	801	726	805	805	899	1042	1042	1	1500	
236	270	305	357	393	434	489	489	550	641	641	-	1200	
481	529	581	661	706	715	807	807	908	1058	1058	1	1000	
230	262	299	344	383	421	482	482	546	639	639	-	900	
416	454	505	566	611	695	795	795	901	1055	1055	1	750	
223	253	291	332	371	408	471	471	537	630	630	-	1800	50
358	389	435	483	525	673	777	777	886	1039	1039	1	1500	
219	247	285	324	364	399	463	463	529	622	622	-	1200	
335	364	409	451	493	659	764	764	873	1026	1026	1	1000	
210	236	275	309	350	383	448	448	514	604	604	-	900	
293	316	358	392	431	632	739	739	847	997	997	1	750	

223	259	286	340	373	-	1800	Triple Reduction Vertical Type
225	258	289	343	374	-	1500	
222	253	288	334	370	-	1200	
217	246	282	324	362	-	1000	
213	241	278	317	356	-	900	
206	232	269	304	343	-	750	

-	1800	Triple Reduction Upright Type
-	1500	
-	1200	
-	1000	
-	900	
-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 56 ► 71

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
56	Exact Reduction Ratio			55.125	55.739	56.195	56.250	56.507	56.608	56.894	56.206	57.353	54.706	57.182	51.547	56.471
	1800	32		22.1	29.1	33	43	50	65	79	102	123	170	189	264	280
	1500	27		18.5	24.3	27.6	36	42	54	66	86	103	142	158	221	234
	1200	21		14.8	19.5	22.1	29.3	34	43	53	69	83	114	126	177	188
	1000	18		12.4	16.2	18.5	24.5	28.5	36	44	57	69	95	105	148	157
	900	16		11.1	14.6	16.6	22.1	25.6	32	40	51	62	86	95	133	141
	750	13		9.3	12.2	13.9	18.4	21.4	27.4	33	43	52	71	79	111	118
63	Exact Reduction Ratio			63.986	63.741	61.358	62.615	65.045	61.852	63.984	61.225	63.984	63.375	63.194	63.186	64.889
	1800	29		19.7	25.7	32	40	47	66	77	106	119	156	179	230	254
	1500	24		16.5	21.5	27.1	33	39	55	64	88	99	131	150	192	212
	1200	19		13.2	17.2	21.7	27.1	31	44	51	71	79	105	120	154	170
	1000	16		11.0	14.4	18.1	22.6	26.5	37	43	59	66	87	100	129	142
	900	14		9.9	13.0	16.3	20.3	23.9	33	38	53	60	79	90	116	128
	750	12		8.3	10.8	13.6	16.9	19.9	27.8	32	44	50	66	75	97	107
71	Exact Reduction Ratio			68.971	69.300	70.014	71.234	74.051	69.488	74.559	70.024	71.691	71.118	69.700	69.381	70.588
	1800	25		17.7	23.4	26.6	34	39	53	60	82	99	131	155	197	225
	1500	21		14.8	19.6	22.2	29.0	32	44	50	69	83	109	130	165	188
	1200	17		11.9	15.7	17.8	23.2	26.1	35	40	55	66	88	104	132	151
	1000	14		9.9	13.1	14.8	19.4	21.8	29.7	34	46	55	73	87	110	126
	900	13		8.9	11.8	13.4	17.5	19.6	26.8	30	41	50	66	78	99	113
	750	11		7.4	9.8	11.2	14.6	16.4	22.4	25.6	34	41	55	65	83	95
Dimension Tables	Horizontal Vertical Upright		C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-152	C-152	C-152	C-152	C-152	C-152	C-154
			C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-178	C-178	C-178	C-178	C-178	C-178	C-180
			C-192	C-192	C-192	C-192	C-192	C-192	C-192	C-194	C-194	C-194	C-194	C-194	C-194	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-			32	39	49	59	62	78	86	106	119	146	152	186	198
				59	83	120	145	150	188	169	208	219	250	362	500	469		
		1500	-			30	37	47	57	60	75	83	102	115	141	148	181	194
				50	70	102	124	128	161	145	178	189	216	314	432	409		
		1200	-			28	35	44	53	56	70	79	96	109	134	142	172	187
				42	58	85	103	107	134	122	149	160	182	267	366	350		
	56 ▼ 71	1000	-			27	33	41	50	53	66	75	92	104	127	136	165	180
				34	48	71	86	90	112	103	126	135	153	227	310	298		
		900	-			26	31	40	48	51	64	73	89	101	123	132	160	175
				32	44	65	79	83	104	95	117	125	142	211	289	278		
		750	-			24	29	37	45	48	60	68	83	95	116	125	152	167
				27	38	55	67	71	89	82	99	108	122	182	249	241		
Dimension Tables	Triple Reduction Vertical Type	1800	-			31	38	47	58	60	75	83	102	114	140	145	178	188
		1500	-			30	36	46	55	58	73	81	99	111	137	143	175	187
		1200	-			28	34	43	52	55	69	77	94	107	131	138	168	182
		1000	-			26	32	41	49	52	65	74	90	102	125	133	162	176
		900	-			25	31	39	47	51	63	72	87	100	122	130	157	172
		750	-			24	29	37	44	48	59	68	82	94	115	124	150	164
	56 ▼ 71	1800	-			32	39	54	59	62	78	86	106	119	146	152	186	
				59	83	133	145	150	188	169	208	219	250	362	500			
		1500	-			30	37	52	57	60	75	83	102	115	141	148	181	
				50	70	113	124	128	161	145	178	189	216	314	432			
		1200	-			28	35	49	53	56	70	79	96	109	134	142	172	
				42	58	94	103	107	134	122	149	160	182	267	366			
56 ▼ 71	1000	-			27	33	46	50	53	66	75	92	104	127	136	165		
			34	48	79	86	90	112	103	126	135	153	227	310				
	900	-			26	31	44	48	51	64	73	89	101	123	132	160		
			32	44	72	79	83	104	95	117	125	142	211	289				
	750	-			24	29	41	45	48	60	68	83	95	116	125	152		
			27	38	61	67	71	89	82	99	108	122	182	249				

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 56 ▶ 71

Size of Reducer												L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
57.600	54.044	55.125	55.485	54.803	56.807	57.600	57.600	57.487	53.842	53.842	Exact Reduction Ratio			
338	413	502	575	717	856	972 *	1130 *	1350 *			56	32	1800	
282	345	419	481	615	716	812 *	946 *	1130 *	1360 *	1600 *		27	1500	
226	277	336	386	494	575	652	759	909 *	1090 *	1290 *		21	1200	
189	231	281	322	413	480	545	635	760	916 *	1080 *		18	1000	
170	208	253	291	372	433	492	572	685	826	974		16	900	
142	174	212	243	311	362	411	478	572	690	814		13	750	
62.494	62.070	59.809	59.598	62.691	61.933	62.494	62.494	62.372	61.592	61.592	Exact Reduction Ratio			
299	378	446	566	607	786	897 *	1040 *	1240 *			63	29	1800	
249	316	373	473	508	657	750 *	873 *	1040 *	1190 *	1410 *		24	1500	
200	253	299	380	408	528	602	701	839 *	960 *	1130 *		19	1200	
167	212	250	317	340	441	503	586	701	802 *	946 *		16	1000	
151	191	225	286	307	397	454	528	632	723	853		14	900	
126	159	188	239	256	332	379	441	528	604	713		12	750	
72.000	66.609	67.941	68.385	67.544	73.193	72.000	72.000	70.853	72.791	72.791	Exact Reduction Ratio			
271	336	408	468	599	667	780 *	908 *	1100 *			71	25	1800	
226	281	341	391	501	558	652 *	759 *	922 *	1010 *	1190 *		21	1500	
182	225	274	314	402	448	524	610	740 *	814 *	961 *		17	1200	
152	188	229	262	336	374	438	509	618	681 *	803 *		14	1000	
137	170	206	236	303	337	394	459	557	613 *	724		13	900	
114	141	172	197	253	281	329	383	466	512	604		11	750	
C-154	C-154	C-154	C-154	C-154	C-156	C-156	C-156	C-158	C-158	C-158	Horizontal Vertical Upright		Dimension Tables	
C-180	C-180	C-180	C-180	C-180	C-180									

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer												Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
214	262	288	337	378	422	448	448	512	591	591	Triple Reduction Horizontal Type	-	1800	56 ▼ 71
491	576	617	700	764	696	739	739	845	975	975		1	1800	
210	258	283	329	370	413	443	443	509	592	592		-	1500	
427	504	539	610	664	681	731	731	840	977	977		1	1500	
201	249	273	318	356	398	432	432	498	583	583		-	1200	
364	433	462	522	567	657	712	712	821	962	962		1	1200	
193	241	264	306	342	384	418	418	484	570	570	Triple Reduction Vertical Type	-	1000	56 ▼ 71
310	371	395	445	483	633	690	690	799	940	940		1	1000	
188	235	257	298	333	375	410	410	475	560	560		-	900	
289	346	369	415	451	618	676	676	784	924	924		1	900	
179	225	246	284	318	358	393	393	457	540	540		-	750	
250	301	320	361	391	591	648	648	754	891	891		1	750	
205	248	274	321	362							Triple Reduction Vertical Type	-	1800	56 ▼ 71
202	247	272	318	357								-	1500	
196	242	266	309	347								-	1200	
189	235	258	299	335								-	1000	
185	230	252	293	328								-	900	
177	221	242	280	313								-	750	
											Triple Reduction Upright Type	-	1800	56 ▼ 71
												-	1500	
												-	1200	
												-	1000	
												-	900	
												-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 80 ► 90

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090		
80	Exact Reduction Ratio		79.751			78.012			81.056			80.234			79.219			77.018	77.090
	1800	23	*	20.6	*	32	*	50	*	82	*	125	*	189	206				
	1500	19	*	17.2	*	27.4	*	42	*	68	*	105	*	158	172				
	1200	15	*	13.8	*	21.9	*	33	*	55	*	84	*	127	138				
	1000	13	*	11.5	*	18.3	*	28.3	*	45	*	70	*	106	115				
	900	11	*	10.4	*	16.5	*	25.5	*	41	*	63	*	95	104				
	750	9.4	*	8.7	*	13.7	*	21.3	*	34	*	53	*	79	87				
90	Exact Reduction Ratio		86.706			88.750			91.063			91.765			88.897			84.569	
	1800	20	*	18.8	*	27.9	*	40	*	63	*	105	*	162	*				
	1500	17	*	15.7	*	23.3	*	34	*	53	*	88	*	136	*				
	1200	13	*	12.6	*	18.7	*	27.3	*	42	*	70	*	109	*				
	1000	11	*	10.5	*	15.6	*	22.8	*	35	*	59	*	91	*				
	900	10	*	9.4	*	14.0	*	20.5	*	32	*	53	*	82	*				
	750	8.3	*	7.9	*	11.7	*	17.1	*	26.7	*	44	*	68	*				
Dimension Tables	Horizontal Vertical Upright	C-150			C-150			C-150			C-152			C-152			C-152	C-154	
		C-176			C-176			C-176			C-178			C-178			C-178	C-180	
		C-192			C-192			C-192			C-194			C-194			C-194		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-				37		56		73		100		139		178	202	
			-				79		137		177		196		238		479	479	
		1500	-				36		54		70		96		134		173	198	
			-				67		118		151		167		205		414	417	
		1200	-				33		50		66		91		127		165	190	
			-				55		97		126		141		173		351	356	
Dimension Tables	80 ▼ 90	1000	-				31		47		62		86		121		158	183	
			-				46		81		106		118		146		297	304	
		900	-				30		45		60		83		117		153	178	
			-				42		74		97		109		135		276	283	
		750	-				28		42		56		78		111		145	170	
			-				36		63		83		93		116		238	246	
	Triple Reduction Vertical Type	1800	-				36		55		71		96		134		171	192	
		1500	-				35		52		69		93		130		168	190	
		1200	-				33		49		65		89		125		161	185	
		1000	-				31		47		61		85		119		155	179	
		900	-				29		45		59		82		116		151	175	
		750	-				27		42		56		77		109		143	167	
	Triple Reduction Upright Type	1800	-				37		56		73		100		139		178		
			-				79		137		177		196		238		479		
		1500	-				36		54		70		96		134		173		
			-				67		118		151		167		205		414		
		1200	-				33		50		66		91		127		165		
			-				55		97		126		141		173		351		
	80 ▼ 90	1000	-				31		47		62		86		121		158		
			-				46		81		106		118		146		297		
		900	-				30		45		60		83		117		153		
			-				42		74		97		109		135		276		
		750	-				28		42		56		78		111		145		
			-				36		63		83		93		116		238		

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 80 ▶ 90

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
78.118	75.300	73.714	80.819	77.266	75.490	78.118	78.118	76.873			Exact Reduction Ratio	
240	298	363	397	495	647	720 *	839 *	1010 *			23	1800
200	249	304	332	413	541	602 *	701 *	851 *			19	1500
160	200	244	266	332	434	483	563	683 *			15	1200
134	167	203	222	277	363	404	470	571			13	1000
121	150	183	200	250	327	364	424	514			11	900
101	125	153	167	208	273	304	354	430			9.4	750
85.313		83.332		91.315	89.216	85.313	85.313	86.903			Exact Reduction Ratio	
220	*	322	*	420	549	661 *	769 *	902 *			20	1800
183	*	269	*	351	459	552 *	643 *	754 *			17	1500
147	*	216	*	281	368	443	516	605 *			13	1200
123	*	180	*	235	308	370	431	506			11	1000
111	*	162	*	212	277	334	388	456			10	900
92	*	135	*	177	231	278	324	380			8.3	750
C-154	C-154	C-154	C-154	C-154	C-156	C-156	C-156	C-158			Horizontal Vertical Upright	Dimension Tables
C-180	C-180	C-180	C-180	C-180	C-180							

* marked models are quadruple reduction units. Refer to C-124 and C-125.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
214	265	283	333	362	399	446	446	500			-	1800
490	582	606	693	732	659	735	735	825			1	1800
209	260	278	326	354	389	441	441	495			-	1500
426	510	530	604	636	642	727	727	817			1	1500
201	252	269	314	340	373	429	429	482			-	1200
363	438	454	516	543	615	708	708	796			1	1200
193	243	259	302	327	358	415	415	468			-	1000
309	374	388	440	462	591	685	685	772			1	1000
188	237	253	295	319	349	406	406	459			-	900
288	350	362	411	431	576	670	670	757			1	900
179	227	241	281	304	332	389	389	440			-	750
250	304	315	357	374	548	642	642	726			1	750

204	251	269	319	347							-	1800
202	250	268	315	343							-	1500
196	244	261	306	332							-	1200
189	237	253	296	321							-	1000
185	233	248	290	314							-	900
176	223	238	277	300							-	750

											-	1800
											-	1500
											-	1200
											-	1000
											-	1000
											-	900
											-	900
											-	750

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 80 ► 100

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																									
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090											
80	Exact Reduction Ratio		82.394			79.669			79.341			76.744			78.120			79.124										
	1800	23	15.3			*	25.0			*	32			*	50			*	82			*	134			*	*	*
	1500	19	12.8			*	20.9			*	27.2			*	41			*	68			*	111			*	*	*
	1200	15	10.3			*	16.7			*	21.7			*	33			*	54			*	89			*	*	*
	1000	13	8.6			*	13.9			*	18.1			*	27.9			*	45			*	74			*	*	*
	900	11	7.7			*	12.6			*	16.3			*	25.1			*	41			*	67			*	*	*
	750	9.4	6.4			*	10.5			*	13.6			*	20.9			*	34			*	55			*	*	*
90	Exact Reduction Ratio		88.813			90.908			90.326			89.427			87.529			87.269			88.471							
	1800	20	13.8			*	20.5			*	32			*	50			*	81			*	124			*	180	
	1500	17	11.5			*	17.1			*	26.7			*	41			*	68			*	104			*	150	
	1200	13	9.2			*	13.7			*	21.4			*	33			*	54			*	83			*	120	
	1000	11	7.7			*	11.5			*	17.9			*	27.9			*	45			*	69			*	101	
	900	10	6.9			*	10.3			*	16.1			*	25.1			*	41			*	62			*	91	
	750	8.3	5.8			*	8.6			*	13.4			*	20.9			*	34			*	52			*	75	
100	Exact Reduction Ratio		103.09			102.69	99.26	101.29	103.97	98.871	100.57	97.650			96.720	96.444	96.432	101.66										
	1800	18	12.3			16.1	20.1	25.1	29.8	32	49	78			82	118	134	163										
	1500	15	10.3			13.4	16.8	20.9	24.9	27.2	41	65			68	99	111	136										
	1200	12	8.2			10.7	13.5	16.7	19.9	21.7	33	52			54	79	89	109										
	1000	10	6.9			9.0	11.2	13.9	16.6	18.1	27.6	43			45	66	74	91										
	900	9.0	6.2			8.1	10.1	12.6	15.0	16.3	24.9	39			41	59	67	82										
	750	7.5	5.2			6.7	8.4	10.5	12.5	13.6	20.7	33			34	49	55	68										
Dimension Tables	Horizontal Vertical Upright	C-160			C-160	C-160	C-160	C-160	C-160	C-160	C-162	C-162			C-162	C-162	C-162	C-164										
		C-182			C-182	C-182	C-182	C-182	C-182	C-182	C-184	C-184			C-184	C-184	C-184	C-186										
		C-196			C-196	C-196	C-196	C-196	C-196	C-196	C-198	C-198			C-198	C-198	C-198											

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-			27	34	42	51	52	65	73		100	122	128	155	157
		1500	-			26	32	41	50	50	62	71		97	118	125	151	156
		1200	-			24	30	39	47	47	59	67		93	113	120	145	152
		1000	-			23	29	37	45	45	56	64		89	108	115	139	148
		900	-			22	28	36	43	44	54	62		86	105	112	135	145
		750	-			21	26	34	41	41	51	59		82	99	107	128	139
Dimension Tables	Quadruple Reduction Vertical Type	1800	-			28	35	45	54	54	67	77		105	128	136	164	172
		1500	-			27	33	43	51	52	64	73		101	123	131	157	167
		1200	-			25	31	40	48	49	60	69		96	116	124	149	160
		1000	-			24	29	38	46	46	57	65		91	110	119	142	154
		900	-			23	28	37	44	45	55	63		88	107	115	138	150
		750	-			21	26	34	41	42	51	60		83	101	109	130	143
	Quadruple Reduction Upright Type	1800	-			27	34	47	51	52	65	74		101	124	130	157	
		1500	-			26	32	45	50	50	63	71		98	120	126	153	
		1200	-			25	31	43	47	48	59	68		93	114	121	146	
		1000	-			23	29	41	45	45	56	64		89	108	116	139	
		900	-			22	28	39	43	44	54	62		87	105	113	136	
		750	-			21	26	37	41	41	51	59		82	100	107	129	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 80 ▶ 100

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	80.205	80.205	Exact Reduction Ratio	
*	*	*	*	*	*	*	*	*	*	1100	1210	23	1800	80
*	*	*	*	*	*	*	*	*	*	922	1060	19	1500	
*	*	*	*	*	*	*	*	*	*	740	872	15	1200	
*	*	*	*	*	*	*	*	*	*	618	727	13	1000	
*	*	*	*	*	*	*	*	*	*	557	654	11	900	
*	*	*	*	*	*	*	*	*	*	465	545	9.4	750	
88.676		91.041								89.191	89.191	Exact Reduction Ratio		90
*	254	*	353	*	*	*	*	*	994	1170	20	1800		
*	212	*	295	*	*	*	*	*	831	980	17	1500		
*	170	*	237	*	*	*	*	*	667	786	13	1200		
*	142	*	198	*	*	*	*	*	557	657	11	1000		
*	128	*	178	*	*	*	*	*	502	592	10	900		
*	106	*	149	*	*	*	*	*	419	494	8.3	750		
97.907	101.85	98.135	97.789	102.87	96.134	101.59	101.59	98.178	102.03	102.03	Exact Reduction Ratio		100	
192	232	274	348	373	465	556	648	800	871	1020	18	1800		
160	194	229	290	312	388	465	541	669	728	858	15	1500		
128	155	184	233	250	310	373	434	537	584	689	12	1200		
107	129	153	194	209	258	311	363	448	488	575	10	1000		
96	117	138	175	188	232	281	327	404	439	518	9.0	900		
80	97	115	146	157	194	234	273	337	367	433	7.5	750		
C-164	C-164	C-164	C-164	C-164	C-166	C-166	C-166	C-168	C-168	C-168	Horizontal Vertical Upright		Dimension Tables	
C-186	C-186	C-186	C-186	C-186										

* marked models are triple reduction units. Refer to C-122 and C-123.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
177	204	230	271	299	328	392	392	425	521	521	-	1800	Quadruple Reduction Horizontal Type 80 ▼ 100
175	203	228	268	295	322	386	386	422	515	515	-	1500	
170	199	223	261	286	311	374	374	413	502	502	-	1200	
165	193	217	253	277	300	362	362	402	487	487	-	1000	
162	190	213	248	271	293	354	354	395	478	478	-	900	
155	182	205	238	260	280	339	339	381	460	460	-	750	
193	225	252	294	323							-	1800	Quadruple Reduction Vertical Type 80 ▼ 100
187	219	245	286	313							-	1500	
179	210	235	273	299							-	1200	
172	202	226	262	287							-	1000	
167	197	221	256	280							-	900	
159	188	211	244	267							-	750	
											-	1800	Quadruple Reduction Upright Type 80 ▼ 100
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 112 ► 140

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
112	Exact Reduction Ratio			111.12	111.65	113.26	115.24	118.37	111.08	117.19	110.06	109.41	108.54	106.37	105.89	110.59
	1800	16		11.1	14.6	16.5	21.5	24.5	32	38	50	65	82	102	130	144
	1500	13		9.2	12.2	13.8	18.0	20.4	27.2	32	41	54	68	85	108	120
	1200	11		7.4	9.8	11.0	14.4	16.4	21.8	26.0	33	43	54	68	87	97
	1000	8.9		6.2	8.2	9.2	12.0	13.7	18.1	21.7	27.9	36	45	57	72	80
	900	8.0		5.6	7.3	8.3	10.8	12.3	16.3	19.6	25.1	33	41	51	65	72
	750	6.7		4.6	6.1	6.9	9.0	10.3	13.6	16.3	20.9	27.5	34	43	54	60
125	Exact Reduction Ratio			127.97	128.49	122.72	126.20	130.09	129.57	125.30	126.11	127.97	120.90	126.39	117.54	127.07
	1800	14		9.9	12.9	16.3	20.3	23.9	31	39	50	60	82	90	124	131
	1500	12		8.3	10.7	13.6	17.0	19.9	26.6	33	41	50	68	75	104	109
	1200	9.6		6.6	8.6	10.9	13.6	16.0	21.3	26.6	33	40	54	60	83	87
	1000	8.0		5.5	7.2	9.1	11.3	13.3	17.8	22.2	27.9	33	45	50	69	73
	900	7.2		5.0	6.5	8.2	10.2	12.0	16.0	20.0	25.1	30	41	45	62	66
	750	6.0		4.2	5.4	6.8	8.5	10.0	13.4	16.7	20.9	25.2	34	38	52	55
140	Exact Reduction Ratio			137.94	139.69	140.03	143.57	148.10	145.56	146.01	144.24	143.38	135.67	139.40	129.07	138.24
	1800	13		8.9	11.7	13.4	17.3	19.6	25.6	31	40	50	69	78	107	116
	1500	11		7.4	9.8	11.2	14.5	16.4	21.4	26.1	33	41	58	65	89	97
	1200	8.6		6.0	7.8	8.9	11.6	13.1	17.1	20.9	27.1	33	46	52	71	77
	1000	7.1		5.0	6.5	7.5	9.7	10.9	14.3	17.5	22.7	28.0	38	43	59	64
	900	6.4		4.5	5.9	6.7	8.7	9.9	12.9	15.7	20.4	25.2	35	39	54	58
	750	5.4		3.7	4.9	5.6	7.3	8.2	10.7	13.1	17.0	21.0	29.2	32	45	48
Dimension Tables	Horizontal Vertical Upright		C-160	C-160	C-160	C-160	C-160	C-160	C-160	C-162	C-162	C-162	C-162	C-162	C-162	C-164
			C-182	C-182	C-182	C-182	C-182	C-182	C-182	C-184	C-184	C-184	C-184	C-184	C-184	C-186
			C-196	C-196	C-196	C-196	C-196	C-196	C-196	C-198	C-198	C-198	C-198	C-198	C-198	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-			25	31	40	48	50	61	70	84	95	117	122	150	151
		1500	-			24	30	38	46	48	59	68	81	92	113	119	146	149
		1200	-			23	28	36	43	45	56	64	77	88	108	114	139	145
	112	1000	-			22	27	35	41	43	53	61	73	84	103	109	134	141
	▼	900	-			21	26	34	40	42	51	59	71	82	100	106	130	138
Dimension Tables	140	750	-			20	24	32	38	39	48	56	67	77	95	101	124	132
	Quadruple Reduction Vertical Type	1800	-			27	33	42	50	52	64	73	88	100	122	129	158	164
		1500	-			25	31	40	47	50	61	70	84	96	117	124	151	159
		1200	-			24	29	37	45	47	57	66	79	90	111	118	144	152
	112	1000	-			22	27	35	42	44	54	62	75	86	105	112	137	146
	▼	900	-			21	26	34	41	43	52	60	72	83	102	109	133	143
	140	750	-			20	24	32	38	40	49	57	68	79	96	103	126	136
	Quadruple Reduction Upright Type	1800	-			26	31	44	48	50	62	71	84	96	118	124	152	
		1500	-			25	30	43	46	48	59	68	81	93	114	120	147	
		1200	-			23	28	40	43	46	56	65	77	89	108	115	140	
	112	1000	-			22	27	38	41	43	53	61	73	84	103	110	134	
	▼	900	-			21	26	37	40	42	51	60	71	82	100	107	131	
140	750	-			20	24	35	38	39	48	56	67	78	95	102	124		

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 112 ▶ 140

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio		
112.80	109.29	111.48	112.21	110.83	113.61	117.50	117.50	117.37	109.93	109.93	112		
174	206	251	287	368	433	482	561	671	809	954			
145	172	209	240	308	362	403	469	561	676	797			
116	138	168	192	247	290	323	376	450	542	640			
97	115	140	161	206	242	270	314	376	453	534			
87	104	126	145	186	218	243	283	338	408	481			
73	86	105	121	155	182	203	236	283	341	402	125		
122.38	124.14	120.95	119.20	126.78	123.87	127.49	127.49	127.34	129.91	129.91			
154	191	223	286	304	397	445	518	619	686	810			
128	159	186	239	253	332	371	432	517	573	676			
103	127	149	191	203	266	298	347	415	460	542			
86	106	124	160	170	222	249	290	347	384	453			
77	96	112	144	153	200	224	261	312	346	408	140		
64	80	94	120	127	167	187	218	261	289	341			
141.00	133.22	135.88	136.77	135.09	146.39	146.88	146.88	142.35	133.32	133.32			
139	170	206	236	303	337	387	450	555	669	789			
116	141	172	197	253	281	323	376	464	559	659			
93	113	138	158	203	226	259	301	372	448	529			
78	95	115	132	169	188	216	252	310	374	441	Horizontal Vertical Upright		
70	85	104	119	152	170	195	227	280	337	398			
58	71	86	99	127	142	162	189	233	281	332			
C-164	C-164	C-164	C-164	C-164	C-166	C-166	C-166	C-168	C-168	C-168			
C-186	C-186	C-186	C-186	C-186	C-186								
											Dimension Tables		

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
164	198	218	256	287	321	372	372	413	502	502	-	1800	Quadruple Reduction Horizontal Type 112 ▼ 140
162	196	216	252	282	314	365	365	406	493	493	-	1500	
157	192	210	245	273	303	352	352	394	476	476	-	1200	
152	187	204	237	264	292	340	340	381	461	461	-	1000	
149	183	200	232	258	285	333	333	373	451	451	-	900	
142	176	192	223	247	273	319	319	358	432	432	-	750	
177	216	237	276	307							-	1800	Quadruple Reduction Vertical Type 112 ▼ 140
172	211	230	267	297							-	1500	
164	202	220	256	284							-	1200	
157	194	212	245	272							-	1000	
153	189	207	239	265							-	900	
146	181	197	228	253							-	750	
											-	1800	Quadruple Reduction Upright Type 112 ▼ 140
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 160 ▶ 200

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
160	Exact Reduction Ratio		165.49	159.50	159.92	156.03	158.68	162.11	154.58	157.13	153.94	158.44	158.25	154.04	168.71		
	1800	11	7.7	10.4	12.6	16.5	17.4	25.5	26.6	42	44	63	71	95	99		
	1500	9.4	6.4	8.7	10.5	13.7	14.5	21.3	22.2	35	37	53	59	79	82		
	1200	7.5	5.1	6.9	8.4	11.0	11.6	17.1	17.8	28.1	29.9	42	47	64	66		
	1000	6.3	4.3	5.8	7.0	9.1	9.7	14.2	14.8	23.4	24.9	35	39	53	55		
	900	5.6	3.9	5.2	6.3	8.2	8.7	12.8	13.3	21.1	22.4	31	35	48	49		
	750	4.7	3.2	4.3	5.3	6.9	7.2	10.7	11.1	17.5	18.7	26.6	29.7	40	41		
180	Exact Reduction Ratio		178.38	173.41	182.48	177.50	180.65	182.13	180.12	179.71	172.48	177.79	174.54	169.14	183.53		
	1800	10	6.9	9.4	10.3	14.0	16.1	20.5	25.4	32	41	53	62	82	87		
	1500	8.3	5.8	7.9	8.6	11.7	13.4	17.1	21.2	27.2	34	44	52	68	73		
	1200	6.7	4.6	6.3	6.9	9.4	10.8	13.7	17.0	21.8	27.9	35	42	54	58		
	1000	5.6	3.9	5.3	5.7	7.8	9.0	11.4	14.2	18.2	23.3	29.7	35	45	49		
	900	5.0	3.5	4.7	5.2	7.1	8.1	10.3	12.8	16.4	21.0	26.7	31	41	44		
	750	4.2	2.9	4.0	4.3	5.9	6.7	8.6	10.7	13.7	17.5	22.3	26.4	34	36		
200	Exact Reduction Ratio		205.43	206.26	197.71	203.32	207.95	197.74	202.57	193.83	192.43	190.60	192.89	192.86	201.89		
	1800	9.0	6.2	8.0	10.2	12.6	15.0	17.4	24.7	26.6	40	44	59	71	79		
	1500	7.5	5.2	6.7	8.5	10.5	12.5	14.5	20.6	22.2	33	37	49	59	66		
	1200	6.0	4.1	5.4	6.8	8.4	10.0	11.6	16.5	17.8	26.8	29.9	39	47	53		
	1000	5.0	3.5	4.5	5.7	7.0	8.4	9.7	13.8	14.8	22.4	24.9	33	39	44		
	900	4.5	3.1	4.0	5.1	6.3	7.5	8.7	12.4	13.3	20.2	22.4	30	35	39		
	750	3.8	2.6	3.4	4.3	5.3	6.3	7.3	10.3	11.1	16.8	18.7	25.0	29.7	33		
Dimension Tables	Horizontal Vertical Upright		C-160	C-160	C-160	C-160	C-160	C-160	C-160	C-162	C-162	C-162	C-162	C-162	C-162	C-164	
			C-182	C-182	C-182	C-182	C-182	C-182	C-182	C-184	C-184	C-184	C-184	C-184	C-184	C-186	
			C-196	C-196	C-196	C-196	C-196	C-196	C-196	C-198	C-198	C-198	C-198	C-198	C-198		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type 160 ▼ 200	1800	-			23	29	36	43	42	52	61	74	85	103	109	131	138
		1500	-			22	28	34	41	40	49	58	71	81	98	105	126	134
		1200	-			20	26	32	38	37	46	55	66	76	92	99	118	127
		1000	-			19	24	30	36	35	43	51	62	72	87	93	112	121
		900	-			18	23	29	35	33	41	49	59	69	84	90	108	117
		750	-			17	21	27	32	31	38	46	55	65	78	85	101	111
Dimension Tables	Quadruple Reduction Vertical Type 160 ▼ 200	1800	-			24	30	37	44	43	53	63	76	88	106	113	136	145
		1500	-			23	28	35	42	41	50	60	72	83	101	108	129	139
		1200	-			21	26	33	39	38	46	56	67	78	94	101	121	131
		1000	-			20	24	31	37	35	43	52	63	73	88	95	114	124
		900	-			19	23	30	35	34	41	50	60	70	85	92	110	120
		750	-			17	21	27	33	31	38	47	56	66	79	86	103	113
	Quadruple Reduction Upright Type 160 ▼ 200	1800	-			23	29	39	43	42	52	62	74	85	104	110	132	
		1500	-			22	28	37	41	40	49	59	71	81	99	105	126	
		1200	-			21	26	35	38	37	46	55	66	76	93	99	119	
		1000	-			19	24	33	36	35	43	51	62	72	87	94	112	
		900	-			18	23	32	35	33	41	50	59	69	84	91	108	
		750	-			17	21	30	32	31	38	46	55	65	79	85	102	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 160 ▶ 200

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
152.98	167.85	147.43	151.57	154.53	150.98	160.41	160.41	154.45	157.56	157.56	Exact Reduction Ratio		
123	141	183	226	250	327	355	413	512	567	669	11	1800	160
103	118	153	188	208	273	296	345	428	474	559	9.4	1500	
82	94	123	151	167	219	237	276	343	380	448	7.5	1200	
69	79	102	126	139	183	198	231	286	317	374	6.3	1000	
62	71	92	113	126	165	178	208	258	286	337	5.6	900	
51	59	77	95	105	137	149	173	215	238	281	4.7	750	
187.20	180.12	183.73	173.92	171.78	178.43	176.73	176.73	175.45	171.78	171.78	Exact Reduction Ratio		
105	126	153	186	239	277	322	375	451	521	614	10	1800	180
88	105	127	155	199	231	269	313	377	435	513	8.3	1500	
70	84	102	125	160	185	216	251	302	349	411	6.7	1200	
59	70	85	104	133	155	180	209	252	291	343	5.6	1000	
53	63	77	94	120	139	162	189	227	262	309	5.0	900	
44	53	64	78	100	116	135	157	190	219	258	4.2	750	
203.11	206.87	199.34	198.63	196.51	191.99	193.01	193.01	190.35	203.02	203.02	Exact Reduction Ratio		
93	115	136	173	197	258	295	344	416	442	521	9.0	1800	200
78	96	113	144	164	215	246	287	348	369	435	7.5	1500	
62	77	91	115	132	172	198	230	279	296	349	6.0	1200	
52	64	76	96	110	144	165	192	233	247	291	5.0	1000	
47	58	68	87	99	130	148	173	210	222	262	4.5	900	
39	48	57	72	82	108	124	144	175	185	219	3.8	750	
C-164	C-164	C-164	C-164	C-164	C-166	C-166	C-166	C-168	C-168	C-168	Horizontal	Dimension Tables	
C-186	C-186	C-186	C-186	C-186							Vertical Upright		

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio		
154	180	202	236	269	297	360	360	393	480	480	-	1800	Quadruple Reduction Horizontal Type 160 ▼ 200
149	175	196	229	262	288	351	351	385	467	467	-	1500	
142	167	187	218	250	275	337	337	373	449	449	-	1200	
135	160	179	207	240	263	325	325	361	432	432	-	1000	
131	155	174	201	234	256	317	317	353	422	422	-	900	
123	147	164	190	222	243	303	303	339	403	403	-	750	
162	190	213	247	283							-	1800	Quadruple Reduction Vertical Type 160 ▼ 200
155	183	204	237	272							-	1500	
146	173	193	223	258							-	1200	
138	164	183	212	246							-	1000	
133	159	177	205	239							-	900	
125	150	167	193	226							-	750	
											-	1800	Quadruple Reduction Upright Type 160 ▼ 200
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 224 ► 280

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
224	Exact Reduction Ratio		221.43	224.24	225.60	231.31	236.74	222.15	236.05	221.69	215.61	213.88	212.75	211.77	229.41		
	1800	8.0	5.6	7.3	8.3	10.8	12.3	16.8	19.4	26.5	33	44	51	65	70		
	1500	6.7	4.7	6.1	6.9	9.0	10.3	14.0	16.2	22.1	27.9	37	43	54	58		
	1200	5.4	3.7	4.9	5.6	7.2	8.2	11.3	13.0	17.7	22.4	29.6	34	44	47		
	1000	4.5	3.1	4.1	4.6	6.0	6.9	9.4	10.8	14.8	18.7	24.7	28.8	36	39		
	900	4.0	2.8	3.7	4.2	5.4	6.2	8.5	9.8	13.3	16.8	22.3	25.9	33	35		
	750	3.3	2.3	3.1	3.5	4.5	5.2	7.1	8.1	11.1	14.0	18.6	21.6	27.6	29.5		
250	Exact Reduction Ratio		256.04			251.37	260.18	259.14	252.38	254.02	252.17	238.24	252.78	235.08	263.61		
	1800	7.2	6.5			10.2	12.0	16.0	19.8	26.0	30	42	45	62	63		
	1500	6.0	5.4			8.5	10.0	13.4	16.6	21.7	25.6	35	38	52	53		
	1200	4.8	4.3			6.8	8.0	10.7	13.3	17.4	20.5	28.3	30	42	42		
	1000	4.0	3.6			5.7	6.7	8.9	11.1	14.5	17.1	23.6	25.5	35	35		
	900	3.6	3.3			5.1	6.0	8.0	10.0	13.0	15.4	21.3	22.9	31	32		
	750	3.0	2.7			4.3	5.0	6.7	8.3	10.9	12.8	17.8	19.1	26.4	26.7		
280	Exact Reduction Ratio		278.37			285.97	296.20	291.13	294.09	290.52	282.55	267.35	278.80	258.13	286.77		
	1800	6.4	5.9			8.7	9.9	12.9	15.6	20.3	25.6	35	39	54	56		
	1500	5.4	4.9			7.3	8.2	10.7	13.0	16.9	21.3	29.6	32	45	47		
	1200	4.3	3.9			5.8	6.6	8.6	10.4	13.5	17.1	23.7	26.4	36	37		
	1000	3.6	3.3			4.9	5.5	7.2	8.7	11.3	14.3	19.8	22.0	30	31		
	900	3.2	3.0			4.4	4.9	6.5	7.8	10.2	12.8	17.8	19.8	27.1	28.3		
	750	2.7	2.5			3.7	4.1	5.4	6.5	8.5	10.7	14.9	16.5	22.6	23.6		
Dimension Tables	Horizontal Vertical Upright		C-160	C-160	C-160	C-160	C-160	C-160	C-160	C-162	C-162	C-162	C-162	C-162	C-162	C-164	
			C-182	C-182	C-182	C-182	C-182	C-182	C-182	C-184	C-184	C-184	C-184	C-184	C-184	C-186	
			C-196	C-196	C-196	C-196	C-196	C-196	C-196	C-198	C-198	C-198	C-198	C-198	C-198		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type 224 ▼ 280	1800	-			23	27	35	40	40	49	59	71	80	99	104	127	132
		1500	-			22	25	33	38	38	47	56	67	77	94	99	121	127
		1200	-			20	24	31	36	36	43	52	63	72	88	94	114	121
		1000	-			19	22	29	34	33	41	49	59	68	83	89	108	115
		900	-			18	21	28	32	32	39	47	56	66	80	86	104	112
		750	-			17	20	26	30	30	36	44	53	61	75	80	98	106
Dimension Tables	Quadruple Reduction Vertical Type 224 ▼ 280	1800	-			24	28	36	41	42	51	60	72	83	102	107	131	138
		1500	-			22	26	34	39	39	48	57	68	79	96	102	124	132
		1200	-			21	24	32	36	36	44	53	64	74	90	96	116	125
		1000	-			19	22	30	34	34	41	50	59	69	84	90	110	118
		900	-			18	21	29	33	32	39	48	57	67	81	87	106	114
		750	-			17	20	27	31	30	36	44	53	62	76	81	99	107
Dimension Tables	Quadruple Reduction Upright Type 224 ▼ 280	1800	-			23	27	38	40	41	50	59	71	81	99	104	127	
		1500	-			22	25	36	38	38	47	56	67	77	95	100	122	
		1200	-			20	24	34	36	36	44	52	63	72	89	94	115	
		1000	-			19	22	32	34	33	41	49	59	68	83	89	108	
		900	-			18	21	30	32	32	39	47	56	66	80	86	105	
		750	-			17	20	28	30	30	36	44	53	62	75	81	98	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 224 ▶ 280

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
234.00	222.00	226.44	227.92	225.12	226.90	230.40	230.40	223.56	232.24	232.24	Exact Reduction Ratio		
84	102	124	142	183	218	248	288	355	387	456	8.0	1800	224
70	85	104	119	152	182	207	241	297	323	381	6.7	1500	
56	68	83	95	122	146	166	193	238	259	305	5.4	1200	
47	57	69	79	102	122	138	161	198	216	255	4.5	1000	
42	51	62	71	92	110	124	145	179	194	229	4.0	900	
35	43	52	60	76	91	104	121	149	162	191	3.3	750	
253.88	252.16	245.68	242.12	257.52	251.60	251.62	251.62	242.56	247.46	247.46	Exact Reduction Ratio		
74	94	110	142	150	197	227	264	328	363	428	7.2	1800	250
62	79	92	118	126	165	189	221	274	303	357	6.0	1500	
50	63	74	95	101	132	152	177	219	243	287	4.8	1200	
41	52	61	79	84	110	127	147	183	203	239	4.0	1000	
37	47	55	71	75	99	114	133	165	182	215	3.6	900	
31	39	46	59	63	83	95	111	137	152	180	3.0	750	
292.50	270.60	276.01	277.82	274.40	276.57	288.00	288.00	275.54	283.08	283.08	Exact Reduction Ratio		
67	84	102	117	150	179	199	231	289	318	375	6.4	1800	280
56	70	85	98	125	150	166	193	241	265	313	5.4	1500	
45	56	68	78	100	120	133	155	193	212	251	4.3	1200	
37	47	57	65	84	100	111	129	161	177	209	3.6	1000	
34	42	51	59	75	90	100	116	145	160	188	3.2	900	
28.5	35	42	49	63	75	83	97	121	133	157	2.7	750	
C-164	C-164	C-164	C-164	C-164	C-166	C-166	C-166	C-168	C-168	C-168	Horizontal	Dimension Tables	
C-186	C-186	C-186	C-186	C-186						Vertical Upright			

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
142	174	190	222	247	275	322	322	366	443	443	-	1800	Quadruple Reduction Horizontal Type 224 ▼ 280
137	169	184	215	239	265	311	311	356	430	430	-	1500	
130	161	176	204	227	251	296	296	341	411	411	-	1200	
124	154	168	195	216	239	283	283	328	395	395	-	1000	
120	150	163	189	210	232	275	275	319	384	384	-	900	
114	142	155	179	198	219	261	261	304	366	366	-	750	

149	183	200	232	257							-	1800	Quadruple Reduction Vertical Type 224 ▼ 280
142	176	192	222	246							-	1500	
134	166	181	209	232							-	1200	
127	158	172	199	220							-	1000	
123	153	167	192	213							-	900	
115	144	157	181	201							-	750	

											-	1800	Quadruple Reduction Upright Type 224 ▼ 280
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 315 ▶ 400

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
315	Exact Reduction Ratio		315.95 324.22 327.89 316.48 324.10 312.22 318.63 308.07 313.18															
	1800	5.7	9.2 12.8 14.0 20.9 22.3 32 34 48 51															
	1500	4.8	7.7 10.7 11.7 17.4 18.6 27.0 28.9 40 43															
	1200	3.8	6.2 8.6 9.4 13.9 14.9 21.6 23.1 32 34															
	1000	3.2	5.2 7.1 7.8 11.6 12.4 18.1 19.3 26.8 28.8															
	900	2.9	4.6 6.4 7.0 10.5 11.2 16.3 17.4 24.2 25.9															
	750	2.4	3.9 5.4 5.9 8.7 9.3 13.6 14.5 20.2 21.6															
355	Exact Reduction Ratio		367.08 364.25 364.33 361.96 345.71 350.36 355.25 338.28 359.23															
	1800	5.1	8.0 10.3 12.6 16.3 20.9 27.1 31 41 45															
	1500	4.2	6.6 8.6 10.5 13.6 17.5 22.6 25.9 34 37															
	1200	3.4	5.3 6.9 8.4 10.9 14.0 18.1 20.7 27.6 30															
	1000	2.8	4.4 5.7 7.0 9.1 11.7 15.1 17.3 23.0 25.1															
	900	2.5	4.0 5.2 6.3 8.2 10.5 13.6 15.6 20.7 22.6															
	750	2.1	3.3 4.3 5.3 6.8 8.8 11.4 13.0 17.3 18.9															
400	Exact Reduction Ratio		400.89 388.53 421.41 403.56 401.65 401.88 394.72 386.60 383.18															
	1800	4.5	7.3 9.7 10.9 14.6 18.0 23.7 28.0 36 42															
	1500	3.8	6.1 8.1 9.1 12.2 15.0 19.8 23.3 30 35															
	1200	3.0	4.9 6.5 7.3 9.8 12.1 15.8 18.7 24.2 28.3															
	1000	2.5	4.1 5.4 6.1 8.1 10.1 13.2 15.6 20.2 23.6															
	900	2.3	3.7 4.8 5.5 7.3 9.1 11.9 14.0 18.2 21.2															
	750	1.9	3.1 4.0 4.6 6.1 7.5 9.9 11.7 15.1 17.7															
Dimension Tables	Horizontal Vertical Upright	C-160 C-160 C-162 C-162 C-162 C-162 C-162 C-162 C-162 C-164																
		C-182 C-182 C-184 C-184 C-184 C-184 C-184 C-184 C-184 C-186																
		C-196 C-196 C-198 C-198 C-198 C-198 C-198 C-198 C-198																

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type 315 ▼ 400	1800	-								41	47	57	67	80	93	103	120	133
		1500	-								39	45	54	64	76	89	99	115	128
		1200	-								36	42	51	60	72	83	93	108	122
		1000	-								34	39	48	56	67	79	88	102	116
		900	-								33	37	46	54	65	76	85	99	113
		750	-								30	35	42	50	61	71	80	93	106
Dimension Tables	Quadruple Reduction Vertical Type 315 ▼ 400	1800	-								42	49	59	69	82	96	107	124	139
		1500	-								40	46	56	65	78	91	101	118	133
		1200	-								37	42	52	61	73	85	95	110	125
		1000	-								34	39	48	57	68	80	89	104	119
		900	-								33	38	46	55	66	77	86	100	115
		750	-								31	35	43	51	61	72	81	94	108
	Quadruple Reduction Upright Type 315 ▼ 400	1800	-								41	48	58	67	81	94	104	121	
		1500	-								39	45	55	64	77	89	99	116	
		1200	-								36	42	51	60	72	84	93	109	
		1000	-								34	39	48	56	68	79	88	103	
		900	-								33	37	46	54	65	76	85	99	
		750	-								30	35	42	50	61	71	80	93	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 315 ▶ 400

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio		
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio				
317.35	305.90	299.46	328.33	313.90	316.08	314.53	314.53	298.95	323.52	323.52	315				
60	74	91	99	124	157	182	212	266	278	328				5.7	1800
50	62	76	83	103	131	152	177	222	232	274				4.8	1500
40	49	60	66	83	105	122	142	178	186	220				3.8	1200
33	41	50	55	69	88	101	118	149	155	183				3.2	1000
30	37	45	50	62	79	91	106	134	140	165				2.9	900
25.2	31	38	41	52	66	76	89	112	117	138	2.4	750	355		
346.58	349.61	338.53	375.23	370.97	362.44	341.25	341.25	355.99	Exact Reduction Ratio						
55	65	80	87	105	137	168	195	224	5.1			1800			
45	54	67	72	87	114	140	163	187	4.2			1500			
36	43	53	58	70	92	112	131	150	3.4			1200			
30	36	45	48	58	76	93	109	125	2.8			1000			
27.6	32	40	43	52	69	84	98	112	2.5			900	400		
23.0	27.4	33	36	44	57	70	82	94	2.1			750			
397.55	389.79	386.90	418.36	423.96	414.22	391.44	391.44	386.24	Exact Reduction Ratio						
48	58	70	78	92	120	146	170	207	4.5			1800			
40	49	59	65	76	100	122	142	172	3.8			1500			
32	39	47	52	61	80	98	114	138	3.0			1200			
26.8	32	39	43	51	67	81	95	115	2.5			1000	Dimension Tables		
24.1	29.5	35	39	46	60	73	85	104	2.3			900			
20.1	24.6	29.6	32	38	50	61	71	86	1.9			750			
C-164	C-164	C-164	C-164	C-164	C-166	C-166	C-166	C-168	C-168	C-168	Horizontal	Vertical Upright			
C-186	C-186	C-186	C-186	C-186											

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

Size of Reducer												Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
142	172	187	215	237	260	316	316	353	433	433		-	1800	Quadruple Reduction Horizontal Type 315 ▼ 400
137	166	181	207	229	250	304	304	342	419	419		-	1500	
130	158	173	197	217	237	289	289	327	400	400		-	1200	
124	151	165	188	207	226	275	275	313	383	383		-	1000	
120	147	160	182	201	219	267	267	305	372	372		-	900	
113	139	152	172	190	207	253	253	289	354	354		-	750	
148	180	196	223	246								-	1800	Quadruple Reduction Vertical Type 315 ▼ 400
142	172	188	214	235								-	1500	
134	163	178	201	222								-	1200	
127	154	169	191	211								-	1000	
122	150	164	185	204								-	900	
115	141	154	174	192								-	750	
												-	1800	Quadruple Reduction Upright Type 315 ▼ 400
												-	1500	
												-	1200	
												-	1000	
												-	900	
												-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 450 ► 500

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
450	Exact Reduction Ratio							451.41			448.40			428.68			431.03	
	1800	4.0						8.3			13.2			22.2			32	
	1500	3.3						6.9			11.0			18.5			27.1	
	1200	2.7						5.6			8.8			14.8			21.7	
	1000	2.2						4.6			7.3			12.4			18.1	
	900	2.0						4.2			6.6			11.1			16.3	
	750	1.7						3.5			5.5			9.3			13.6	
500	Exact Reduction Ratio							492.99			518.66			498.04			478.93	
	1800	3.6						7.6			11.4			19.1			29.2	
	1500	3.0						6.4			9.5			16.0			24.4	
	1200	2.4						5.1			7.6			12.8			19.5	
	1000	2.0						4.2			6.3			10.7			16.3	
	900	1.8						3.8			5.7			9.6			14.7	
	750	1.5						3.2			4.8			8.0			12.2	
Dimension Tables	Horizontal							C-160			C-162			C-162			C-162	
	Vertical							C-182			C-184			C-184			C-184	
	Upright							C-196			C-198			C-198			C-198	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer																		
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090				
Selection Tables	Quadruple Reduction Horizontal Type 450	1800	-							49				67				92				120
		1500	-							47				64				88				115
		1200	-							43				59				82				108
	▼	1000	-							40				56				77				102
		900	-							39				53				74				98
		500	750	-							36				50				69			
Dimension Tables	Quadruple Reduction Vertical Type 450	1800	-							50				69				94				123
		1500	-							48				65				89				117
		1200	-							44				60				83				109
	▼	1000	-							41				56				78				103
		900	-							39				54				75				99
		500	750	-							36				50				70			
	Quadruple Reduction Upright Type 450	1800	-							49				67				92				120
		1500	-							47				64				88				115
		1200	-							43				59				82				108
	▼	1000	-							41				56				77				102
		900	-							39				53				74				98
		500	750	-							36				50				69			

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 450 ► 500

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
424.05	431.36			472.69	461.82						Exact Reduction Ratio	
45	63			82	108						4.0	1800
37	52			69	90						3.3	1500
30	42			55	72						2.7	1200
25.1	35			46	60						2.2	1000
22.6	31			41	54						2.0	900
18.9	26.6			34	45						1.7	750
										Exact Reduction Ratio		
										3.6		1800
										3.0		1500
										2.4		1200
										2.0		1000
										1.8		900
										1.5		750
C-164	C-164			C-164	C-166						Horizontal Vertical Upright	Dimension Tables
C-186	C-186			C-186								

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C49 for the allowable radial and axial load on each shaft.

