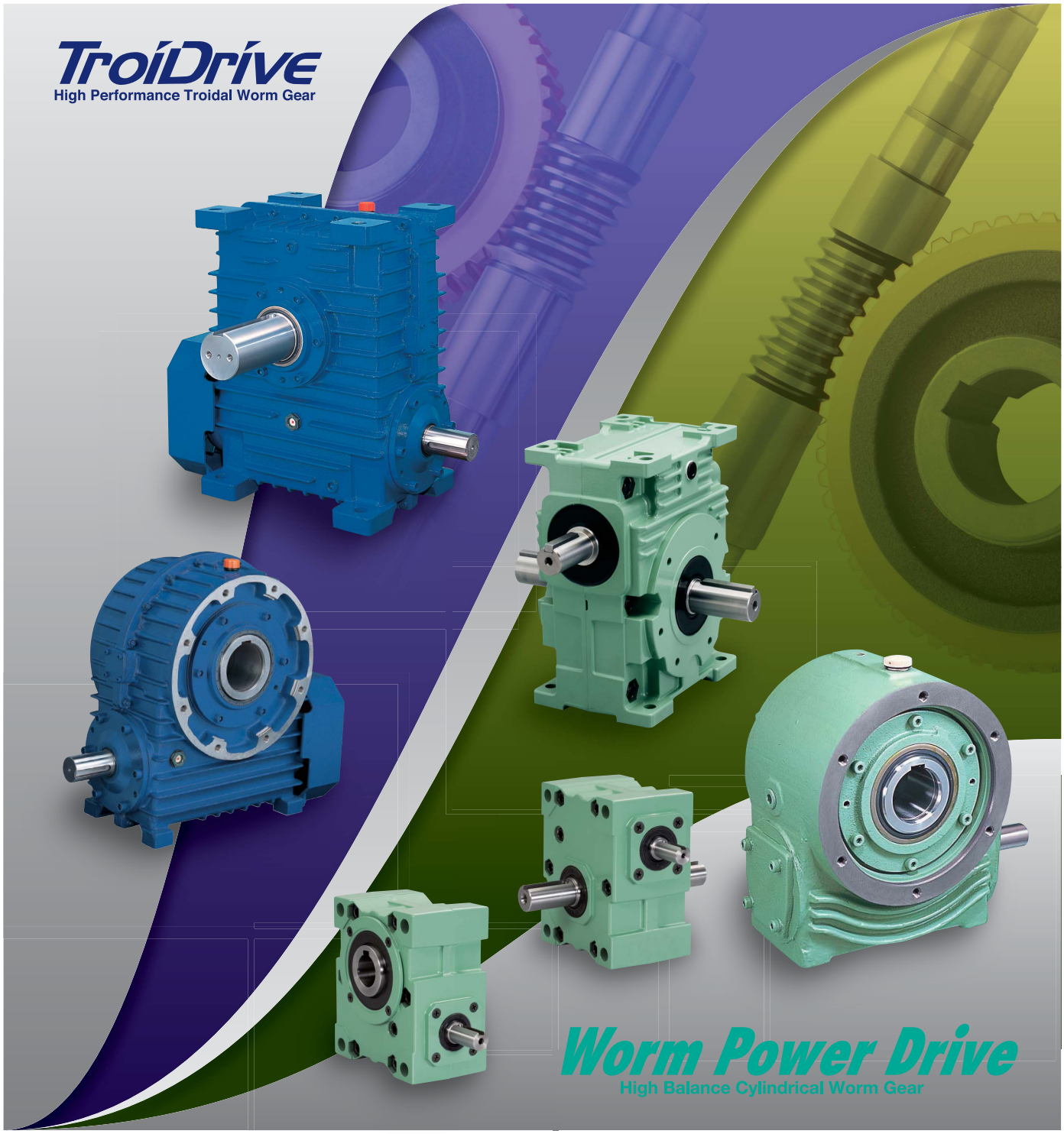
Innovation in Motion
TSUBAKI

TSUBAKI
Troi Drive
Worm Power Drive

Worm Gear Reducers