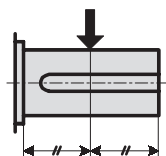
Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
143	184			233	256						-	1800
138	178			225	246						-	1500
131	170			213	233						-	1200
125	162			203	221						-	1000
121	157			196	214						-	900
114	148			185	202						-	750
149	192			241							-	1800
143	184			231							-	1500
134	174			217							-	1200
127	165			206							-	1000
123	160			199							-	900
116	151			188							-	750
										-	1800	Quadruple Reduction Type
										-	1500	Vertical Type
										-	1200	450
										-	1000	▼
										-	900	500
										-	750	500

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: RL, LR, BL

L.Speed Shaft Speed r/min		Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	11.8	17.7	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	77.0	100.1	100.1	137.8	139.8
	160	11.8	17.7	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	89.0	108.9	108.9	145.7	157.5
	100	11.8	17.7	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	54.4	99.0	99.0	122.1	122.1	147.6	166.3
	63	11.8	17.7	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	131.5	125.6	125.6	143.7	165.3
	40	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	141.0	125.1	125.1	137.8	164.8
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	139.5	122.6	122.6	135.4	163.3
Heavy duty bearing model	250									71.1	93.7	70.1	122.5	122.5	141.8	141.8	158.9	181.0
	160									78.0	94.7	77.5	137.5	137.5	132.4	132.4	151.6	174.6
	100									81.4	98.1	92.2	149.5	149.5	127.0	127.0	147.6	166.8
	63									81.4	98.1	114.8	149.0	149.0	125.6	125.6	143.7	165.8
	40									81.4	98.1	117.7	148.5	148.5	125.1	125.1	137.8	165.3
	≤ 25									81.4	98.1	117.7	147.0	147.0	122.6	122.6	135.4	163.8

Sheet 2

Applicable to configurations: RR, LL, BR

	L.Speed Shaft Speed r/min	Size of Reducer																	
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100	
Standard bearing model	250	8.3	15.2	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	44.0	58.4	58.4	97.6	80.4	
	160	9.8	17.7	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	55.5	64.3	64.3	103.0	96.1	
	100	11.8	17.7	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	63.5	74.6	74.6	110.9	105.9	
	63	11.8	17.7	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	95.0	104.5	104.5	148.1	153.5	
	40	11.8	17.7	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	129.0	146.7	146.7	172.2	203.6	
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	60.8	68.7	67.7	167.0	167.0	171.2	171.2	171.2	215.3	
Heavy duty bearing model	250									46.1	74.6	40.2	90.0	90.0	114.8	114.8	156.0	150.6	
	160									52.0	72.1	45.6	103.5	103.5	125.1	125.1	164.8	170.7	
	100									60.3	79.0	59.4	116.0	116.0	140.8	140.8	176.1	187.4	
	63									81.4	96.6	80.0	152.5	152.5	174.1	174.1	186.9	218.8	
	40									81.4	98.1	108.9	192.0	192.0	191.8	191.8	193.7	241.8	
	≤ 25									81.4	98.1	117.7	180.5	180.5	171.2	171.2	171.2	214.8	

Allowable Axial Load (kN)



	L.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	9.3	11.4	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	28.0	23.5	23.5	31.4	52.0	45.1
	160	9.3	11.4	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	28.4	27.5	27.5	34.3	53.0	53.0
	100	9.3	11.4	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	39.7	32.9	32.9	43.2	59.4	58.4
	63	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	52.5	45.6	45.6	54.0	59.8	81.4
	40	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	63.3	60.3	59.8	59.8	83.4
	≤ 25	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	67.7	60.3	59.8	59.8	83.4
Heavy duty bearing model	250									23.1	34.8	18.6	18.6	56.9	56.9	59.8	59.8	83.4
	160									25.0	33.4	21.1	21.1	56.9	56.9	59.8	59.8	83.4
	100									29.4	36.8	27.5	27.5	56.9	56.9	59.8	59.8	83.4
	63									39.2	43.2	36.3	36.3	56.9	56.9	59.8	59.8	83.4
	40									39.2	43.2	49.1	49.1	56.9	56.9	59.8	59.8	83.4
	≤ 25									39.2	43.2	56.9	56.9	56.9	56.9	59.8	59.8	83.4

SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
192.3	167.8	222.7							250	Standard bearing model
200.6	174.1	234.9							160	
183.9	184.9	245.7	391.9	352.7	330.6	315.4	403.2	391.9	100	
178.1	190.8	303.1	387.5	369.3	341.4	328.6	462.5	430.7	63	
173.6	194.7	320.8	460.1	449.3	401.2	409.6	572.4	511.1	40	
167.3	184.9	316.4	448.3	554.8	497.4	534.6	733.8	638.6	≤ 25	Heavy duty bearing model
213.9	250.6	316.9							250	
200.6	214.8	334.5							160	
183.9	195.2	340.9							100	
178.1	190.8	333.5							63	
173.6	194.7	320.8							40	
167.3	184.9	316.4							≤ 25	

Unit: kN

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
131.5	94.2	152.5							250	Standard bearing model
138.3	92.2	155.0							160	
146.7	101.0	167.3	312.0	228.1	197.7	159.4	203.6	190.3	100	
200.1	144.7	220.7	292.3	244.3	206.0	170.7	260.9	218.8	63	
235.4	199.1	250.2	373.3	322.7	257.0	250.2	369.3	286.5	40	
304.1	272.7	353.2	460.1	427.2	348.7	373.3	528.3	398.3	≤ 25	Heavy duty bearing model
213.4	191.3	248.7							250	
223.2	197.7	261.4							160	
236.9	210.4	274.2							100	
301.7	267.8	341.9							63	
304.1	323.7	382.1							40	
304.1	323.7	374.7							≤ 25	

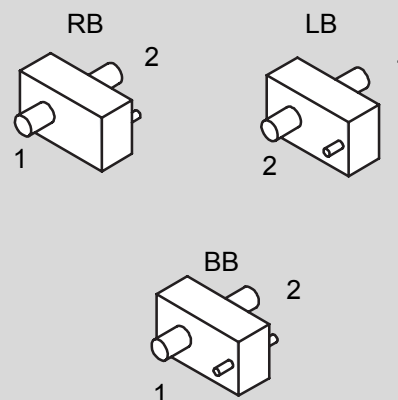
Unit: kN

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RB, LB, BB)
 - See sheet 1 when the radial load is applied only to the shaft 1.
 - See sheet 2 when the radial load is applied only to the shaft 2.
 - Consult us when the radial load is applied to both shafts.

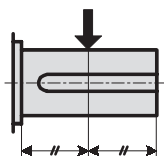


Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
50.0	50.0	76.5							250	Standard bearing model
49.5	49.5	76.5							160	
54.0	54.0	83.4	119.7	121.6	116.7	91.2	113.3	107.9	100	
74.6	74.6	83.4	119.7	121.6	121.6	96.6	140.3	122.6	63	
83.4	83.4	83.4	119.7	121.6	121.6	134.9	191.3	155.5	40	
83.4	83.4	83.4	119.7	121.6	121.6	144.2	192.3	192.3	≤ 25	Heavy duty bearing model
83.4	83.4	83.4							250	
83.4	83.4	83.4							160	
83.4	83.4	83.4							100	
83.4	83.4	83.4							63	
83.4	83.4	83.4							40	
83.4	83.4	83.4							≤ 25	

Unit: kN

SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: RL, LR, BL

L. Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	1200	1800	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200	10200	14050
	160	1200	1800	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100	11100	14850
	100	1200	1800	2550	3600	3950	4000	4800	5450	4850	5550	5550	10100	10100	12450	12450	15050
	63	1200	1800	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800	12800	14650
	40	1200	1800	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750	12750	14050
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500	12500	13800
Heavy duty bearing model	250								7250	9550	7150	12500	12500	14450	14450	16200	18450
	160								7950	9650	7900	14000	14000	13500	13500	15450	17800
	100								8300	10000	9400	15250	15250	12950	12950	15050	17000
	63								8300	10000	11700	15200	15200	12800	12800	14650	16900
	40								8300	10000	12000	15150	15150	12750	12750	14050	16850
	≤ 25								8300	10000	12000	15000	15000	12500	12500	13800	16700

Sheet 2

Applicable to configurations: RR, LL, BR

L. Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	850	1550	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950	5950	8200
	160	1000	1800	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550	6550	9800
	100	1200	1800	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	6450	7600	7600	10800
	63	1200	1800	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650	10650	15100
	40	1200	1800	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950	14950	17550
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450	17450	21950
Heavy duty bearing model	250								4700	7600	4100	9150	9150	11700	11700	15900	15350
	160								5300	7350	4650	10550	10550	12750	12750	16800	17400
	100								6150	8050	6050	11800	11800	14350	14350	17950	19100
	63								8300	9850	8150	15550	15550	17750	17750	19050	22300
	40								8300	10000	11100	19550	19550	19550	19550	19750	24650
	≤ 25								8300	10000	12000	18400	18400	17450	17450	17450	21900

Allowable Axial Load (kgf)



L. Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	950	1160	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400	3200	4600
	160	950	1160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2900	2800	2800	3500	5400
	100	950	1160	2500	2350	3350	3200	3800	3250	3500	4400	4050	4050	3350	3350	4400	5950
	63	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650	5500	8300
	40	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150	6100	8500
	≤ 25	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150	6100	8500
Heavy duty bearing model	250								2350	3550	1900	1900	5800	5800	6100	6100	8500
	160								2550	3400	2150	2150	5800	5800	6100	6100	8500
	100								3000	3750	2800	2800	5800	5800	6100	6100	8500
	63								4000	4400	3700	3700	5800	5800	6100	6100	8500
	40								4000	4400	5000	5000	5800	5800	6100	6100	8500
	≤ 25								4000	4400	5800	5800	5800	5800	6100	6100	8500

SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Size of Reducer									L.Speed Shaft Speed r/min
9105	9110	9115	9118	9121	9126	9128	9131	9136	
19600	17100	22700							250
20450	17750	23950							160
18750	18850	25050	39950	35950	33700	32150	41100	39950	100
18150	19450	30900	39500	37650	34800	33500	47150	43900	63
17700	19850	32700	46900	45800	40900	41750	58350	52100	40
17050	18850	32250	45700	56550	50700	54500	74800	65100	≤ 25
21800	25550	32300							250
20450	21900	34100							160
18750	19900	34750							100
18150	19450	34000							63
17700	19850	32700							40
17050	18850	32250							≤ 25

Unit: kgf

Size of Reducer									L.Speed Shaft Speed r/min
9105	9110	9115	9118	9121	9126	9128	9131	9136	
13400	9600	15550							250
14100	9400	15800							160
14950	10300	17050	31800	23250	20150	16250	20750	19400	100
20400	14750	22500	29800	24900	21000	17400	26600	22300	63
24000	20300	25500	38050	32900	26200	25500	37650	29200	40
31000	27800	36000	46900	43550	35550	38050	53850	40600	≤ 25
21750	19500	25350							250
22750	20150	26650							160
24150	21450	27950							100
30750	27300	34850							63
31000	33000	38950							40
31000	33000	38200							≤ 25

Unit: kgf

Size of Reducer									L.Speed Shaft Speed r/min
9105	9110	9115	9118	9121	9126	9128	9131	9136	
5100	5100	7800							250
5050	5050	7800							160
5500	5500	8500	12200	12400	11900	9300	11550	11000	100
7600	7600	8500	12200	12400	12400	9850	14300	12500	63
8500	8500	8500	12200	12400	12400	13750	19500	15850	40
8500	8500	8500	12200	12400	12400	14700	19600	19600	≤ 25
8500	8500	8500							250
8500	8500	8500							160
8500	8500	8500							100
8500	8500	8500							63
8500	8500	8500							40
8500	8500	8500							≤ 25

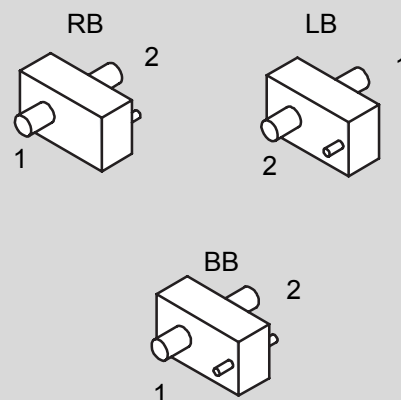
Unit: kgf

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RB, LB, BB)
 - See sheet 1 when the radial load is applied only to the shaft 1.
 - See sheet 2 when the radial load is applied only to the shaft 2.
 - Consult us when the radial load is applied to both shafts.



SELECTION Allowable Radial Load on High Speed Shaft Parallel shaft

Double Reduction (kN)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
6.3	1800	2.5	3.4	1.5	1.5							2.5	2.5	2.5	2.5	26.5	26.5	29.4
	1500	2.5	3.4	3.9	3.9							2.5	2.5	3.9	3.9	28.0	28.0	31.4
	1200	2.5	2.9	3.4	3.4							3.9	3.9	8.8	8.8	30.4	30.4	35.8
	1000	2.5	2.9	3.4	3.4							3.9	3.9	20.6	20.6	33.4	33.8	41.2
8	900	2.5	2.9	3.4	3.4							3.9	3.9	24.0	24.0	35.8	34.8	44.6
	750	2.5	2.9	3.4	3.4							4.4	4.4	26.0	26.0	38.3	35.8	47.6
9	1800	2.9	3.4	3.9	3.9							2.0	2.0	12.8	12.8	28.9	28.4	33.8
	1500	2.9	3.4	3.9	3.9	3.4	3.4			5.4	5.4	5.9	5.9	24.0	24.0	31.9	30.4	38.7
	1200	2.9	3.4	3.9	3.9	6.9	6.9	2.5	2.5	11.8	11.8	16.2	16.2	29.4	29.4	36.8	34.3	45.1
	1000	2.9	3.4	3.9	3.9	8.3	8.3	5.9	5.9	12.8	12.8	23.1	23.1	29.4	29.4	41.7	37.8	50.5
10	900	2.9	3.4	3.9	3.9	8.3	8.3	7.4	7.4	12.8	12.8	24.5	24.5	28.9	28.9	43.7	39.2	54.0
	750	2.9	3.4	3.9	3.9	8.3	8.3	10.3	10.3	12.8	12.8	24.5	24.5	28.9	28.9	46.1	40.2	57.4
11.2	1800	2.9	3.9	4.4	4.4	8.3	8.3	8.8	8.8	8.8	8.8	10.8	10.8	25.0	25.0	32.9	29.4	40.2
	1500	2.9	3.9	4.4	4.4	8.8	8.8	11.8	11.8	13.2	13.2	19.1	19.1	25.0	25.0	37.3	31.9	45.1
	1200	2.9	3.9	4.4	4.4	8.8	8.8	11.8	11.8	13.2	13.2	25.0	25.0	25.0	25.0	42.2	35.8	51.5
	1000	2.9	3.9	4.4	4.4	8.8	8.8	11.8	11.8	13.2	13.2	25.0	25.0	25.0	25.0	47.1	39.2	56.9
22.4	900	2.9	3.9	4.4	4.4	8.8	8.8	11.8	11.8	13.2	13.2	25.0	25.0	25.0	25.0	49.1	40.7	60.3
	750	2.9	3.9	4.4	4.4	8.8	8.8	11.8	11.8	13.2	13.2	25.0	25.0	25.0	25.0	51.5	42.7	63.8

Triple Reduction(kN)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
20	1800	2.0	2.9	2.0	2.0	2.9	2.9	3.4	3.4	3.4	3.4	2.9	2.9	6.4	6.4	15.2	15.2	17.2
	1500	2.0	2.9	2.0	2.0	2.9	2.9	3.4	3.4	3.9	3.9	2.9	2.9	7.8	7.8	15.2	15.2	17.2
	1200	2.0	2.9	2.0	2.0	2.9	2.9	3.4	3.4	4.9	4.9	5.4	5.4	9.8	9.8	14.7	14.7	17.2
	1000	2.0	2.9	2.0	2.0	2.9	2.9	3.4	3.4	5.4	5.4	5.9	5.9	10.8	10.8	14.7	14.7	17.2
25	900	2.0	2.9	2.0	2.0	2.9	2.9	3.4	3.4	5.9	5.9	6.4	6.4	10.8	10.8	14.7	14.2	17.2
	750	2.0	2.9	2.0	2.0	2.9	2.9	3.4	3.4	6.4	6.4	7.4	7.4	10.8	10.8	14.7	14.2	17.2
28	1800	2.0	2.9	2.5	2.5	2.9	2.9	3.9	3.9	5.4	5.4	5.9	5.9	9.8	9.8	16.7	16.2	19.6
	1500	2.0	2.9	2.5	2.5	2.9	2.9	3.9	3.9	5.9	5.9	6.9	6.9	11.8	11.8	16.7	16.2	19.6
	1200	2.0	2.9	2.5	2.5	2.9	2.9	3.9	3.9	6.9	6.9	7.8	7.8	12.3	12.3	16.7	16.2	19.6
	1000	2.0	2.9	2.5	2.5	2.9	2.9	3.9	3.9	7.4	7.4	8.8	8.8	12.3	12.3	16.7	15.7	19.6
50	900	2.0	2.9	2.5	2.5	2.9	2.9	3.9	3.9	7.8	7.8	9.3	9.3	12.3	12.3	16.7	15.7	19.6
	750	2.0	2.9	2.5	2.5	2.9	2.9	3.9	3.9	7.8	7.8	9.8	9.8	12.3	12.3	16.7	15.7	19.6
56	1800			2.9	2.9	3.9	3.9	4.4	4.4	8.8	8.8	9.8	9.8	14.2	14.2	17.7	17.2	21.6
	1500			2.9	2.9	3.9	3.9	4.4	4.4	9.3	9.3	10.8	10.8	16.2	16.2	17.7	17.2	21.6
	1200			2.9	2.9	3.9	3.9	4.4	4.4	9.3	9.3	11.3	11.3	16.2	16.2	17.7	17.2	21.6
	1000			2.9	2.9	3.9	3.9	4.4	4.4	9.3	9.3	11.3	11.3	16.2	16.2	17.7	17.2	21.6
90	900			2.9	2.9	3.9	3.9	4.4	4.4	9.3	9.3	11.3	11.3	16.2	16.2	17.7	17.2	21.6
	750			2.9	2.9	3.9	3.9	4.4	4.4	9.3	9.3	11.3	11.3	16.2	16.2	17.7	17.2	21.6

Quadruple Reduction(kN)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
80	1800			2.0	2.0	2.9	2.9	2.5	2.5	3.4	3.4	3.9	3.9	4.9	4.9	15.2	15.2	21.1
	1500			2.0	2.0	2.9	2.9	2.5	2.5	3.4	3.4	3.9	3.9	4.9	4.9	15.2	15.2	21.1
	1200			2.0	2.0	2.9	2.9	2.5	2.5	3.4	3.4	3.9	3.9	4.9	4.9	15.2	15.2	21.1
	1000			2.0	2.0	2.9	2.9	2.5	2.5	3.4	3.4	3.9	3.9	4.9	4.9	15.2	15.2	21.1
500	900			2.0	2.0	2.9	2.9	2.5	2.5	3.4	3.4	3.9	3.9	4.9	4.9	15.2	15.2	21.1
	750			2.0	2.0	2.9	2.9	2.5	2.5	3.4	3.4	3.9	3.9	4.9	4.9	15.2	15.2	21.1

SELECTION Allowable Radial Load on High Speed Shaft Parallel shaft

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
29.4	43.7	43.2							1800	6.3
31.4	46.1	45.6							1500	
33.4	49.1	49.1							1200	
36.8	53.0	53.0							1000	8
38.7	55.9	55.9							900	
42.2	59.4	59.4							750	
31.4	48.1	47.1							1800	9
33.4	52.5	50.0							1500	
37.3	58.4	55.4							1200	
41.7	63.8	60.3							1000	10
45.1	66.7	63.8							900	
48.6	71.6	67.2							750	
32.4	54.4	48.1							1800	11.2
35.3	59.4	52.0							1500	
40.2	65.7	58.4							1200	
45.6	71.1	63.3							1000	22.4
49.1	74.6	66.7							900	
52.5	80.4	70.1							750	

Unit: kN

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
16.7	12.3	12.3	4.9				16.2	13.7	1800	20
16.7	11.8	11.8	4.9				24.5	18.6	1500	
16.2	10.8	10.8	5.4				34.8	24.5	1200	
16.2	10.3	10.3	5.4				44.1	29.9	1000	25
16.2	10.3	9.8	7.8				50.0	33.4	900	
16.2	9.8	9.8	10.3				59.4	38.7	750	
18.6	12.8	14.7	4.9	10.3	4.4		29.9	23.5	1800	28
18.6	12.3	14.2	8.8	15.2	6.4	3.9	38.3	28.4	1500	
18.6	12.3	13.7	17.2	22.1	10.3	11.3	49.1	34.8	1200	
18.1	12.3	13.2	17.7	28.0	13.7	17.7	58.4	40.7	1000	50
18.1	12.3	13.2	17.7	31.4	16.7	21.1	64.3	44.1	900	
18.1	12.3	12.8	17.7	34.8	20.6	25.5	73.6	50.5	750	
20.6	17.2	11.8	26.5	28.9	17.7	21.6	52.0	26.0	1800	56
20.6	17.2	10.8	26.5	33.8	22.6	27.5	51.5	25.5	1500	
20.6	17.2	10.8	26.5	38.3	25.0	34.8	51.0	25.0	1200	
20.6	17.2	10.8	26.5	37.8	25.0	41.2	50.5	24.0	1000	90
20.6	17.2	10.8	26.5	37.8	25.0	45.1	50.5	24.0	900	
20.6	16.7	10.3	26.5	37.8	24.5	49.5	50.0	23.5	750	

Unit: kN

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
21.1	21.1	21.1	17.7	24.5	23.1	34.3	34.3	26.5	1800	80
21.1	21.1	21.1	24.5	24.5	22.6	34.3	39.2	26.0	1500	
21.1	21.1	21.1	27.5	24.5	22.6	34.3	39.2	26.0	1200	
21.1	21.1	21.1	28.9	24.5	22.6	35.8	39.2	26.0	1000	500
21.1	21.1	21.1	29.9	24.5	22.6	34.3	39.2	25.5	900	
21.1	21.1	21.1	30.4	24.5	22.6	34.3	39.2	25.5	750	

Unit: kN

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft.
Consult us when a load is not in the center.
- Consult us when the radial load due to pulley driving, etc. is to be applied in the blanks in the table.

SELECTION Allowable Radial Load on High Speed Shaft Parallel shaft

Double Reduction (kgf)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
6.3 ▼ 8	1800	250	350	150	150							250	250	250	250	2700	2700	3000
	1500	250	350	400	400							250	250	400	400	2850	2850	3200
	1200	250	300	350	350							400	400	900	900	3100	3100	3650
	1000	250	300	350	350							400	400	2100	2100	3400	3450	4200
	900	250	300	350	350							400	400	2450	2450	3650	3550	4550
	750	250	300	350	350							450	450	2650	2650	3900	3650	4850
9 ▼ 10	1800	300	350	400	400							200	200	1300	1300	2950	2900	3450
	1500	300	350	400	400	350	350			550	550	600	600	2450	2450	3250	3100	3950
	1200	300	350	400	400	700	700	250	250	1200	1200	1650	1650	3000	3000	3750	3500	4600
	1000	300	350	400	400	850	850	600	600	1300	1300	2350	2350	3000	3000	4250	3850	5150
	900	300	350	400	400	850	850	750	750	1300	1300	2500	2500	2950	2950	4450	4000	5500
	750	300	350	400	400	850	850	1050	1050	1300	1300	2500	2500	2950	2950	4700	4100	5850
11.2 ▼ 22.4	1800	300	400	450	450	850	850	900	900	900	900	1100	1100	2550	2550	3350	3000	4100
	1500	300	400	450	450	900	900	1200	1200	1350	1350	1950	1950	2550	2550	3800	3250	4600
	1200	300	400	450	450	900	900	1200	1200	1350	1350	2550	2550	2550	2550	4300	3650	5250
	1000	300	400	450	450	900	900	1200	1200	1350	1350	2550	2550	2550	2550	4800	4000	5800
	900	300	400	450	450	900	900	1200	1200	1350	1350	2550	2550	2550	2550	5000	4150	6150
	750	300	400	450	450	900	900	1200	1200	1350	1350	2550	2550	2550	2550	5250	4350	6500

Triple Reduction(kgf)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
20 ▼ 25	1800	200	300	200	200	300	300	350	350	350	350	300	300	650	650	1550	1550	1750
	1500	200	300	200	200	300	300	350	350	400	400	300	300	800	800	1550	1550	1750
	1200	200	300	200	200	300	300	350	350	500	500	550	550	1000	1000	1500	1500	1750
	1000	200	300	200	200	300	300	350	350	550	550	600	600	1100	1100	1500	1500	1750
	900	200	300	200	200	300	300	350	350	600	600	650	650	1100	1100	1500	1450	1750
	750	200	300	200	200	300	300	350	350	650	650	750	750	1100	1100	1500	1450	1750
28 ▼ 50	1800	200	300	250	250	300	300	400	400	550	550	600	600	1000	1000	1700	1650	2000
	1500	200	300	250	250	300	300	400	400	600	600	700	700	1200	1200	1700	1650	2000
	1200	200	300	250	250	300	300	400	400	700	700	800	800	1250	1250	1700	1650	2000
	1000	200	300	250	250	300	300	400	400	750	750	900	900	1250	1250	1700	1600	2000
	900	200	300	250	250	300	300	400	400	800	800	950	950	1250	1250	1700	1600	2000
	750	200	300	250	250	300	300	400	400	800	800	1000	1000	1250	1250	1700	1600	2000
56 ▼ 90	1800			300	300	400	400	450	450	900	900	1000	1000	1450	1450	1800	1750	2200
	1500			300	300	400	400	450	450	950	950	1100	1100	1650	1650	1800	1750	2200
	1200			300	300	400	400	450	450	950	950	1150	1150	1650	1650	1800	1750	2200
	1000			300	300	400	400	450	450	950	950	1150	1150	1650	1650	1800	1750	2200
	900			300	300	400	400	450	450	950	950	1150	1150	1650	1650	1800	1750	2200
	750			300	300	400	400	450	450	950	950	1150	1150	1650	1650	1800	1750	2200

Quadruple Reduction(kgf)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
80 ▼ 500	1800			200	200	300	300	250	250	350	350	400	400	500	500	1550	1550	2150
	1500			200	200	300	300	250	250	350	350	400	400	500	500	1550	1550	2150
	1200			200	200	300	300	250	250	350	350	400	400	500	500	1550	1550	2150
	1000			200	200	300	300	250	250	350	350	400	400	500	500	1550	1550	2150
	900			200	200	300	300	250	250	350	350	400	400	500	500	1550	1550	2150
	750			200	200	300	300	250	250	350	350	400	400	500	500	1550	1550	2150

SELECTION Allowable Radial Load on High Speed Shaft Parallel shaft

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
3000	4450	4400							1800	6.3
3200	4700	4650							1500	
3400	5000	5000							1200	
3750	5400	5400							1000	
3950	5700	5700							900	8
4300	6050	6050							750	
3200	4900	4800							1800	9
3400	5350	5100							1500	
3800	5950	5650							1200	
4250	6500	6150							1000	
4600	6800	6500							900	10
4950	7300	6850							750	
3300	5550	4900							1800	11.2
3600	6050	5300							1500	
4100	6700	5950							1200	
4650	7250	6450							1000	
5000	7600	6800							900	22.4
5350	8200	7150							750	

Unit: kgf

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25
V Belt	1.5
Flat Belt	2.5

Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
1700	1250	1250	500				1650	1400	1800	20
1700	1200	1200	500				2500	1900	1500	
1650	1100	1100	550				3550	2500	1200	
1650	1050	1050	550				4500	3050	1000	
1650	1050	1000	800				5100	3400	900	25
1650	1000	1000	1050				6050	3950	750	
1900	1300	1500	500	1050	450		3050	2400	1800	28
1900	1250	1450	900	1550	650	400	3900	2900	1500	
1900	1250	1400	1750	2250	1050	1150	5000	3550	1200	
1850	1250	1350	1800	2850	1400	1800	5950	4150	1000	
1850	1250	1350	1800	3200	1700	2150	6550	4500	900	50
1850	1250	1300	1800	3550	2100	2600	7500	5150	750	
2100	1750	1200	2700	2950	1800	2200	5300	2650	1800	56
2100	1750	1100	2700	3450	2300	2800	5250	2600	1500	
2100	1750	1100	2700	3900	2550	3550	5200	2550	1200	
2100	1750	1100	2700	3850	2550	4200	5150	2450	1000	
2100	1750	1100	2700	3850	2550	4600	5150	2450	900	90
2100	1700	1050	2700	3850	2500	5050	5100	2400	750	

Unit: kgf

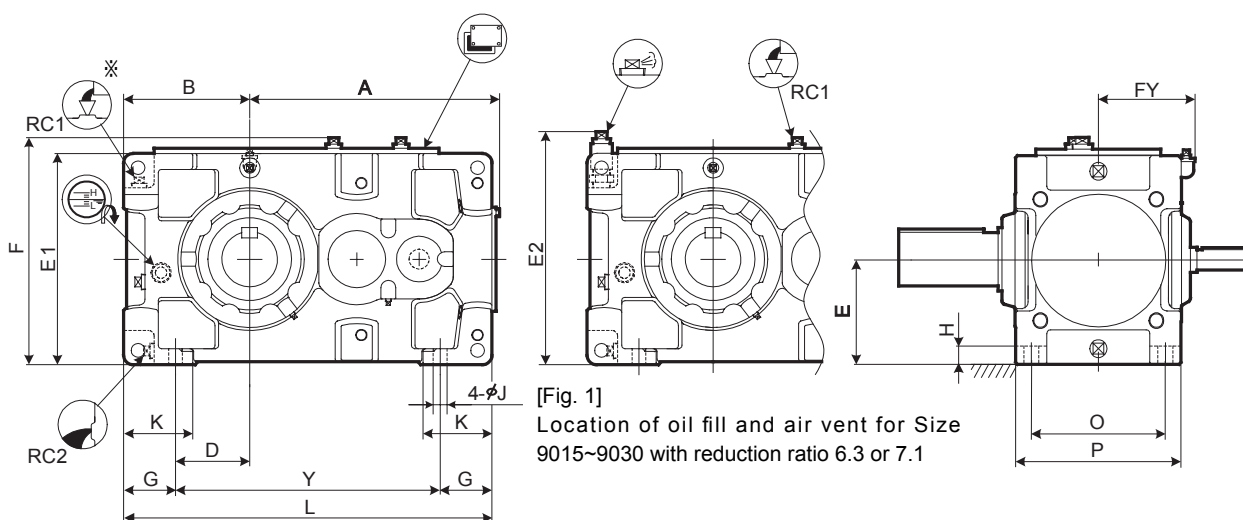
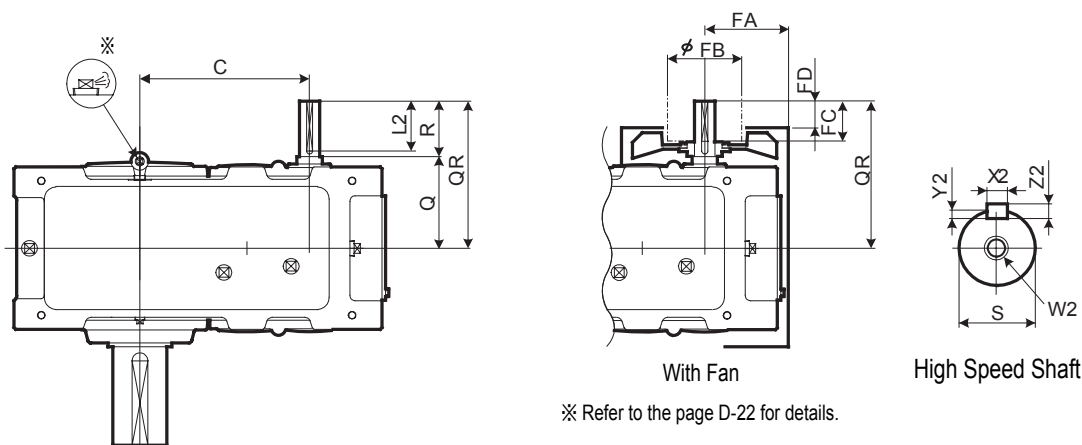
Size of Reducer									H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9105	9110	9115	9118	9121	9126	9128	9131	9136		
2150	2150	2150	1800	2500	2350	3500	3500	2700	1800	80
2150	2150	2150	2500	2500	2300	3500	4000	2650	1500	
2150	2150	2150	2800	2500	2300	3500	4000	2650	1200	
2150	2150	2150	2950	2500	2300	3650	4000	2650	1000	
2150	2150	2150	3050	2500	2300	3500	4000	2600	900	500
2150	2150	2150	3100	2500	2300	3500	4000	2600	750	

Unit: kgf

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft.
Consult us when a load is not in the center.
- Consult us when the radial load due to pulley driving, etc. is to be applied in the blanks in the table.

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9015 ▶ 9055



※ Location of oil fill and air vent changes for Size 9015~9030 with reduction ratio 6.3 or 7.1. Refer to Fig. 1.

Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9015	295	160	194	90	135	270	309	299	129	70	22	15	95	440	170	205	300
9025	346	175	227	95	155	310	346	339	142	80	25	19	110	505	195	235	345
9030	406	200	264	110	160	320	353	349	154	90	28	24	120	590	215	265	410
9035	437	219	295	129	185	370		399	154	90	28	24	120	640	215	265	460
9040	467	235	306	120	200	400		431	172	115	30	28	150	685	255	315	455
9045	506	256	345	141	220	440		471	172	115	30	28	150	745	255	315	515
9050	537	255	358	138.5	210	420		451	192	116.5	32	28	150	775	285	345	542
9055	576	286	397	171	245	490		521	192	115	32	28	150	845	285	345	615

Size	High Speed Shaft									Fan				RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9015	131	211	80	30k6	M10/22	8	4	7	70	129	125	50	30	3/4"	3/4"	100	5
9025	146	226	80	35k6	M12/28	10	5	8	70	143	140	50	30	3/4"	3/4"	140	7
9030	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	3/4"	195	10
9035	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	3/4"	215	12
9040	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	1"	285	16
9045	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	1"	345	18
9050	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	1"	415	21
9055	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	1"	475	28

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.
5. When fastening the mounting bolt, it is necessary to remove the fan food.

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9015 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

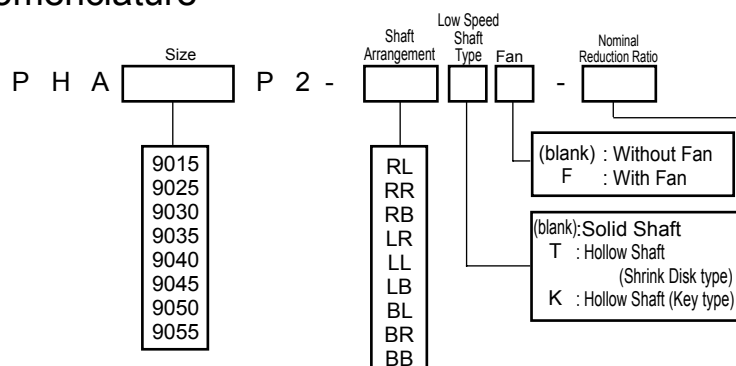
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55	
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

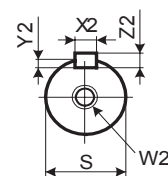
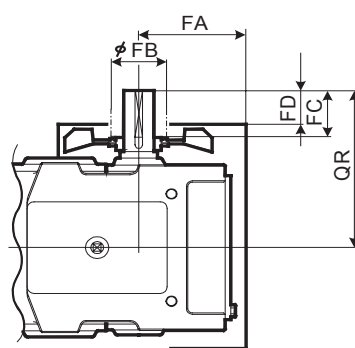
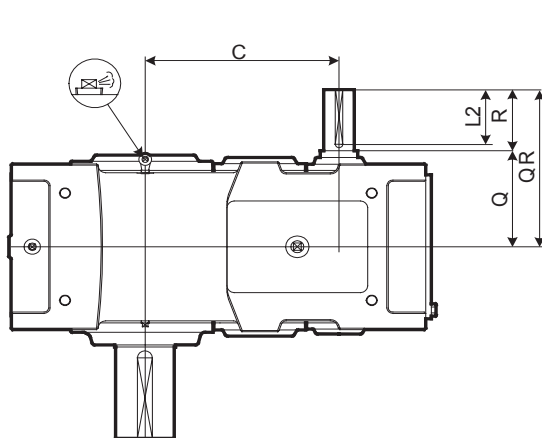


Backstop (Option)



Opposite Side

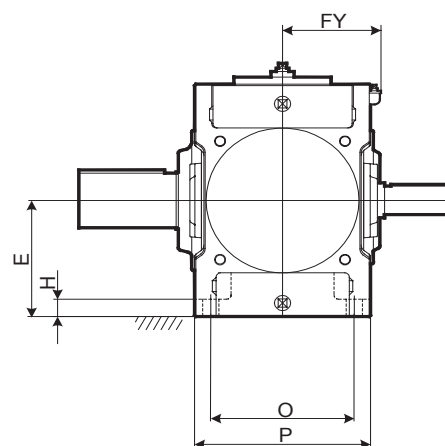
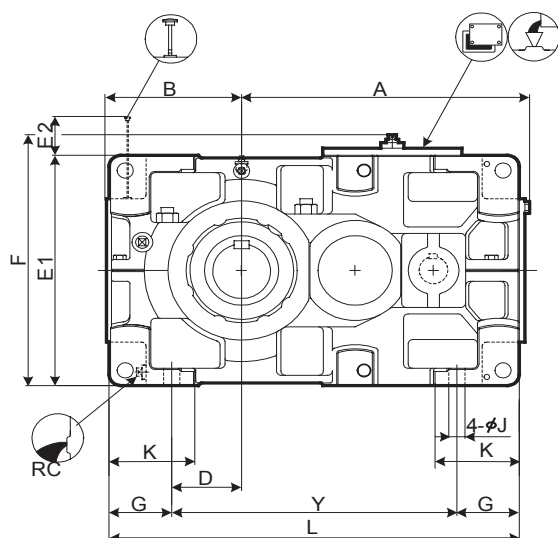
DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9060 ▶ 9085



With Fan

High Speed Shaft

※ Refer to the page D-22 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9060	621	299	414	151	265	530	183	578	212	135	35	35	180	885	310	380	615
9065	667	338	460	190	300	600	148	648	212	135	35	35	180	970	310	380	700
9070	719	336	482	163	300	600	213	648	237	160	40	42	215	1020	350	430	700
9075	772	383	535	210	335	670	178	718	237	160	52	42	220	1120	350	430	800
9080	812	378	556	205	335	670	233	718	257	160	52	42	220	1155	380	460	835
9085	868	422	612	249	375	750	193	798	257	160	52	42	220	1255	380	460	935

Size	High Speed Shaft									Fan				RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9060	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	610	25
9065	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	735	29
9070	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	860	38
9075	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	1110	47
9080	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1240	54
9085	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1500	68

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. When fastening the mounting bolt, it is necessary to remove the fan food.

4. Refer to the page D -14 for dimensions not shown in these drawings.
5. Refer to the page D -27 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

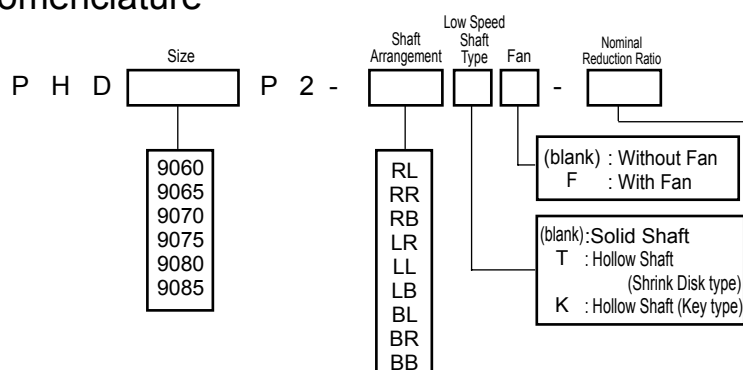
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○	○	○
9065			○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

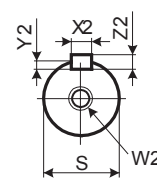
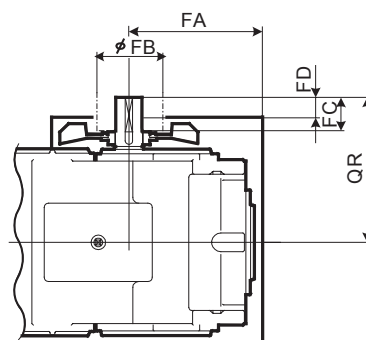
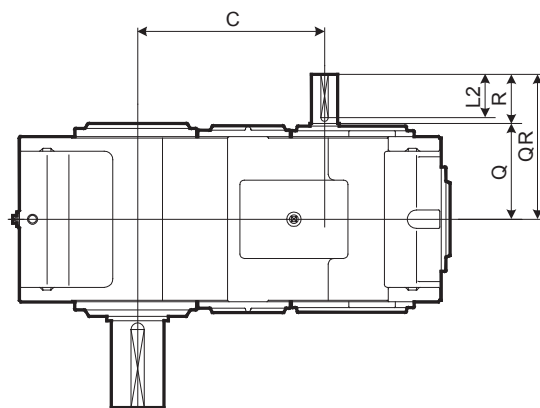


Backstop (Option)



Opposite Side

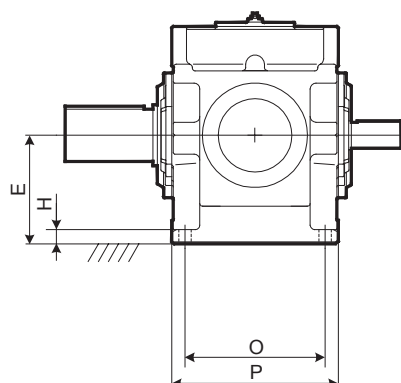
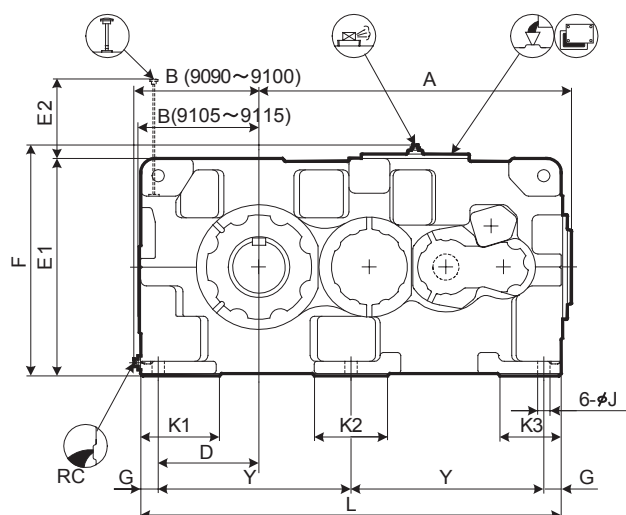
DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9090 ▶ 9115



High Speed Shaft

With Fan

※ Refer to the page D-22 for details.



Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1070	428	640	345	375	750	274	797	60	50	42	270	250	210	1440	480	570	660
9095	1100	458	670	375	400	800	286	847	60	50	42	290	250	210	1500	480	570	690
9100	1204	468	724	375	425	850	299	897	70	55	48	300	280	240	1610	560	650	735
9105	1238	493	758	410	450	900	316	947	70	55	48	320	280	240	1680	560	650	770
9110	1354	508	824	420	475	950	321	997	75	60	56	340	310	260	1810	610	710	830
9115	1403	558	873	470	500	1000	333	1047	75	60	56	350	310	260	1910	610	710	880

Size	High Speed Shaft									Fan				RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9090	330	500	170	90m6	M24/50	25	9	14	150	465	250	135	90	1 1/2"	2050	120
9095	330	500	170	90m6	M24/50	25	9	14	150	465	250	135	90	1 1/2"	2300	140
9100	375	585	210	100m6	M24/50	28	10	16	190	515	250	175	130	1 1/2"	2730	170
9105	375	585	210	100m6	M24/50	28	10	16	190	515	250	175	130	1 1/2"	3290	205
9110	405	615	210	110m6	M24/50	28	10	16	190	565	250	175	130	1 1/2"	3960	240
9115	405	615	210	110m6	M24/50	28	10	16	190	565	250	175	130	1 1/2"	4410	290

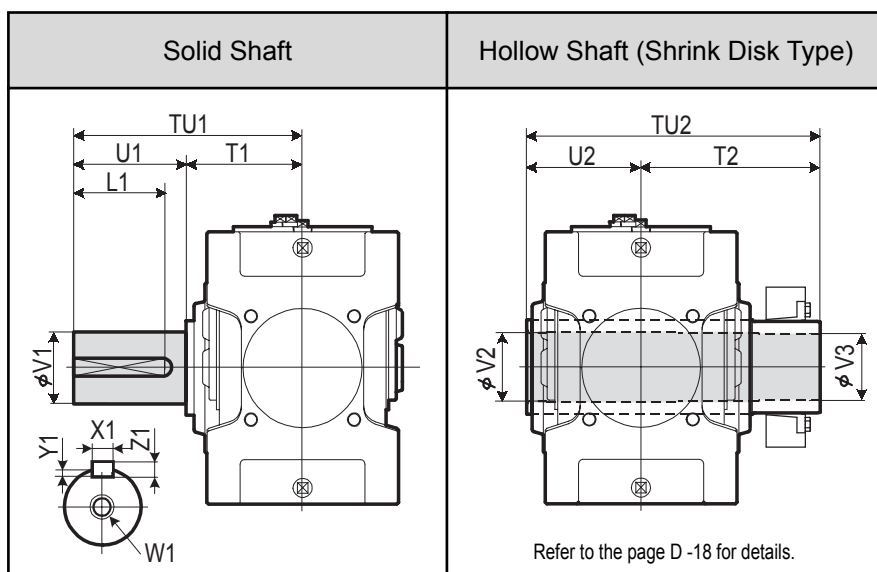
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-16 for dimensions not shown in these drawings.

4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9090 ▶ 9115

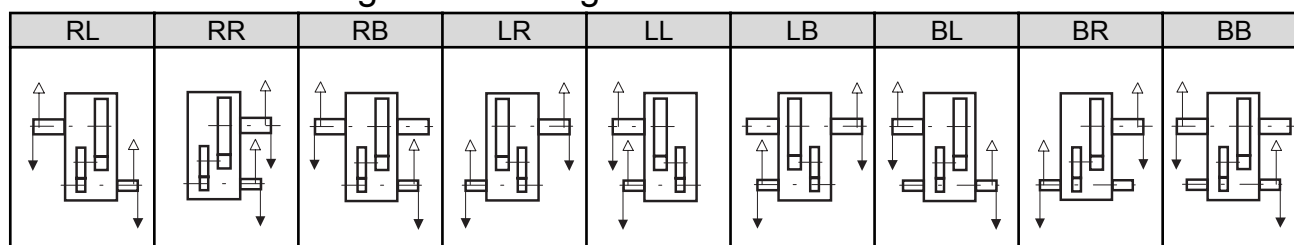
Slow Speed Shaft



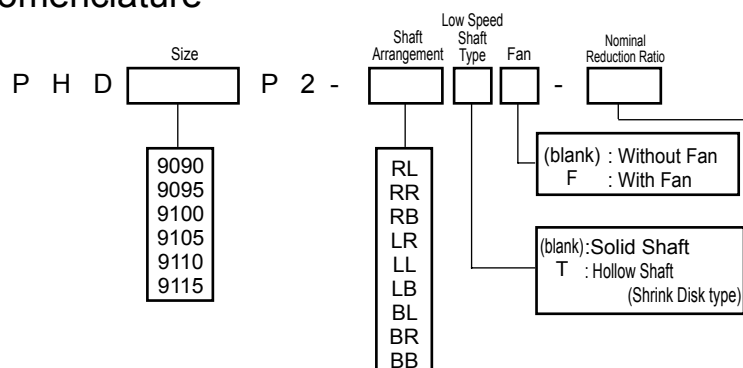
Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3
						X1	Y1	Z1	L1					
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio										
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20
9090	○	○	○	○	○	○	○	○	○	○	
9095		○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	
9105		○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	
9115		○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

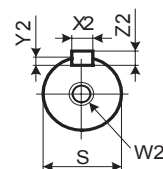
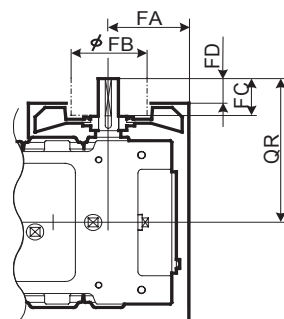
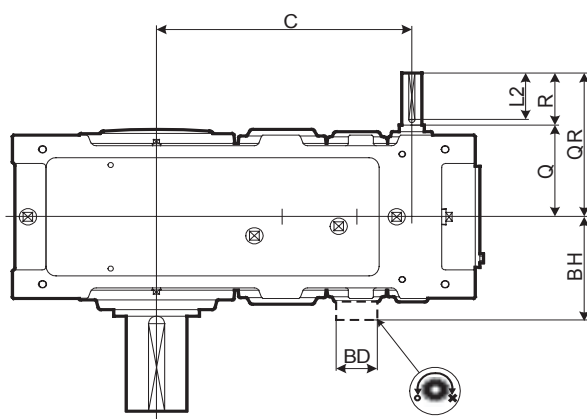


Backstop (Option)



Opposite Side

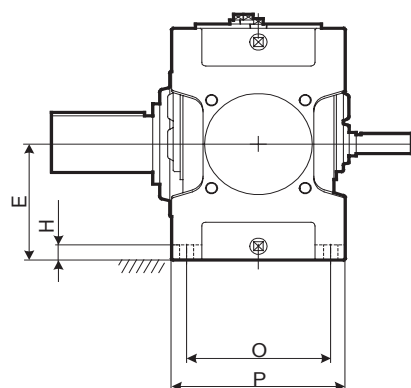
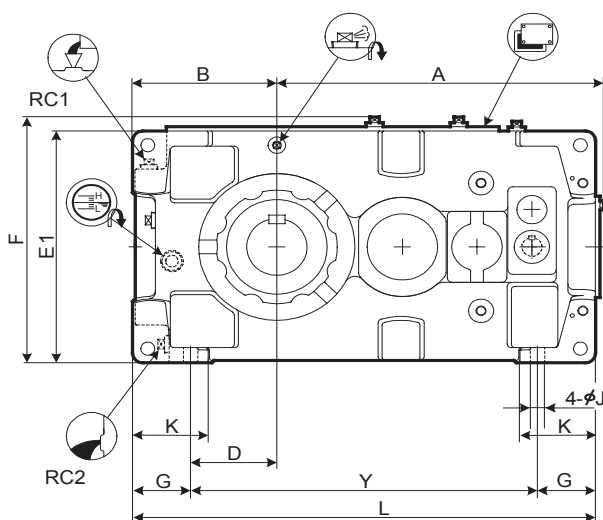
DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9015 ▶ 9055



High Speed Shaft

With Fan

※ Refer to the page D-23 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9015	338	160	257	90	135	270	299	70	22	15	95	485	170	205	345
9025	408	175	306	95	155	310	339	80	25	19	110	570	195	235	410
9030	453	200	343	110	160	320	349	90	28	24	120	640	215	265	460
9035	484	219	374	129	185	370	399	90	28	24	120	690	215	265	510
9040	540	235	398	120	200	400	431	115	30	28	150	759	255	315	529
9045	577	256	437	141	220	440	471	115	30	28	150	819	255	315	589
9050	609	255	467	138.5	210	420	451	116.5	32	28	150	848	285	345	615
9055	648	286	506	171	245	490	521	115	32	28	150	918	285	345	688

Size	High Speed Shaft										Fan				Backstop		RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD	BD	BH					
9015	130	190	60	25k6	M10/22	8	4	7	50	111	125	30	10			3/4"	3/4"	105	5	
9025	144	204	60	28k6	M10/22	8	4	7	50	129	125	30	10			3/4"	3/4"	150	8	
9030	161	241	80	30k6	M10/22	8	4	7	70	140	125	50	30			3/4"	3/4"	205	10	
9035	161	241	80	30k6	M10/22	8	4	7	70	150	140	50	22			3/4"	3/4"	225	13	
9040	176	256	80	35k6	M12/28	10	5	8	70	170	140	50	22			1"	1"	305	19	
9045	176	256	80	35k6	M12/28	10	5	8	70	170	140	50	22			1"	1"	375	21	
9050	194	304	110	40k6	M16/36	12	5	8	95	172	140	80	52	150	263	1"	1"	445	24	
9055	194	304	110	40k6	M16/36	12	5	8	95	172	140	80	52	150	263	1"	1"	505	29	

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. When fastening the mounting bolt, it is necessary to remove the fan food.

4. Refer to the page D -13 for dimensions not shown in these drawings.
5. Refer to the page D -24 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9015 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55	
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

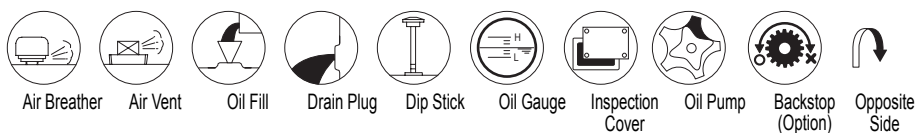
Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

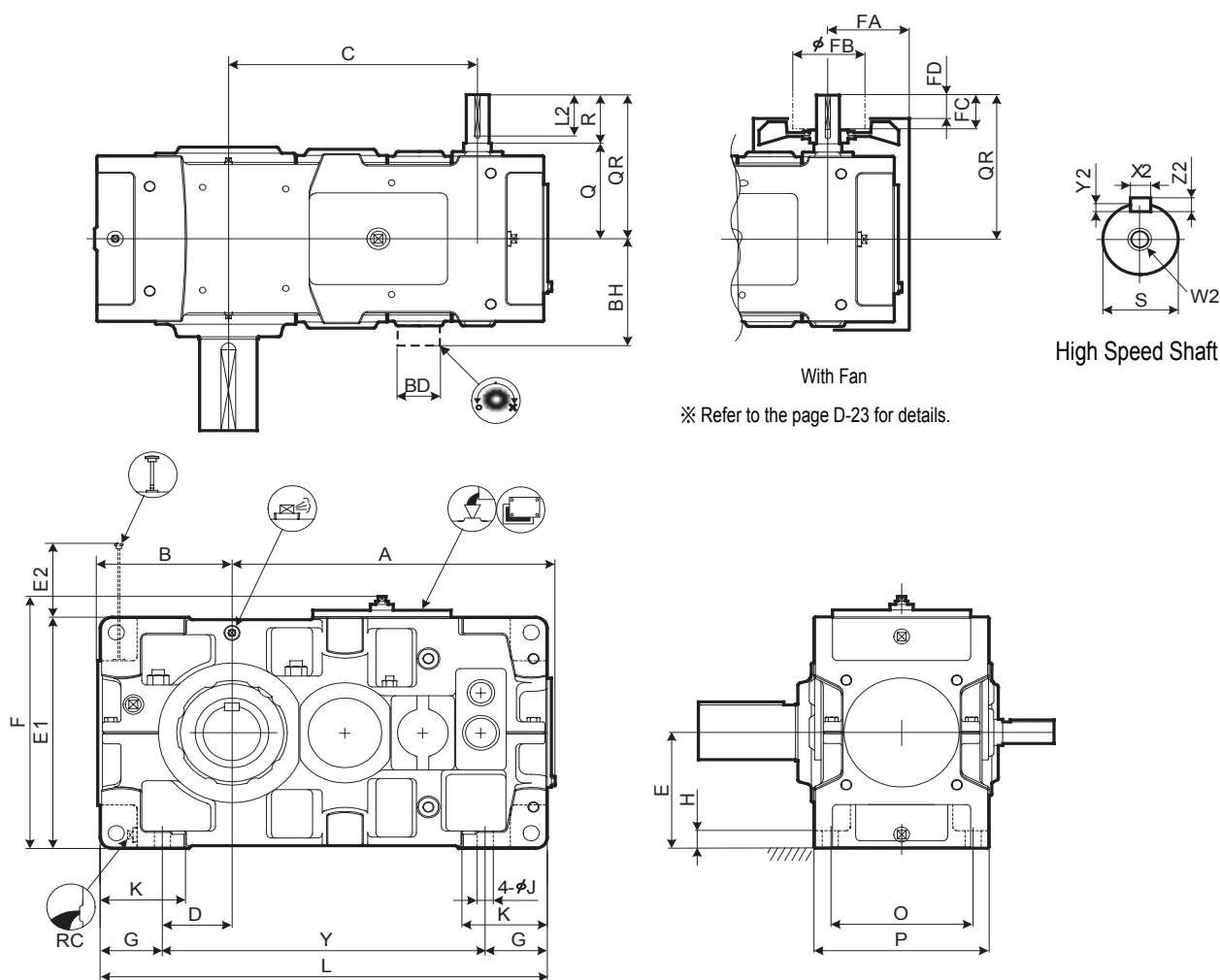
Nomenclature

Size	Shaft Arrangement	Low Speed Shaft Type	Option	Nominal Reduction Ratio
P H A 	P 3 - 	 	 	
9015 9025 9030 9035 9040 9045 9050 9055	RL RR RB LR LL LB BL BR BB	(blank) : Without Fan F : With Fan B : With Backstop FB : With Fan & Backstop	(blank) : Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)	

Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9015	○	○	○	○	○	○	○	○								
9025	○	○	○	○	○	○	○	○								
9030	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	701	299	540	151	265	530	155	578	135	35	35	180	970	310	380	700
9065	747	338	586	190	300	600	120	648	135	35	35	180	1055	310	380	785
9070	809	336	630	163	300	600	181	648	160	40	42	215	1115	350	430	795
9075	862	383	683	210	335	670	146	718	160	52	42	220	1215	350	430	895
9080	932	378	725	205	335	670	205	718	160	52	42	220	1275	380	460	955
9085	988	422	781	249	375	750	165	798	160	52	42	220	1375	380	460	1055

Size	High Speed Shaft									Fan				Backstop		RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Key		L2	FA	FB	FC	FD	BD	BH			
9060	219	329	110	50k6	M16/36	14	5.5	9	95	199	160	80	52	175	308	1"	660	33
9065	219	329	110	50k6	M16/36	14	5.5	9	95	199	160	80	52	175	308	1"	815	38
9070	244	354	110	55m6	M20/42	16	6	10	95	221	160	80	52	190	330	1"	940	49
9075	244	354	110	55m6	M20/42	16	6	10	95	221	160	80	52	190	330	1"	1160	59
9080	265	405	140	65m6	M20/42	18	7	11	125	247	200	105	65	210	365	1"	1350	64
9085	265	405	140	65m6	M20/42	18	7	11	125	247	200	105	65	210	365	1"	1610	80

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. When fastening the mounting bolt, it is necessary to remove the fan food.

4. Refer to the page D -15 for dimensions not shown in these drawings.
5. Refer to the page D -27 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

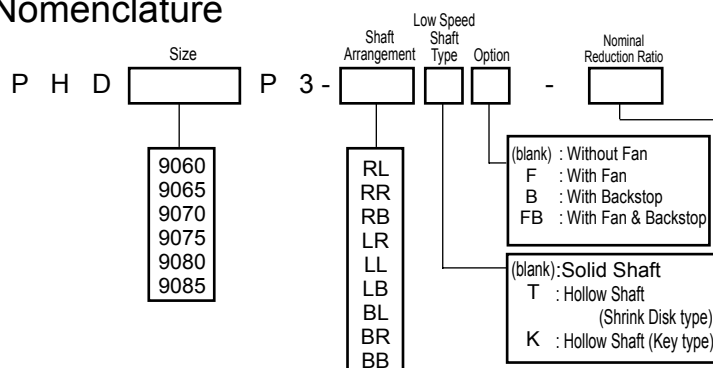
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

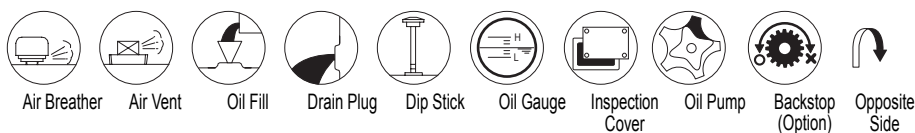
Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

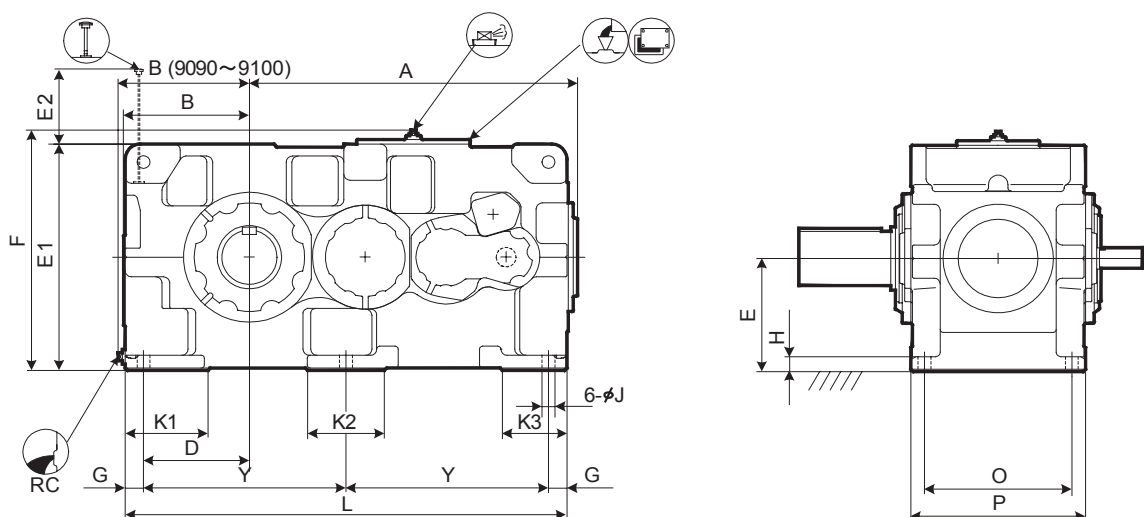
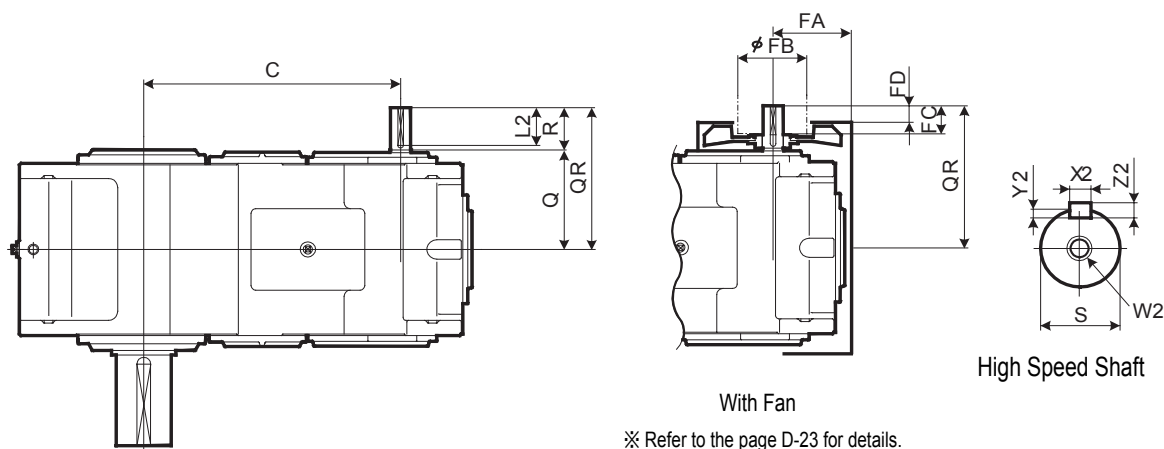
Nomenclature



Size	Nominal Reduction Ratio													
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9085	○	○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115



Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1070	428	837	345	375	750	249	797	60	50	42	270	250	210	1440	480	570	660
9095	1100	458	867	375	400	800	254	847	60	50	42	290	250	210	1500	480	570	690
9100	1204	468	950	375	425	850	273	897	70	55	48	300	280	240	1610	560	650	735
9105	1238	493	984	410	450	900	278	947	70	55	48	320	280	240	1680	560	650	770
9110	1354	508	1050	420	475	950	283	997	75	60	56	340	310	260	1810	610	710	830
9115	1403	558	1099	470	500	1000	282	1047	75	60	56	350	310	260	1910	610	710	880

Size	High Speed Shaft										Fan				RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9090	330	470	140	65m6	M20/42	18	7	11	125	268	200	105	65	1 1/2"	2100	120	
9095	330	470	140	65m6	M20/42	18	7	11	125	268	200	105	65	1 1/2"	2350	155	
9100	375	515	140	75m6	M20/42	20	7.5	12	125	289	225	105	65	1 1/2"	2780	180	
9105	375	515	140	75m6	M20/42	20	7.5	12	125	289	225	105	65	1 1/2"	3340	225	
9110	405	575	170	80m6	M20/42	22	9	14	150	339	225	135	95	1 1/2"	4010	260	
9115	405	575	170	80m6	M20/42	22	9	14	150	339	225	135	95	1 1/2"	4460	325	

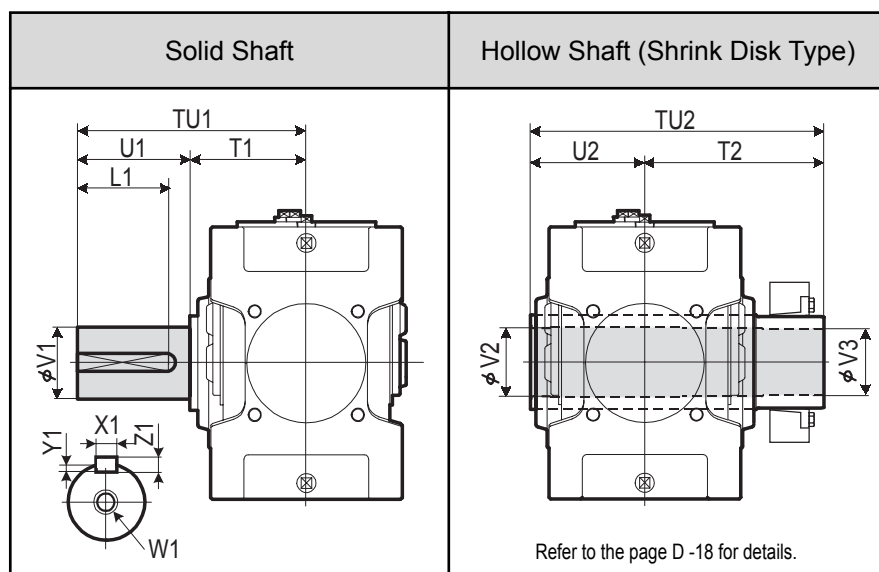
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
 2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
 3. Refer to the page D -16 for dimensions not shown in these drawings.

4. Refer to the page D -30 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115

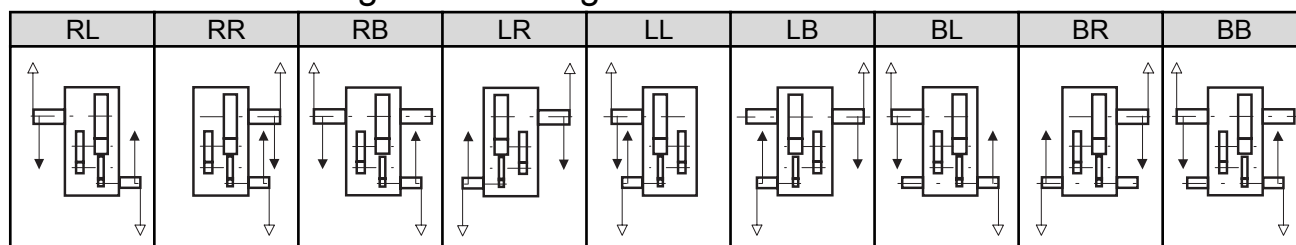
Slow Speed Shaft



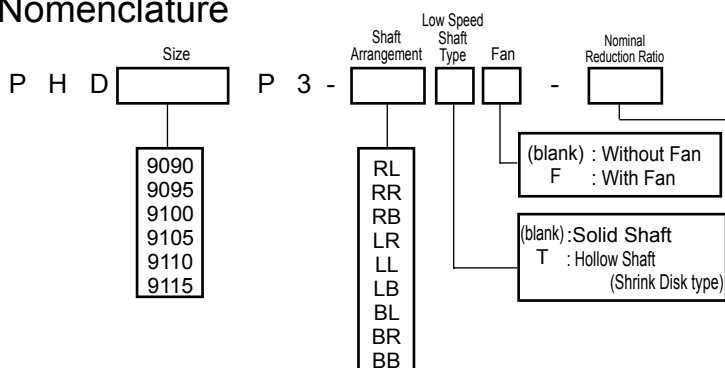
Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3
						X1	Y1	Z1	L1					
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

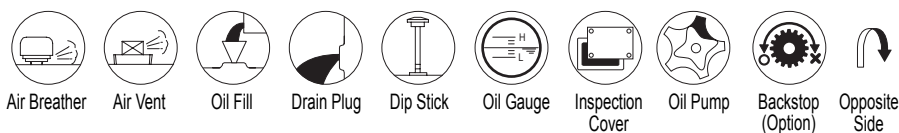
Standard Shaft Arrangement Configuration



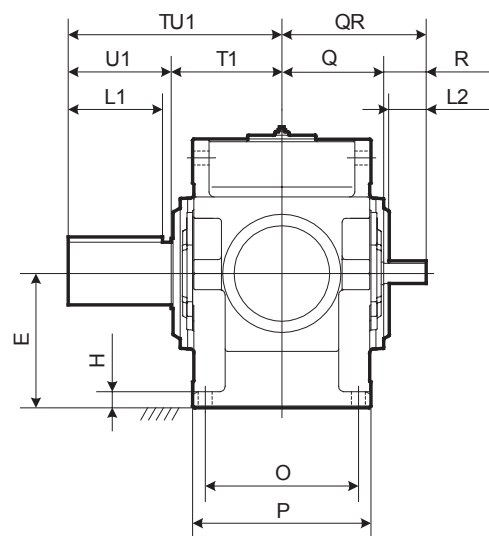
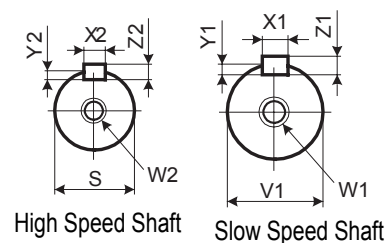
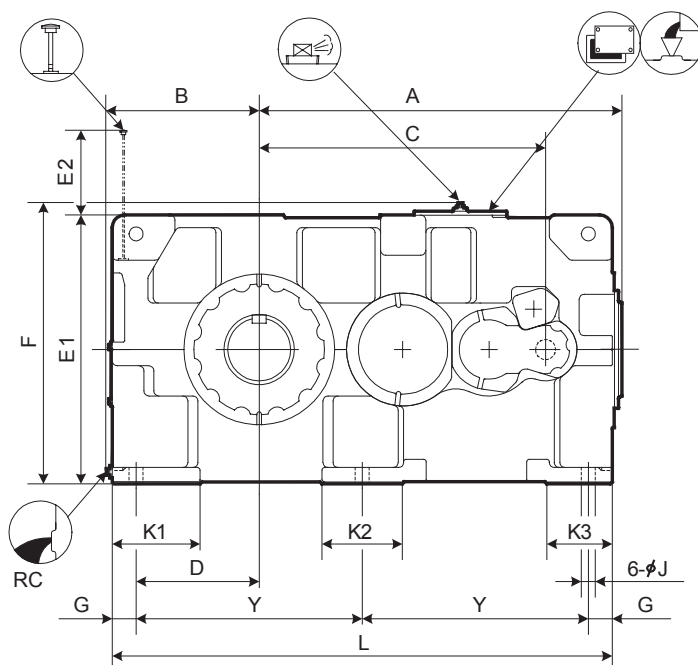
Nomenclature



Size	Nominal Reduction Ratio													
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9105	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9115	○	○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9118 ▶ 9126

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9118	1444	608	1140	490	535	1070	338	1117	95	65	56	350	320	260	1990	610	710	900
9121	1585	663	1290	545	580	1160	347	1207	95	70	56	390	300	270	2180	680	780	995
9126	1585	663	1290	545	580	1160	347	1207	95	70	56	390	300	270	2180	680	780	995

Size	High Speed Shaft									RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key						
						X2	Y2	Z2	L2			
9118	405	575	170	80m6	M20/42	22	9	14	150	1 1/2"	5050	350
9121	440	650	210	100m6	M24/50	28	10	16	190	1 1/2"	6050	470
9126	440	650	210	100m6	M24/50	28	10	16	190	1 1/2"	6350	470

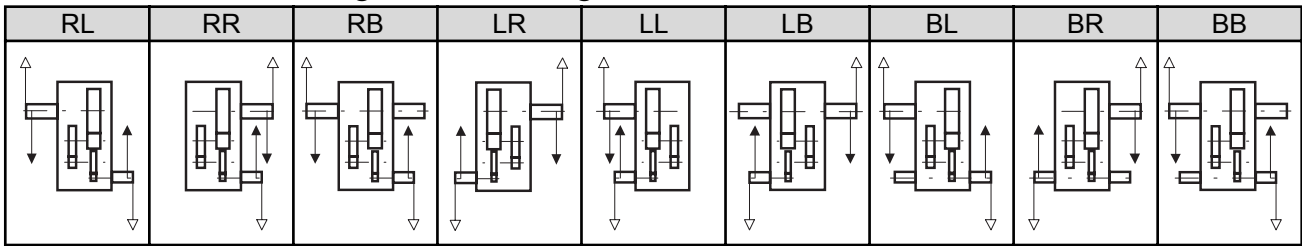
Size	Solid Shaft					Key			
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1
9118	850	440	410	260m6	M36/70	56	20	32	375
9121	935	465	470	280m6	M36/70	63	20	32	425
9126	935	465	470	300m6	M36/70	70	22	36	425

Unit: mm

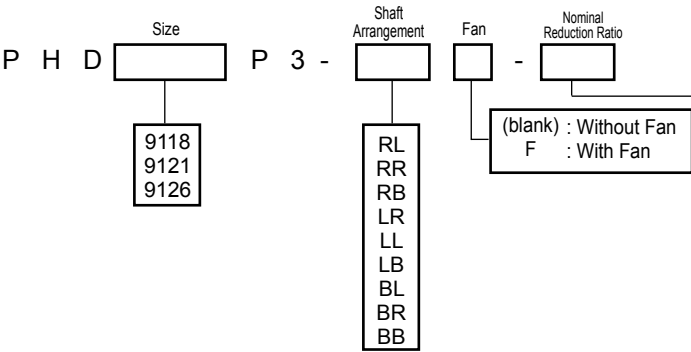
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for dimensions not shown in these drawings.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9118 ▶ 9126

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio													
	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9118		○		○	○	○	○	○	○	○	○	○	○	
9121			○	○	○	○	○	○	○	○	○	○	○	
9126			○	○	○	○	○	○	○	○	○	○	○	

PARAMAX

Horizontal

Split

9118

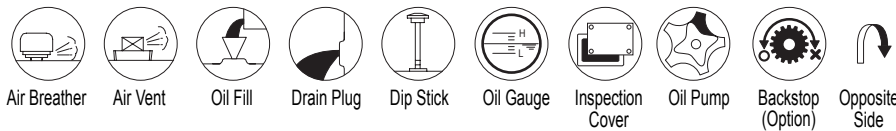
9126

Parallel

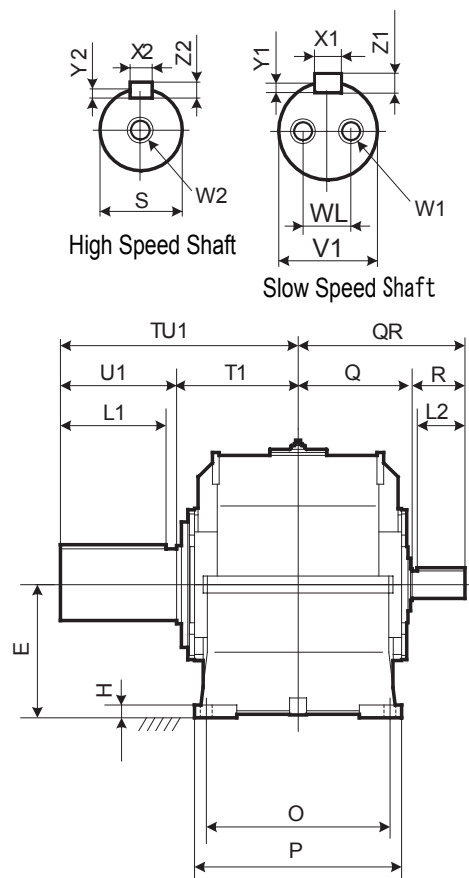
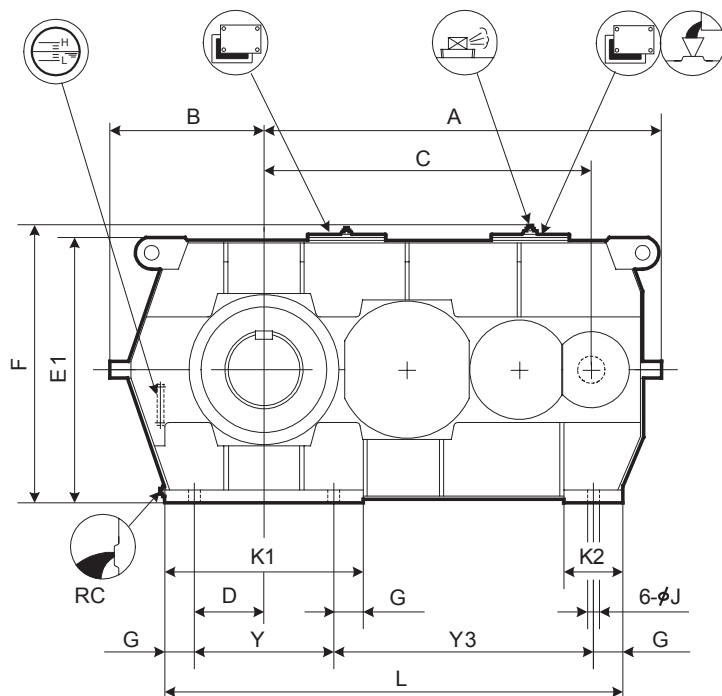
Triple Reduction

P

3



DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9128 ▶ 9136

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K1	K2	L	O	P	Y	Y3
9128	1720	680	1413	330	600	1194	1241	140	55	66	940	280	1990	710	840	660	1050
9131	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	850	980	660	1230
9136	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	850	980	660	1230

Size	High Speed Shaft									RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key						
						X2	Y2	Z2	L2			
9128	470	680	210	100m6	M24/50	28	10	16	190	1 1/2"	7250	390
9131	540	790	250	130m6	M24/50	32	11	18	225	1 1/2"	9550	550
9136	540	790	250	130m6	M24/50	32	11	18	225	1 1/2"	9900	540

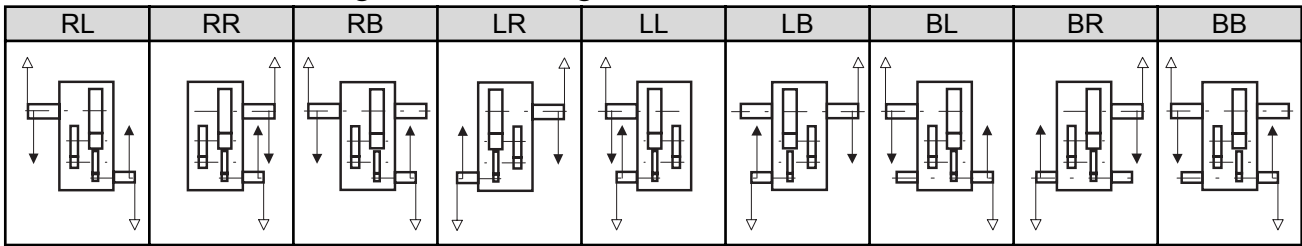
Size	Solid Shaft										RC	Wt. kg	Oil Qty. L
	TU1	T1	U1	V1	W1/Depth	WL	X1	Y1	Z1	L1			
9128	950	480	470	320m6	M36/70	200	70	22	36	425			
9131	1100	550	550	340m6	M36/70	215	80	25	40	500			
9136	1110	560	550	360m6	M36/70	230	80	25	40	500			

Unit: mm

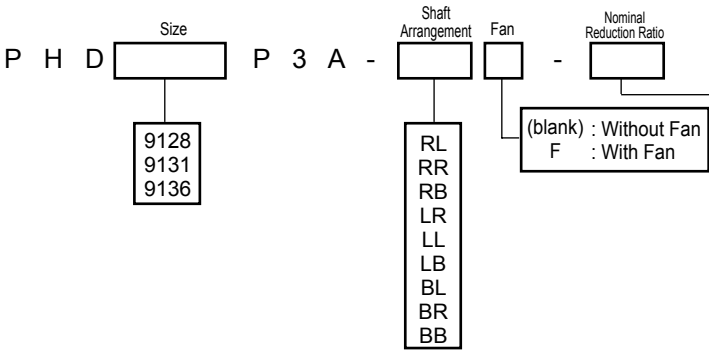
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for dimensions not shown in these drawings.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9128 ▶ 9136

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio												
	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9128			○	○	○	○	○	○	○	○	○	○	○
9131	○	○	○	○	○	○	○	○	○	○	○	○	○
9136	○	○	○	○	○	○	○	○	○	○	○		

PARAMAX

Horizontal

Split

9128

9136

Parallel

Triple Reduction

Steel Housing

P

H

D

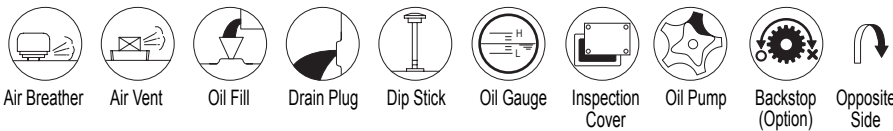
9128

9136

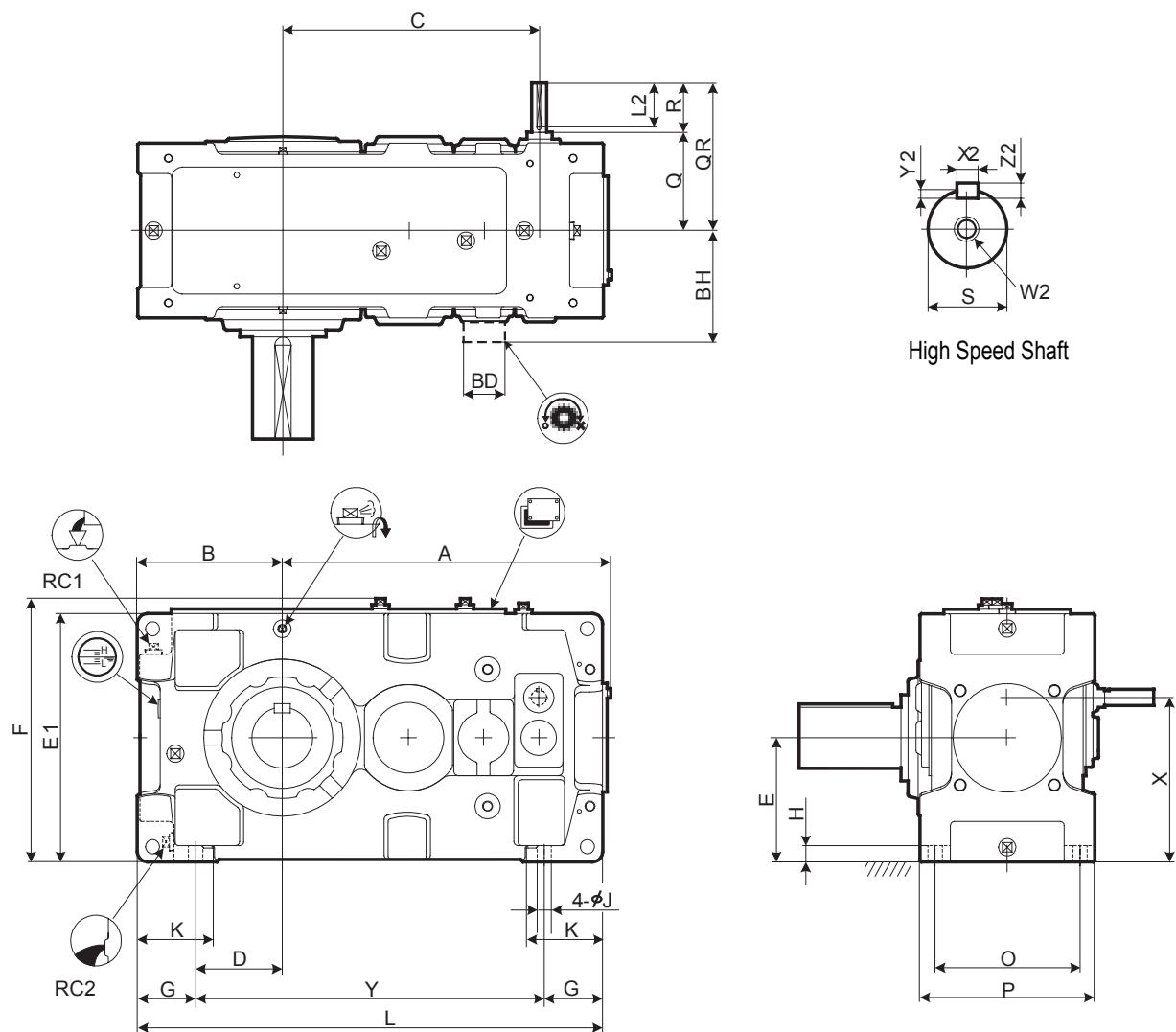
P

3

A



DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9030 ▶ 9055



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9030	453	200	343	110	160	320	349	90	28	24	120	640	215	265	223	460
9035	484	219	374	129	185	370	399	90	28	24	120	690	215	265	248	510
9040	540	235	398	120	200	400	431	115	30	28	150	759	255	315	279	529
9045	577	256	437	141	220	440	471	115	30	28	150	819	255	315	299	589
9050	609	255	467	138.5	210	420	451	116.5	32	28	150	848	285	345	289	615
9055	648	286	506	171	245	490	521	115	32	28	150	918	285	345	324	688

Size	High Speed Shaft									Backstop		RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	BD	BH				
9030	159	219	60	25k6	M10/22	8	4	7	50			3/4"	3/4"	210	14
9035	159	219	60	25k6	M10/22	8	4	7	50			3/4"	3/4"	230	17
9040	175	235	60	28k6	M10/22	8	4	7	50			1"	1"	310	25
9045	175	235	60	28k6	M10/22	8	4	7	50			1"	1"	380	28
9050	195	275	80	30k6	M10/22	8	4	7	70	150	263	1"	1"	450	32
9055	195	275	80	30k6	M10/22	8	4	7	70	150	263	1"	1"	510	40

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D -13 for dimensions not shown in these drawings.

4. Refer to the page D -24 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9030 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D - 18 for details.	Refer to the page D - 18 for details.

Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

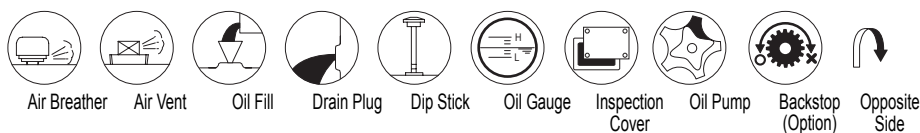
Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

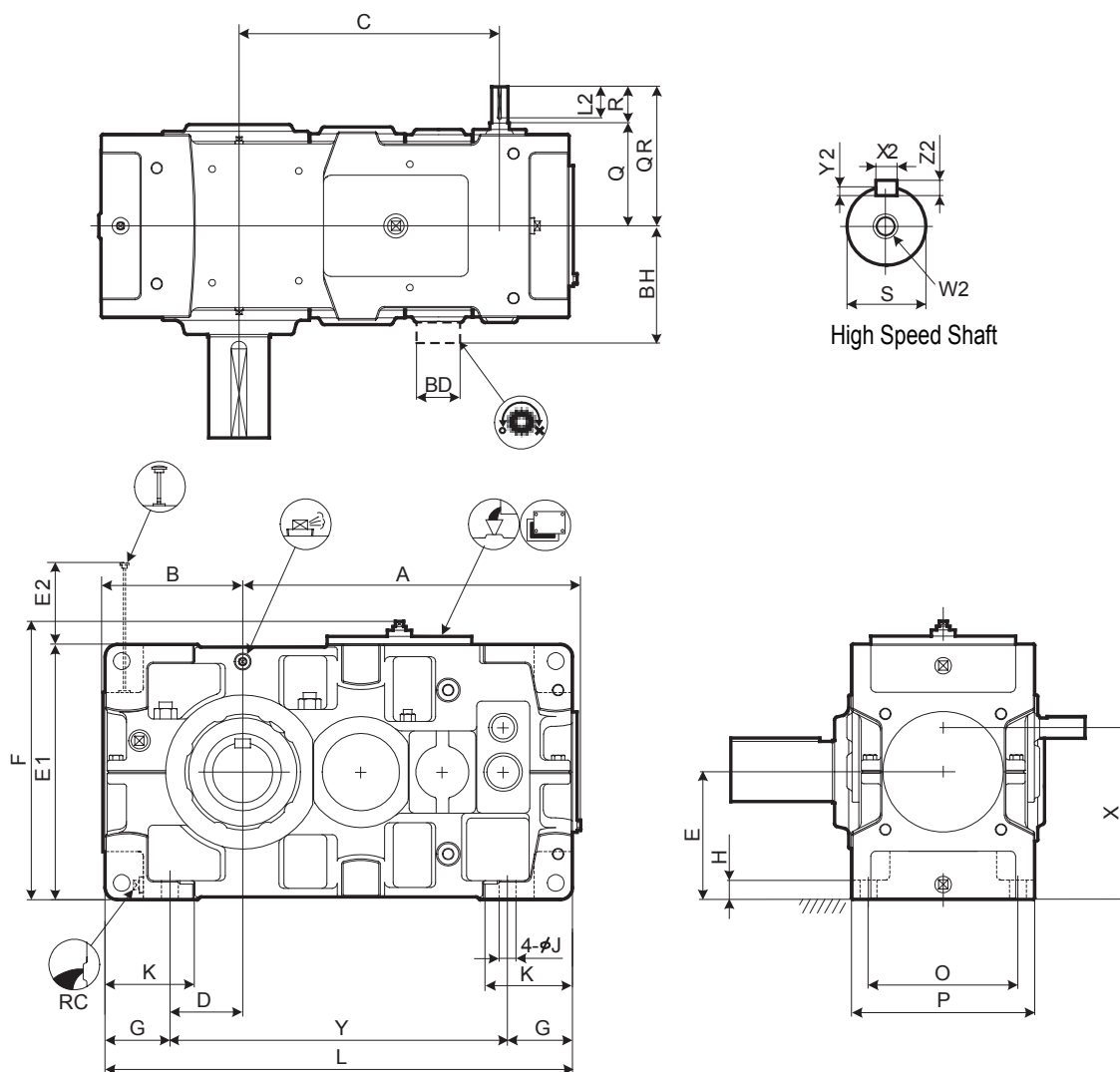
Nomenclature

Size	Shaft Arrangement	Low Speed Shaft Type	Option	Nominal Reduction Ratio
P H A P 4 - - 				
9030 9035 9040 9045 9050 9055	RL RR RB LR LL LB BL BR BB	(blank) : Without Option B : With Backstop	(blank): Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)	

Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500	
9030	○	○	○	○	○	○	○	○	○	○								
9035			○	○	○	○	○	○	○	○	○	○						
9040	○	○	○	○	○	○	○	○	○	○								
9045	○	○	○	○	○	○	○	○	○	○	○	○						
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	X	Y
9060	701	299	540	151	265	530	126	578	135	35	35	180	970	310	380	357	700
9065	747	338	586	190	300	600	91	648	135	35	35	180	1055	310	380	392	785
9070	809	336	630	163	300	600	144	648	160	40	42	215	1115	350	430	409	795
9075	862	383	683	210	335	670	109	718	160	52	42	220	1215	350	430	444	895
9080	932	378	725	205	335	670	167	718	160	52	42	220	1275	380	460	461	955
9085	988	422	781	249	375	750	127	798	160	52	42	220	1375	380	460	501	1055

Size	High Speed Shaft										Backstop		RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	BD	BH				
9060	221	301	80	35k6	M12/28	10	5	8	70	175	308	1"	660	37	
9065	221	301	80	35k6	M12/28	10	5	8	70	175	308	1"	815	42	
9070	244	354	110	40k6	M16/36	12	5	8	95	190	330	1"	950	56	
9075	244	354	110	40k6	M16/36	12	5	8	95	190	330	1"	1170	67	
9080	264	374	110	45k6	M16/36	14	5.5	9	95	210	365	1"	1360	73	
9085	264	374	110	45k6	M16/36	14	5.5	9	95	210	365	1"	1620	90	

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D -15 for dimensions not shown in these drawings.

4. Refer to the page D -27 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

Size
P H D P 4 - -

9060
9065
9070
9075
9080
9085

RL
RR
RB
LR
LL
LB
BL
BR
BB

(blank) : Without Option
B : With Backstop

(blank) : Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500		
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



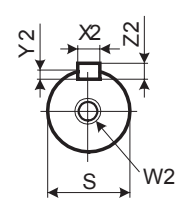
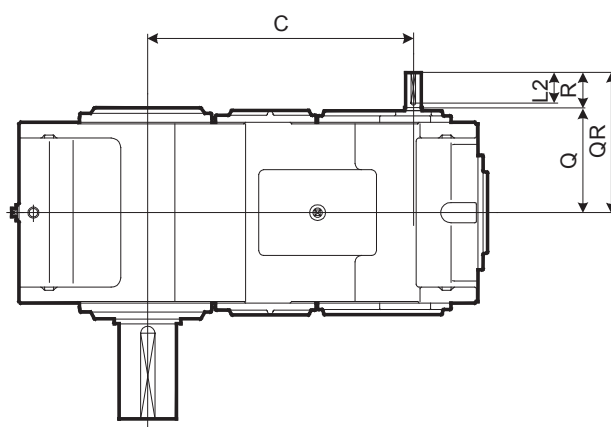
Oil Gauge

Inspection
Cover

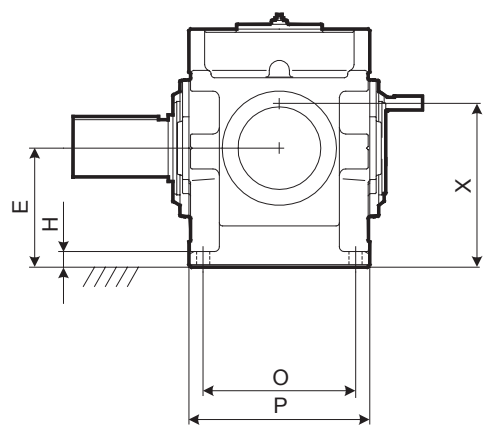
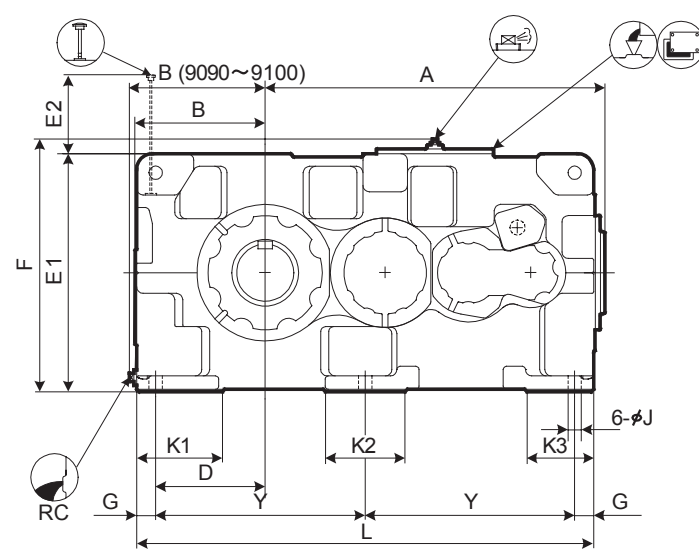
Oil Pump

Backstop
(Option)Opposite
Side

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9090 ▶ 9115



High Speed Shaft



Speed Reducer
Selection Tables
Dimension Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	X	Y
9090	1070	428	795	345	375	750	194	797	60	50	42	270	250	210	1440	480	570	517	660
9095	1100	458	825	375	400	800	199	847	60	50	42	290	250	210	1500	480	570	542	690
9100	1204	468	901	375	425	850	208	897	70	55	48	300	280	240	1610	560	650	587	735
9105	1238	493	935	410	450	900	213	947	70	55	48	320	280	240	1680	560	650	612	770
9110	1354	508	1001	420	475	950	218	997	75	60	56	340	310	260	1810	610	710	637	830
9115	1403	558	1050	470	500	1000	217	1047	75	60	56	350	310	260	1910	610	710	662	880

Size	High Speed Shaft									RC	Wt. kg	Oil Qty L
	Q	QR	R	S	W2/Depth	Key						
						X2	Y2	Z2	L2			
9090	330	440	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2150	150
9095	330	440	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2400	180
9100	375	515	140	60m6	M20/42	18	7	11	125	1 1/2"	2830	220
9105	375	515	140	60m6	M20/42	18	7	11	125	1 1/2"	3390	260
9110	405	545	140	60m6	M20/42	18	7	11	125	1 1/2"	4060	300
9115	405	545	140	60m6	M20/42	18	7	11	125	1 1/2"	4510	365

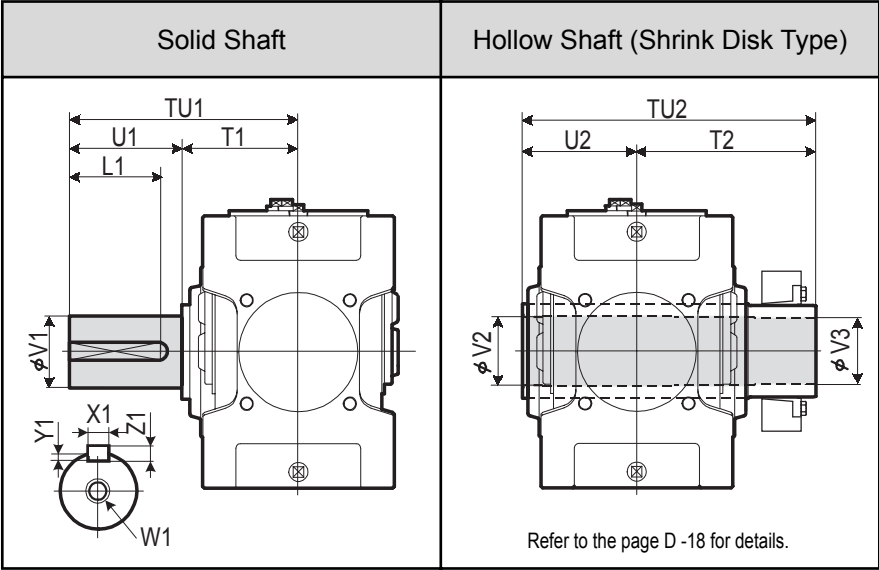
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-16 for dimensions not shown in these drawings.
4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9090 ▶ 9115

P
PARAMAX
Horizontal
Split
9090
9115
Parallel
Quadruple
Reduction
4

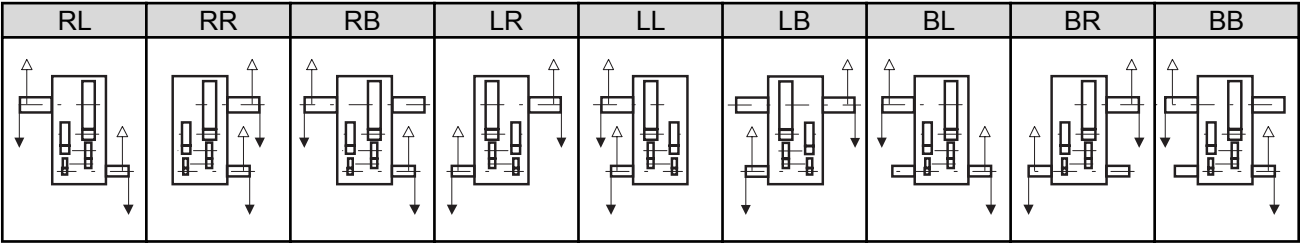
Slow Speed Shaft



Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P H D

Size

P 4

Shaft Arrangement

Low Speed Shaft Type

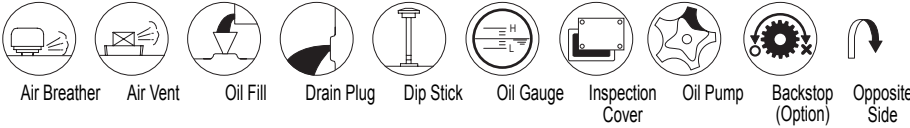
Nominal Reduction Ratio

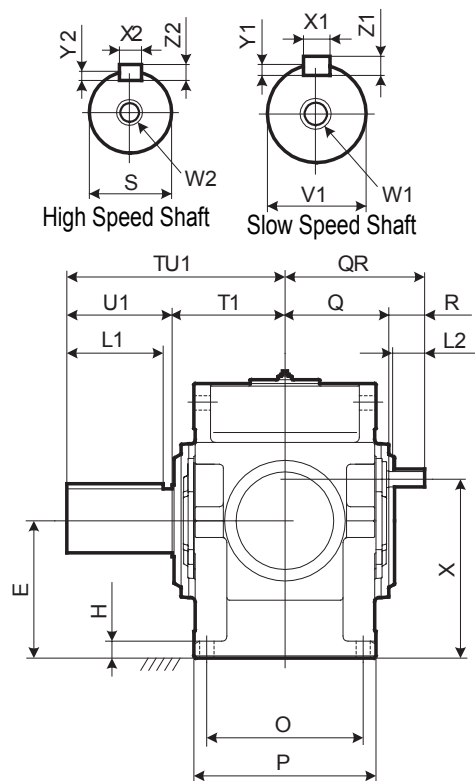
9090
9095
9100
9105
9110
9115

RL
RR
RB
LR
LL
LB
BL
BR
BB

(blank): Solid Shaft
T : Hollow Shaft
(Shrink Disk type)

Size	Nominal Reduction Ratio															
	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9105	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9115	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○





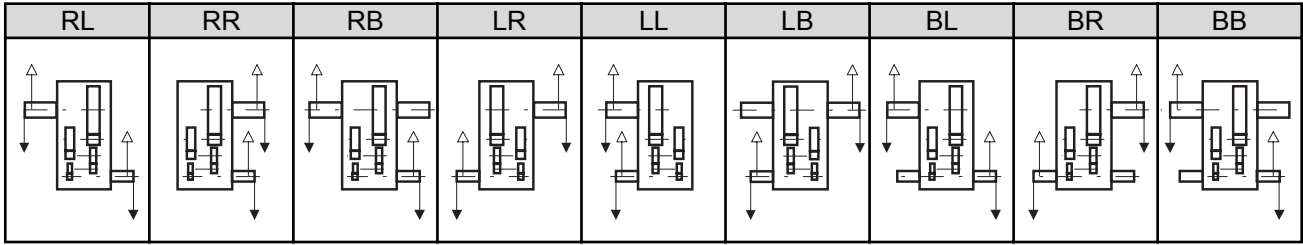
Dimension Tables

Size	Solid Shaft					Key			
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1
9118	850	440	410	260m6	M36/70	56	20	32	375
9121	935	465	470	280m6	M36/70	63	20	32	425
9126	935	465	470	300m6	M36/70	70	22	36	425

C - 166

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9118 ▶ 9126

Standard Shaft Arrangement Configuration



Nomenclature

P

H

D

Size

9118

9121

9126

P

4

-

Shaft Arrangement

RL

RR

RB

LR

LL

LB

BL

BR

BB

-

Nominal Reduction Ratio

	Nominal Reduction Ratio													
Size	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9118	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9121	○	○	○	○	○	○	○	○	○	○	○	○	○	
9126	○	○	○	○	○	○	○	○	○	○	○	○	○	

P

H

D

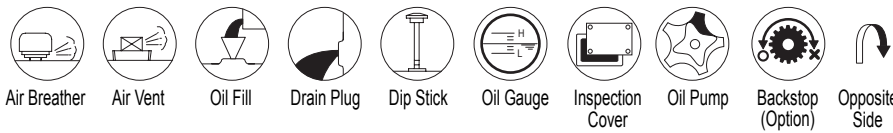
9118

9126

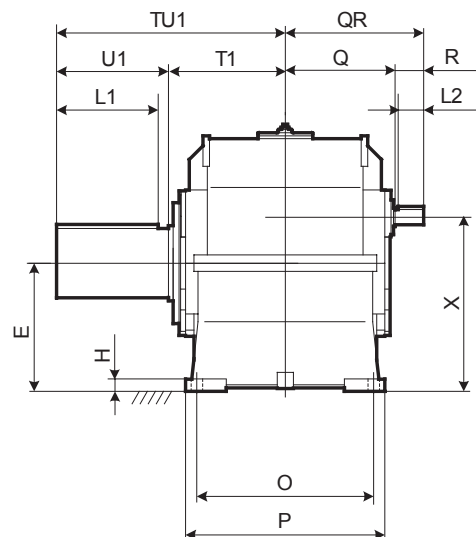
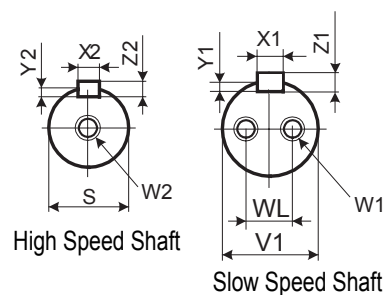
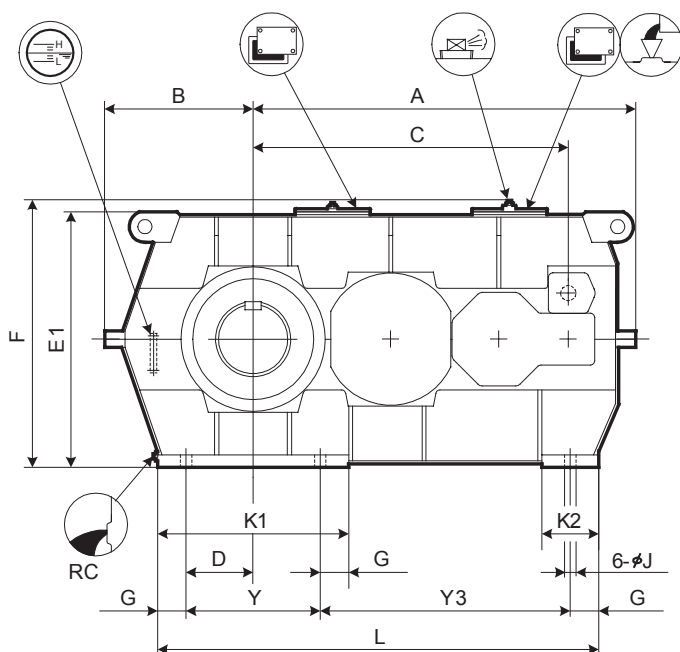
P

4

PARAMAX Horizontal Split Parallel Quadruple Reduction



DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9128 ▶ 9036

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K1	K2	L	O	P	X	Y	Y3
9128	1720	680	1413	330	600	1194	1241	140	55	66	940	280	1990	710	840	826	660	1050
9131	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	850	980	856	660	1230
9136	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	850	980	856	660	1230

Size	High Speed Shaft									RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key						
						X2	Y2	Z2	L2			
9128	465	605	140	75m6	M20/42	20	7.5	12	125	1 1/2"	7400	450
9131	540	680	140	75m6	M20/42	20	7.5	12	125	1 1/2"	9600	650
9136	540	680	140	75m6	M20/42	20	7.5	12	125	1 1/2"	10000	640

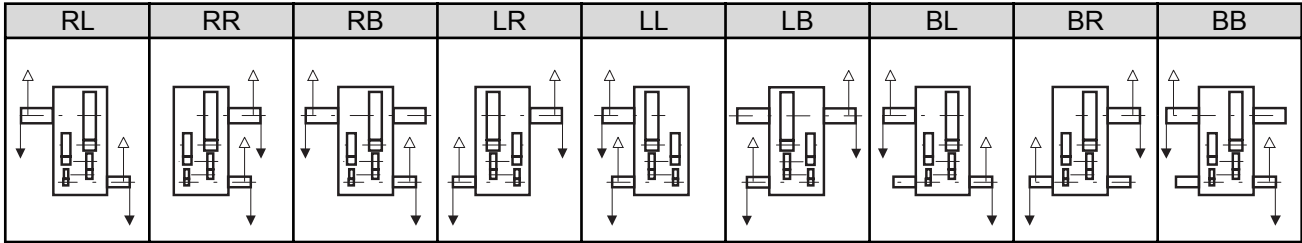
Size	Slow Speed Shaft (Solid)									
	TU1	T1	U1	V1	W1/Depth	WL	Key			
							X1	Y1	Z1	L1
9128	950	480	470	320m6	M36/70	200	70	22	36	425
9131	1100	550	550	340m6	M36/70	215	80	25	40	500
9136	1110	560	550	360m6	M36/70	230	80	25	40	500

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for dimensions not shown in these drawings.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9128 ▶ 9036

Standard Shaft Arrangement Configuration



Nomenclature

P

H

D

Size

9128

9131

9136

P

4

A

-

Shaft Arrangement

RL

RR

RB

LR

LL

LB

BL

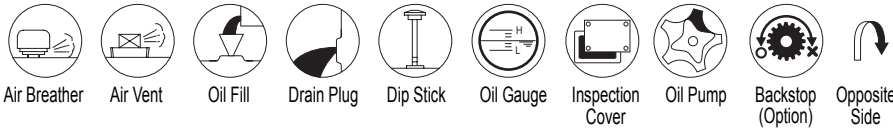
BR

BB

-

Nominal Reduction Ratio

Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	
9118				○	○	○	○	○	○	○	○	○	○	○	○	
9121	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9126	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



PARAMAX

Horizontal

Split

9128

9136

Parallel

Quadruple Reduction

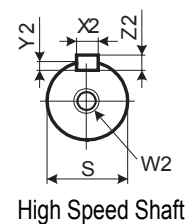
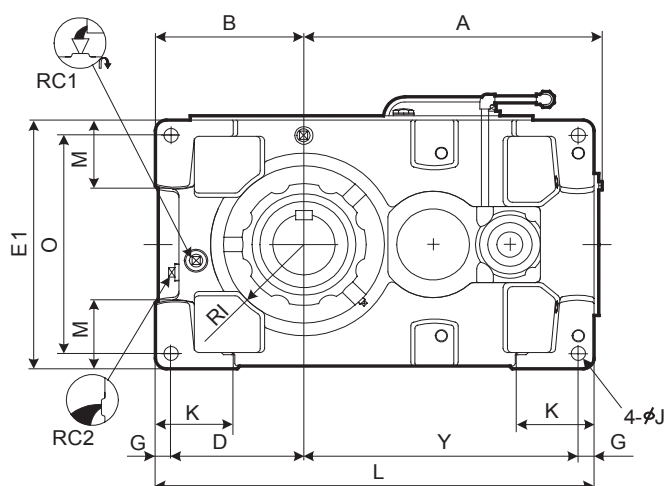
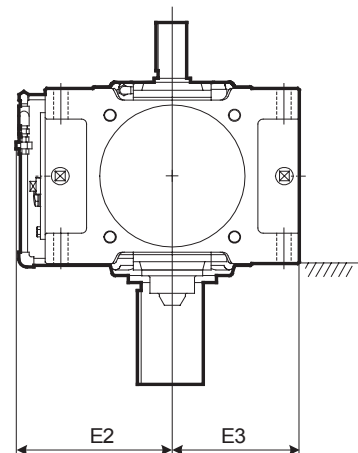
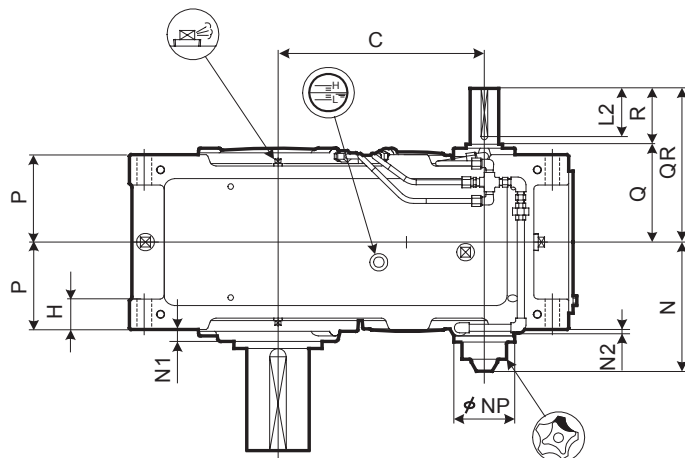
Steel Housing

P

4

A

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9015 ▶ 9055

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9015	295	160	194	140	270	195	135	20	35	80	15	95	440	70	186	25	14	100	230	102.5	260
9025	346	175	227	155	310	215	155	20	40	87.5	19	110	505	75	198.5	23	12	100	270	117.5	310
9030	406	200	264	175	320	220	160	25	50	105	24	120	590	85	211	22	9	100	270	132.5	365
9035	437	219	295	194	370	245	185	25	50	120	24	120	640	100	211	22	9	100	320	132.5	396
9040	467	235	306	205	400	260	200	30	60	120	28	150	685	100	239	15	2	117	340	157.5	420
9045	506	256	345	226	440	266	220	30	60	140	28	150	745	120	239	17.5	2	117	380	157.5	459
9050	537	255	358	225	420	270	210	30	60	140	28	150	775	110	259	23	7	117	360	172.5	490
9055	576	286	397	256	490	305	245	30	60	155	28	150	845	135	259	23	7	117	430	172.5	529

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9015	131	211	80	30k6	M10/22	8	4	7	70	3/4"	3/4"	100	5
9025	146	226	80	35k6	M12/28	10	5	8	70	3/4"	3/4"	140	7
9030	159	269	110	40k6	M16/36	12	5	8	95	3/4"	3/4"	195	9
9035	159	269	110	40k6	M16/36	12	5	8	95	3/4"	3/4"	215	12
9040	174	284	110	50k6	M16/36	14	5.5	9	95	1"	1"	285	18
9045	174	284	110	50k6	M16/36	14	5.5	9	95	1"	1"	345	22
9050	193	303	110	55k6	M20/42	16	6	10	95	1"	1"	415	22
9055	193	303	110	55k6	M20/42	16	6	10	95	1"	1"	472	31

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions not shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9015 ▶ 9055

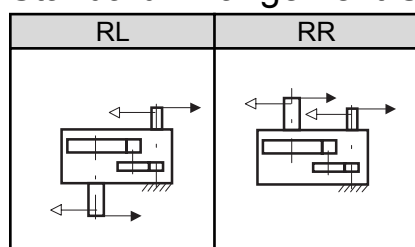
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

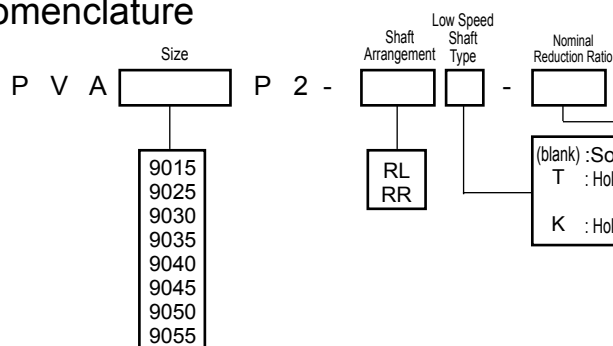
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

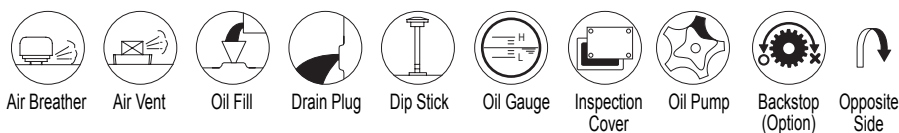
Standard Arrangement Configuration



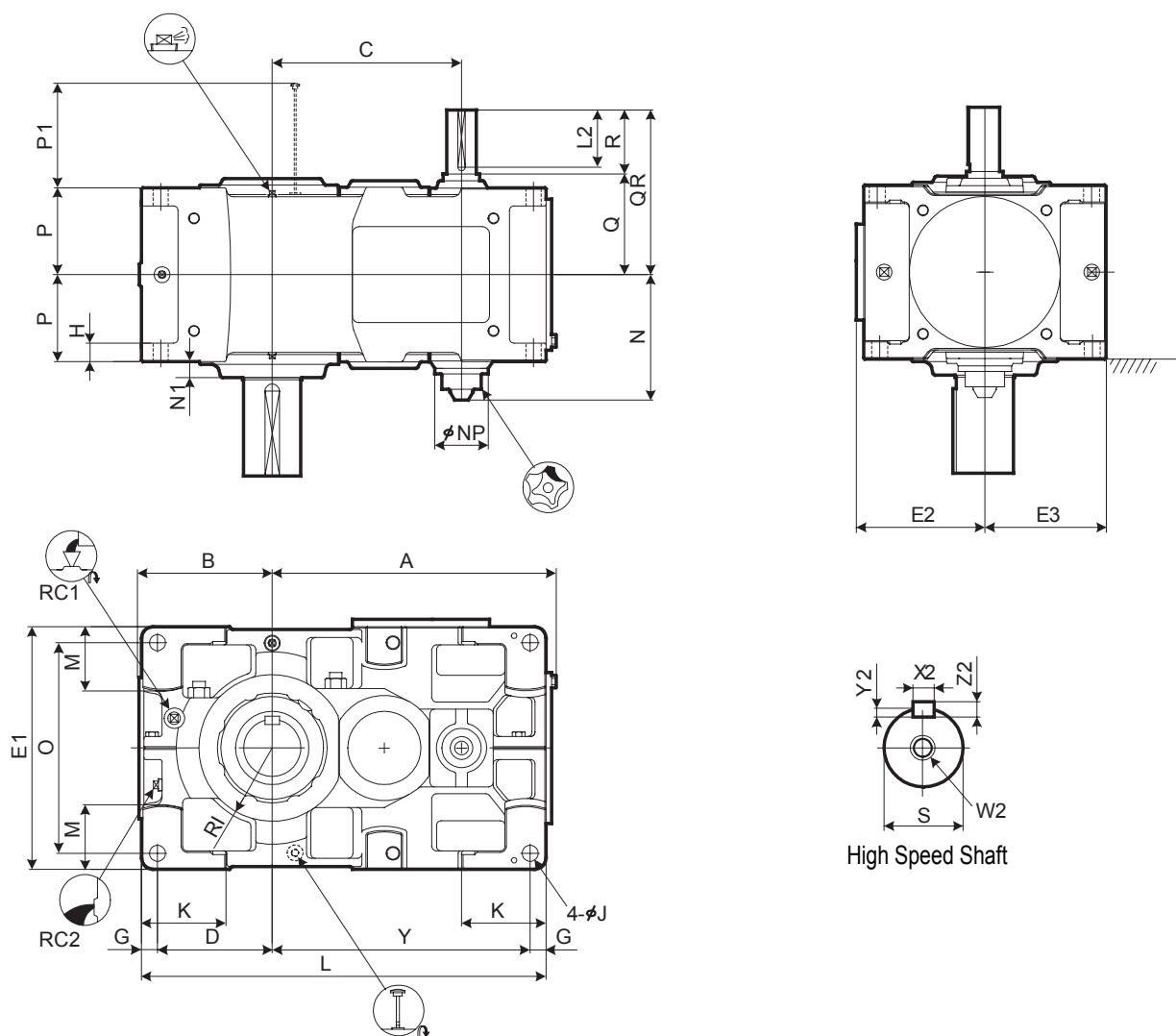
Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○		○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○



DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9060 ▶ 9085



Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	621	299	414	251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	223	564
9065	667	338	460	290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	223	610
9070	719	336	482	283	600	317	300	40	40	175	42	215	1020	155	304	38	117	520	215	253	657
9075	772	383	535	330	670	352	335	40	52	190	42	220	1120	195	304	40	117	590	215	253	710
9080	812	378	556	325	670	352	335	40	52	190	42	220	1155	170	322.5	45	117	590	230	283	750
9085	868	422	612	369	750	392	375	40	52	215	42	220	1255	210	322.5	40	117	670	230	283	806

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9060	220	360	140	65m6	M20/42	18	7	11	125	1"	1"	610	25
9065	220	360	140	65m6	M20/42	18	7	11	125	1"	1"	735	32
9070	245	385	140	75m6	M20/42	20	7.5	12	125	1"	1"	860	39
9075	245	385	140	75m6	M20/42	20	7.5	12	125	1"	1"	1110	49
9080	264	434	170	85m6	M20/42	22	9	14	150	1"	1"	1240	54
9085	264	434	170	85m6	M20/42	22	9	14	150	1"	1"	1500	71

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with visible gauge. Refer to page D-28.

4. Refer to the page D-14 for dimensions not shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9060 ▶ 9085

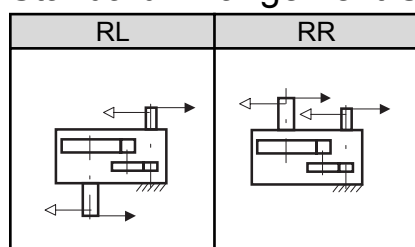
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

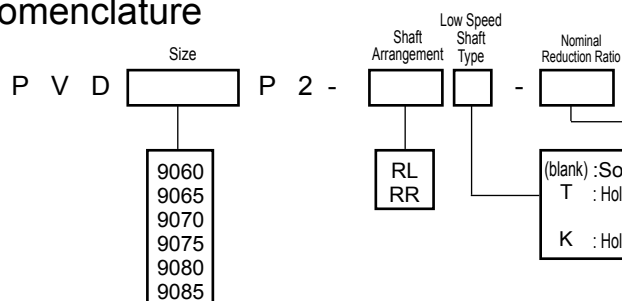
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

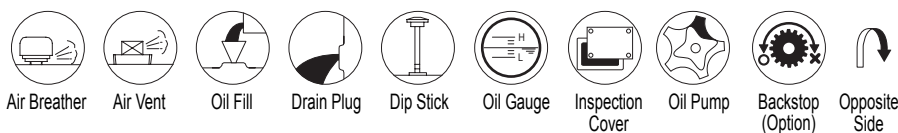
Standard Arrangement Configuration



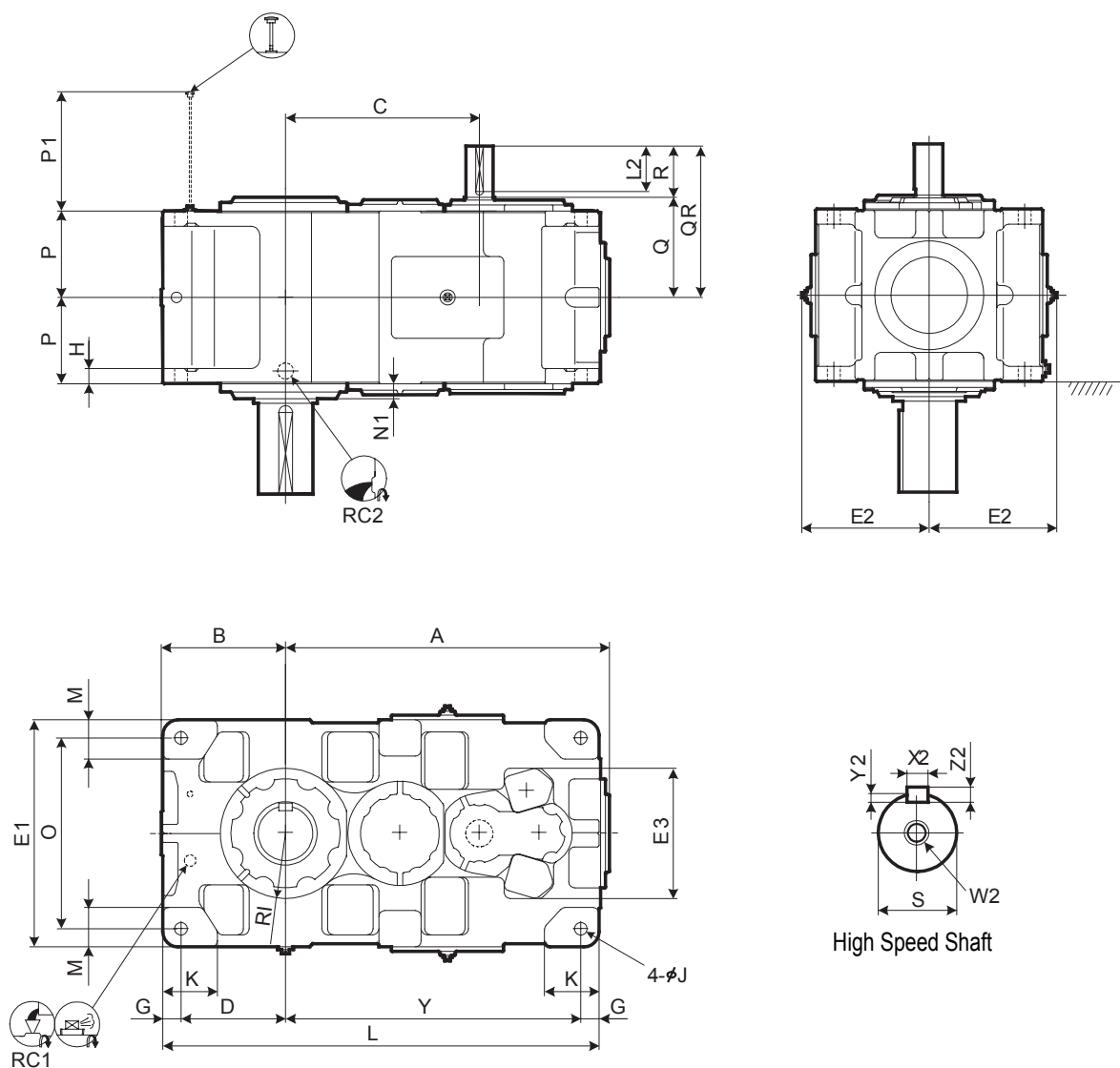
Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○		
9065			○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○



DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9090 ▶ 9115



Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N1	O	P	P1	Y
9090	1070	410	640	345	750	421	430	60	50	215	42	180	1440	130	50	630	285	394	975
9095	1100	440	670	375	800	446	430	60	50	235	42	200	1500	140	50	680	285	394	1005
9100	1204	450	724	375	850	471	500	70	55	235	48	200	1610	150	60	710	325	443	1095
9105	1238	485	758	410	900	496	500	70	55	260	48	220	1680	160	60	760	325	443	1130
9110	1354	500	824	420	950	521	500	75	60	265	56	220	1810	170	55	800	355	475	1240
9115	1403	550	873	470	1000	546	500	75	60	280	56	250	1910	180	55	850	355	475	1290

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9090	330	500	170	90m6	M24/50	25	9	14	150	1"	1 1/2"	2070	90
9095	330	500	170	90m6	M24/50	25	9	14	150	1"	1 1/2"	2330	120
9100	375	585	210	100m6	M24/50	28	10	16	190	1"	1 1/2"	2820	140
9105	375	585	210	100m6	M24/50	28	10	16	190	1"	1 1/2"	3300	175
9110	405	615	210	110m6	M24/50	28	10	16	190	1"	1 1/2"	3950	200
9115	405	615	210	110m6	M24/50	28	10	16	190	1"	1 1/2"	4470	255

※ 9090 ~ 9115 are equipped with motor driven pumps. For details consult us.

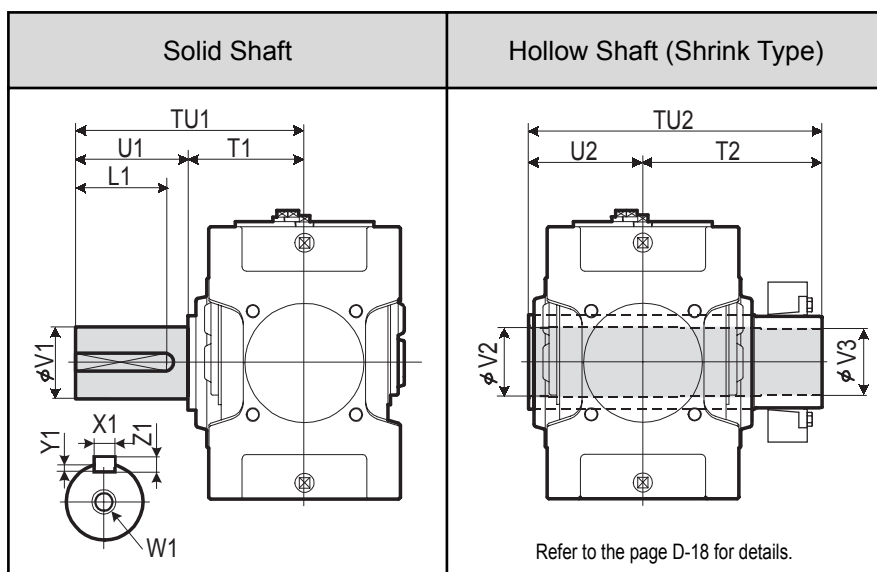
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D -16 for dimensions not shown in these drawings.

4. Refer to the page D -31 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9090 ▶ 9115

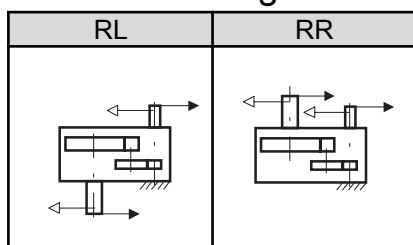
Slow Speed Shaft



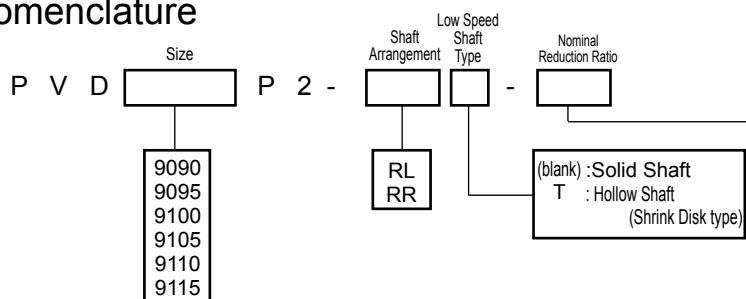
Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3
						X1	Y1	Z1	L1					
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

Standard Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio										
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20
9090	○	○	○	○	○	○	○	○	○	○	
9095		○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	
9105		○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	
9115		○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



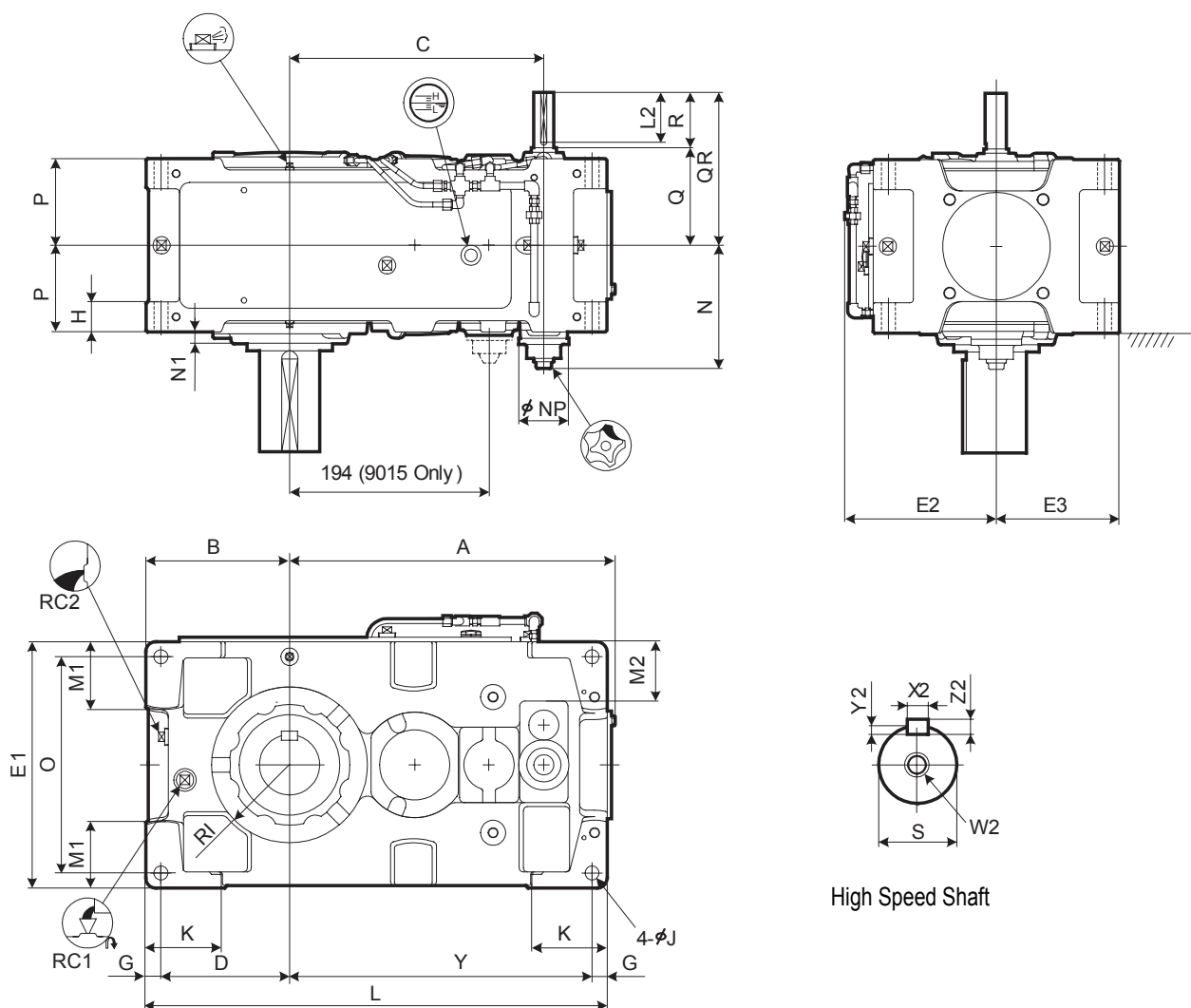
Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9015 ▶ 9055



Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9015	338	160	257	140	270	195	135	20	35	80	15	95	485	70	80	186	25	100	230	102.5	305
9025	408	175	306	155	310	215	155	20	40	87.5	19	110	570	75	90	198.5	23	100	270	117.5	375
9030	453	200	343	175	320	220	160	25	50	105	24	120	640	85	50	211	22	100	270	132.5	415
9035	484	219	374	194	370	245	185	25	50	120	24	120	690	100	75	211	22	100	320	132.5	446
9040	540	235	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	577	256	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050	609	255	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055	648	286	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9015	130	190	60	25k6	M10/22	8	4	7	50	3/4"	3/4"	105	6
9025	144	204	60	28k6	M10/22	8	4	7	50	3/4"	3/4"	150	8
9030	161	241	80	30k6	M10/22	8	4	7	70	3/4"	3/4"	205	10
9035	161	241	80	30k6	M10/22	8	4	7	70	3/4"	3/4"	225	14
9040	176	256	80	35k6	M12/28	10	5	8	70	1"	1"	305	18
9045	176	256	80	35k6	M12/28	10	5	8	70	1"	1"	375	22
9050	194	304	110	40k6	M16/36	12	5	8	95	1"	1"	445	25
9055	194	304	110	40k6	M16/36	12	5	8	95	1"	1"	505	35

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions not shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9015 ▶ 9055

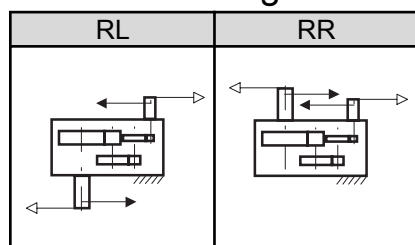
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

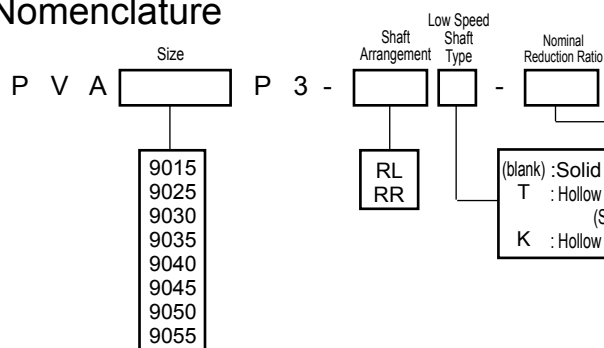
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55	
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9015	○	○	○	○	○	○	○	○							
9025	○	○	○	○	○	○	○	○							
9030	○	○	○	○	○	○	○	○	○	○	○	○			
9035			○	○	○	○	○	○	○	○	○	○	○	○	
9040	○	○	○	○	○	○	○	○	○	○	○	○			
9045			○	○	○	○	○	○	○	○	○	○	○	○	
9050	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

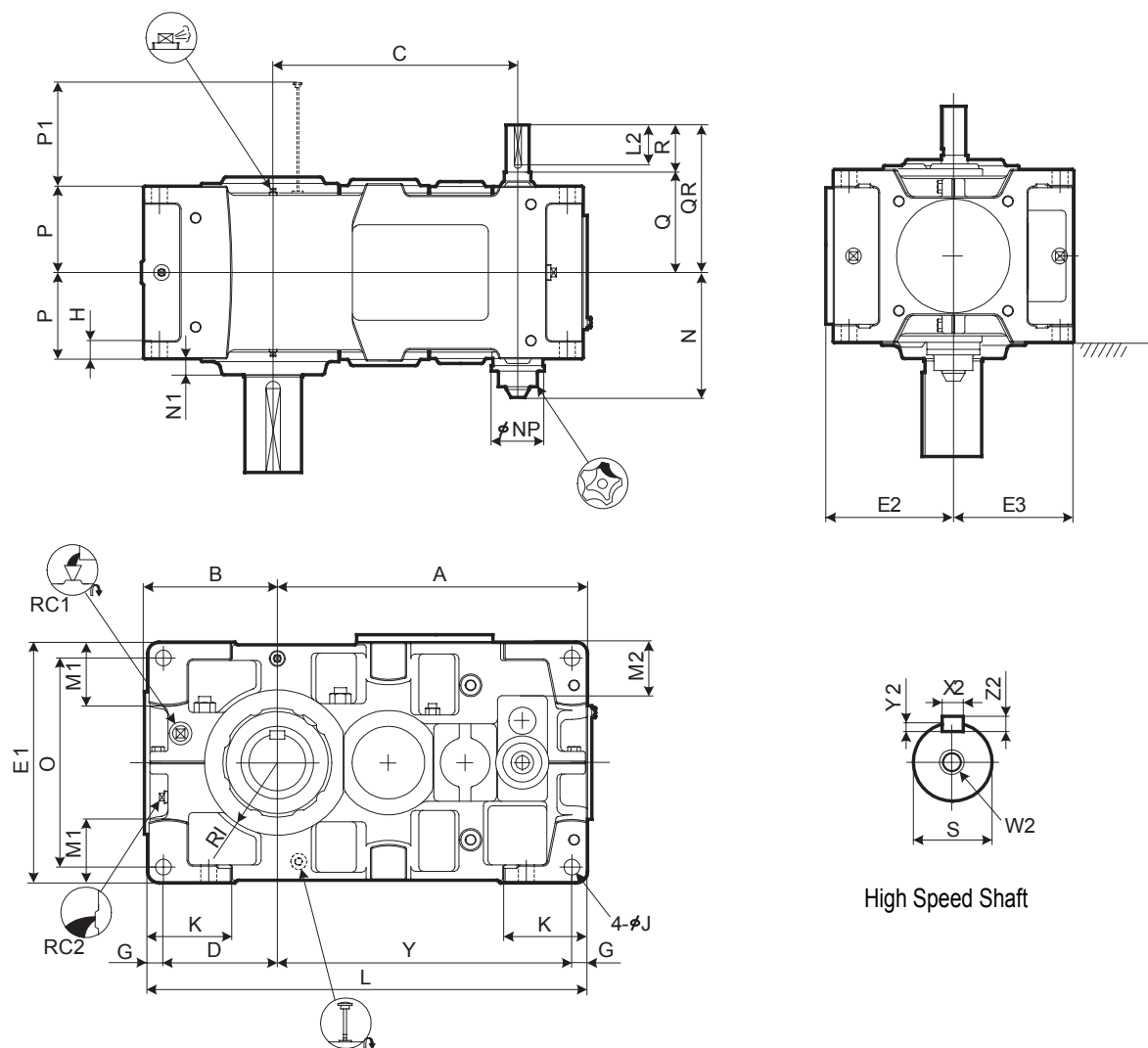


Backstop (Option)



Opposite Side

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085



High Speed Shaft

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	P1	Y
9060	701	299	540	251	530	282	265	35	35	160	35	180	970	140	118	277.5	35	117	460	190	223	649
9065	747	338	586	290	600	317	300	35	35	175	35	180	1055	175	153	277.5	38	117	530	190	223	695
9070	809	336	630	283	600	317	300	40	40	175	42	215	1115	155	128	304	38	117	520	215	253	752
9075	862	383	683	330	670	352	335	40	52	190	42	220	1215	195	163	304	40	117	590	215	253	805
9080	932	378	725	325	670	352	335	40	52	190	42	220	1275	170	140	322.5	45	117	590	230	283	870
9085	988	422	781	369	750	392	375	40	52	215	42	220	1375	210	180	322.5	40	117	670	230	283	926

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	219	329	110	50k6	M16/36	14	5.5	9	95	1"	1"	660	28
9065	219	329	110	50k6	M16/36	14	5.5	9	95	1"	1"	815	35
9070	244	354	110	55m6	M20/42	16	6	10	95	1"	1"	940	44
9075	244	354	110	55m6	M20/42	16	6	10	95	1"	1"	1160	56
9080	265	405	140	65m6	M20/42	18	7	11	125	1"	1"	1350	57
9085	265	405	140	65m6	M20/42	18	7	11	125	1"	1"	1610	79

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with visible gauge. Refer to page D-28.

4. Refer to the page D-15 for dimensions not shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085

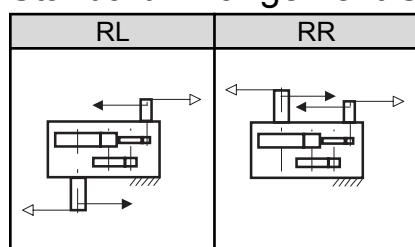
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Arrangement Configuration



Nomenclature

Size
P V D P 3 - -

9060
9065
9070
9075
9080
9085

Shaft
Arrangement
RL
RR

Low Speed
Shaft
Type

(blank) : Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Nominal
Reduction
Ratio

Size	Nominal Reduction Ratio													
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9065			○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

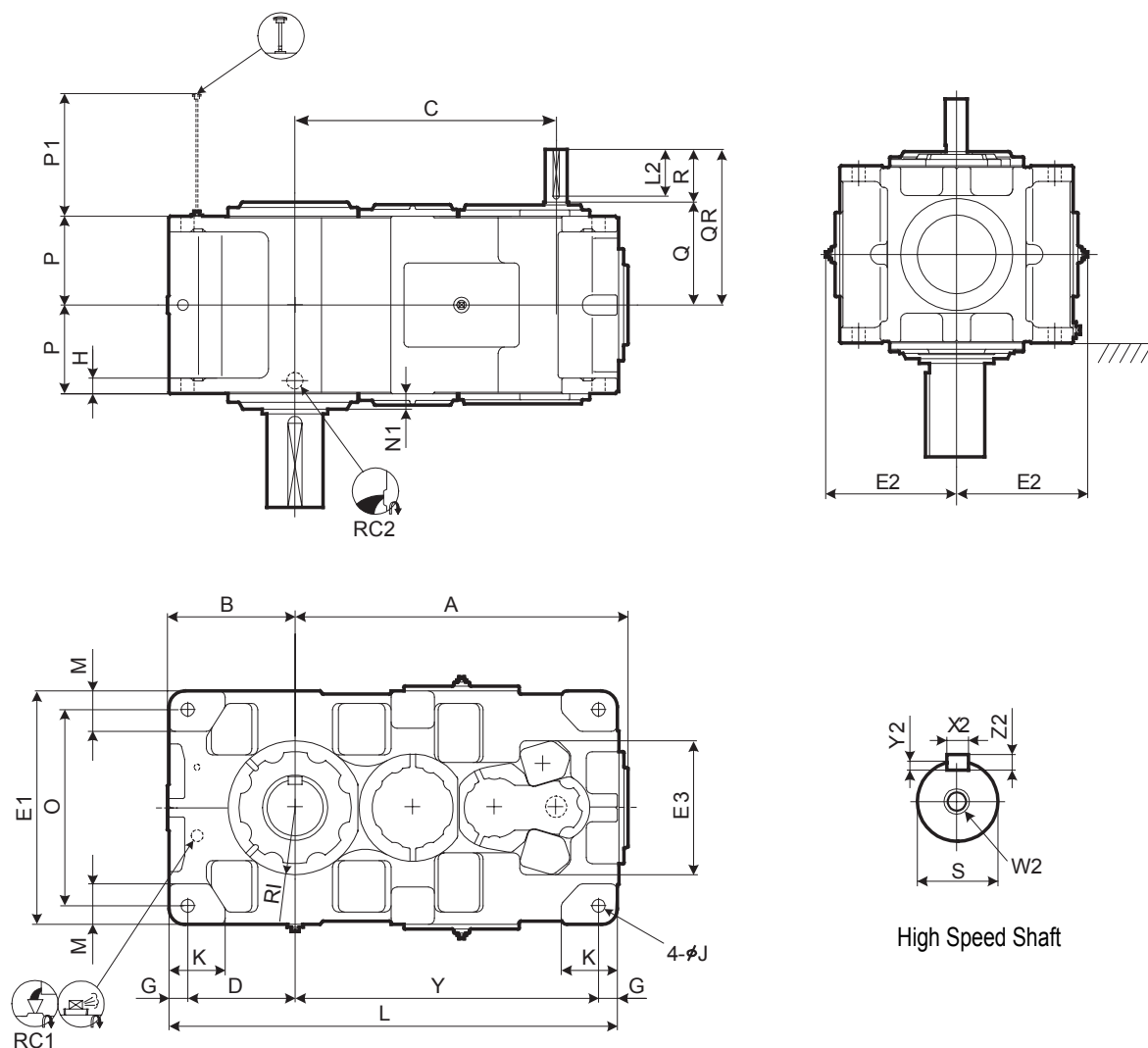


Backstop (Option)



Opposite Side

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9090 ▶ 9115



High Speed Shaft

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N1	O	P	P1	Y
9090	1070	410	837	345	750	421	430	60	50	215	42	180	1440	130	50	630	285	394	975
9095	1100	440	867	375	800	446	430	60	50	235	42	200	1500	140	50	680	285	394	1005
9100	1204	450	950	375	850	471	500	70	55	235	48	200	1610	150	60	710	325	443	1095
9105	1238	485	984	410	900	496	500	70	55	260	48	220	1680	160	60	760	325	443	1130
9110	1354	500	1050	420	950	521	500	75	60	265	56	220	1810	170	55	800	355	475	1240
9115	1403	550	1099	470	1000	546	500	75	60	280	56	250	1910	180	55	850	355	475	1290

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9090	330	470	140	65m6	M20/42	18	7	11	125	1"	1 1/2"	2120	90
9095	330	470	140	65m6	M20/42	18	7	11	125	1"	1 1/2"	2380	120
9100	375	515	140	75m6	M20/42	20	7.5	12	125	1"	1 1/2"	2870	140
9105	375	515	140	75m6	M20/42	20	7.5	12	125	1"	1 1/2"	3350	175
9110	405	575	170	80m6	M20/42	22	9	14	150	1"	1 1/2"	4000	200
9115	405	575	170	80m6	M20/42	22	9	14	150	1"	1 1/2"	4520	255

※ 9090 ~ 9115 are equipped with motor driven pumps. For details consult us.

Unit: mm

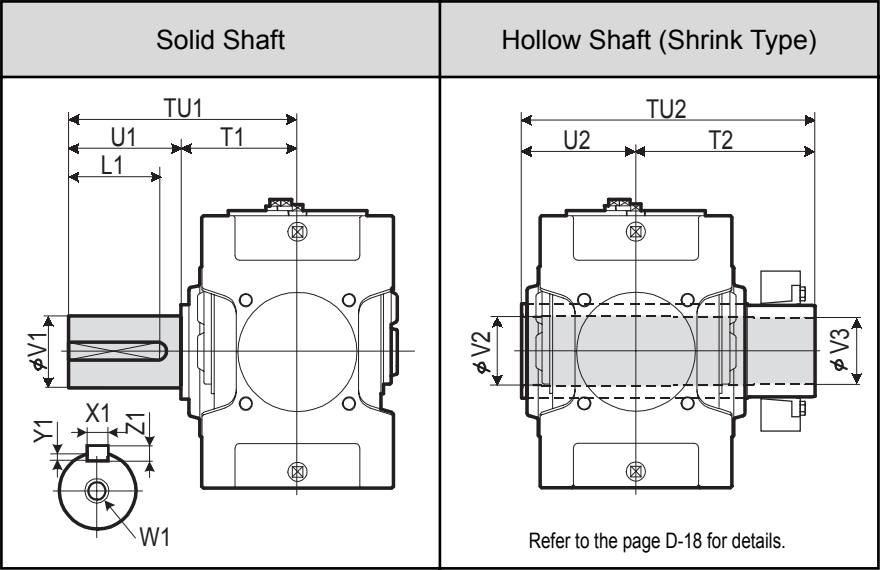
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-31.

4. Refer to the page D -16 for dimensions not shown in these drawings.
5. Refer to the page D -31 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9090 ▶ 9115

P
V
D
9090
9115
P
3
Parallel
Triple
Reduction

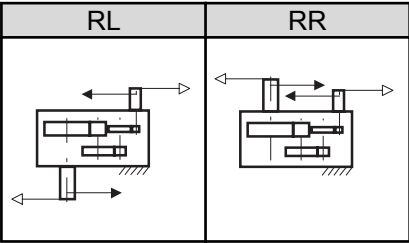
Slow Speed Shaft



Size	Solid Shaft					Hollow Shaft (Shrink Disk Type)									
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	
						X1	Y1	Z1	L1						
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190	
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200	
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210	
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220	
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240	
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250	

Unit: mm

Standard Arrangement Configuration



Nomenclature

P V D

Size

9090
9095
9100
9105
9110
9115

P 3 -

Shaft Arrangement

RL
RR

-

Low Speed Shaft Type

(blank) : Solid Shaft
T : Hollow Shaft (Shrink Disk type)

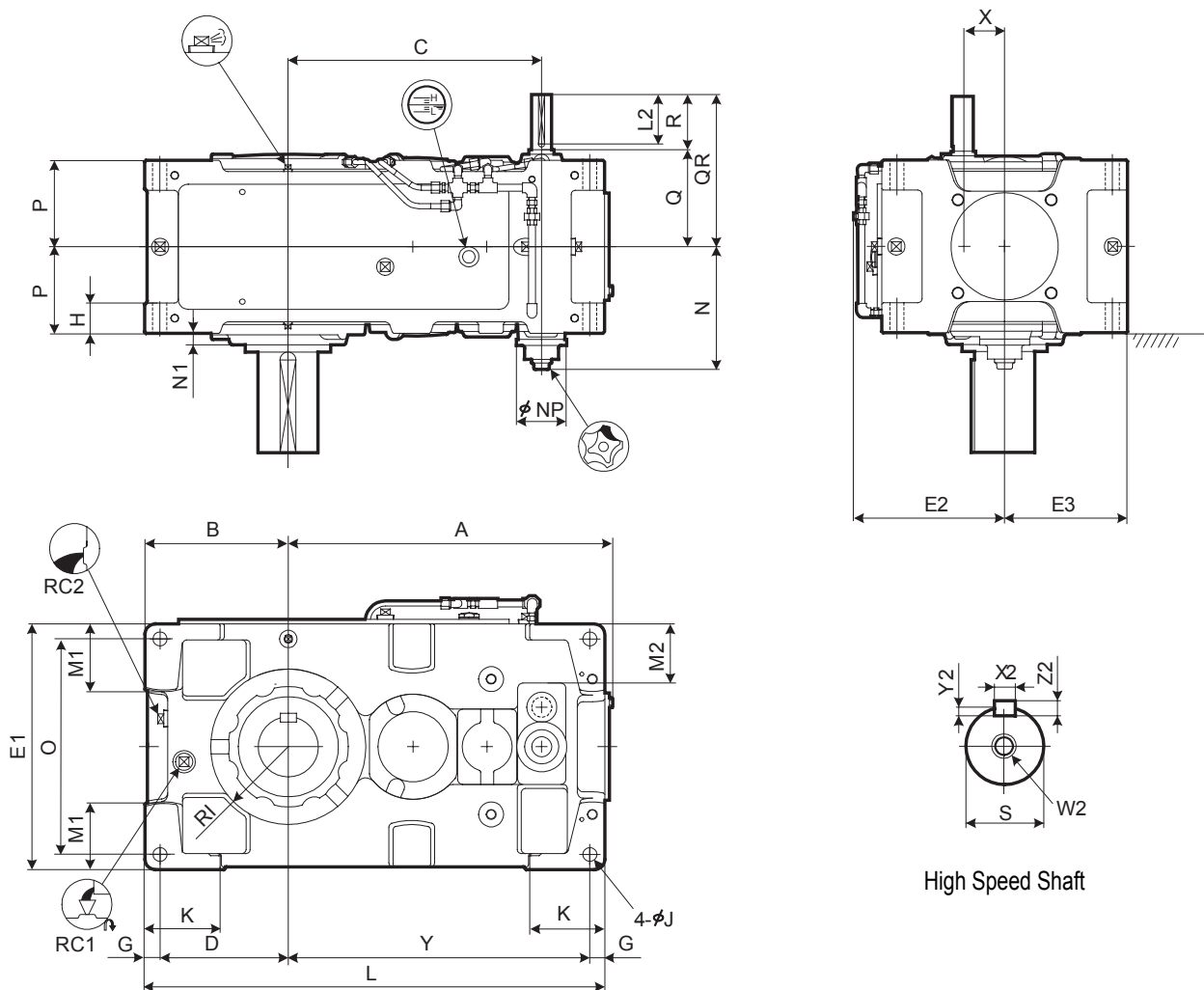
-

Nominal Reduction Ratio

Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095		○	○	○	○	○	○	○	○	○	○	○	○	○
9100		○	○	○	○	○	○	○	○	○	○	○	○	○
9105			○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	
9115		○	○	○	○	○	○	○	○	○	○	○	○	○

- Air Breather
- Air Vent
- Oil Fill
- Drain Plug
- Dip Stick
- Oil Gauge
- Inspection Cover
- Oil Pump
- Backstop (Option)
- Opposite Side

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9030 ▶ 9055



High Speed Shaft

Size	A	B	C	D	E1	E2	E3	G	H	I	J	K	L	M1	M2	N	N1	NP	O	P	X	Y
9030	453	200	343	175	320	220	160	25	50	105	24	120	640	85	50	211	22	100	270	132.5	63	415
9035	484	219	374	194	370	245	185	25	50	120	24	120	690	100	75	211	22	100	320	132.5	63	446
9040	540	235	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	79	494
9045	577	256	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	79	533
9050	609	255	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	79	563
9055	648	286	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	79	602

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9030	159	219	60	25k6	M10/22	8	4	7	50	3/4"	3/4"	210	10
9035	159	219	60	25k6	M10/22	8	4	7	50	3/4"	3/4"	230	14
9040	175	235	60	28k6	M10/22	8	4	7	50	1"	1"	310	17
9045	175	235	60	28k6	M10/22	8	4	7	50	1"	1"	380	21
9050	195	275	80	30k6	M10/22	8	4	7	70	1"	1"	450	23
9055	195	275	80	30k6	M10/22	8	4	7	70	1"	1"	510	33

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions not shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9030 ▶ 9055

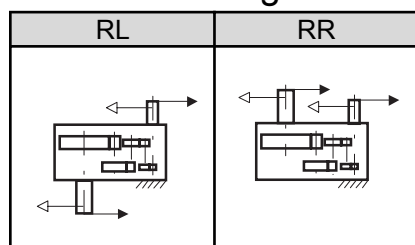
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Arrangement Configuration



Nomenclature

Size
P V A P 4 - -

9030
9035
9040
9045
9050
9055

Shaft Arrangement
RL
RR

Low Speed Shaft Type
Nominal Reduction Ratio

(blank) : Solid Shaft
T : Hollow Shaft (Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500	
9030	○	○	○	○	○	○	○	○	○	○								
9035			○	○	○	○	○	○	○	○	○	○						
9040	○	○	○	○	○	○	○	○	○	○								
9045	○	○	○	○	○	○	○	○	○	○	○	○						
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

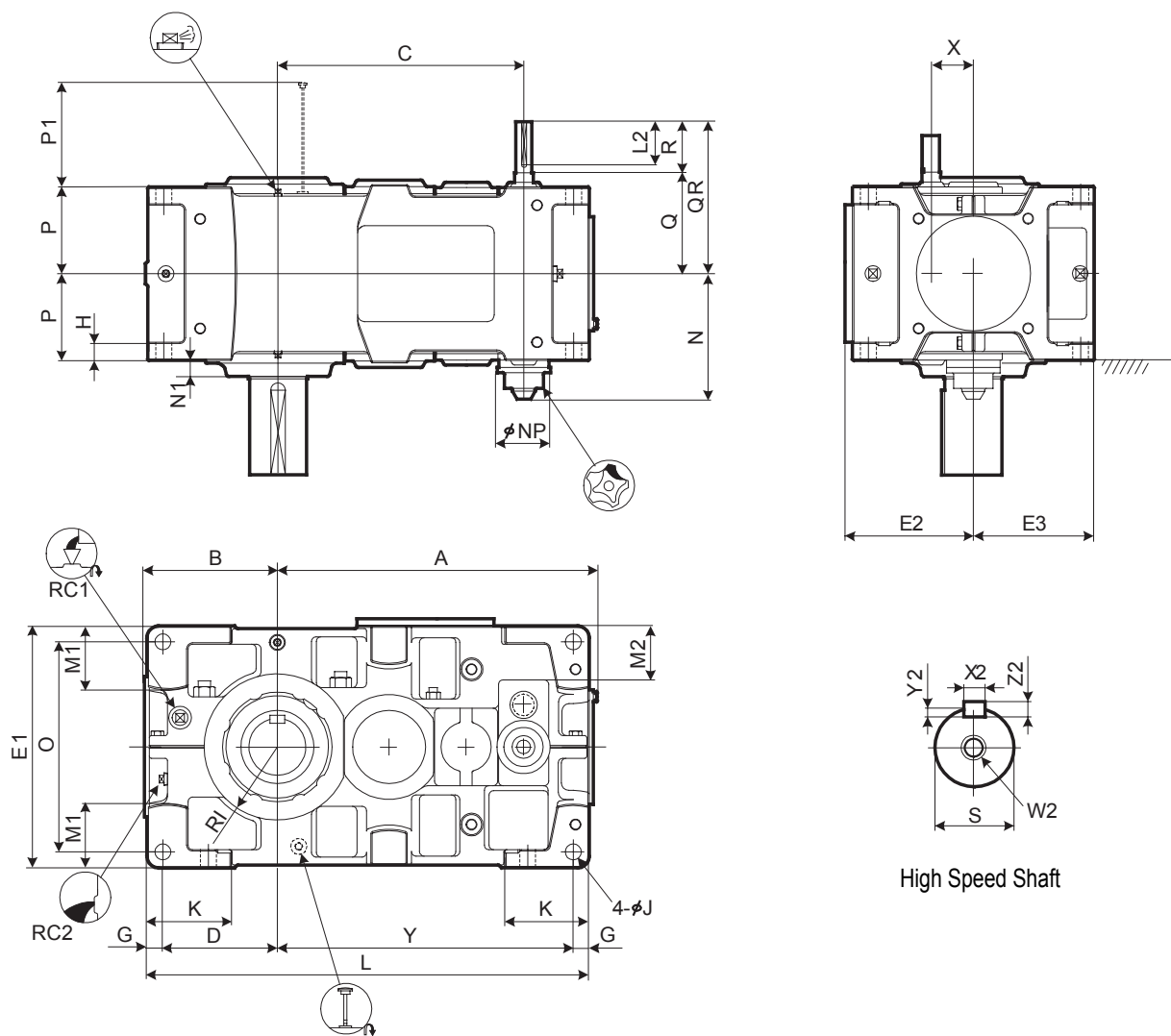


Backstop (Option)



Opposite Side

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9060 ▶ 9085



High Speed Shaft

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	P1	X	Y
9060	701	299	540	251	530	282	265	35	35	160	35	180	970	140	118	277.5	35	117	460	190	213	92	649
9065	747	338	586	290	600	317	300	35	35	175	35	180	1055	175	153	277.5	38	117	530	190	213	92	695
9070	809	336	630	283	600	317	300	40	40	175	42	215	1115	155	128	304	38	117	520	215	233	109	752
9075	862	383	683	330	670	352	335	40	52	190	42	220	1215	195	163	304	40	117	590	215	233	109	805
9080	932	378	725	325	670	352	335	40	52	190	42	220	1275	170	140	322.5	45	117	590	230	268	126	870
9085	988	422	781	369	750	392	375	40	52	215	42	220	1375	210	180	322.5	40	117	670	230	268	126	926

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	221	301	80	35k6	M12/28	10	5	8	70	1"	1"	660	32
9065	221	301	80	35k6	M12/28	10	5	8	70	1"	1"	815	40
9070	244	354	110	40k6	M16/36	12	5	8	95	1"	1"	950	53
9075	244	354	110	40k6	M16/36	12	5	8	95	1"	1"	1170	67
9080	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1"	1360	65
9085	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1"	1620	89

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with visible gauge. Refer to page D-28.

4. Refer to the page D-15 for dimensions not shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9060 ▶ 9085

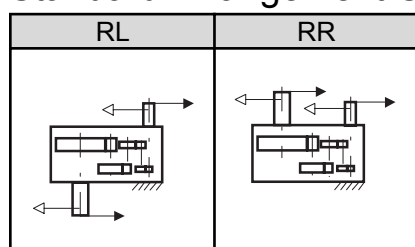
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Arrangement Configuration



Nomenclature

Size
P V D P 4 - -

9060
9065
9070
9075
9080
9085

Shaft
Arrangement
RL
RR

Low Speed
Shaft
Type
(blank) : Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500		
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9065	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9070		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



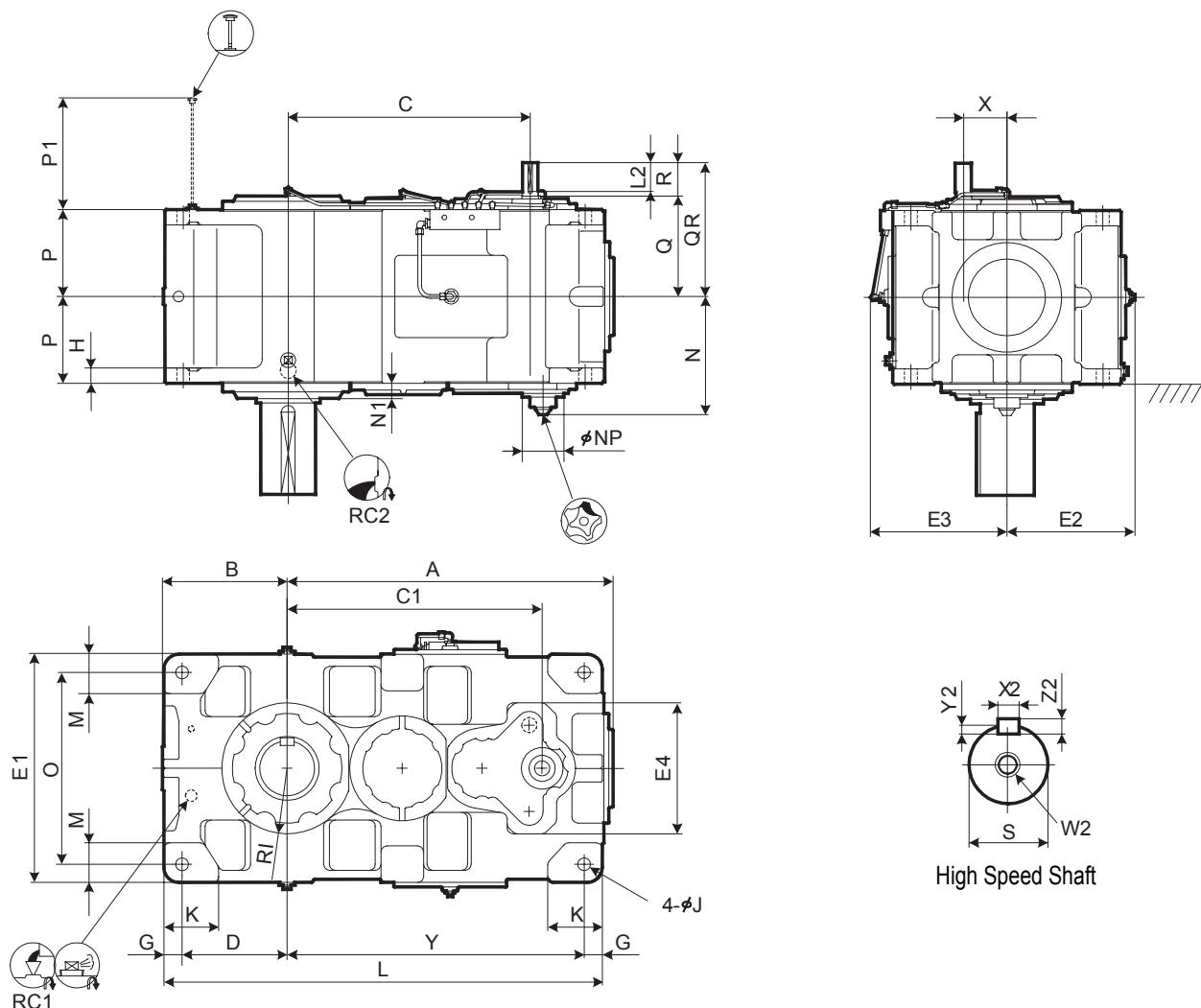
Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115



Size	A	B	C	C1	D	E1	E2	E3	E4	G	H	RI	J	K	L	M	N	NP	N1	O	P	P1	X	Y
9090	1070	410	795	837	345	750	421	449	430	60	50	215	42	180	1440	130	388	137	50	630	285	367	142	975
9095	1100	440	825	867	375	800	446	474	430	60	50	235	42	200	1500	140	388	137	50	680	285	367	142	1005
9100	1204	450	901	950	375	850	471	499	500	70	55	235	48	200	1610	150	428	137	60	710	325	409	162	1095
9105	1238	485	935	984	410	900	496	524	500	70	55	260	48	220	1680	160	428	137	60	760	325	409	162	1130
9110	1354	500	1001	1050	420	950	521		500	75	60	265	56	220	1810	170			55	800	355	442	162	1240
9115	1403	550	1050	1099	470	1000	546		500	75	60	280	56	250	1910	180			55	850	355	442	162	1290

Size	High Speed Shaft									RC1	RC2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9090	330	440	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2170	110
9095	330	440	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2430	140
9100	375	515	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	2920	170
9105	375	515	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	3400	210
9110	405	545	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4050	240
9115	405	545	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4570	295

※ 9110 ~ 9115 are equipped with motor driven pumps. For details consult us.

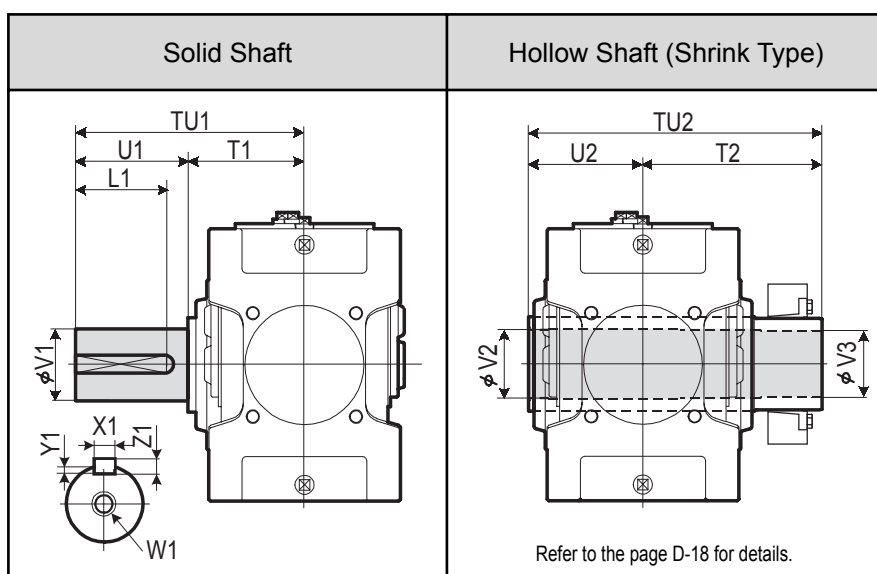
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-31.

4. Refer to the page D-16 for dimensions not shown in these drawings.
5. Refer to the page D-31 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115

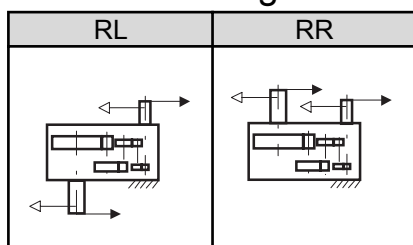
Slow Speed Shaft



Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3
						X1	Y1	Z1	L1					
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

Standard Arrangement Configuration



Nomenclature

Nomenclature

P

V

D

Size

9090

9095

9100

9105

9110

9115

P

4

-

Shaft Arrangement

RL

RR

Low Speed Shaft Type

(blank) : Solid Shaft

T : Hollow Shaft

(Shrink Disk type)

-

Nominal Reduction Ratio

Size	Nominal Reduction Ratio															
	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9095		○	○		○	○	○	○	○	○	○	○	○	○	○	
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9105		○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9115		○	○	○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



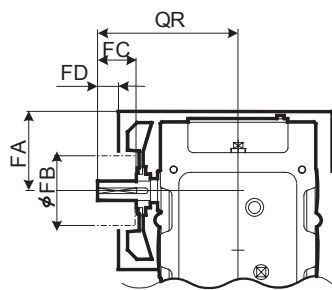
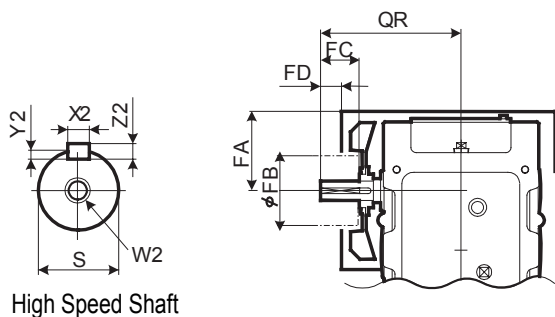
Oil Gauge

Inspection
Cover

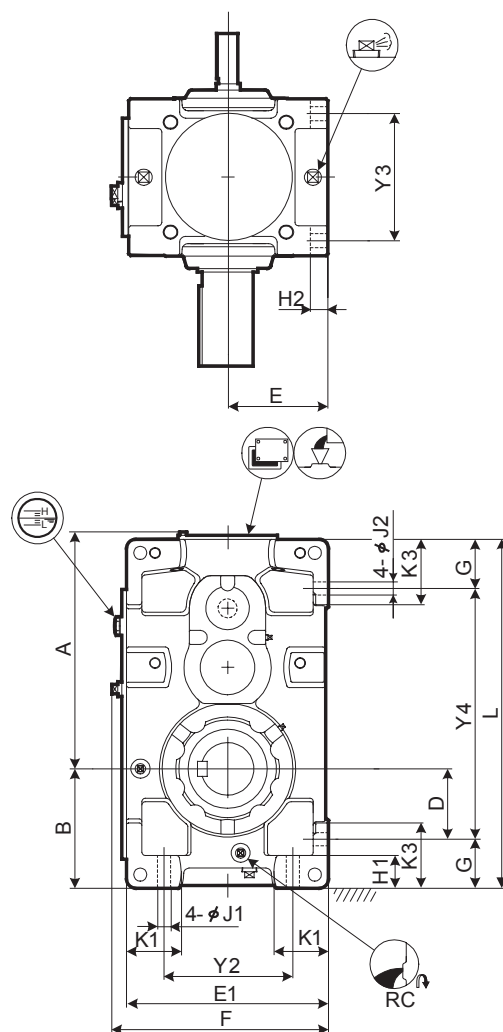
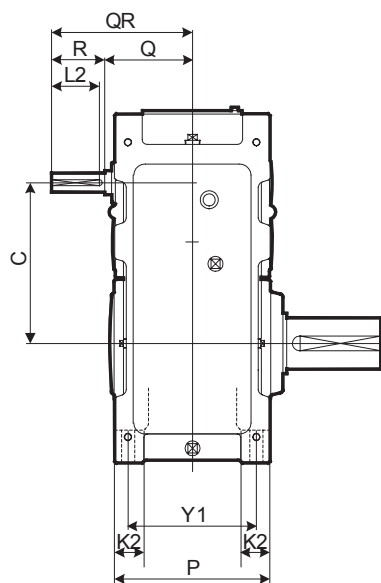
Oil Pump

Backstop
(Option)Opposite
Side

DIMENSIONS Parallel Shaft Double Reduction Upright Mounting 9015 ▶ 9055



※ Refer to the page D-22 for details.



Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9015	296	160	194	90	135	270	298	70	50	22	15	15	70	35	95	440	205	170	180	170	300
9025	347	175	227	95	155	310	338	80	55	25	19	19	75	40	110	505	235	195	210	195	345
9030	407	200	264	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	438	219	295	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	468	235	306	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045	507	256	345	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050	538	255	358	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055	577	286	397	171	245	490	520	115	75	32	28	28	135	60	150	845	345	285	350	285	615

Size	High Speed Shaft										Fan				RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9015	131	211	80	30k6	M10/22	8	4	7	70	129	125	50	30	3/4"	100	9	
9025	146	226	80	35k6	M12/28	10	5	8	70	143	140	50	30	3/4"	140	13	
9030	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	195	16	
9035	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	215	22	
9040	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	285	29	
9045	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	345	36	
9050	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	415	36	
9055	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	475	47	

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Always remove fan hood when tightening mounting bolt.

4. Refer to the page D-12 for dimensions not shown in these drawings.
5. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Upright Mounting 9015 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

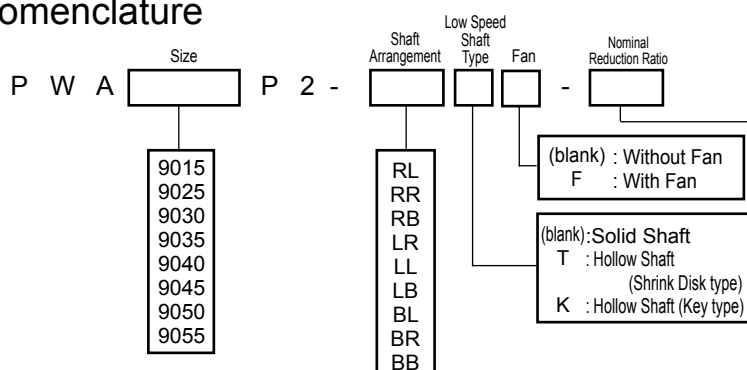
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55	
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

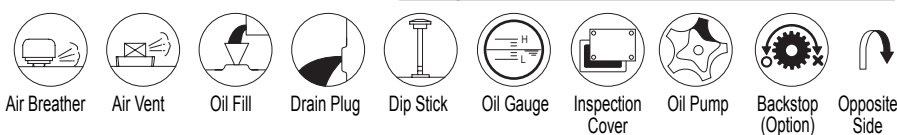
Standard Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

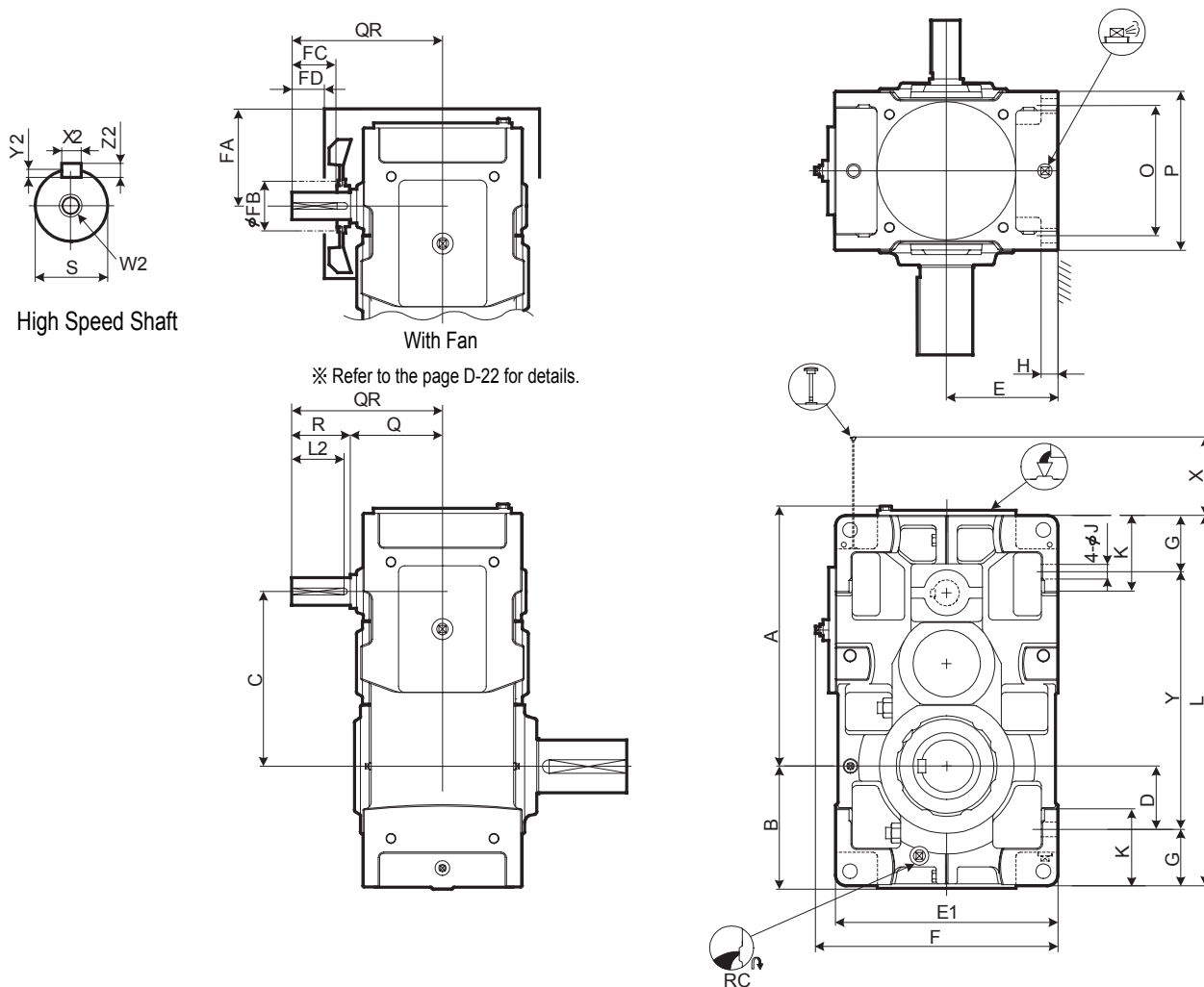
Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○



DIMENSIONS Parallel Shaft Double Reduction Upright Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9060	622	299	414	151	265	530	577	135	35	35	180	885	310	380	133	615
9065	668	338	460	190	300	600	647	135	35	35	180	970	310	380	133	700
9070	720	336	482	163	300	600	647	160	40	42	215	1020	350	430	138	700
9075	773	383	535	210	335	670	717	160	52	42	220	1120	350	430	138	800
9080	813	378	556	205	335	670	717	160	52	42	220	1155	380	460	169	835
9085	869	422	612	249	375	750	797	160	52	42	220	1255	380	460	169	935

Size	High Speed Shaft									Fan				RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key				FA	FB	FC	FD			
						X2	Y2	Z2	L2							
9060	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	610	53
9065	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	735	67
9070	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	860	84
9075	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	1110	100
9080	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1240	109
9085	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1500	137

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Always remove fan hood when tightening mounting bolt.

4. Refer to the page D-14 for dimensions not shown in these drawings.
5. Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Upright Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

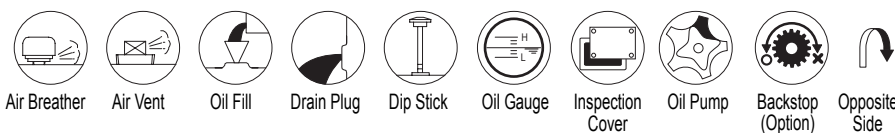
Unit: mm

Standard Arrangement Configuration

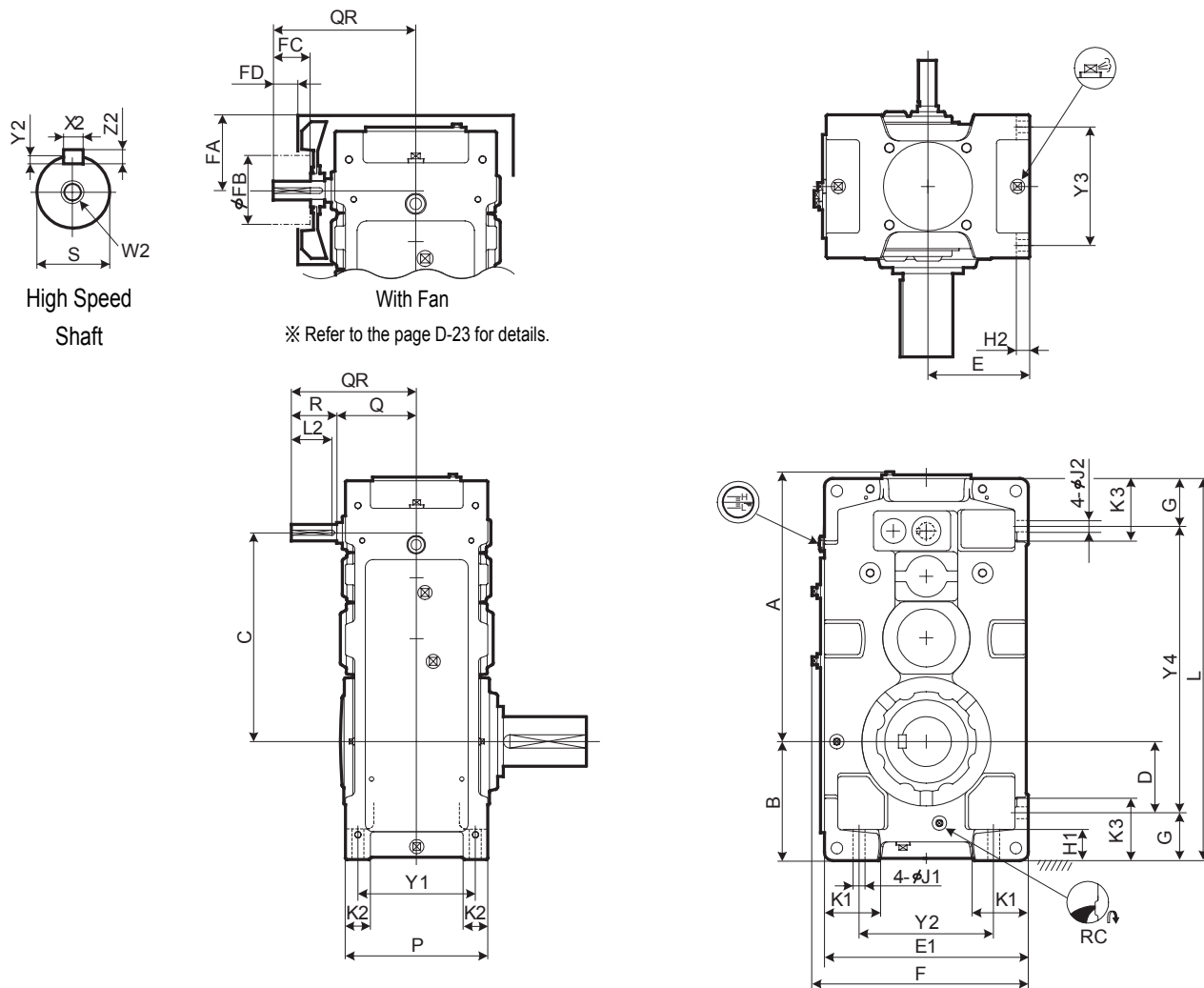
RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

P	W	D	Size	P	2	W	-	Shaft Arrangement	Low Speed Shaft Type	Fan	-	Nominal Reduction Ratio																																																																																											
			9060 9065 9070 9075 9075 9080 9085					RL RR RB LR LL LB BL BR BB	(blank): Without Fan F : With Fan	(blank): Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)		<table border="1"> <thead> <tr> <th>Size</th><th>6.3</th><th>7.1</th><th>8</th><th>9</th><th>10</th><th>11.2</th><th>12.5</th><th>14</th><th>16</th><th>18</th><th>20</th><th>22.4</th></tr> </thead> <tbody> <tr><td>9060</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9065</td><td></td><td></td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9070</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9075</td><td></td><td></td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9080</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>9085</td><td></td><td></td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> </tbody> </table>	Size	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	9060	○	○	○	○	○	○	○	○	○	○	○	○	9065			○	○	○	○	○	○	○	○	○	○	9070	○	○	○	○	○	○	○	○	○	○	○	○	9075			○	○	○	○	○	○	○	○	○	○	9080	○	○	○	○	○	○	○	○	○	○	○	○	9085			○	○	○	○	○	○	○	○	○	○
Size	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4																																																																																											
9060	○	○	○	○	○	○	○	○	○	○	○	○																																																																																											
9065			○	○	○	○	○	○	○	○	○	○																																																																																											
9070	○	○	○	○	○	○	○	○	○	○	○	○																																																																																											
9075			○	○	○	○	○	○	○	○	○	○																																																																																											
9080	○	○	○	○	○	○	○	○	○	○	○	○																																																																																											
9085			○	○	○	○	○	○	○	○	○	○																																																																																											



DIMENSIONS Parallel Shaft Triple Reduction Upright Mounting 9015 ▶ 9055



Speed Reducer

Selection Tables

Dimension Tables

Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9015	339	160	257	90	135	270	298	70	50	22	15	15	70	35	95	485	205	170	180	170	345
9025	409	175	306	95	155	310	338	80	55	25	19	19	75	40	110	570	235	195	210	195	410
9030	454	200	343	110	160	320	348	90	60	28	24	24	85	50	120	640	265	215	200	215	460
9035	485	219	374	129	185	370	398	90	60	28	24	24	100	50	120	690	265	215	250	215	510
9040	541	235	398	120	200	400	430	115	75	30	28	28	100	60	150	759	315	255	260	255	529
9045	577	256	437	141	220	440	470	115	75	30	28	28	120	60	150	819	315	255	300	255	589
9050	610	255	467	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	285	280	285	615
9055	649	286	506	171	245	490	520	115	75	32	28	28	135	60	150	918	345	285	350	285	688

Size	High Speed Shaft										Fan				RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Key	Z2	L2	FA	FB	FC	FD			
9015	130	190	60	25k6	M10/22	8	4	7	50		111	125	30	10	3/4"	105	11
9025	144	204	60	28k6	M10/22	8	4	7	50		129	125	30	10	3/4"	150	15
9030	161	241	80	30k6	M10/22	8	4	7	70		140	125	50	30	3/4"	205	20
9035	161	241	80	30k6	M10/22	8	4	7	70		150	140	50	22	3/4"	225	25
9040	176	256	80	35k6	M12/28	10	5	8	70		170	140	50	22	1"	305	35
9045	176	256	80	35k6	M12/28	10	5	8	70		170	140	50	22	1"	375	43
9050	194	304	110	40k6	M16/36	12	5	8	95		172	140	80	52	1"	445	45
9055	194	304	110	40k6	M16/36	12	5	8	95		172	140	80	52	1"	505	59

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Always remove fan hood when tightening mounting bolt.

4. Refer to the page D-13 for dimensions not shown in these drawings.
5. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Upright Mounting 9015 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

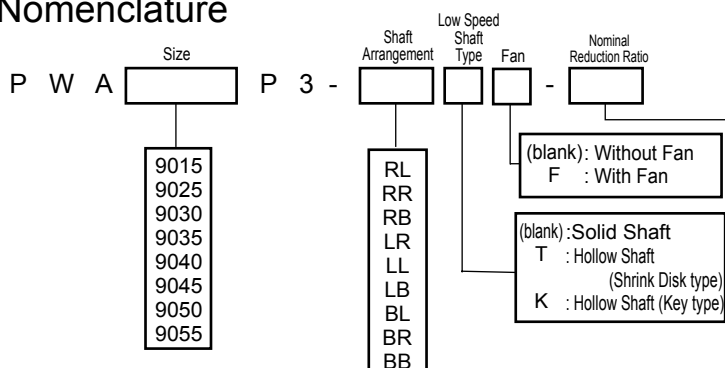
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55	
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature



Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9015	○	○	○	○	○	○	○	○							
9025	○	○	○	○	○	○	○	○							
9030	○	○	○	○	○	○	○	○	○	○	○	○			
9035			○	○	○	○	○	○	○	○	○	○	○	○	
9040	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9045			○	○	○	○	○	○	○	○	○	○	○	○	
9050	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

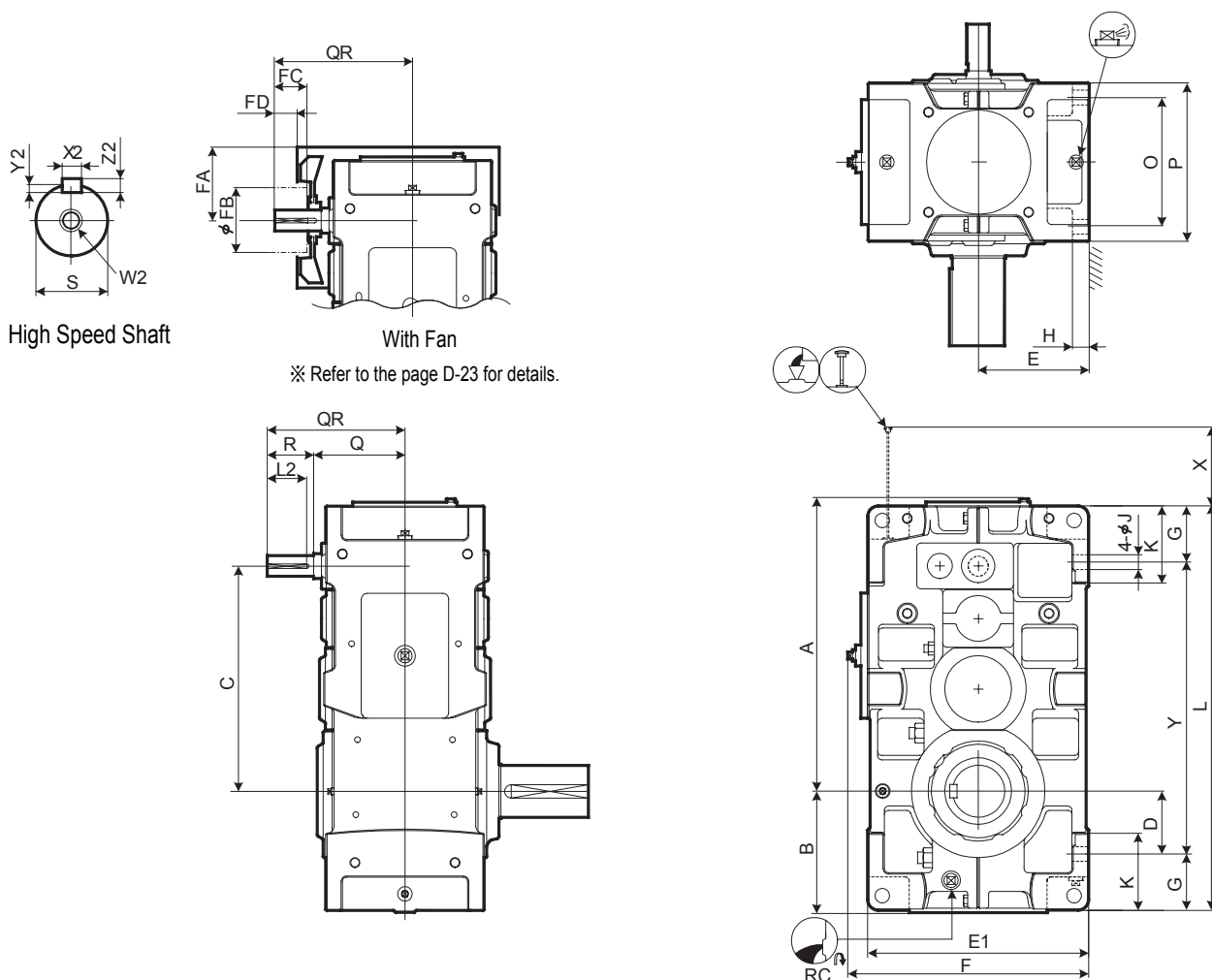


Backstop (Option)



Opposite Side

DIMENSIONS Parallel Shaft Triple Reduction Upright Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	P1	Y
9060	702	299	540	151	265	530	577	135	35	35	180	970	310	380	216	700
9065	748	338	586	190	300	600	647	135	35	35	180	1055	310	380	216	785
9070	810	336	630	163	300	600	647	160	40	42	215	1115	350	430	233	795
9075	863	383	683	210	335	670	717	160	52	42	220	1215	350	430	233	895
9080	933	378	725	205	335	670	717	160	52	42	220	1275	380	460	285	955
9085	989	422	781	249	375	750	797	160	52	42	220	1375	380	460	285	1055

Size	High Speed Shaft									Fan				RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key				FA	FB	FC	FD			
						X2	Y2	Z2	L2							
9060	219	329	110	50k6	M16/36	14	5.5	9	95	199	160	80	52	1"	660	68
9065	219	329	110	50k6	M16/36	14	5.5	9	95	199	160	80	52	1"	815	85
9070	244	354	110	55m6	M20/42	16	6	10	95	221	160	80	52	1"	940	106
9075	244	354	110	55m6	M20/42	16	6	10	95	221	160	80	52	1"	1160	120
9080	265	405	140	65m6	M20/42	18	7	11	125	247	200	105	65	1"	1350	130
9085	265	405	140	65m6	M20/42	18	7	11	125	247	200	105	65	1"	1610	176

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Always remove fan hood when tightening mounting bolt.

4. Refer to the page D-15 for dimensions not shown in these drawings.
5. Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Upright Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

Size			Shaft Arrangement			Low Speed Shaft Type			Fan			Nominal Reduction Ratio																																																																																																											
P	W	D	P	3	W																																																																																																																		
9060 9065 9070 9075 9080 9085			RL RR RB LR LL LB BL BR BB			(blank) : Without Fan F : With Fan			(blank) : Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)			<table> <tr> <th>Size</th><th>20</th><th>22.4</th><th>25</th><th>28</th><th>31.5</th><th>35.5</th><th>40</th><th>45</th><th>50</th><th>56</th><th>63</th><th>71</th><th>80</th><th>90</th></tr> <tr> <td>9060</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr> <td>9065</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr> <td>9070</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr> <td>9075</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr> <td>9080</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr> <td>9085</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> </table>			Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9075	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	9085	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90																																																																																																									
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9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																																									
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9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																																									
9085	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																																									



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

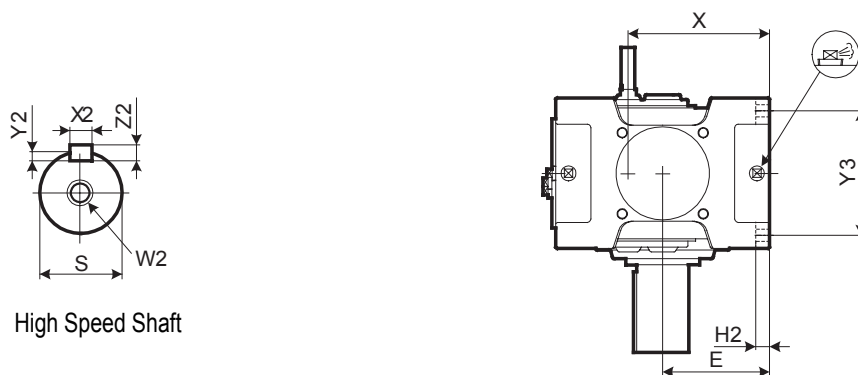


Backstop (Option)

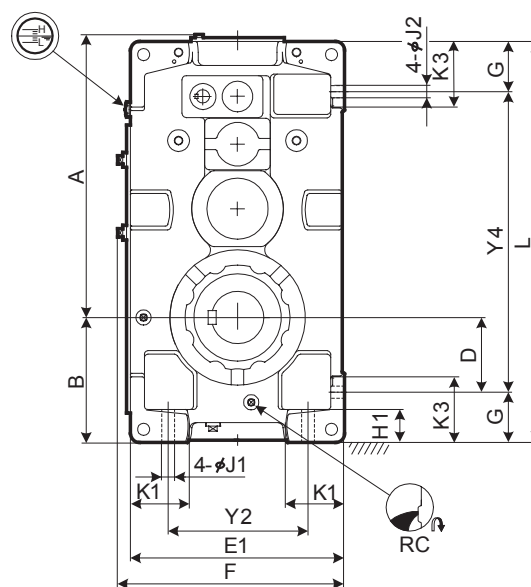
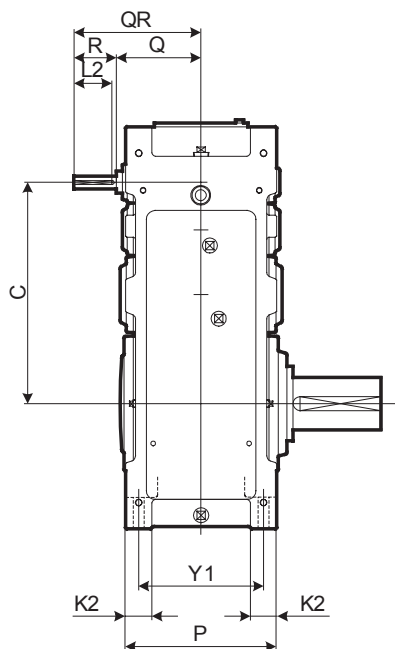


Opposite Side

DIMENSIONS Parallel Shaft Quadruple Reduction Upright Mounting 9030 ▶ 9055



High Speed Shaft



Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	X	Y1	Y2	Y3	Y4
9030	454	200	343	110	160	320	348	90	60	28	24	24	85	50	120	640	265	223	215	200	215	460
9035	485	219	374	129	185	370	398	90	60	28	24	24	100	50	120	690	265	248	215	250	215	510
9040	541	235	398	120	200	400	430	115	75	30	28	28	100	60	150	759	315	279	255	260	255	529
9045	577	256	437	141	220	440	470	115	75	30	28	28	120	60	150	819	315	299	255	300	255	589
9050	610	255	467	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	289	285	280	285	615
9055	649	286	506	171	245	490	520	115	75	32	28	28	135	60	150	918	345	324	285	350	285	688

Size	High Speed Shaft									RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2			
9030	159	219	60	25k6	M10/22	8	4	7	50	3/4"	210	20
9035	159	219	60	25k6	M10/22	8	4	7	50	3/4"	230	25
9040	175	135	60	28k6	M10/22	8	4	7	50	1"	310	35
9045	175	235	60	28k6	M10/22	8	4	7	50	1"	380	43
9050	195	275	80	30k6	M10/22	8	4	7	70	1"	450	46
9055	195	275	80	30k6	M10/22	8	4	7	70	1"	510	59

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions not shown in these drawings.

4. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Upright Mounting 9030 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

Size	Shaft Arrangement	Low Speed Shaft Type	Nominal Reduction Ratio
P W A P 4 - - 			
9030 9035 9040 9045 9050 9055	RL RR RB LR LL LB BL BR BB	(blank): Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)	

Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500		
9030	○	○	○	○	○	○	○	○	○	○	○	○							
9035	○	○	○	○	○	○	○	○	○	○	○	○							
9040	○	○	○	○	○	○	○	○	○	○	○	○							
9045	○	○	○	○	○	○	○	○	○	○	○	○	○						
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

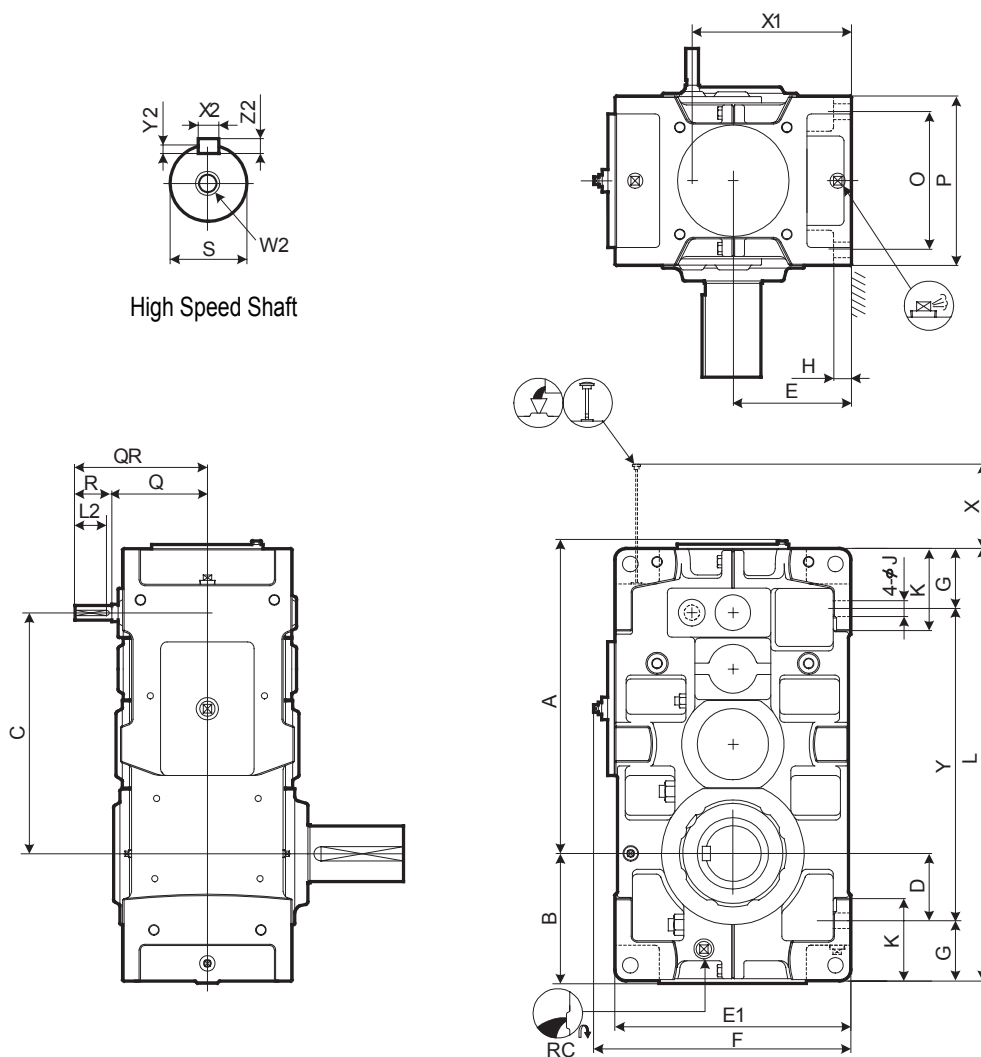


Backstop (Option)



Opposite Side

DIMENSIONS Parallel Shaft Quadruple Reduction Upright Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	X1	Y
9060	702	299	540	151	265	530	577	135	35	35	180	970	310	380	73	357	700
9065	748	338	586	190	300	600	647	135	35	35	180	1055	310	380	73	392	785
9070	810	336	630	163	300	600	647	160	40	42	215	1115	350	430	67	409	795
9075	863	383	683	210	335	670	717	160	52	42	220	1215	350	430	67	444	895
9080	933	378	725	205	335	670	717	160	52	42	220	1275	380	460	93	461	955
9085	989	422	781	249	375	750	797	160	52	42	220	1375	380	460	93	501	1055

Size	High Speed Shaft									RC	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2			
9060	221	301	80	35k6	M12/28	10	5	8	70	1"	660	69
9065	221	301	80	35k6	M12/28	10	5	8	70	1"	815	86
9070	244	354	110	40k6	M16/36	12	5	8	95	1"	950	108
9075	244	354	110	40k6	M16/36	12	5	8	95	1"	1170	122
9080	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1360	130
9085	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1620	175

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
 2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
 3. Refer to the page D-15 for dimensions not shown in these drawings.

4. Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Upright Mounting 9060 ▶ 9085

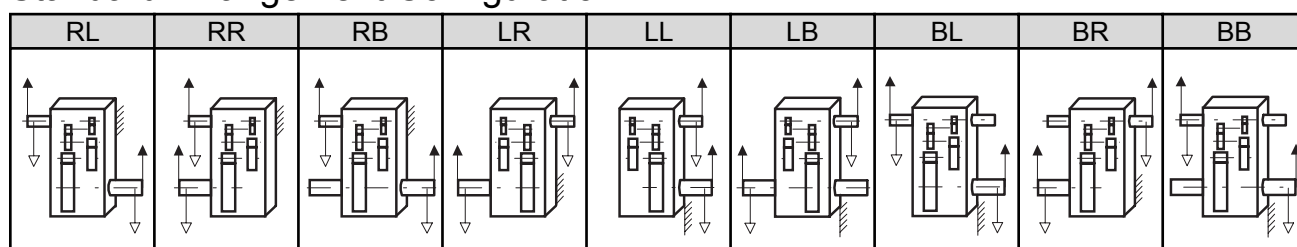
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Arrangement Configuration



Nomenclature

Size P W D P 4 W - Shaft Arrangement Low Speed Shaft Type Nominal Reduction Ratio

9060
9065
9070
9075
9080
9085

RL
RR
RB
LR
LL
LB
BL
BR
BB

(blank): Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	500
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9065	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○
9070		○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



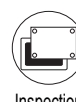
Drain Plug



Dip Stick

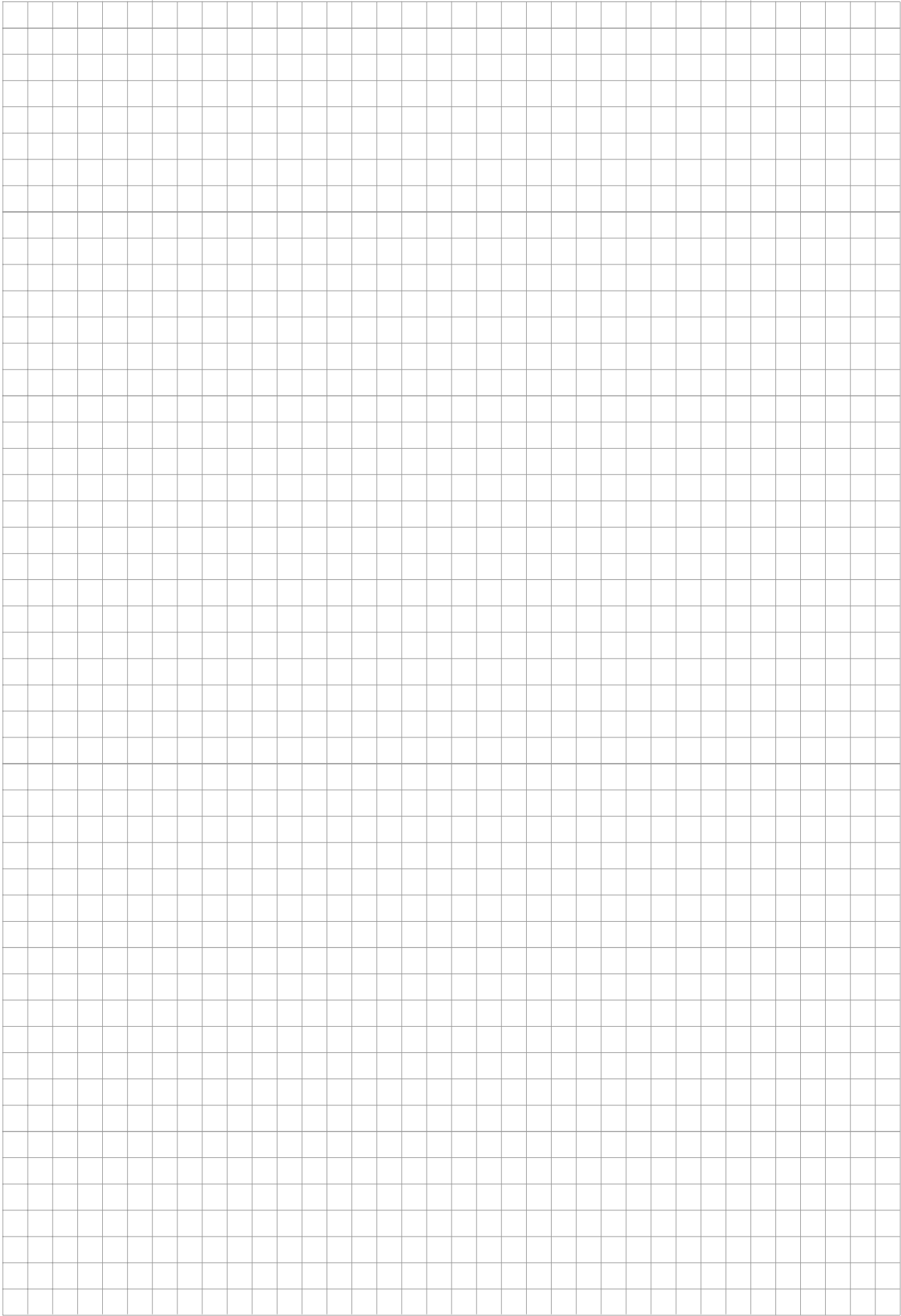


Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side



D

TECHNICAL DATA

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TECHNICAL DATA Lubricant, Installation

Lubricant

Slow Speed Shaft Speed		Ambient Temperature		
		-10 deg to +15 deg	0 deg to +30 deg	+10 deg to +50 deg
Over 100r/min	ISO* AGMA	VG68 2EP	VG150 4EP	VG220 5EP
Under 100r/min	ISO* AGMA	VG100 3EP	VG220 5EP	VG320 6EP

* Kinetic Viscosity (cSt) at ISO 40 deg.

PARAMAX DRIVE is shipped without lubrication oil.
Supply oil within the range shown on the dip stick
before operation.

The table on the right shows appropriate viscosity of oil
based on ISO and AGMA for respective ambient
temperatures and slow speed shaft r/min.

When the ambient temperature is lower than -10 deg or
higher than +50 deg, a heating or cooling unit is
necessary, in general.

Recommended Lubricants

	Brand	BP	CASTROL			CHEVRON TEXACO		EXXON MOBIL		SHELL	TOTAL
Gear Oil	ISO VG68 AGMA 2EP	ENERGOL GR-XP-68	ALPHA SP68	OPTIGEAR BM68	TRIBOL 1100/68	GEAR COMPOUNDS EP68	MEROPA WM68	SPARTAN EP68	MOBIL- GEAR 626	OMALA 68	CARTER EP68
	ISO VG100 AGMA 3EP	ENERGOL GR-XP-100	ALPHA SP100	OPTIGEAR BM100	TRIBOL 1100/100	GEAR COMPOUNDS EP100	MEROPA WM100	SPARTAN EP100	MOBIL- GEAR 627	OMALA 100	CARTER EP100
	ISO VG150 AGMA 4EP	ENERGOL GR-XP-150	ALPHA SP150	OPTIGEAR BM150	TRIBOL 1100/150	GEAR COMPOUNDS EP150	MEROPA WM150	SPARTAN EP150	MOBIL- GEAR 629	OMALA 150	CARTER EP150
	ISO VG220V AGMA 5EP	ENERGOL GR-XP-220	ALPHA SP220	OPTIGEAR BM220	TRIBOL 1100/220	GEAR COMPOUNDS EP220	MEROPA WM220	SPARTAN EP220	MOBIL- GEAR 630	OMALA 220	CARTER EP220
	ISO VG320 AGMA 6EP	ENERGOL GR-XP-320	ALPHA SP320	OPTIGEAR BM320	TRIBOL 1100/320	GEAR COMPOUNDS EP320	MEROPA WM320	SPARTAN EP320	MOBIL- GEAR 632	OMALA 320	CARTER EP320
Bearing grease	ENER- GREASE LS EP2	SPHEEROL AP3	Olista Long- time 3EP	TRIBOL 3020/ 1000-2	DURALITH GREASE 68	MULTI- FAK EP2	BEACON EP2	MOBIL- PLEX 48	ALVANIA EP2	MULTIS EP2	

Installation

- (1) Consult us when PARAMAX DRIVE is to be installed on an inclined surface or on a ceiling.
Additional lubrication system may be necessary.
- (2) Install PARAMAX DRIVE horizontally on a sufficiently rigid base.
When the unit is made for inclined installation according to your specification,
do not install it at any other angle other than the specified angle.
- (3) Installation bolts for PARAMAX DRIVE shall be equivalent to JIS strength classification 10.9.
Consult us when the force that pushes up PARAMAX DRIVE is to be applied.
- (4) Refer to the maintenance manual attached to the unit for other installation notes.

TECHNICAL DATA Painting Specifications, Rust Proof Standard

Painting Specifications

Painting Area	Surface Conditioning	Kind of Painting		Painting Specification of				Application
		Class	Painting of Finish Coat	Type	Coating	Thickness μ	Type of Coating	
Outside Painting	Cast Iron Class 1	Standard painting		Under	1	20 ~ 40	Modified alkyd resin	Standard under coat
			Phallic acid	Finish	1	15 ~ 30	Alkyd resin paint	Standard finish coat
		Standard export painting		Under	2	40 ~ 80	Modified alkyd resin	Export standard
			Modified epoxy	Finish	1	15 ~ 30	Vinyl modified epoxy resin	
		Special painting (Including rust-proof and heat resisting painting) One layer of Unigrand PTC Primer as the first primer	Modified epoxy	Under	1	20 ~ 40	Vinyl modified epoxy resin	Moderate corrosive atmosphere, seaside, outdoor humid atmosphere, chemical plant area, ... etc.
				Finish	2	30 ~ 60	Vinyl modified epoxy resin	
			Long of oil phallic	Under	2	40 ~ 80	Lead rust preventive paint	Ocean-going vessel & boat, bridge, seaside, outdoor humid atmosphere, ... etc.
				Finish	2	30 ~ 60	Synthetics resin paint	
			Chloride rubber	Under	2	40 ~ 80	Lead rust preventive paint	Ocean-going vessel & boat, bridge, seaside, outdoor humid atmosphere, ... etc.
				Second	1	20 ~ 40	Phenol M.I.O paint	
				Finish	2	30 ~ 60	Chloride rubber paint	
			Phenol	Under	2	40 ~ 80	Lead rust preventive paint	In-and-outdoor of acid treating plant and chemical plant etc...
				Finish	2	30 ~ 60	Phenol resin enamel	
			Heat-proof silver	Under	1	20 ~ 40	Lead rust preventive paint	Heating furnace (120 deg), ... etc.
				Finish	1	15 ~ 30	Aluminum paint	
	Steel Plate Class 2	Extra rust-proof painting	Epoxy	Under	2	40 ~ 80	Special permeability epoxy aluminium paint	Indoor anti-corrosion area, Chemical plant
				Finish	3	120 ~ 240	Polyamide epoxy	
		Extra rust-proof painting (Sand blast under coating)	Polyurethane	Under	2	40 ~ 80	Special permeability epoxy aluminium paint	Outdoor anti-corrosion area, Chemical plant
				Finish	3	45 ~ 90	Polyisocyanate urethane resin paint	
		Extra rust-proof painting (Sand blast under coating)	Thick film epoxy		5	250 ~ 350	Thick film type modified epoxy resin paint	Submersible equipment, marine structure, ... etc.
Inside Painting	Cast Iron Class 1 Steel Plate Class 3	Standard painting			1	20 ~ 40	Modified alkyd resin	Standard inside painting

Note: SUMITOMO standard color is Munsell 6.5PB 3.6/8.2

Rust Proof Standard

Rust proofing treatment has been conducted on all completely assembled models, prior to shipment.

1. Standard rust proofing specifications

(1) Outside rust proofing

Rust proofing oil has been applied to products before shipment.

Check the rust proofing conditions every 6 months after shipment, and conduct rust proofing treatment, as necessary.

Rust proofing period	6 months
Storage condition	Generally to be stored inside the shop or warehouse, relatively free of humidity, dust, extreme temperature fluctuation, corrosive gas, and similar atmosphere. After shipment, the product shall be operated 5-10 minutes every 2-3 months with recommended lubricants.

2. Export rust proofing specifications

Consult us for export rust proofing when export specifications or severe specifications are required.

TECHNICAL DATA Moment of Inertia Right Angle Shaft

Right Angle Shaft Double Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.00423	0.00805	0.0157		0.0333		0.0662		0.146		0.301		0.502	
7.1	0.00400	0.00750	0.0153		0.0313		0.0621		0.135		0.281		0.475	
8	0.00288	0.00508	0.0137	0.0181	0.0283	0.0374	0.0603	0.0745	0.130	0.166	0.253	0.337	0.480	0.562
9	0.00275	0.00475	0.0134	0.0175	0.0269	0.0346	0.0577	0.0681	0.124	0.149	0.242	0.311	0.464	0.524
10	0.00218	0.00488	0.0111	0.0152	0.0201	0.0311	0.0492	0.0653	0.0981	0.1426	0.203	0.274	0.398	0.516
11.2	0.00210	0.00468	0.0109	0.0149	0.0193	0.0292	0.0475	0.0614	0.0939	0.1319	0.196	0.259	0.387	0.493
12.5	0.00188	0.00390	0.00843	0.0120	0.0138	0.0217	0.0357	0.0525	0.0691	0.1056	0.139	0.216	0.268	0.422
14	0.00183	0.00375	0.00830	0.0118	0.0133	0.0206	0.0345	0.0499	0.0664	0.0990	0.135	0.207	0.261	0.407
16	0.00133	0.00258	0.00583	0.00908	0.0107	0.0149	0.0243	0.0379	0.0514	0.0739	0.102	0.147	0.194	0.282
18	0.00130	0.00250	0.00575	0.00890	0.0104	0.0142	0.0237	0.0362	0.0497	0.0697	0.0987	0.141	0.190	0.273
20				0.00620		0.0114		0.0257		0.0546		0.107		0.203
22.4				0.00610		0.0109		0.0246		0.0518		0.103		0.198

Right Angle Shaft Triple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20			0.00378		0.00693		0.0140		0.0289		0.0590		0.121	
22.4			0.00373		0.00670		0.0136		0.0278		0.0571		0.118	
25			0.00338	0.00403	0.00608	0.00735	0.0115	0.0149	0.0237	0.0310	0.0515	0.0624	0.106	0.126
28			0.00333	0.00395	0.00595	0.00705	0.0112	0.0142	0.0230	0.0292	0.0503	0.0600	0.104	0.123
31.5			0.00193	0.00353	0.00433	0.00635	0.00835	0.0120	0.0183	0.0248	0.0359	0.0537	0.0700	0.110
35.5			0.00190	0.00350	0.00425	0.00618	0.00818	0.0116	0.0178	0.0238	0.0351	0.0521	0.0689	0.108
40			0.00178	0.00203	0.00403	0.00450	0.00738	0.00868	0.0161	0.0191	0.0328	0.0373	0.0644	0.0722
45			0.00175	0.00200	0.00398	0.00440	0.00730	0.00843	0.0159	0.0184	0.0323	0.0363	0.0636	0.0708
50			0.00118	0.00183	0.00233	0.00413	0.00555	0.00758	0.0120	0.0166	0.0239	0.0337	0.0484	0.0659
56			0.00115	0.00183	0.00230	0.00405	0.00550	0.00743	0.0118	0.0162	0.0236	0.0331	0.0479	0.0649
63			0.00110	0.00120	0.00220	0.00240	0.00423	0.00568	0.00893	0.01230	0.0173	0.0245	0.0349	0.0493
71			0.00110	0.00120	0.00218	0.00235	0.00418	0.00558	0.00883	0.01203	0.0171	0.0241	0.0346	0.0487
80				0.00113		0.00225		0.00430		0.00910		0.0176		0.0355
90				0.00113		0.00223		0.00423		0.00895		0.0174		0.0351
100														

Right Angle Shaft Quadruple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80					0.00295		0.00283		0.00553		0.0113		0.0229	
90					0.00293		0.00280		0.00548		0.0112		0.0227	
100					0.00215	0.00298	0.00268	0.00288	0.00523	0.00565	0.0108	0.0115	0.0219	0.0233
112					0.00215	0.00295	0.00265	0.00283	0.00518	0.00555	0.0107	0.0114	0.0218	0.0230
125					0.00203	0.00218	0.00243	0.00270	0.00473	0.00530	0.00923	0.0110	0.0188	0.0222
140					0.00203	0.00215	0.00243	0.00268	0.00470	0.00523	0.00918	0.0109	0.0188	0.0220
160						0.00205	0.00120	0.00245	0.00243	0.00475	0.00480	0.00930	0.00993	0.0190
180						0.00203	0.00120	0.00243	0.00240	0.00473	0.00478	0.00925	0.00990	0.0189
200							0.00118	0.00123	0.00235	0.00245	0.00468		0.00970	0.0100
224							0.00118	0.00120	0.00233	0.00243	0.00465	0.00483	0.00968	0.0100
250							0.00110	0.00118	0.00223	0.00235	0.00428	0.00473	0.00893	0.00978
280							0.00110	0.00118	0.00220	0.00235	0.00425	0.00470	0.00893	0.00973
315							0.00110	0.00113	0.00220	0.00223	0.00420	0.00430	0.00885	0.00898
355							0.00108	0.00110	0.00215	0.00223	0.00418	0.00428	0.00868	0.00895
400								0.00110		0.00220		0.00423		0.00885
450								0.00108		0.00218		0.00418		0.00868
500														

TECHNICAL DATA Moment of Inertia Right Angle Shaft

Unit: kg m²

Size of Reducer											Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136
											6.3
											7.1
											8
1.182.234.16											9
1.162.203.98											10
0.8711.683.10											11.2
0.8581.652.99											12.5
0.6381.222.28											14
0.6301.202.21											16
0.4640.8941.68											18
0.4590.8841.63											20
											22.4

Unit: kg m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.240		0.460		0.889								20
0.237	0.249	0.453	0.476	0.866	0.926							22.4
0.212	0.245	0.401	0.470	0.774	0.896	0.959						25
0.210	0.218	0.397	0.412	0.759	0.798		2.18	2.21		4.48	4.53	28
0.141	0.215	0.264	0.408	0.454	0.779	0.701	2.12	2.15		4.24	4.28	31.5
0.140	0.144	0.262	0.271	0.445	0.468	0.731	1.29	1.31	2.39	3.31	3.34	35.5
0.129	0.143	0.241	0.268	0.409	0.456	0.615	1.25	1.27	2.33	3.16	3.18	40
0.129	0.132	0.239	0.245	0.403	0.418	0.559	0.939	0.952	1.78	2.41	2.43	45
0.0931	0.131	0.175	0.244	0.311	0.411	0.443	0.917	0.928	1.74	2.32	2.33	50
0.0927	0.0945	0.174	0.178	0.307	0.317	0.408	0.683	0.691	1.28	1.76	1.77	56
0.0664	0.0940	0.127	0.177	0.225	0.312	0.322	0.668	0.675	1.26	1.70	1.71	63
0.0661	0.0673	0.126	0.129	0.223	0.229	0.300	0.509	0.515	0.934			71
0.0642	0.0669	0.121	0.128	0.211	0.226	0.232	0.500	0.505	0.919			80
	0.0648		0.123		0.214	0.218						90
												100

Unit: kg m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
												63
												71
												80
0.0467		0.0962		0.108			0.235	0.238	0.502	0.713	0.718	90
0.0452	0.0472	0.0930	0.0972	0.102	0.110	0.139	0.230	0.233	0.492	0.688	0.692	100
0.0451	0.0455	0.0927	0.0937	0.101	0.104	0.123	0.199	0.201	0.429	0.505	0.508	112
0.0409	0.0454	0.0846	0.0934	0.0908	0.102	0.105	0.196	0.198	0.423	0.489	0.492	125
0.0408	0.0411	0.0844	0.0850	0.0902	0.0918	0.100	0.152	0.154	0.281	0.448	0.450	140
0.0243	0.0410	0.0493	0.0849	0.0527	0.0910	0.0927	0.150	0.151	0.277	0.438	0.439	160
0.0242	0.0244	0.0492	0.0496	0.0523	0.0533	0.0890	0.137	0.138	0.252	0.326	0.327	180
0.0183	0.0244	0.0370	0.0495	0.0393	0.0528	0.0693	0.136	0.136	0.250	0.319	0.320	200
0.0183	0.0184	0.0369	0.0371	0.0391	0.0397	0.0544	0.0978	0.0983	0.143	0.234	0.235	224
0.0172	0.0183	0.0349	0.0371	0.0364	0.0394	0.0516	0.0969	0.0974	0.141	0.230	0.231	250
0.0172	0.0172	0.0348	0.0350	0.0363	0.0367	0.0501	0.0693	0.0696	0.131	0.217	0.217	280
0.0171	0.0172	0.0345	0.0350	0.0355	0.0365	0.0477	0.0688	0.0690	0.130			315
0.0163	0.0171	0.0334	0.0346	0.0341	0.0357	0.0360	0.0664	0.0667	0.125			355
0.01640.03340.03430.0345												400
												450
												500

TECHNICAL DATA GD² Right Angle Shaft

GD²: Right Angle Shaft Double Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.0169	0.0322	0.0629		0.133		0.265		0.584		1.20		2.01	
7.1	0.0160	0.0300	0.0610		0.125		0.248		0.541		1.13		1.90	
8	0.0115	0.0203	0.0548	0.0723	0.113	0.150	0.241	0.298	0.522	0.663	1.01	1.35	1.92	2.25
9	0.0110	0.0190	0.0536	0.0699	0.108	0.138	0.231	0.272	0.495	0.594	0.968	1.24	1.86	2.10
10	0.0087	0.0195	0.0443	0.0609	0.0805	0.1242	0.197	0.261	0.392	0.570	0.812	1.10	1.59	2.06
11.2	0.0084	0.0187	0.0436	0.0594	0.0772	0.1167	0.190	0.246	0.376	0.528	0.783	1.04	1.55	1.97
12.5	0.0075	0.0156	0.0337	0.0481	0.0553	0.0869	0.143	0.210	0.276	0.423	0.556	0.865	1.07	1.69
14	0.0073	0.0150	0.0332	0.0472	0.0532	0.0825	0.138	0.200	0.266	0.396	0.538	0.827	1.04	1.63
16	0.0053	0.0103	0.0233	0.0363	0.0428	0.0594	0.0972	0.152	0.206	0.296	0.407	0.590	0.777	1.13
18	0.0052	0.0100	0.0230	0.0356	0.0414	0.0566	0.0946	0.145	0.199	0.279	0.395	0.566	0.759	1.09
20				0.0248		0.0455		0.103		0.218		0.429		0.814
22.4				0.0244		0.0437		0.0985		0.207		0.413		0.790

GD²: Right Angle Shaft Triple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20			0.0151		0.0277		0.0559		0.116		0.236		0.482	
22.4			0.0149		0.0268		0.0542		0.111		0.229		0.471	
25			0.0135	0.0161	0.0243	0.0294	0.0459	0.0594	0.0946	0.1238	0.206	0.250	0.425	0.505
28			0.0133	0.0158	0.0238	0.0282	0.0449	0.0567	0.0919	0.1167	0.201	0.240	0.418	0.491
31.5			0.0077	0.0141	0.0173	0.0254	0.0334	0.0479	0.0730	0.0993	0.144	0.215	0.280	0.440
35.5			0.0076	0.0140	0.0170	0.0247	0.0327	0.0464	0.0712	0.0952	0.141	0.208	0.276	0.431
40			0.0071	0.0081	0.0161	0.0180	0.0295	0.0347	0.0645	0.0764	0.131	0.149	0.257	0.289
45			0.0070	0.0080	0.0159	0.0176	0.0292	0.0337	0.0635	0.0735	0.129	0.145	0.255	0.283
50			0.0047	0.0073	0.0093	0.0165	0.0222	0.0303	0.0480	0.0665	0.0957	0.135	0.193	0.264
56			0.0046	0.0073	0.0092	0.0162	0.0220	0.0297	0.0473	0.0648	0.0945	0.132	0.192	0.260
63			0.0044	0.0048	0.0088	0.0096	0.0169	0.0227	0.0357	0.0492	0.0690	0.0979	0.140	0.197
71			0.0044	0.0048	0.0087	0.0094	0.0167	0.0223	0.0353	0.0481	0.0682	0.0963	0.139	0.195
80				0.0045		0.0090		0.0172		0.0364		0.0704		0.142
90				0.0045		0.0089		0.0169		0.0358		0.0694		0.141
100														

GD²: Right Angle Shaft Quadruple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80					0.0118		0.0113		0.0221		0.0452		0.0914	
90					0.0117		0.0112		0.0219		0.0447		0.0907	
100					0.0086	0.0119	0.0107	0.0115	0.0209	0.0226	0.0432	0.0461	0.0877	0.0930
112					0.0086	0.0118	0.0106	0.0113	0.0207	0.0222	0.0429	0.0455	0.0872	0.0920
125					0.0081	0.0087	0.0097	0.0108	0.0189	0.0212	0.0369	0.0438	0.0753	0.0887
140					0.0081	0.0086	0.0097	0.0107	0.0188	0.0209	0.0367	0.0434	0.0751	0.0881
160						0.0082	0.0048	0.0098	0.0097	0.0190	0.0192	0.0372	0.0397	0.0759
180						0.0081	0.0048	0.0097	0.0096	0.0189	0.0191	0.0370	0.0396	0.0756
200							0.0047	0.0049	0.0094	0.0098	0.0187	0.0195	0.0388	0.0401
224							0.0047	0.0048	0.0093	0.0097	0.0186	0.0193	0.0387	0.0399
250							0.0044	0.0047	0.0089	0.0094	0.0171	0.0189	0.0357	0.0391
280							0.0044	0.0047	0.0088	0.0094	0.0170	0.0188	0.0357	0.0389
315							0.0044	0.0045	0.0088	0.0089	0.0168	0.0172	0.0354	0.0359
355							0.0043	0.0044	0.0086	0.0089	0.0167	0.0171	0.0347	0.0358
400								0.0044		0.0088		0.0169		0.0354
450								0.0043		0.0087		0.0167		0.0347
500														

TECHNICAL DATA GD² Right Angle Shaft

Unit: kgf m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
												6.3
												7.1
												8
	4.72		8.94		16.6							9
	4.63		8.78		15.9							10
	3.48		6.70		12.4							11.2
	3.43		6.61		12.0							12.5
	2.55		4.88		9.14							14
	2.52		4.82		8.85							16
	1.86		3.57		6.71							18
	1.84		3.54		6.53							20
												22.4

Unit: kgf m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.960		1.84		3.56								20
0.949	0.994	1.81	1.91	3.47	3.70							22.4
0.848	0.981	1.60	1.88	3.10	3.59	3.84						25
0.842	0.870	1.59	1.65	3.04	3.19		8.71	8.84		17.9	18.1	28
0.563	0.862	1.06	1.63	1.81	3.12	2.80	8.48	8.59		17.0	17.1	31.5
0.559	0.578	1.05	1.08	1.78	1.87	2.92	5.16	5.24	9.58	13.2	13.4	35.5
0.518	0.572	0.964	1.07	1.64	1.83	2.46	5.01	5.08	9.34	12.6	12.7	40
0.515	0.527	0.958	0.982	1.61	1.67	2.24	3.76	3.81	7.10	9.65	9.73	45
0.372	0.523	0.699	0.975	1.24	1.64	1.77	3.67	3.71	6.95	9.27	9.33	50
0.371	0.378	0.695	0.710	1.23	1.27	1.63	2.73	2.76	5.13	7.04	7.09	56
0.266	0.760	0.507	0.706	0.900	1.25	1.29	2.67	2.70	5.03	6.79	6.83	63
0.265	0.269	0.505	0.514	0.890	0.915	1.20	2.04	2.06	3.73			71
0.257	0.268	0.485	0.512	0.845	0.903	0.928	2.00	2.02	3.67			80
	0.259		0.491		0.854	0.872						90
												100

Unit: kgf m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
												63
												71
												80
0.187		0.385		0.431			0.941	0.954	2.01	2.85	2.87	90
0.181	0.189	0.372	0.389	0.409	0.439	0.554	0.920	0.930	1.97	2.75	2.77	100
0.180	0.182	0.371	0.375	0.405	0.415	0.490	0.797	0.805	1.72	2.02	2.03	112
0.163	0.182	0.338	0.374	0.363	0.410	0.420	0.784	0.790	1.69	1.96	1.97	125
0.163	0.164	0.338	0.340	0.361	0.367	0.398	0.609	0.614	1.12	1.79	1.80	140
0.0970	0.164	0.197	0.339	0.211	0.364	0.371	0.600	0.605	1.11	1.75	1.76	160
0.0969	0.0976	0.197	0.198	0.209	0.213	0.356	0.548	0.552	1.01	1.30	1.31	180
0.0731	0.0974	0.148	0.198	0.157	0.211	0.277	0.542	0.545	0.998	1.28	1.28	200
0.0730	0.0734	0.148	0.149	0.156	0.159	0.217	0.391	0.393	0.571	0.936	0.940	224
0.0687	0.0733	0.140	0.148	0.146	0.157	0.206	0.388	0.389	0.565	0.920	0.923	250
0.0687	0.0689	0.139	0.140	0.145	0.147	0.200	0.277	0.279	0.525	0.867	0.868	280
0.0682	0.0689	0.138	0.140	0.142	0.146	0.191	0.275	0.276	0.521			315
0.0653	0.0683	0.133	0.138	0.137	0.143	0.144	0.266	0.267	0.498			355
0.0654												400
												450
												500

TECHNICAL DATA Moment of Inertia Parallel shaft

Parallel Shaft Double Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.00238	0.00508	0.0110		0.0211		0.0416		0.109		0.226		0.447	
7.1	0.00215	0.00455	0.0105		0.0188		0.0376		0.0977		0.207		0.420	
8	0.00185	0.00433	0.00913	0.0135	0.0158	0.0257	0.0336	0.0496	0.0787	0.128	0.167	0.262	0.326	0.502
9	0.00170	0.00398	0.00880	0.0129	0.0144	0.0226	0.0309	0.0434	0.0721	0.111	0.155	0.236	0.309	0.466
10	0.00133	0.00305	0.00718	0.0107	0.0136	0.0186	0.0267	0.0389	0.0619	0.0909	0.132	0.188	0.256	0.360
11.2	0.00125	0.00283	0.00698	0.0103	0.0126	0.0167	0.0251	0.0348	0.0576	0.0803	0.124	0.173	0.245	0.337
12.5	0.00100	0.00218	0.00463	0.00820	0.00933	0.0154	0.0210	0.0300	0.0443	0.0699	0.0898	0.147	0.165	0.279
14	0.00095	0.00205	0.00450	0.00795	0.00878	0.0142	0.0200	0.0275	0.0415	0.0629	0.0851	0.136	0.158	0.264
16	0.00078	0.00173	0.00365	0.00523	0.00725	0.0104	0.0149	0.0232	0.0312	0.0493	0.0708	0.0984	0.129	0.179
18	0.00073	0.00163	0.00355	0.00508	0.00690	0.00965	0.0142	0.0215	0.0296	0.0449	0.0678	0.0922	0.124	0.169
20				0.00403		0.00795		0.0161		0.0342		0.0764		0.138
22.4				0.00393		0.00748		0.0151		0.0316		0.0724		0.132

Parallel Shaft Triple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20	0.00085	0.00210	0.00288		0.00558		0.0135		0.0303		0.0588		0.121	
22.4	0.00083	0.00205	0.00280		0.00538		0.0131		0.0291		0.0570		0.118	
25	0.00073	0.00190	0.00248	0.00310	0.00478	0.00600	0.0109	0.0144	0.0249	0.0324	0.0514	0.0622	0.106	0.127
28	0.00073	0.00188	0.00245	0.00305	0.00463	0.00573	0.0107	0.0137	0.0242	0.0306	0.0502	0.0598	0.104	0.123
31.5	0.00048	0.00115	0.00153	0.00263	0.00335	0.00505	0.00763	0.0115	0.0164	0.0261	0.0317	0.0536	0.0690	0.110
35.5	0.00048	0.00115	0.00153	0.00260	0.00328	0.00485	0.00743	0.0111	0.0159	0.0251	0.0309	0.0520	0.0679	0.108
40	0.00043	0.00108	0.00138	0.00163	0.00303	0.00353	0.00658	0.00798	0.0142	0.0172	0.0287	0.0331	0.0632	0.0714
45	0.00043	0.00108	0.00138	0.00160	0.00298	0.00343	0.00648	0.00770	0.0140	0.0165	0.0282	0.0321	0.0624	0.0699
50			0.00090	0.00145	0.00190	0.00315	0.00433	0.00680	0.00868	0.0147	0.0175	0.0296	0.0347	0.0648
56			0.00088	0.00143	0.00188	0.00308	0.00425	0.00663	0.00850	0.0143	0.0172	0.0289	0.0343	0.0637
63			0.00083	0.00093	0.00178	0.00198	0.00393	0.00448	0.00788	0.00900	0.0164	0.0180	0.0325	0.0356
71			0.00083	0.00093	0.00175	0.00193	0.00390	0.00435	0.00778	0.00873	0.0162	0.0177	0.0323	0.0350
80				0.00085		0.00183		0.00400		0.00805		0.0167		0.0331
90				0.00085		0.00180		0.00395		0.00790		0.0165		0.0328

Parallel Shaft Quadruple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80			0.00078		0.00200		0.00278		0.00618		0.0124		0.0248	
90			0.00078		0.00200		0.00275		0.00610		0.0123		0.0246	
100			0.00075	0.00080	0.00195	0.00203	0.00263	0.00283	0.00585	0.00630	0.0119	0.0126	0.0238	0.0252
112			0.00075	0.00078	0.00195	0.00200	0.00260	0.00278	0.00580	0.00620	0.0118	0.0125	0.0237	0.0249
125			0.00068	0.00075	0.00183	0.00198	0.00238	0.00265	0.00533	0.00593	0.0103	0.0121	0.0207	0.0241
140			0.00068	0.00075	0.00183	0.00195	0.00238	0.00263	0.00530	0.00585	0.0103	0.0120	0.0207	0.0239
160			0.00043	0.00068	0.00110	0.00185	0.00103	0.00240	0.00220	0.00538	0.00493	0.0104	0.00883	0.0209
180			0.00043	0.00068	0.00110	0.00183	0.00103	0.00238	0.00218	0.00533	0.00490	0.0104	0.00878	0.0208
200			0.00040	0.00043	0.00105	0.00110	0.00098	0.00105	0.00213	0.00223	0.00480	0.00498	0.00860	0.00893
224			0.00040	0.00043	0.00105	0.00110	0.00098	0.00103	0.00210	0.00220	0.00478	0.00495	0.00858	0.00888
250				0.00040		0.00105	0.00093	0.00100	0.00200	0.00213	0.00440	0.00483	0.00783	0.00865
280				0.00040		0.00105	0.00093	0.00100	0.00198	0.00213	0.00438	0.00480	0.00780	0.00863
315							0.00093	0.00093	0.00198	0.00200	0.00433	0.00440	0.00773	0.00785
355							0.00088	0.00093	0.00193	0.00200	0.00430	0.00440	0.00755	0.00783
400							0.00080	0.00093	0.00163	0.00198	0.00353	0.00435	0.00685	0.00775
450								0.00090		0.00193		0.00430		0.00758
500								0.00080		0.00165		0.00353		0.00685

TECHNICAL DATA Moment of Inertia Parallel shaft

Unit: kg m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131		9136
0.865		1.78		3.33								6.3
0.840	0.950	1.72	1.95	3.10	3.70							7.1
0.693	0.918	1.32	1.89	2.48	3.40							8
0.675	0.748	1.28	1.42	2.34	2.70							9
0.490	0.725	1.02	1.39	1.91	2.53							10
0.480	0.523	0.990	1.09	1.81	2.05							11.2
0.323	0.510	0.658	1.06	1.29	1.94							12.5
0.318	0.345	0.640	0.700	1.23	1.38							14
0.253	0.338	0.510	0.683	1.01	1.31							16
0.250	0.268	0.500	0.538	0.968	1.06							18
	0.263		0.528		1.02							20
												22.4

Unit: kg m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.239		0.508		0.720								20
0.237	0.248	0.500	0.523	0.698	0.755					4.58	4.66	22.4
0.212	0.245	0.450	0.518	0.610	0.728	0.787				4.19	4.25	25
0.210	0.217	0.445	0.460	0.595	0.633		1.20	1.23	2.34	3.36	3.41	28
0.139	0.215	0.300	0.458	0.398	0.615	0.654	1.15	1.17	2.24	3.13	3.16	31.5
0.138	0.143	0.298	0.308	0.388	0.413	0.567	0.941	0.962	1.72	2.32	2.35	35.5
0.128	0.142	0.275	0.305	0.350	0.400	0.426	0.906	0.923	1.65	2.16	2.18	40
0.127	0.130	0.275	0.280	0.345	0.360	0.418	0.630	0.643	1.14	1.73	1.75	45
0.0695	0.129	0.138	0.278	0.178	0.353	0.370	0.609	0.619	1.10	1.63	1.65	50
0.0693	0.0710	0.137	0.141	0.174	0.184	0.333	0.486	0.494	0.810	1.34	1.36	56
0.0653	0.0705	0.128	0.140	0.159	0.179	0.216	0.473	0.479	0.786	1.28	1.29	63
0.0650	0.0660	0.127	0.130	0.157	0.163	0.194	0.367	0.372	0.626	1.02	1.03	71
0.0630	0.0658	0.122	0.129	0.145	0.160	0.166	0.358	0.362	0.610			80
	0.0638		0.124		0.147	0.152	0.309	0.312	0.491			90

Unit: kg m²

Size of Reducer												Nominal reduction ratio		
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
												63		
												71		
										0.713	0.719	80		
0.0675	0.108		0.123									0.611	0.616	90
0.0658	0.0680	0.105	0.109	0.118	0.125	0.147	0.250	0.253	0.517	0.588	0.592	100		
0.0658	0.0663	0.105	0.106	0.117	0.119	0.138	0.221	0.223	0.447	0.525	0.528	112		
0.0613	0.0660	0.0963	0.105	0.106	0.118	0.121	0.218	0.219	0.441	0.469	0.471	125		
0.0613	0.0615	0.0963	0.0968	0.106	0.107	0.115	0.199	0.200	0.291	0.368	0.371	140		
0.0193	0.0615	0.0398	0.0965	0.0678	0.107	0.108	0.189	0.190	0.287	0.331	0.332	160		
0.0193	0.0194	0.0395	0.0400	0.0673	0.0683	0.105	0.164	0.165	0.261	0.260	0.261	180		
0.0189	0.0194	0.0388	0.0398	0.0425	0.0678	0.0688	0.158	0.159	0.258	0.237	0.238	200		
0.0189	0.0190	0.0388	0.0390	0.0423	0.0428	0.0665	0.113	0.114	0.158	0.232	0.233	224		
0.0178	0.0189	0.0368	0.0390	0.0398	0.0425	0.0431	0.110	0.110	0.156	0.171	0.172	250		
0.0178	0.0179	0.0368	0.0370	0.0395	0.0400	0.0621	0.0830	0.0833	0.146	0.168	0.169	280		
0.0177	0.0179	0.0365	0.0368	0.0388	0.0398	0.0597	0.0805	0.0808	0.145	0.141	0.141	315		
0.0170	0.0177	0.0353	0.0365	0.0375	0.0390	0.0392	0.0801	0.0803	0.112			355		
0.0156	0.0170	0.0295	0.0355	0.0313	0.0375	0.0378	0.0626	0.0628	0.111			400		
	0.0156		0.0295		0.0313	0.0315						450		
												500		

TECHNICAL DATA GD² Parallel shaft

Parallel Shaft Double Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.0095	0.0203	0.0440		0.0845		0.166		0.434		0.906		1.79	
7.1	0.0086	0.0182	0.0419		0.0753		0.150		0.391		0.830		1.68	
8	0.0074	0.0173	0.0365	0.0541	0.0633	0.1027	0.134	0.199	0.315	0.513	0.666	1.05	1.30	2.01
9	0.0068	0.0159	0.0352	0.0515	0.0577	0.0903	0.124	0.174	0.288	0.444	0.620	0.946	1.24	1.86
10	0.0053	0.0122	0.0287	0.0426	0.0542	0.0743	0.107	0.156	0.248	0.364	0.529	0.751	1.02	1.44
11.2	0.0050	0.0113	0.0279	0.0410	0.0505	0.0668	0.100	0.139	0.230	0.321	0.497	0.690	0.978	1.35
12.5	0.0040	0.0087	0.0185	0.0328	0.0373	0.0616	0.0841	0.120	0.177	0.280	0.359	0.587	0.658	1.12
14	0.0038	0.0082	0.0180	0.0318	0.0351	0.0566	0.0798	0.110	0.166	0.252	0.340	0.545	0.631	1.06
16	0.0031	0.0069	0.0146	0.0209	0.0290	0.0415	0.0594	0.0926	0.125	0.197	0.283	0.394	0.514	0.714
18	0.0029	0.0065	0.0142	0.0203	0.0276	0.0386	0.0569	0.0860	0.119	0.180	0.271	0.369	0.496	0.678
20				0.0161		0.0318		0.0643		0.137		0.305		0.552
22.4				0.0157		0.0299		0.0605		0.126		0.290		0.527

Parallel Shaft Triple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20	0.0034	0.0084	0.0115		0.0223		0.0539		0.121		0.235		0.483	
22.4	0.0033	0.0082	0.0112		0.0215		0.0522		0.117		0.228		0.472	
25	0.0029	0.0076	0.0099	0.0124	0.0191	0.0240	0.0437	0.0574	0.0996	0.130	0.206	0.249	0.425	0.507
28	0.0029	0.0075	0.0098	0.0122	0.0185	0.0229	0.0427	0.0547	0.0969	0.122	0.201	0.239	0.418	0.492
31.5	0.0019	0.0046	0.0061	0.0105	0.0134	0.0202	0.0305	0.0458	0.0655	0.105	0.127	0.214	0.276	0.441
35.5	0.0019	0.0046	0.0061	0.0104	0.0131	0.0194	0.0297	0.0442	0.0637	0.100	0.124	0.208	0.272	0.431
40	0.0017	0.0043	0.0055	0.0065	0.0121	0.0141	0.0263	0.0319	0.0568	0.0689	0.115	0.132	0.253	0.285
45	0.0017	0.0043	0.0055	0.0064	0.0119	0.0137	0.0259	0.0308	0.0558	0.0659	0.113	0.128	0.250	0.279
50			0.0036	0.0058	0.0076	0.0126	0.0173	0.0272	0.0347	0.0588	0.0700	0.118	0.139	0.259
56			0.0035	0.0057	0.0075	0.0123	0.0170	0.0265	0.0340	0.0571	0.0689	0.116	0.137	0.255
63			0.0033	0.0037	0.0071	0.0079	0.0157	0.0179	0.0315	0.0360	0.0647	0.0721	0.130	0.142
71			0.0033	0.0037	0.0070	0.0077	0.0156	0.0174	0.0311	0.0349		0.0706	0.129	0.140
80				0.0034		0.0073		0.0160		0.0322		0.0668		0.133
90				0.0034		0.0072		0.0158		0.0316		0.0659		0.131

Parallel Shaft Quadruple Reduction

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80			0.0031		0.0080		0.0111		0.0247		0.0496		0.0990	
90			0.0031		0.0080		0.0110		0.0244		0.0491		0.0983	
100			0.0030	0.0032	0.0078	0.0081	0.0105	0.0113	0.0234	0.0252	0.0476	0.0505	0.0953	0.101
112			0.0030	0.0031	0.0078	0.0080	0.0104	0.0111	0.0232	0.0248	0.0473	0.0499	0.0948	0.0996
125			0.0027	0.0030	0.0073	0.0079	0.0095	0.0106	0.0213	0.0237	0.0413	0.0482	0.0829	0.0963
140			0.0027	0.0030	0.0073	0.0078	0.0095	0.0105	0.0212	0.0234	0.0411	0.0478	0.0827	0.0957
160			0.0017	0.0027	0.0044	0.0074	0.0041	0.0096	0.0088	0.0215	0.0197	0.0416	0.0353	0.0835
180			0.0017	0.0027	0.0044	0.0073	0.0041	0.0095	0.0087	0.0213	0.0196	0.0414	0.0351	0.0832
200			0.0016	0.0017	0.0042	0.0044	0.0039	0.0042	0.0085	0.0089	0.0192	0.0199	0.0344	0.0357
224			0.0016	0.0017	0.0042	0.0044	0.0039	0.0041	0.0084	0.0088	0.0191	0.0198	0.0343	0.0355
250					0.0016		0.0042	0.0037	0.0040	0.0080	0.0085	0.0176	0.0193	0.0313
280					0.0016		0.0042	0.0037	0.0040	0.0079	0.0085	0.0175	0.0192	0.0312
315							0.0037	0.0037	0.0079	0.0080	0.0173	0.0176	0.0309	0.0314
355							0.0035	0.0037	0.0077	0.0080	0.0172	0.0176	0.0302	0.0313
400							0.0032	0.0037	0.0065	0.0079	0.0141	0.0174	0.0274	0.0310
450								0.0036		0.0077		0.0172		0.0303
500								0.0032		0.0066		0.0141		0.0274

TECHNICAL DATA GD² Parallel shaftUnit: kgf m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
3.46		7.10		13.3								6.3
3.36	3.80	6.86	7.79	12.4	14.8							7.1
2.77	3.67	5.28	7.54	9.91	13.6							8
2.70	2.99	5.12	5.69	9.37	10.8							9
1.96	2.90	4.06	5.54	7.62	10.1							10
1.92	2.09	3.96	4.34	7.25	8.21							11.2
1.29	2.04	2.63	4.24	5.16	7.74							12.5
1.27	1.38	2.56	2.80	4.93	5.52							14
1.01	1.35	2.04	2.73	4.02	5.23							16
0.998	1.07	2.00	2.15	3.87	4.25							18
	1.05		2.11		4.06							20
												22.4

Unit: kgf m²

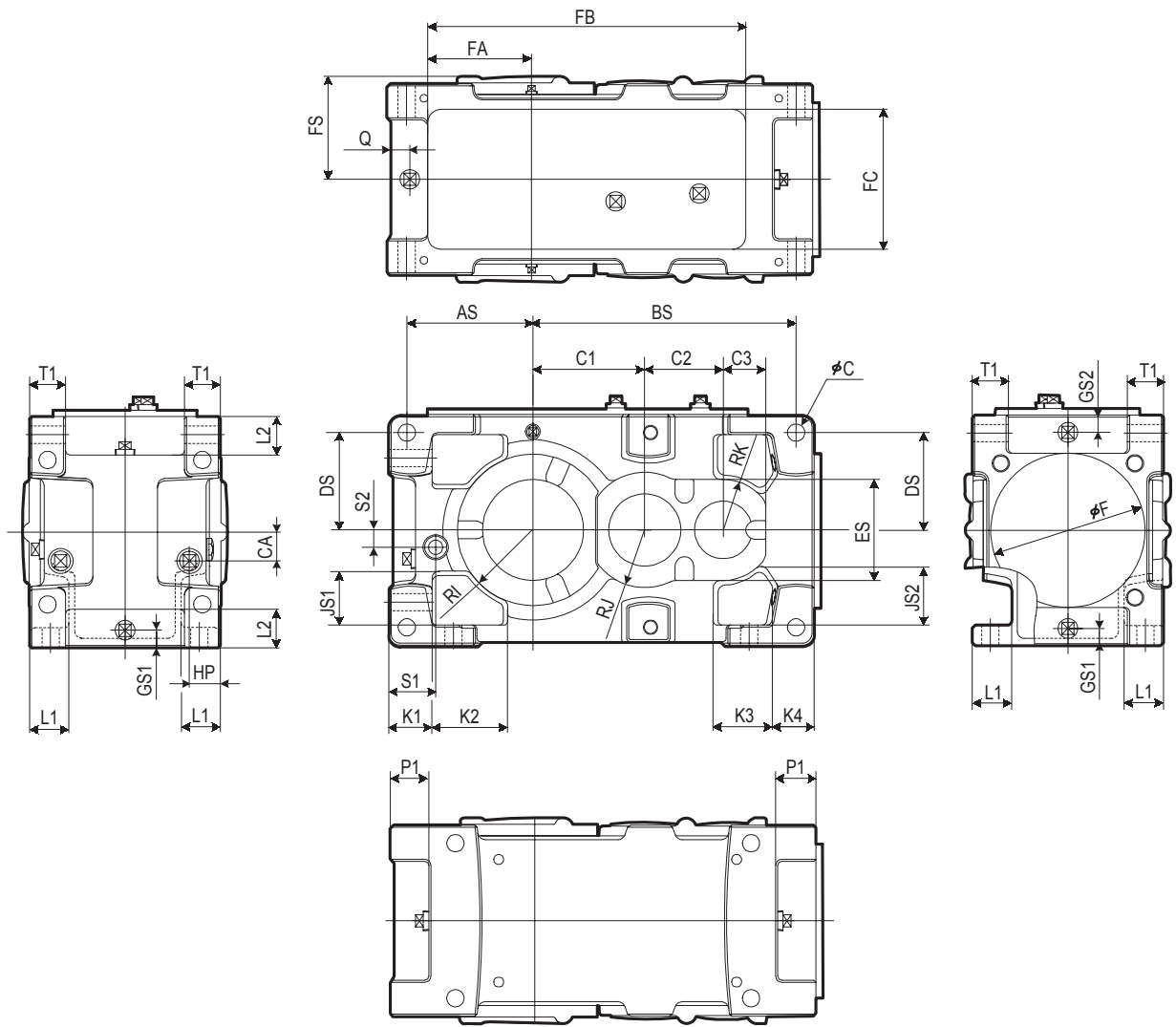
Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.957		2.03		2.88								20
0.946	0.991	2.00	2.09	2.79	3.02					18.3	18.7	22.4
0.846	0.978	1.80	2.07	2.44	2.91	3.15				16.7	17.0	25
0.839	0.868	1.78	1.84	2.38	2.53		4.80	4.92	9.35	13.4	13.6	28
0.557	0.859	1.20	1.83	1.59	2.46	2.62	4.58	4.69	8.96	12.5	12.7	31.5
0.553	0.571	1.19	1.23	1.55	1.65	2.27	3.77	3.85	6.86	9.26	9.40	35.5
0.510	0.566	1.10	1.22	1.40	1.60	1.70	3.62	3.69	6.62	8.63	8.73	40
0.508	0.520	1.10	1.12	1.38	1.44	1.67	2.52	2.57	4.57	6.93	7.01	45
0.278	0.516	0.551	1.11	0.711	1.41	1.48	2.43	2.48	4.41	6.54	6.60	50
0.277	0.284	0.547	0.562	0.696	0.735	1.33	1.95	1.98	3.24	5.37	5.42	56
0.261	0.282	0.512	0.558	0.636	0.716	0.863	1.89	1.92	3.14	5.11	5.15	63
0.260	0.264	0.509	0.519	0.626	0.651	0.776	1.47	1.49	2.51	4.08	4.11	71
0.252	0.263	0.489	0.517	0.578	0.639	0.666	1.43	1.45	2.44			80
	0.255		0.495		0.587	0.607	1.24	1.25	1.96			90

Unit: kgf m²

Size of Reducer												Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
												63	
												71	
										2.85	2.88	80	
0.270	0.432		0.493								2.45	2.47	90
0.263	0.272	0.419	0.436	0.471	0.501	0.589	1.00	1.01	2.07	2.35	2.37	100	
0.263	0.265	0.418	0.422	0.467	0.477	0.552	0.884	0.892	1.79	2.10	2.11	112	
0.245	0.264	0.385	0.421	0.425	0.472	0.482	0.871	0.878	1.77	1.88	1.88	125	
0.245	0.246	0.385	0.387	0.423	0.429	0.460	0.795	0.800	1.16	1.47	1.48	140	
0.0771	0.246	0.159	0.386	0.271	0.426	0.433	0.758	0.762	1.15	1.32	1.33	160	
0.0770	0.0777	0.158	0.160	0.269	0.273	0.418	0.657	0.661	1.04	1.04	1.04	180	
0.0755	0.0775	0.155	0.159	0.170	0.271	0.275	0.632	0.634	1.03	0.948	0.952	200	
0.0754	0.0758	0.155	0.156	0.169	0.171	0.266	0.454	0.455	0.631	0.930	0.933	224	
0.0713	0.0757	0.147	0.156	0.159	0.170	0.173	0.438	0.440	0.625	0.685	0.688	250	
0.0712	0.0715	0.147	0.148	0.158	0.160	0.249	0.332	0.333	0.583	0.673	0.675	280	
0.0707	0.0714	0.146	0.147	0.155	0.159	0.239	0.322	0.323	0.579	0.562	0.564	315	
0.0680	0.0709	0.141	0.146	0.150	0.156	0.157	0.320	0.321	0.448			355	
0.0622	0.0681	0.118	0.142	0.125	0.150	0.151	0.251	0.251	0.445			400	
	0.0623		0.118		0.125	0.126							450
												500	

TECHNICAL DATA Supplementary Dimension Drawing

9015 ▶ 9055 / Right Angle Double, Triple / Parallel double
/ Horizontal, Vertical, Upright



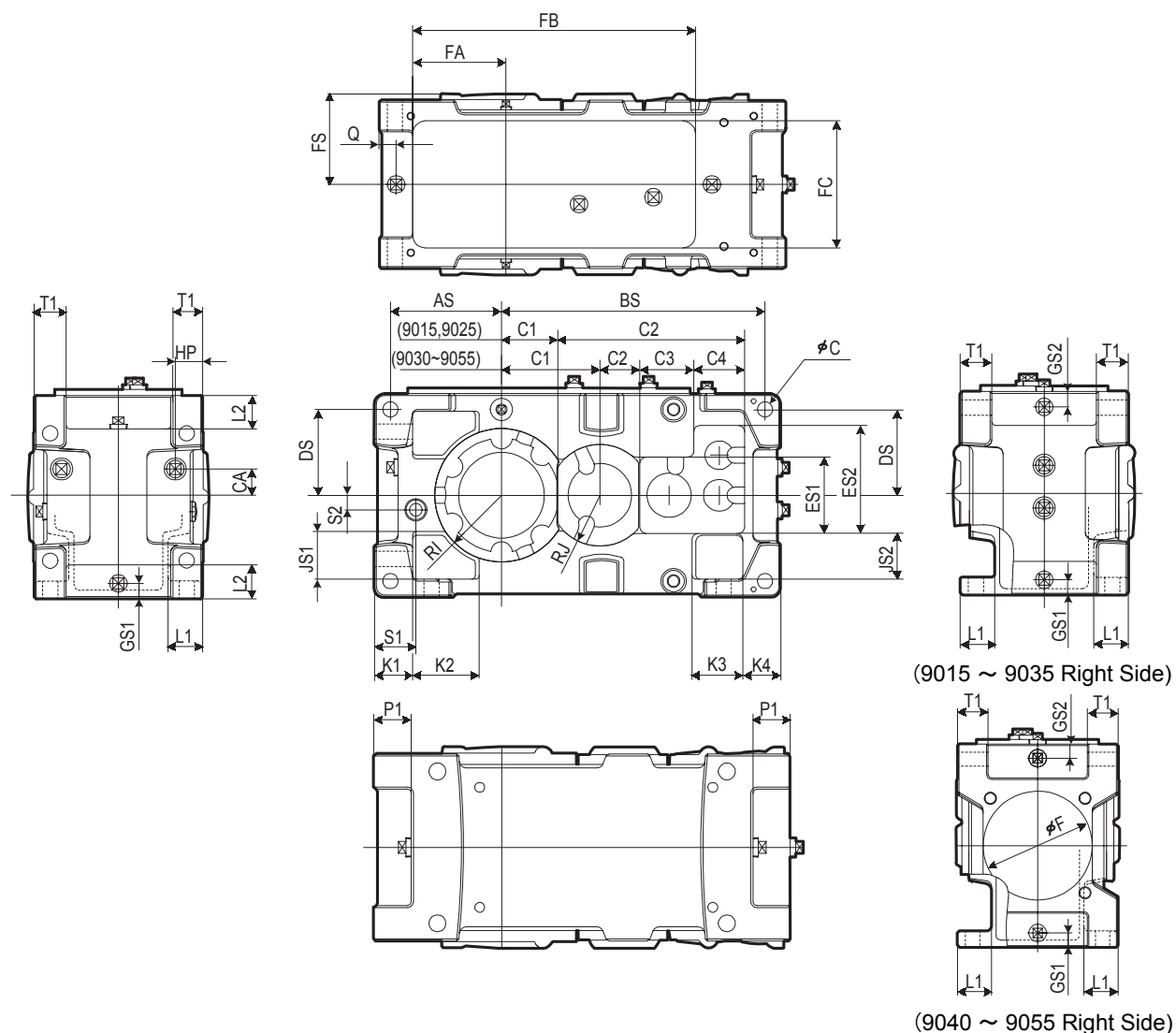
Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9015	118	110	325	175	140	260	15	25	38	115	23	23	60	58	50	75	85	50
9025	130	125	385	190	155	310	19	30	41	135	24	24	70	65	55	90	110	55
9030	143	147	445	200	175	365	24	40	43	135	24	24	75	81	60	105	80	60
9035	143	166	495	200	194	396	24	40	43	160	24	24	90	106	60	105	80	60
9040	165	168	510	240	205	420	28	48	55	170	28	28	95	107	75	125	100	75
9045	165	189	570	240	226	459	28	48	55	190	28	28	115	127	75	125	100	75
9050	185	188	590	250	225	490	28	55	50	180	29	29	95	103	75	135	100	75
9055	185	219	660	250	256	529	28	55	50	215	29	29	120	138	75	135	100	75

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	RK	F	C1	C2	C3	ES
9015	38	47	50	25	35	53	23	80	65		175	115	79	55	110
9025	45	50	50	26	40	58	26	87.5	75		200	135	92	60	130
9030	54	53	53	27	50	65	24	105	80	70	214	155	109	59	140
9035	54	60	53	27	50	65	24	120	80	70	214	186	109	59	140
9040	66	67	67	30	60	70	28	120	90	72.5	250	180	126	72.5	145
9045	66	87	67	30	60	70	28	140	90	72.5	250	219	126	72.5	145
9050	68	67	67	31	60	78	32	140	105		280	210	148	59	150
9055	68	80	67	31	60	78	32	155	105		280	249	148	59	150

Technical
Common

TECHNICAL DATA Supplementary Dimension Drawing

9015 ▶ 9055 / Right Angle Quadruple / Parallel Triple, Quadruple
/ Horizontal, Vertical, Upright

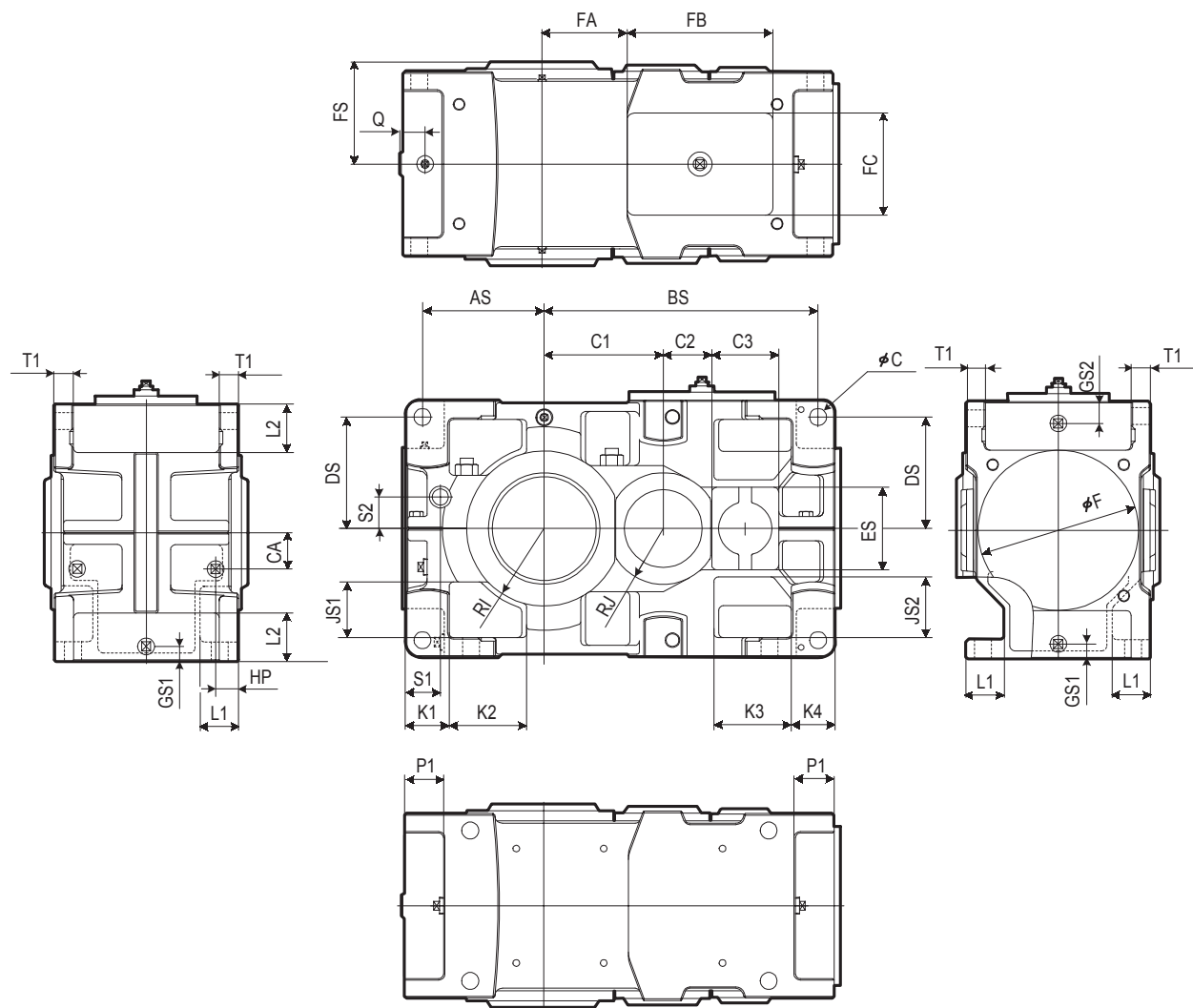


Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9015	118	110	325	175	140	305	15	25	38	115	23	23	60	58	50	75	65	50
9025	130	125	385	190	155	375	19	23	41	135	24	24	70	65	55	90	85	55
9030	143	147	445	200	175	415	24	44	43	135	24	24	75	72	60	105	80	60
9035	143	166	495	200	194	446	24	44	43	160	24	24	90	97	60	105	80	60
9040	165	168	510	240	205	494	28	56	55	170	28	28	95	100	75	125	100	75
9045	165	189	570	240	205	533	28	56	55	190	28	28	115	120	75	125	100	75
9050	185	188	590	250	225	563	28	56	50	180	29	29	95	103	75	135	100	75
9055	185	219	660	250	256	602	28	56	50	215	29	29	120	138	75	135	100	75

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	F	C1	C2	C3	C4	ES2	ES2
9015	38	47	50	25	35	53	19	80			70	20			110	
9025	45	50	50	26	40	58	23	87.5			82.5	281			130	
9030	54	53	53	27	50	65	23	105	80		155	63	85	80	120	170
9035	54	60	53	27	50	65	23	120	80		186	63	85	80	120	170
9040	66	67	67	30	60	70	24	120	90	214	180	74	99	90	140	200
9045	66	87	67	30	60	70	24	140	90	170	219	74	99	90	140	200
9050	68	67	67	31	60	78	24	140	105	214	210	89	118	96	150	202
9055	68	80	67	31	60	78	24	155	105	214	249	89	118	96	150	202

TECHNICAL DATA Supplementary Dimension Drawing

9060 ▶ 9085 / Right Angle Double, Triple / Parallel Double
/ Horizontal, Vertical, Upright



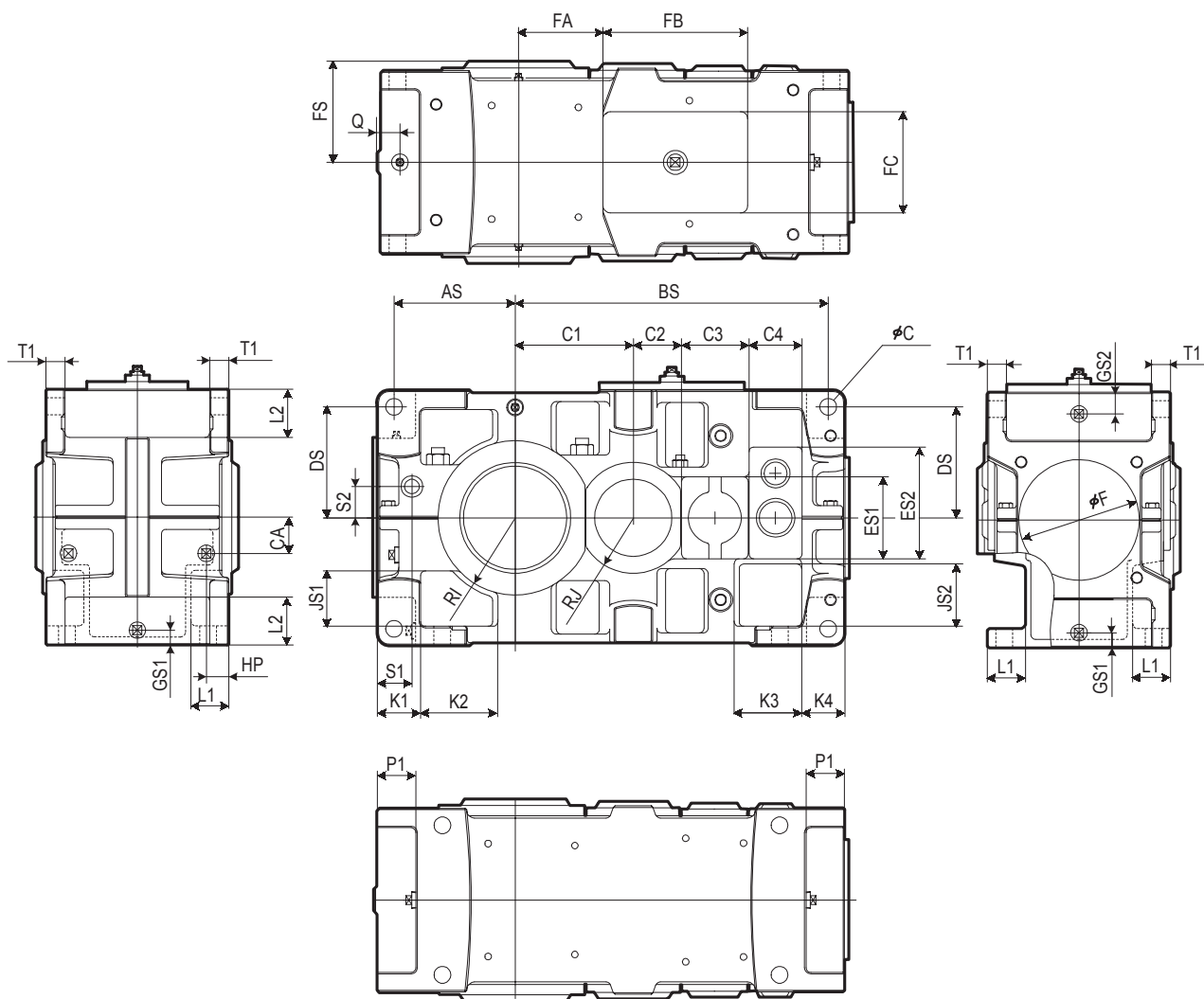
Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9060	210	175	300	210	251	564	35	75	47	230	31	45	105	120	90	160	160	90
9065	210	221	300	210	290	610	35	75	47	265	31	45	140	155	90	160	160	90
9070	235	185	370	270	283	657	42	85	47	260	33	45	125	135	105	190	190	105
9075	235	238	370	270	330	710	42	85	47	295	33	45	148	158	105	190	190	105
9080	255	275	370	270	325	750	42	100	47	295	34	45	138	148	105	190	190	105
9085	265	331	370	270	369	806	42	100	47	335	34	45	168	188	105	190	190	105

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	F	C1	C2	C3	ES
9060	79	100	80	40	35	72	65	160	115	330	245	100	138	170
9065	79	135	80	40	35	72	65	175	115	330	291	100	138	170
9070	94	110	95	40	40	72	75	175	138	380	285	94.5	203	200
9075	94	145	95	40	52	72	75	190	138	380	338	94.5	203	200
9080	96	120	95	45	52	82	85	190	160	420	330	132	188	220
9085	96	160	95	45	52	82	85	215	160	420	386	132	188	220

Technical
Common

TECHNICAL DATA Supplementary Dimension Drawing

9060 ▶ 9085 / Right Angle Quadruple / Parallel Triple, Quadruple
/ Horizontal, Vertical, Upright

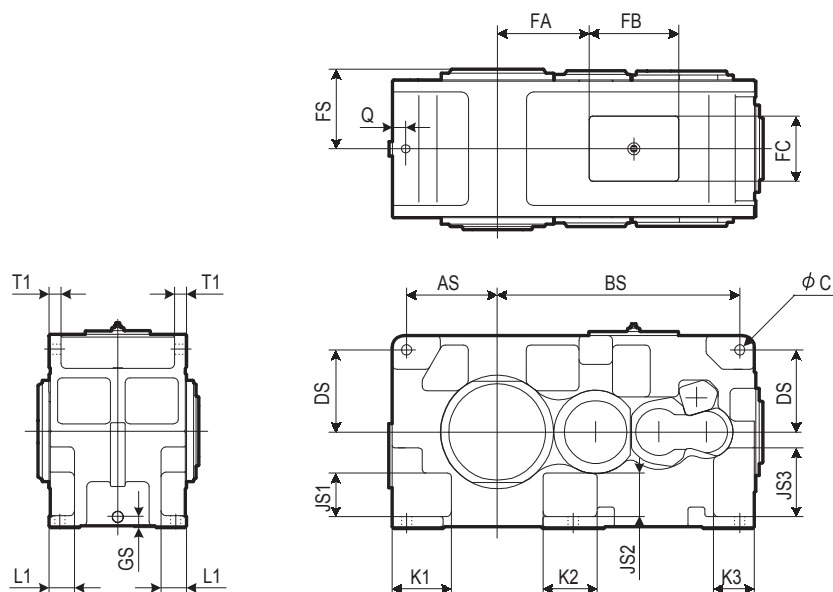


Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9060	210	175	300	210	251	649	35	75	47	230	31	45	105	145	90	160	140	90
9065	210	221	300	210	290	695	35	75	47	265	31	45	140	180	90	160	140	90
9070	235	185	370	270	283	752	42	85	47	260	33	45	125	165	105	190	165	105
9075	235	238	370	270	330	805	42	85	47	295	33	45	148	188	105	190	165	105
9080	255	275	370	270	325	870	42	100	47	295	34	45	138	173	105	190	190	105
9085	265	331	370	270	369	926	42	100	47	335	34	45	168	213	105	190	190	105

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	F	C1	C2	C3	ES
9060	79	100	80	40	35	72	65	160	115	250	245	100	138	170
9065	79	135	80	40	35	72	65	175	115	250	291	100	138	170
9070	94	110	95	40	40	72	75	175	138	280	285	94.5	203	200
9075	94	145	95	40	52	72	75	190	138	280	338	94.5	203	200
9080	96	120	95	45	52	82	85	190	160	330	330	132	188	220
9085	96	160	95	45	52	82	85	215	160	330	386	132	188	220

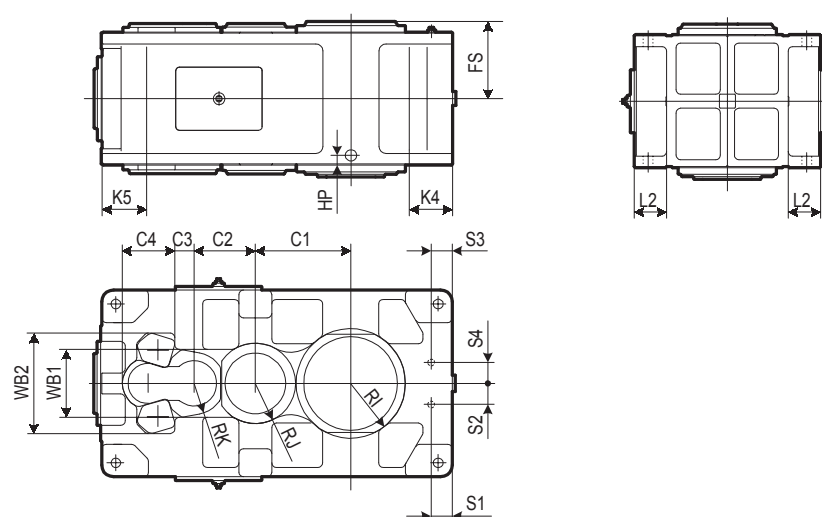
TECHNICAL DATA Supplementary Dimension Drawing

9090 ► 9115/ Parallel Double, Triple, Quadruple / Horizontal
/ Right Angle Double, Triple, Quadruple / Horizontal



Size	FS	FA	FB	FC	AS	BS	C	DS	GS	JS1	JS2	JS3	K1	K2	K3	L1	Q	T1
9090	330	350	370	270	345	975	42	315	45	155	152	260	230	240	170	96	45	50
9095	330	380	370	270	375	1005	42	340	45	180	177	285	245	225	170	106	45	50
9100	375	435	370	270	375	1095	48	355	46	185	170	305	265	290	190	110	45	55
9105	375	470	370	270	410	1130	48	380	46	210	195	330	270	260	190	120	45	55
9110	407	525	370	270	420	1240	56	400	48	230	202	350	285	325	310	119	45	60
9115	407	575	370	270	470	1290	56	425	48	255	227	375	315	305	310	129	45	60

9090 9115 / Parallel Double, Triple, Quadruple / Vertical
/ Right Angle Double, Triple, Quadruple/Vertical



Size	FS	HP	K4	K5	L2	RI	RJ	RK	S1	S2	S3	S4	C1	C2	C3	C4	WB1	WB2
9090	330	42	170	190	130	215	173	133	90	130	90	90	378	262	82	225	290	430
9095	330	42	185	215	140	235	173	133	80	140	90	90	408	262	82	225	290	430
9100	375	43	190	220	150	235	200	145	85	145	90	100	425	299	91	260	370	500
9105	375	43	215	240	160	260	200	145	80	155	90	100	459	299	91	260	370	500
9110	407	44	210	240	170	265	213	160	90	150	105	100	483	341	90	261	370	500
9115	407	44	235	270	180	280	213	160	85	150	105	100	532	341	90	261	370	500

TECHNICAL DATA Supplementary Matters to Hollow Shaft

Feature and Benefits

PARAMAX DRIVE units have a number of outstanding features compared to conventional solid shaft speed reducers.

1. There is no necessity for a large sized coupling, permitting substantial cost reduction.
2. It can be directly mounted onto the driven shaft, eliminating the necessity for foundation working for speed reducer installation and alignment operation.
3. Any unit is designed for compactness and ease of operation.

How to Install Unit

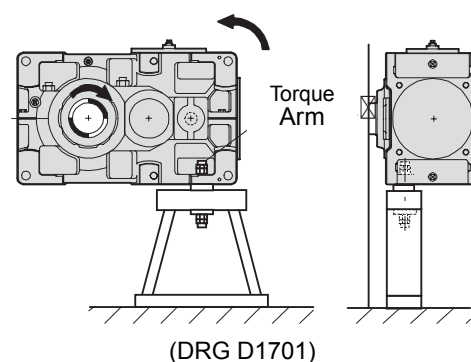
a. Torque Arm (Option)

The hollow shaft type PARAMAX DRIVE is secured with the torque arm to prevent it from being turned by the counter force.

A torque arm is subjected to a compression or tensile load depending upon the direction of rotation of the slow speed shaft, and it must have a sufficient strength against shock loading at the start and during operation. Being prepared as a optional accessory, the torque arm is designed in consideration of such loading conditions.

Please order us, if it is necessary.

The construction and strength of the torque arm mounting legs must be determined in consideration of impact load.



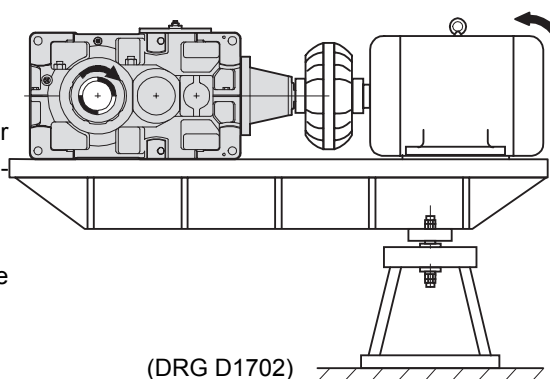
b. How to Use Torque Arm

(1) When the torque arm is used with the speed reducer housing

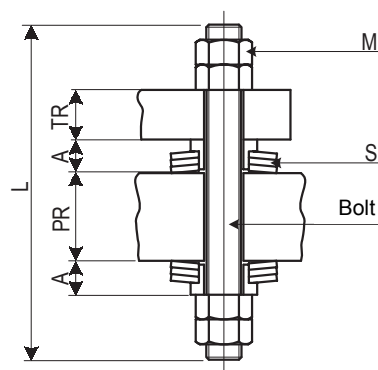
The torque arm must be mounted in an installation hole closer to the application machine. (For torque arm mounting dimensions, refer to the dimension drawing.)

(2) When the torque arm is used with the common base plate

The torque arm must be mounted in a position as far from the low speed shaft as possible.



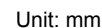
Torque Arm Dimensions



Use bolt and nut classified as JIS strength class 8.8

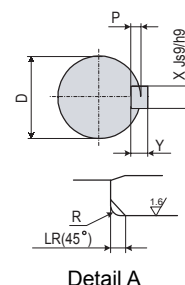
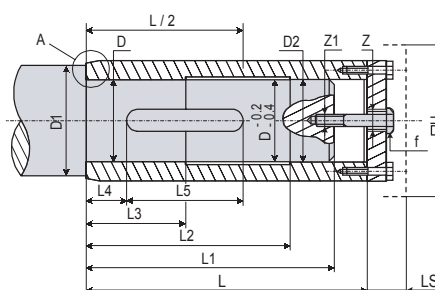
Size	A	L	M (nut)	PR max	TR	S (belleve spring)	
						DIN2093(nom.)	Qty
9015	13.1	140	M12	35	22	A50	2X2
9025	16.1	170	M16	40	25	A50	2X3
9030	18.9	200	M20	50	28	A63	2X3
9035	18.9	200	M20	50	28	A63	2X3
9040	21.7	240	M24	60	30	A80	2X2
9045	21.7	240	M24	60	30	A80	2X2
9050	21.7	240	M24	60	32	A80	2X2
9055	21.7	240	M24	60	32	A80	2X2
9060	32.2	310	M30	85	35	A100	2X3
9065	32.2	310	M30	85	35	A100	2X3
9070	38.2	370	M36	95	40	A100	2X4
9075	38.2	370	M36	95	52	A100	2X4
9080	38.2	370	M36	95	52	A100	2X4
9085	38.2	370	M36	95	52	A100	2X4
9090	38.6	370	M36	95	50	A125	2X3
9095	38.6	370	M36	95	50	A125	2X3
9100	47.6	420	M42	100	55	A125	2X4
9105	47.6	420	M42	100	55	A125	2X4
9110	48.5	460	M48	110	60	A160	2X3
9115	48.5	460	M48	110	60	A160	2X3

Shrink Disk Coupling



Note: 1 Shrink disk (made by RINGSPANN) type No.
2 SHAEFER may be used.
3 For vertical types, thrust washer is necessary to prevent the reducer move when loosening the locking bolt ZS.

9060~9085



Unit: mm

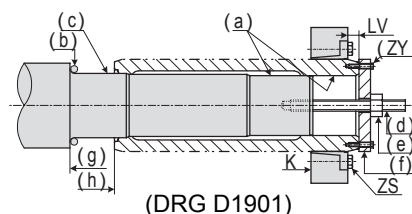
Note: 1 The key and keyway conform to JIS B 1301-1996(ISO)"Sunk keys and keyways" parallel keys (regular class)
2 The locking screw and distance ring will not be supplied. Please prepare, if they are necessary.
3 Dimension from center of housing to shaft end is L/2.

TECHNICAL DATA Hollow Shaft Related Dimensions

2. Shrink Disk Coupling / Mounting & Removal Procedure

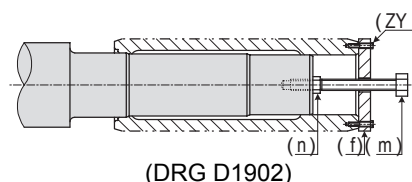
Mounting Procedure (DRG D1901)

- (1) Clean and degrease contact surface (a) and (c).
- (2) Smear surface (c) with "Molykote 321" or its equivalent.
However, keep surface (a) as clean as possible (no grease).
- (3) Slide O-ring (b) onto the shaft. (Size 9090 to 9115)
- (4) Mount the reducer on the driven shaft and screw nuts (e) until faces (g) and (h) make contact.
- (5) Set the shrink disk (k) at dimensions (LV). Tighten locking bolt (ZS) at specified torque (TA) (using a torque wrench).



Removal Procedure (DRG D1902)

- (1) Loosen locking bolt (ZS) and remove shrink disk (k).
 - (2) Set thrust washer (f) and hexagon head bolt (n).
Remove the reducer from the driven shaft using bolt (m).
- Note: Parts (d), (e), (f), (ZY), (m) and (n) are optional.
Order these as required.

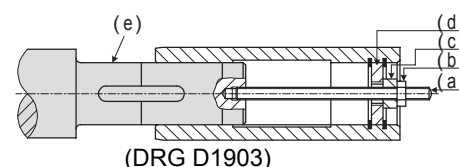


3. Key Coupling / Mounting & Removal Procedure

Size 9015 to 9055

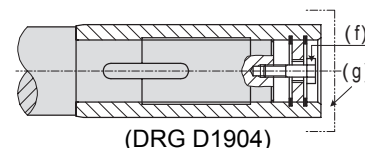
Mounting Procedure (DRG D1903)

- The Hollow shaft bore is provided with retaining ring (d).
Ring (d) is the essential component for mounting, securing, and removing the unit.
- (1) Smear surface of the shaft (e) with "molykote 321" or its equivalent.
 - (2) Turn nut (b) and slide the reducer over the driven shaft.
Use plain washer (c), if they are necessary.



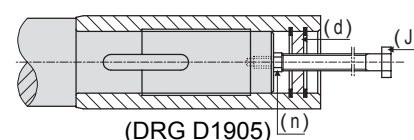
Securing (DRG D1904)

- (1) After mounting the reducer on the driven shaft, fix bolt (f). (Bolt (f) is not supplied with the unit.)
- (2) The bore should be protected by cover (g).



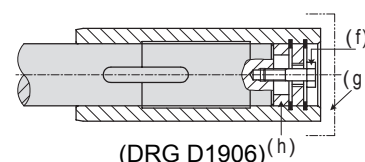
Removal Procedure (DRG D1905)

- (1) Remove ring (d), mount bolt (n), and reset ring (d).
Attach bolt (J) to ring (d), and turn bolt (J) to disconnect the hollow shaft from the driven shaft.
Screw size, refer to the lower table (Z) of the page D-18.



Special Cases (DRG D1906)

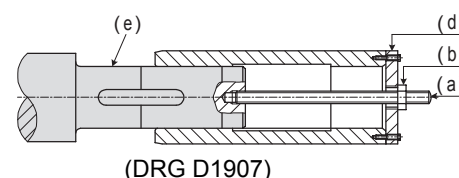
- (1) If the driven shaft has no shoulder (DRG D1906) when mounting, provide a distance ring (h) for fixing in place. (Ring (h) is not supplied with the unit).



Size 9060 to 9085

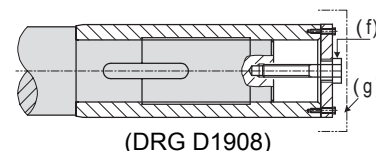
Mounting Procedure (DRG D1907)

- The Hollow shaft end is provided with thrust washer (d).
Thrust washer (d) is the essential component for mounting, securing, and removing the unit.
- (1) Smear surface of the shaft (e) with "molykote 321" or its equivalent.
 - (2) Turn nut (b) and slide the reducer over the driven shaft.



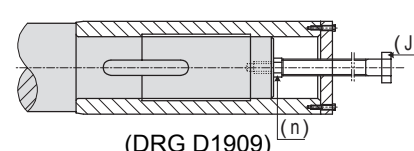
Securing (DRG D1908)

- (1) After mounting the reducer on the driven shaft, fix bolt (f). Bolt (f) is not supplied with the unit.)
- (2) The bore should be protected by cover (g)



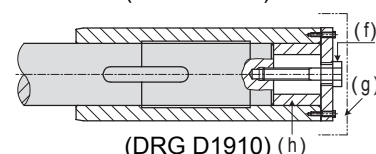
Removal Procedure (DRG D1909)

- (1) Remove thrust washer (d), mount bolt (n), and reset thrust washer (d).
Attach bolt (J) to thrust washer (d), and turn bolt (J) to disconnect the hollow shaft from the driven shaft.
Screw size, refer to the lower table (Z) of the page D-18.



Special Cased (DRG D1910)

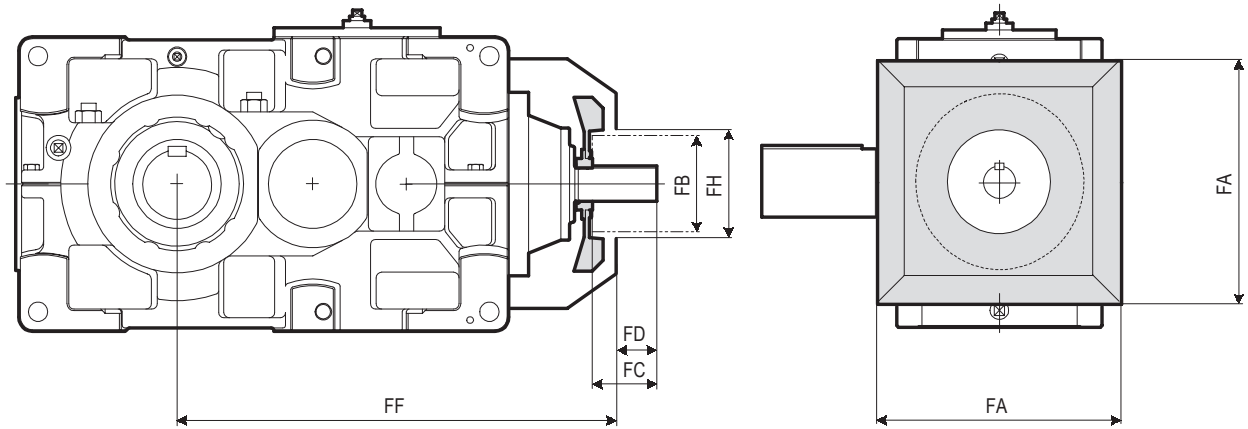
- (1) If the driven shaft has no shoulder (DRG D1906) when mounting, provide a distance ring (h) for fixing in place. (Ring (h) is not supplied with the unit.)
Distance ring dimension, refer to the lower table of the page D-18.



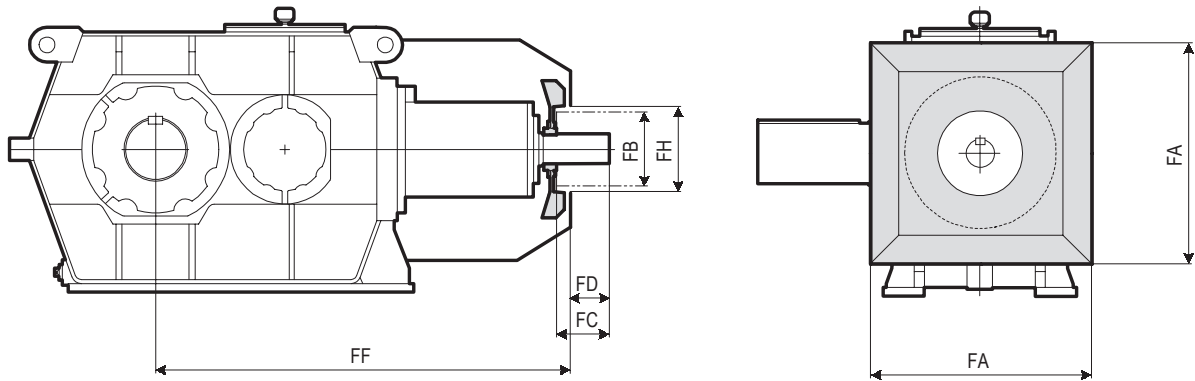
Note: Parts (a),(b),(c),(n) and (J) are optional. Order these as required.

TECHNICAL DATA Cooling Fan Dimension

9015 ▶ 9085 Right Angle Double Reduction



9090 ▶ 9115 Right Angle Double Reduction



Technical

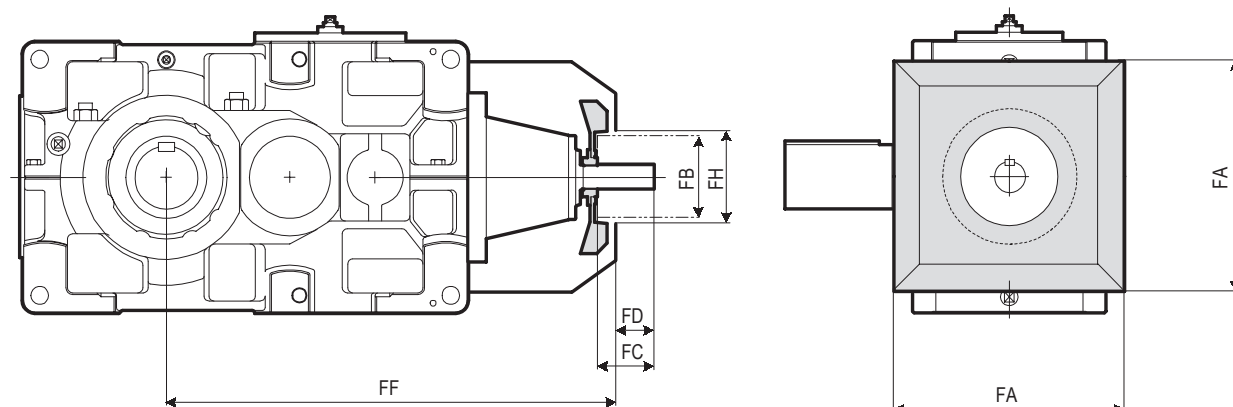
Common

Size	FA	FB	FC	FD	FF	FH
9015	250	125	50	30	477	145
9025	270	140	50	30	515	160
9030	300	140	80	52	593	160
9035	300	140	80	52	624	160
9040	340	160	80	52	653	180
9045	340	160	80	52	692	180
9050	380	160	80	52	703	180
9055	380	160	80	52	742	180
9060	440	160	105	65	800	180
9065	440	160	105	65	846	180
9070	490	200	105	65	900	220
9075	490	200	105	65	953	220
9080	540	225	105	60	1020	245
9085	540	225	105	60	1076	245

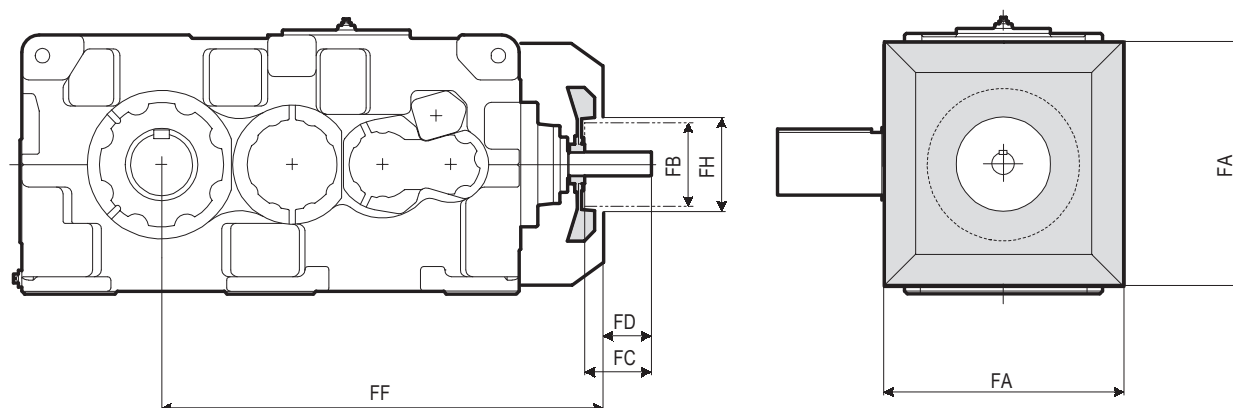
Size	FA	FB	FC	FD	FF	FH
9095	680	250	135	90	1303	270
9105	760	250	175	130	1459	270
9115	820	250	175	130	1672	270

TECHNICAL DATA Cooling Fan Dimension

9015 ▶ 9085 Right Angle Triple Reduction



9090 ▶ 9115 Right Angle Triple Reduction



Size	FA	FB	FC	FD	FF	FH
9030	300	125	50	30	626	145
9035	300	125	50	30	657	145
9040	340	125	50	30	686	145
9045	340	125	50	30	725	145
9050	380	140	50	22	786	160
9055	380	140	50	22	825	160
9060	440	160	80	52	887	180
9065	440	160	80	52	933	180
9070	490	160	80	52	975	180
9075	490	160	80	52	1028	180
9080	540	160	105	65	1111	180
9085	540	160	105	65	1167	180

Size	FA	FB	FC	FD	FF	FH
9090	680	200	105	65	1255	220
9095	680	200	105	65	1285	220
9100	760	225	105	60	1414	245
9105	760	225	105	60	1448	245
9110	820	225	135	90	1594	245
9115	820	225	135	90	1643	245

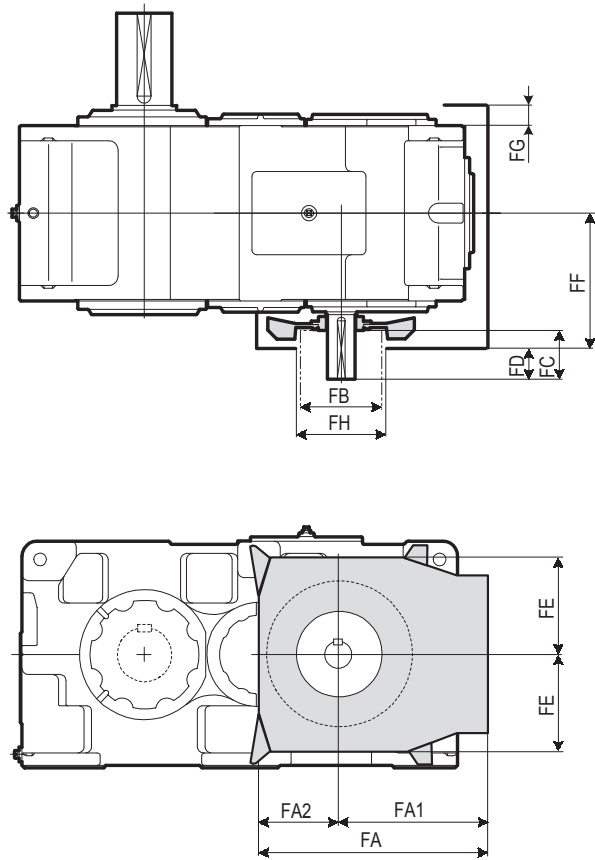
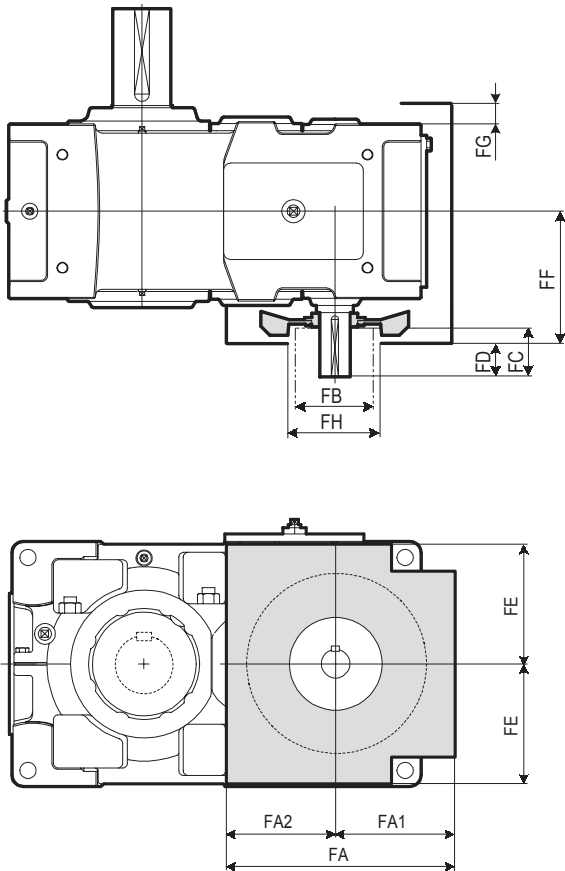
Note) Consult us for cooling fan dimension of size 9118 and 9136.

PARAMAX® 9000

TECHNICAL DATA Cooling Fan Dimension Horizontal, Upright

9015 ▶ 9085 Parallel Double Reduction

9090 ▶ 9115 Parallel Double Reduction



※ When tightening installation bolt, to be removed fan hood.

Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9015	129	129	258	125	50	30	130	181	32.5	145
9025	143	143	286	140	50	30	150	196	27.5	160
9030	169	169	338	140	80	52	155	217	27.5	160
9035	169	169	338	140	80	52	180	217	27.5	160
9040	188	188	376	160	80	52	195	232	21.5	180
9045	188	188	376	160	80	52	215	232	21.5	180
9050	208	208	416	160	80	52	205	251	28.5	180
9055	208	208	416	160	80	52	240	251	28.5	180
9060	240	240	480	200	105	65	260	295	40	220
9065	240	240	480	200	105	65	260	295	40	220
9070	274	274	548	225	105	65	295	320	44	245
9075	274	274	548	225	105	65	330	320	44	245
9080	296	296	592	225	135	95	330	339	52	245
9085	296	296	592	225	135	95	370	339	52	245

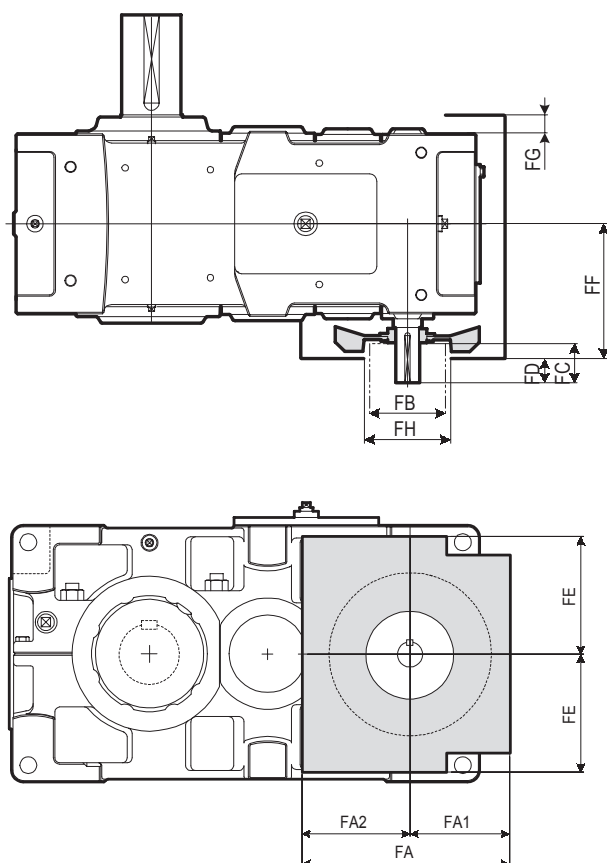
Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9090	465	277	742	250	135	90	345	410	65	270
9095	465	277	742	250	135	90	345	410	65	270
9100	515	314	829	250	175	130	395	455	65	270
9105	515	314	829	250	175	130	395	455	65	270
9110	565	356	921	250	175	130	445	485	65	270
9115	565	356	921	250	175	130	445	485	65	270

Technical

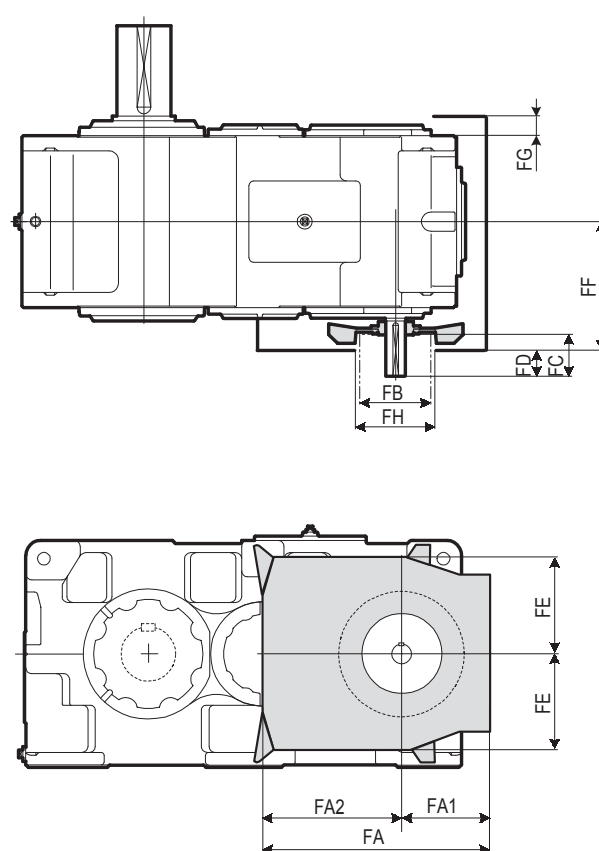
Common

TECHNICAL DATA Cooling Fan Dimension Horizontal, Upright

9015 ▶ 9085 Parallel Triple Reduction



9090 ▶ 9115 Parallel Triple Reduction



※ When tightening installation bolt, to be removed fan hood.

Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9015	111	111	222	125	30	10	105	180	32.5	145
9025	129	129	258	125	30	10	125	194	27.5	145
9030	140	140	280	125	50	30	125	211	27.5	145
9035	150	150	300	140	50	22	150	219	27.5	160
9040	170	170	340	140	50	22	165	234	21.5	160
9045	170	170	340	140	50	22	185	234	21.5	160
9050	172	172	344	140	80	52	170	252	28.5	160
9055	172	172	344	140	80	52	205	252	28.5	160
9060	199	199	398	160	80	52	220	277	40	180
9065	199	199	398	160	80	52	255	277	40	180
9070	221	221	442	160	80	52	250	302	44	180
9075	221	221	442	160	80	52	285	302	44	180
9080	247	247	494	200	105	65	280	340	52	220
9085	247	247	494	200	105	65	320	340	52	220

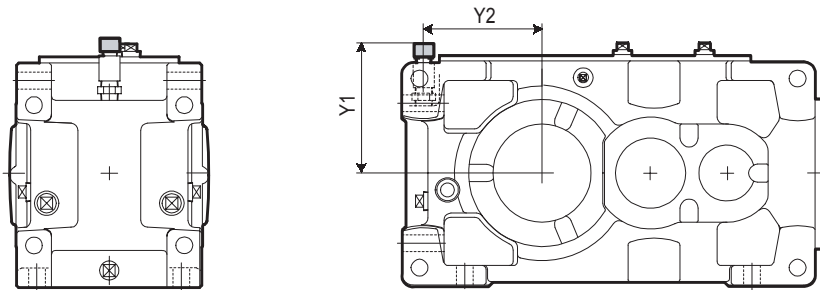
Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9090	268	474	742	200	105	65	345	405	65	220
9095	268	474	742	200	105	65	345	405	65	220
9100	289	540	829	225	105	65	395	450	65	245
9105	289	540	829	225	105	65	395	450	65	245
9110	339	582	921	225	135	95	445	480	65	245
9115	339	582	921	225	135	95	445	480	65	245

Note) Consult us for cooling fan dimension of size 9118 and 9136.

TECHNICAL DATA Option Dimension Horizontal

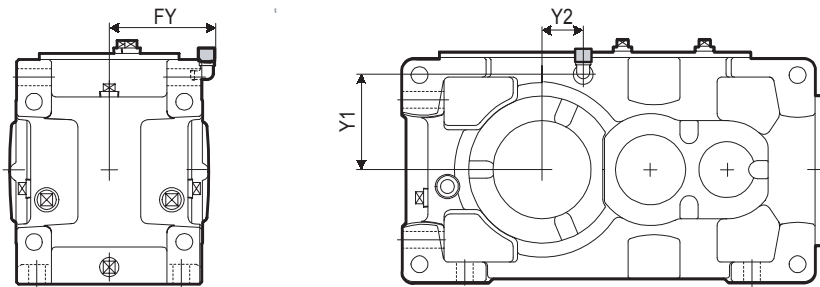
9015 ▶ 9055 Right Angle Double, Triple, Quadruple
/ Parallel Double, Triple, Quadruple

Air Breather



Size	Y1	Y2
9015	216	135
9025	233	149
9030	235	173

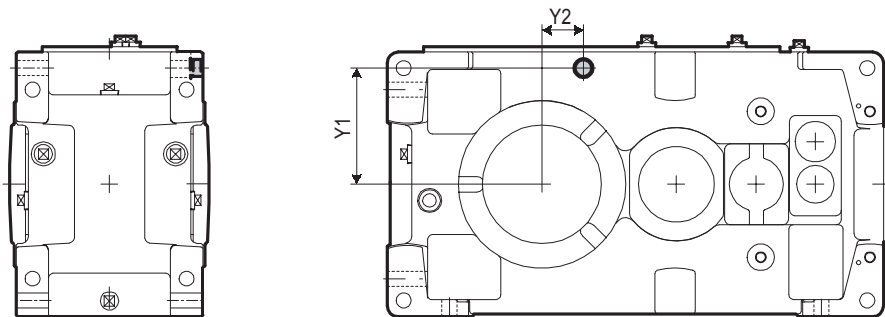
[9015~9030 Double reduction right angle and
double reduction parallel/Reduction ratio 6.3~7.1]



Size	Y1	Y2	FY
9015	110	35	131
9025	130	25	144
9030	135	0	156
9035	160	0	156
9040	175	30	174
9045	195	29	174
9050	180	25	194
9055	215	0	194

[9015~9030 Double reduction right angle and double reduction parallel/Reduction ratio 8~25]

9035~9055 Double reduction right angle and double reduction parallel/Reduction ratio 6.3~25]

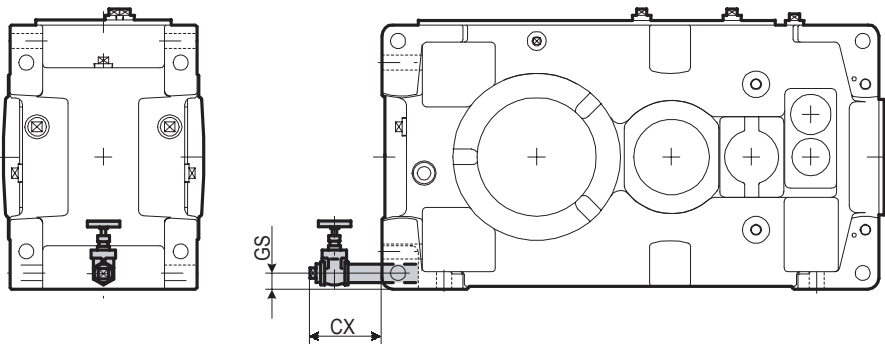


Size	Y1	Y2
9015	110	35
9025	130	25
9030	135	0
9035	160	0
9040	175	30
9045	195	*29 or 30
9050	180	25
9055	215	0

*29mm ... Triple reduction right angle.
30mm ... Quadruple reduction right
angle.
30mm ... Triple and quadruple
reduction parallel.

[9015~9055 Triple and quadruple reduction right angle
and triple and quadruple reduction parallel/All reduction
ratios]

Drain Valve

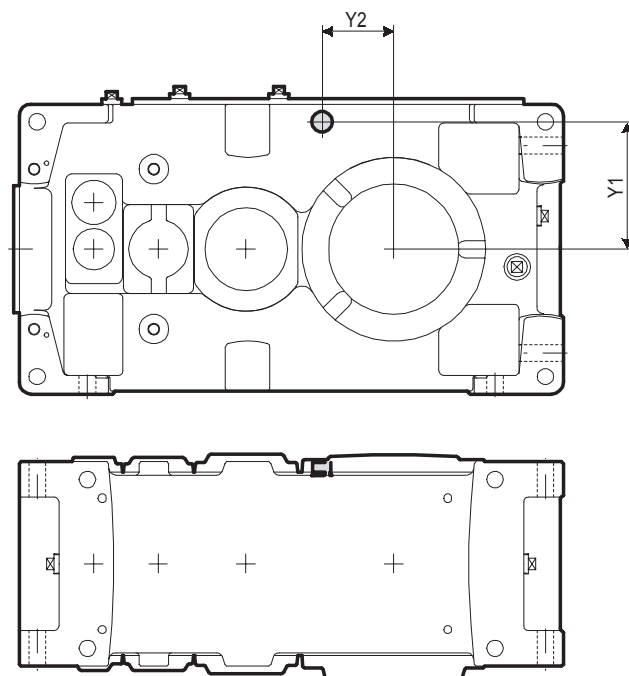


Size	CX	GS
9015	122	23
9025	122	24
9030	119	24
9035	119	24
9040	133	28
9045	133	28
9050	133	29
9055	133	29

TECHNICAL DATA Option Dimension Vertical

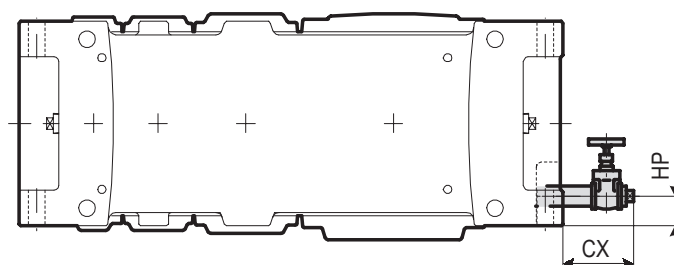
9015 ► 9055 Right Angle Double, Triple, Quadruple
/ Parallel Double, Triple, Quadruple

Air Breather

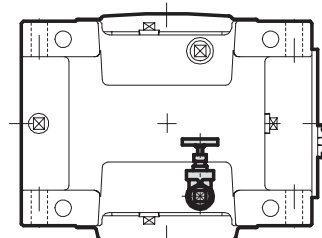


Size	Y1	Y2
9015	110	35
9025	130	25
9030	135	0
9035	160	0
9040	175	30
9045	195	29
9050	180	25
9055	215	0

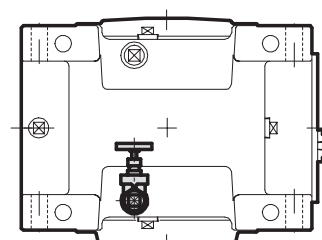
Drain Valve



Size	CX	HP
9015	122	38
9025	117	41
9030	109	43
9035	109	43
9040	127	55
9045	127	55
9050	119	50
9055	119	50



Parallel Triple, Quadruple
Right Angle Quadruple



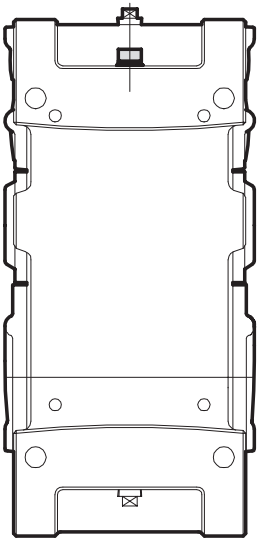
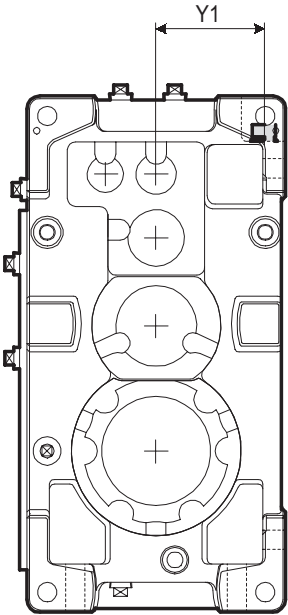
Parallel Double
Right Angle Double, Triple

TECHNICAL DATA Option Dimension Upright

9015 ▶ 9055 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

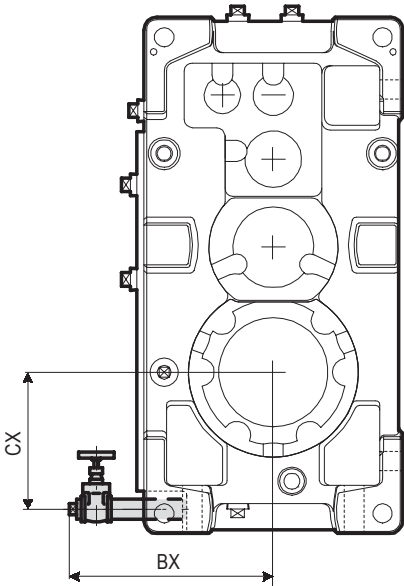
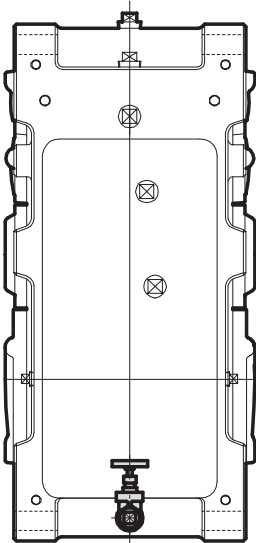
Air Breather

Size	Y1
9015	112
9025	131
9030	136
9035	161
9040	172
9045	192
9050	181
9055	216



Drain Valve

Technical
Common

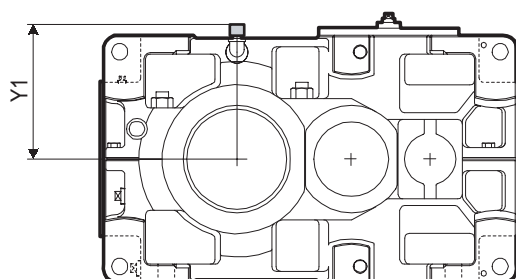
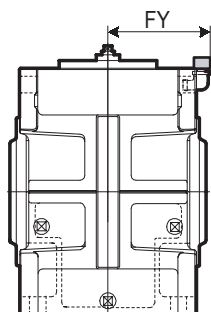


Size	BX	CX
9015	260	135
9025	277	149
9030	279	173
9035	297	192
9040	333	205
9045	353	226
9050	343	224
9055	365	255

TECHNICAL DATA Option Dimension Horizontal

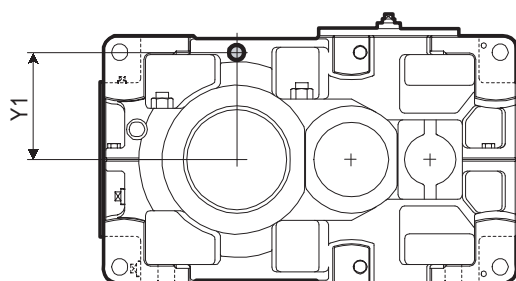
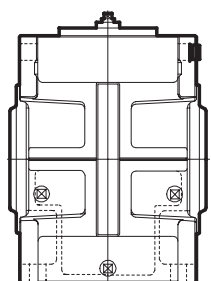
9060 ▶ 9085 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

Air Breather



Size	Y1	FY
9060	272	214
9065	307	214
9070	306	239
9075	341	239
9080	341	259
9085	381	259

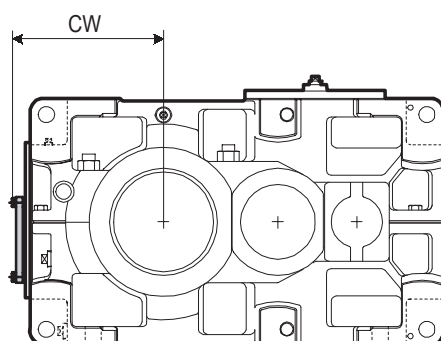
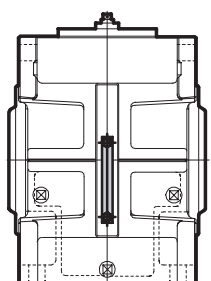
[9060~9085 Double reduction right angle and
double reduction parallel]



Size	Y1
9060	229
9065	264
9070	263
9075	298
9080	298
9085	338

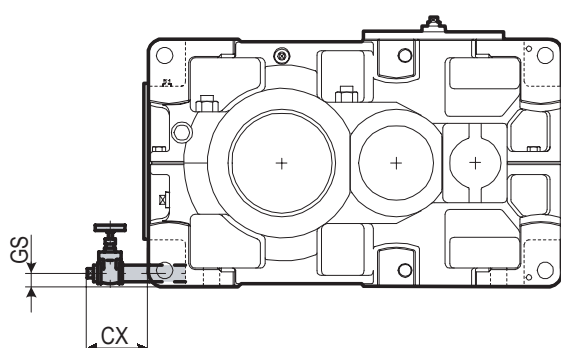
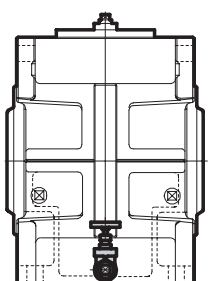
[9060~9085 Triple and quadruple reduction right angle and
triple and quadruple reduction parallel]

Oil Level Gauge



Size	CW
9060	318
9065	357
9070	355
9075	402
9080	397
9085	441

Drain Valve

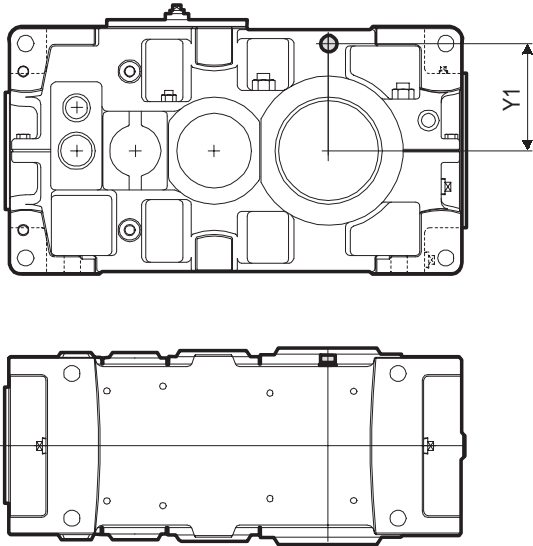


Size	CX	GS
9060	170	31
9065	170	31
9070	155	33
9075	155	33
9080	155	34
9085	157	34

TECHNICAL DATA Option Dimension Vertical

9060 ▶ 9085 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

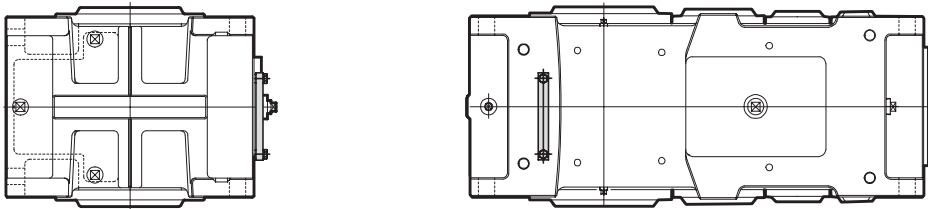
Air Breather



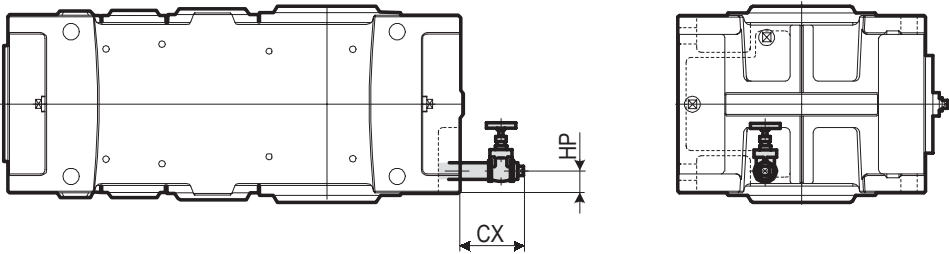
Size	Y1
9060	229
9065	264
9070	263
9075	298
9080	298
9085	338

Oil Level Gauge

Note) Oil level gauge is not max dimension.



Drain Valve



Size	CX	HP
9060	120	47
9065	120	47
9070	120	47
9075	120	47
9080	110	47
9085	110	47

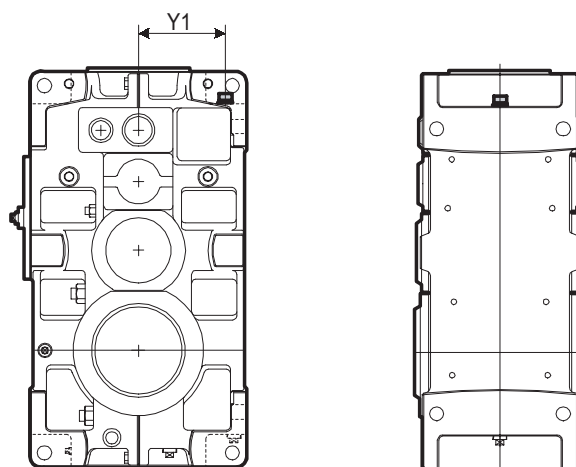
Technical
Common

TECHNICAL DATA Option Dimension Upright

9060 ▶ 9085 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

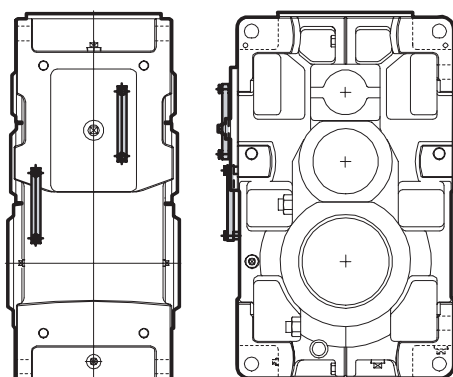
Air Breather

Size	Y1
9060	234
9065	264
9070	267
9075	302
9080	301
9085	341

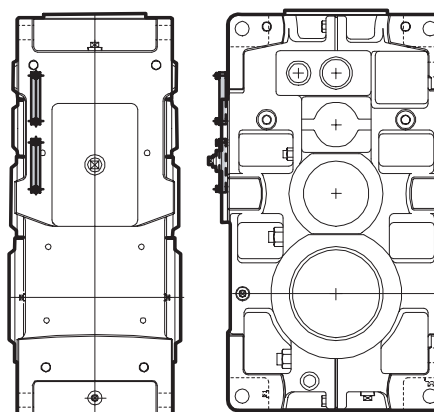


Oil Level Gauge

Note) Oil level gauge is not max dimension.

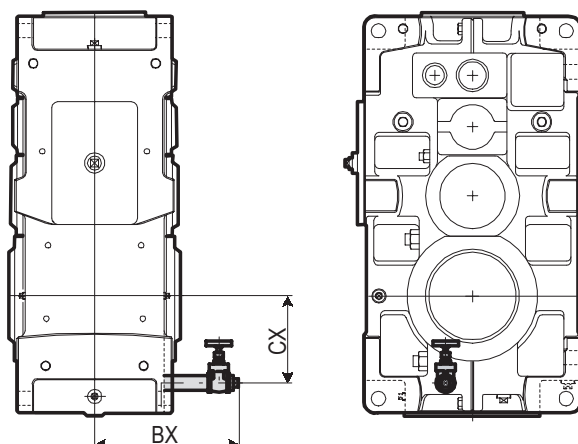


Right Angle Double, Triple / Parallel Double



Right Angle Quadruple / Parallel Triple, Quadruple

Drain Valve

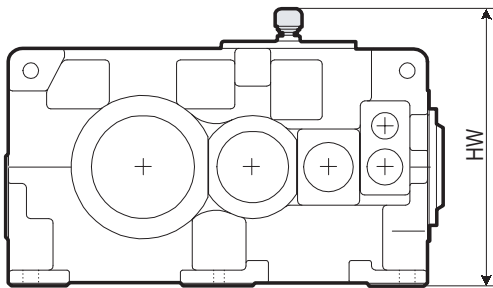


Size	BX	CY
9060	335	214
9065	335	253
9070	360	251
9075	360	298
9080	380	283
9085	380	327

TECHNICAL DATA Option Dimension Horizontal

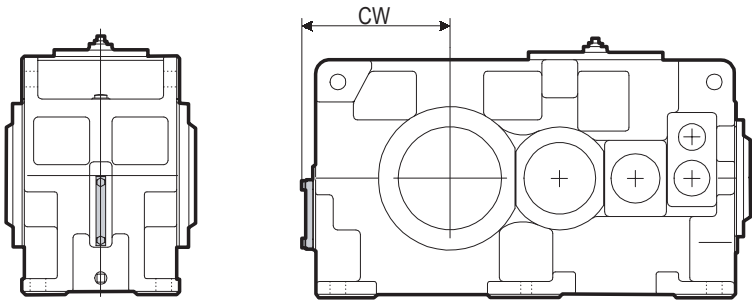
9090 ▶ 9115 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

Air Breather



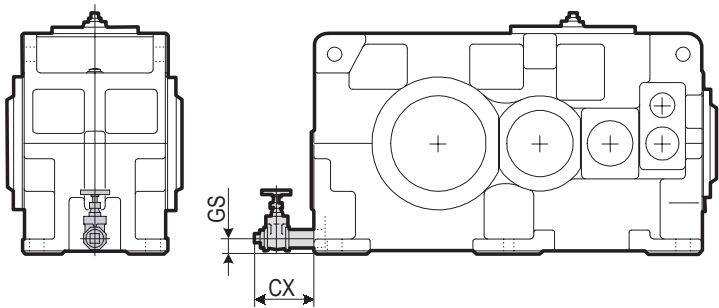
Size	HW
9090	839
9095	889
9100	939
9105	989
9110	1039
9115	1089

Oil Level Gauge

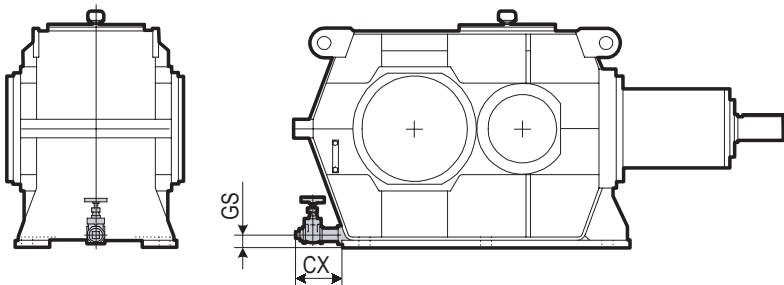


Size	CW
9090	435
9095	465
9100	475
9105	510
9110	525
9115	575

Drain Valve



Size	CX	GS
9090	162	45
9095	162	45
9100	162	46
9105	162	46
9110	162	48
9115	162	48



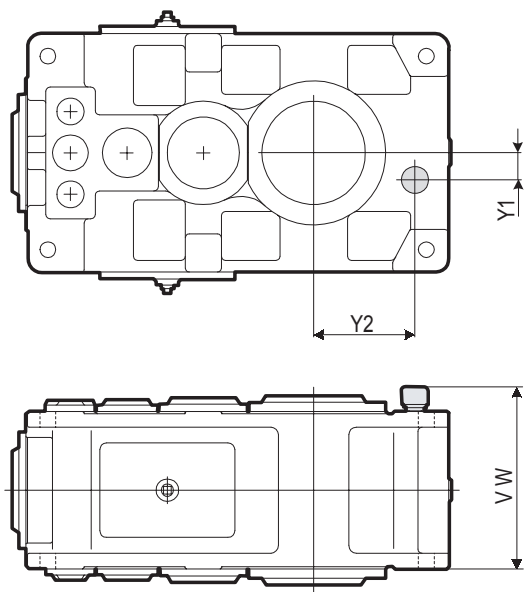
Size	CX	GS
9095R2	172	62
9105R2	172	62
9115R2	172	69

Technical
Common

TECHNICAL DATA Option Dimension Vertical

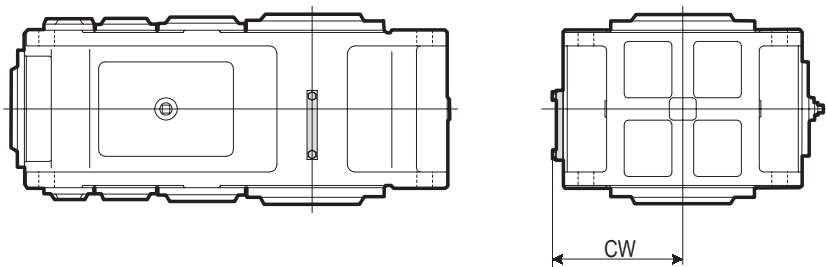
9090 ▶ 9115 Right Angle Double, Triple, Quadruple
/ Parallel Double, Triple, Quadruple

Air Breather



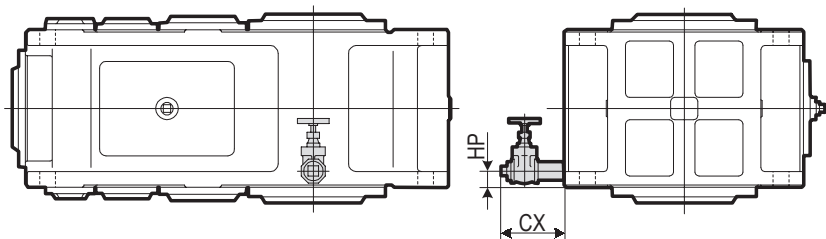
Size	V W	Y1	Y2
9090	626	90	315
9095	626	90	345
9100	706	100	355
9105	706	100	390
9110	766	100	405
9115	766	100	440

Oil Level Gauge



Size	CW
9090	405
9095	430
9100	455
9105	480
9110	505
9115	530

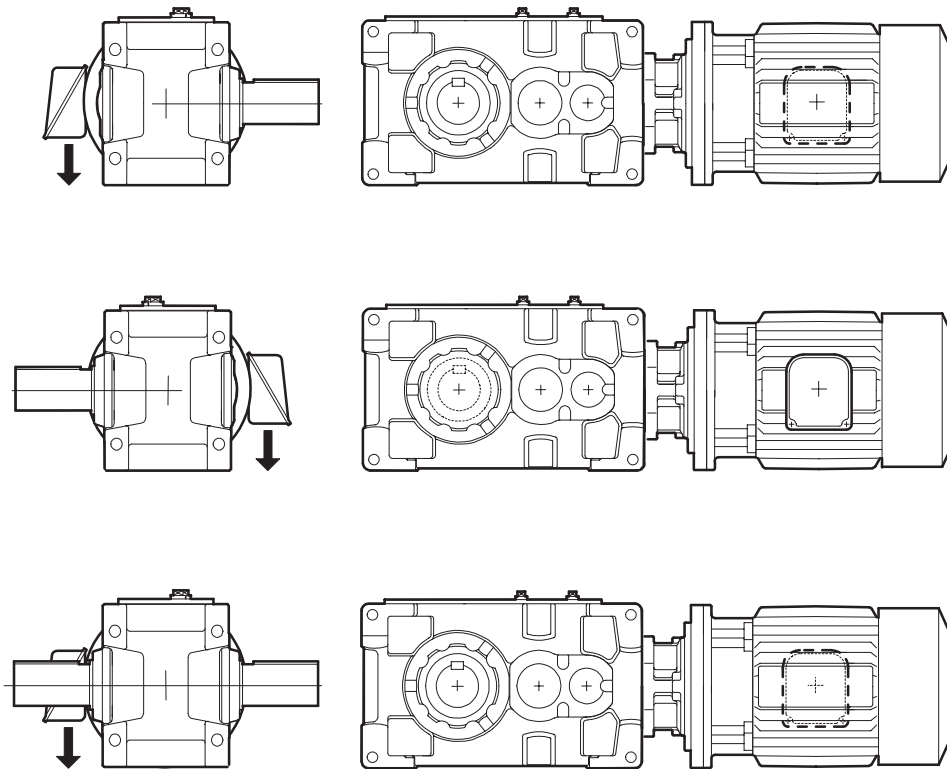
Drain Valve



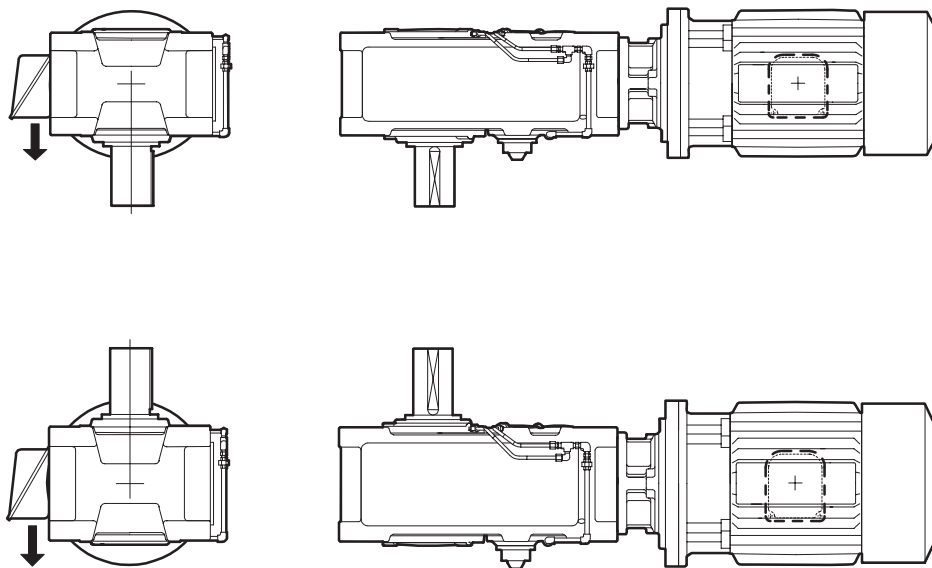
Size	CX	HP
9090	162	42
9095	162	42
9100	162	43
9105	162	43
9110	162	44
9115	162	44

TECHNICAL DATA Motor Terminal Box Drive Unit

Right Angle Shaft Horizontal Mounting



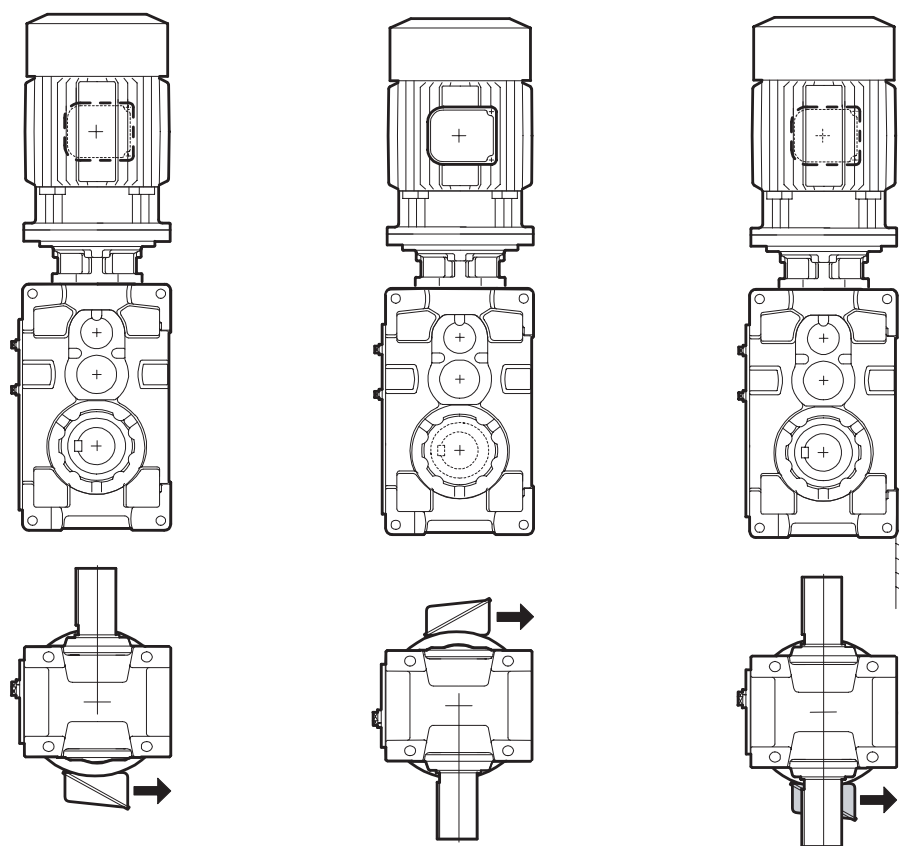
Right Angle Shaft Vertical Mounting



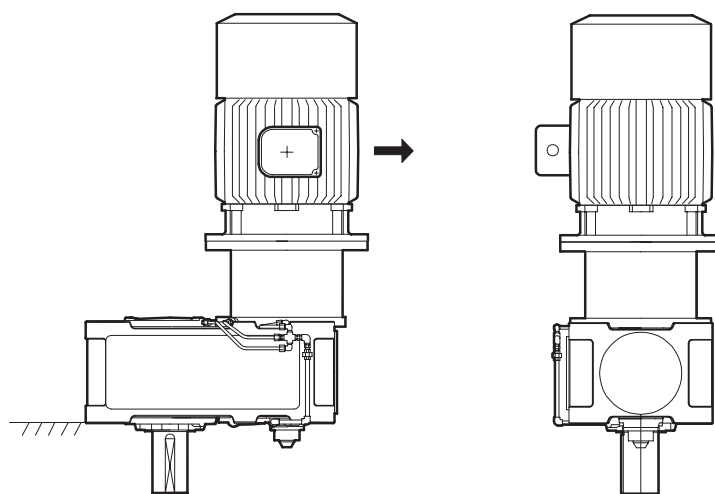
1. Direction shows lead wire outside of terminal box.
2. The terminal box mounting direction can be changed in units of 90 degree in our factory. Please specify the direction when placing an order.

TECHNICAL DATA Motor Terminal Box Drive Unit

Right Angle Shaft Upright Mounting

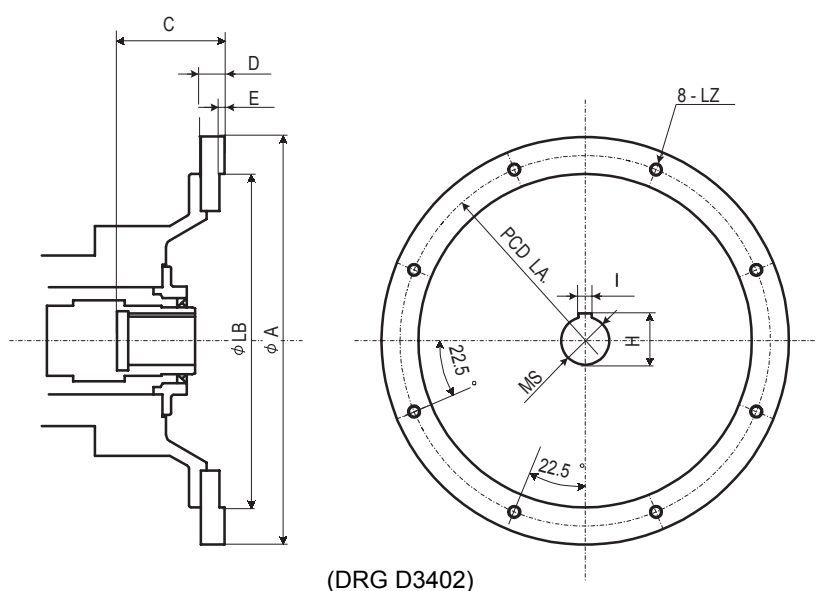
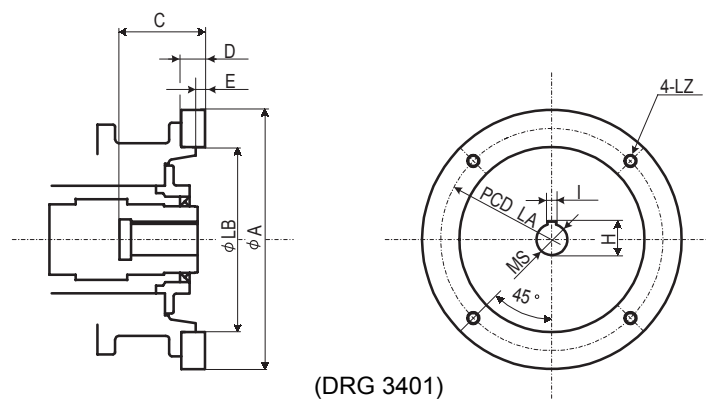


Parallel Shaft Vertical Mounting



1. Direction shows lead wire outside of terminal box.
2. The terminal box mounting direction can be changed in units of 90 degree in our factory.
Please specify the direction when placing an order.

TECHNICAL DATA Motor Flange Dimension IEC, JEM Standard

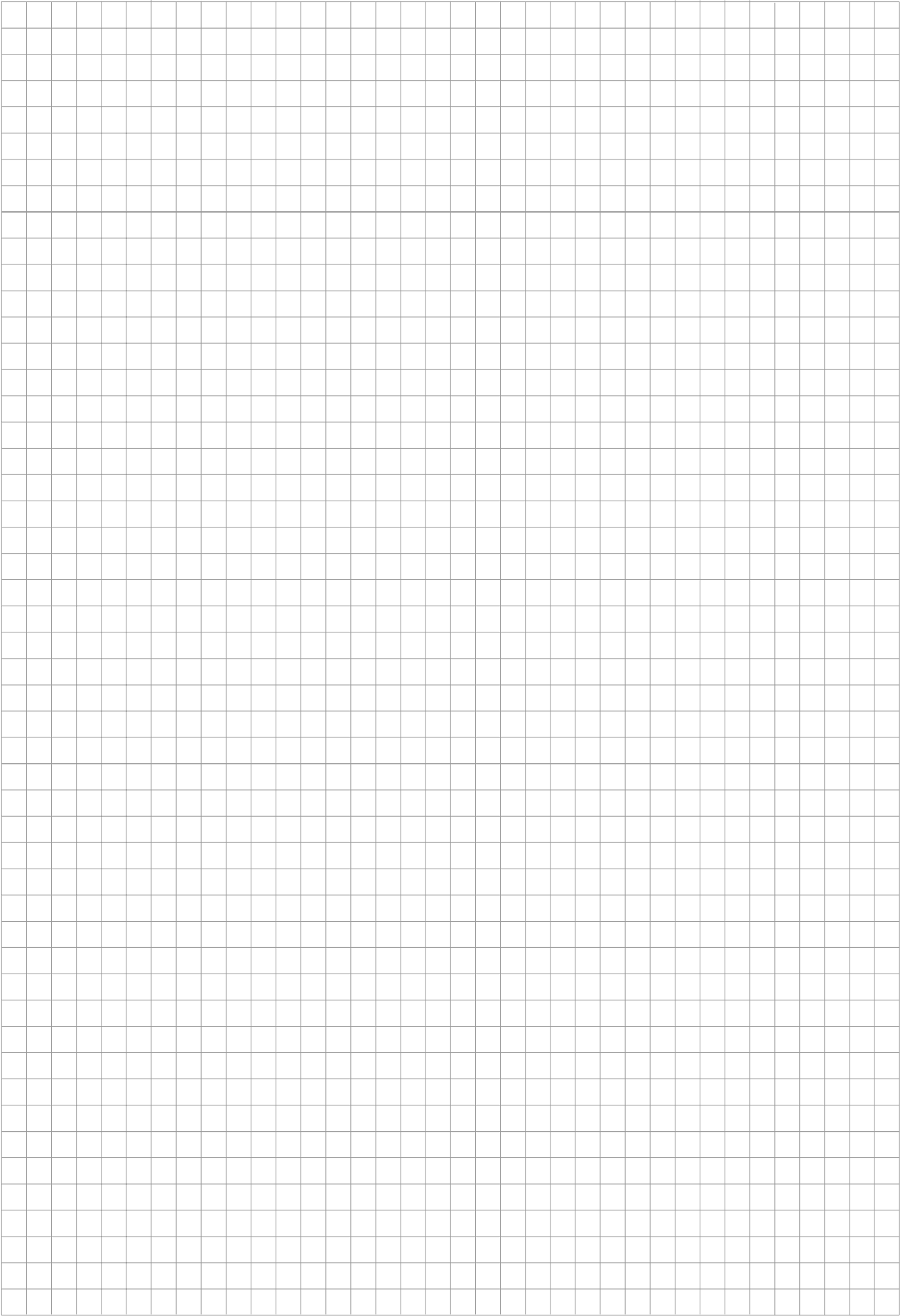


(JEM Standard)

kWxP	Motor Flame	A	LB	C	D	E	φ MS	H	I	LA	LZ	Thread Length	Fig.
5.5 × 4P	132S	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
7.5 × 4P	132M	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
11 × 4P	160M	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
15 × 4P	160L	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
18.5 × 4P	180M	400	300	114	32	7	48	51.8	14	350	4-M16	32	D3401
22 × 4P	180M	400	300	114	32	7	48	51.8	14	350	4-M16	32	D3401
30 × 4P	180L	400	300	114	32	7	55	59.3	16	350	4-M16	32	D3401
37 × 4P	200L	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
45 × 4P	200L	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
55 × 4P	225S	550	450	144	32	7	65	69.4	18	500	8-M16	32	D3402

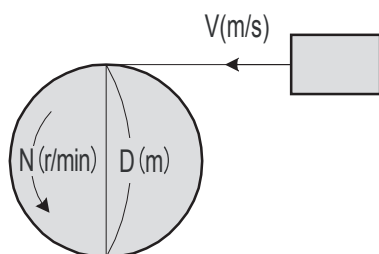
(IEC Standard)

kWxP	Motor Flame	A	LB	C	D	E	φ MS	H	I	LA	LZ	Thread Length	Fig.
5.5 × 4P	132S	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
7.5 × 4P	132M	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
11 × 4P	160M	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
15 × 4P	160L	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
18.5 × 4P	180M	350	250	114	32	7	48	51.8	14	300	4-M16	32	D3401
22 × 4P	180L	350	250	114	32	7	48	51.8	14	300	4-M16	32	D3401
30 × 4P	200L	400	300	114	32	7	55	59.3	16	350	4-M16	32	D3401
37 × 4P	225S	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
45 × 4P	225M	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
55 × 4P	250M	550	450	144	32	7	65	69.4	18	500	8-M16	32	D3402



TECHNICAL DATA Formula of Drive System SI Units

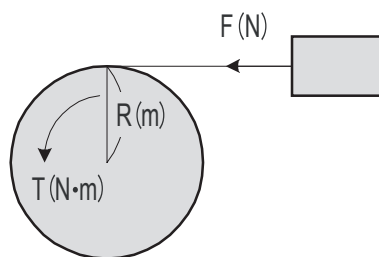
1. Revolving Speed N(r/min), Velocity V(m/s)



$$V = \pi \cdot D \cdot \frac{N}{60} \quad (\text{m/s})$$

D : Wheel Diameter (m)
($\pi \approx 3.14$)

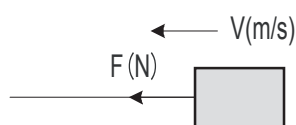
2. Torque T (Nm)



$$T = F \cdot R \quad (\text{N} \cdot \text{m})$$

F : Load (N)
R : Wheel Radius (m)

3. Power P(kW)



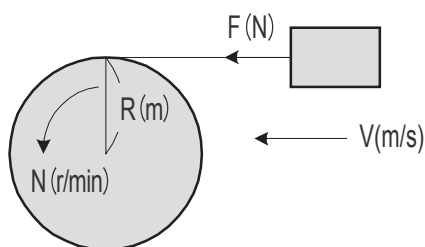
$$P = \frac{F \cdot V}{1000} \quad (\text{kW})$$

F : Load (N)
V : Velocity (m/s)

4. Power P(kW), Torque T(Nm), Revolving Speed N(r/min)

$$P = \frac{N \cdot T}{9550} \quad (\text{kW}), \quad T = \frac{9550 \cdot P}{N} \quad (\text{N} \cdot \text{m})$$

$$P = \frac{F \cdot V}{1000} \quad (\text{kW}), \quad V = \pi \cdot 2 \cdot R \cdot \frac{N}{60} \quad (\text{m/s})$$



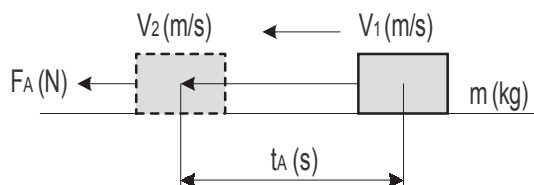
$$\therefore P = \frac{F \cdot \pi \cdot 2 \cdot R \cdot \frac{N}{60}}{1000} = \frac{2 \cdot \pi}{1000 \times 60} \cdot N \cdot F \cdot R \quad (\text{kW})$$

$$\text{Since } T = F \cdot R$$

$$P = \frac{2 \cdot \pi}{1000 \times 60} \cdot N \cdot T = \frac{N \cdot T}{9550} \quad (\text{kW})$$

TECHNICAL DATA Formula of Drive System SI Units

5. Acceleration Force F_A (N)



$$F_A = m \cdot \alpha = m \cdot \frac{V_2 - V_1}{t_A} \text{ (N)}$$

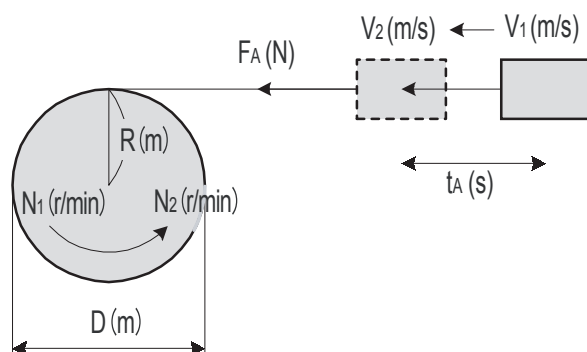
$$\alpha = m \cdot \frac{V_2 - V_1}{t_A}$$

m = Weight (kg)

α : Acceleration (m/s^2)

t_A : Acceleration Time (s)

6. Acceleration Torque T_A (Nm)



$$T_A = F_A \cdot R, \quad F_A = m \cdot \frac{V_2 - V_1}{t_A}$$

$$V_2 = \pi \cdot D \cdot \frac{N_2}{60}, \quad V_1 = \pi \cdot D \cdot \frac{N_1}{60},$$

$$D = 2 \cdot R$$

$$\therefore T_A = m \cdot \frac{\frac{\pi \cdot 2 \cdot R}{60} (N_2 - N_1)}{t_A} \cdot R$$

$$= \frac{2 \pi \cdot m \cdot R}{60} \cdot \frac{N_2 - N_1}{t_A} \cdot R$$

$$= \frac{m \cdot R^2}{9.55} \cdot \frac{N_2 - N_1}{t_A} \text{ (N} \cdot \text{m)}$$

Since $m \cdot R^2$ is J (Moment of Inertia : $\text{kg} \cdot \text{m}^2$)

$$T_A = \frac{J}{9.55} \cdot \frac{N_2 - N_1}{t_A} \text{ (N} \cdot \text{m)}$$

7. Synchronized Revolving Speed of AC Motor N_0 (r/min)

$$N_0 = \frac{120 \cdot f}{P} \text{ (r/min)}$$

f : Power Supply Frequency (Hz)

P : No. of Motor Poles

8. Rated Revolving Speed of AC Motor N (r/min)

$$N = N_0 (1 - S) \text{ (r/min)}$$

N_0 : Synchronized Revolving Speed (r/min)

S : Slippage

Warranty

Warranty Period	The warranty period for the Products shall be 18 months after the commencement of delivery or 18 months after the shipment of the Products from the seller's works or 12 months from the Products coming into operation, whichever comes first.
Warranty Condition	In Case that any problems, troubles or damages on the Products arise due to the defects in the Products during the above "Warranty Period", although the Products are appropriately and properly installed in, connected or combined to the equipment or machines, or maintained in accordance with the maintenance manual and are properly operated under the conditions as described in the catalogue or otherwise as agreed upon in writing between the Seller and the Buyer or its customers, the Seller will Provide, at its sole discretion, appropriate repair or replacement on the Products free of charge, except as stipulated in the "Exception for Warranty" as described below. However, in the event that the Products is installed in, connected or combined to or integrated into the equipment or machines, the Seller shall not reimburse the costs for removal or re-installation of the Products or other incidental costs related thereto and any lost opportunity, loss of profit or any other incidental or consequential losses or damages incurred by the Buyer or its customers.
Exception for Warranty	Notwithstanding the above warranty, the warranty as set forth herein shall not be applied to the problems, troubles or damages on the Products which are caused by: 1. installations, connections, combinations or integration of the Products in or to the other equipment or machines, which are rendered by any person or entity other than the Seller, 2. the insufficient maintenance or improper operation by the Buyer or its customers, such that the Product is not appropriately maintained in accordance with the maintenance manual provided or designated by the Seller, 3. the improper use or operation of the Products by the Buyer or its customers which are not informed to the Seller, including, without limitation, the Buyer's or its customers' operation of the Products not in conformity with the specifications, or use of the lubrication oil in the Products which is not recommended by the Seller, 4. troubles, problems or damages on any equipment or machines in or to which the Products are installed, connected or combined or installed, or any specifications particular to the Buyer or its customers.

CCC Standards (China Compulsory Certification)

China had implemented the China Compulsory Certification (CCC) system since May 1, 2003 as becoming the full member of World Trade Organization (WTO). They have moved on to compulsory licensing on August 1, 2003.

Motor capacity 1.1kW and below are subject to this certification, and requires CCC mark for sales in China.

Below table is our motor with CCC.

Motor	Single phase motor		Three phase motor		AF motor	AF motor (foot mount)
Capacity	15 ~ 90W	0.1 ~ 0.75KW	40 ~ 90W	0.1 ~ 1.1KW	0.1 ~ 0.75KW	0.4 ~ 0.75KW
Voltage	220V		380V			
Frequency	50Hz		50Hz			
Insulation	Class E	Class B	Class E	Class F		
Usage	Indoor (IP44, IP55)					

AF motor : Motor for inverter

Difference with standard items

- CCC Mark is on the nameplate.
- Aluminum terminal box is the standard for three phase motor (except indoor specification for 40 ~ 90W).
- Terminal block type (6 terminals, European system) is the standard for three phase motor (for 0.1kW or more).
- Rotational direction is the opposite from Japanese domestic specification (in CCW direction looking from the anti-load side).
- CCC correspondence motor coil is used.



China Compulsory Certificate

Remarks

- CCC approved/authorized motor is necessary for small type motors 1.1kW and below when exporting to China for domestic use.
- Import of items subject for CCC without certification may be permitted by applying for exemption in some cases. Consult us if any clarification necessary.



SAFETY PRECAUTIONS

- Strictly observe the safety rules for the installation place and the equipment to use.
(Industrial Safety and Health Law, Technical Standard for Electric Facilities, Extension Rules, Plant Explosion Guidelines, Building Standards Law, etc.)
- Carefully read the maintenance manual before use. If the maintenance manual is not on hand, make a request for one to the distributor at which you purchased the product or to our sales department. The maintenance manual should be sent to the actual user.
- Select an appropriate product that matches the operating environment and usage.
- Install a protective equipment on the machine side when the machine is used for transportation of passengers or for elevators, escalators, and dumbwaiters.
- When the machine is used for food processing equipment and others that are susceptible to oil, install an oil pan or other damage preventive devices in case of oil leakage due to failure or termination of service life.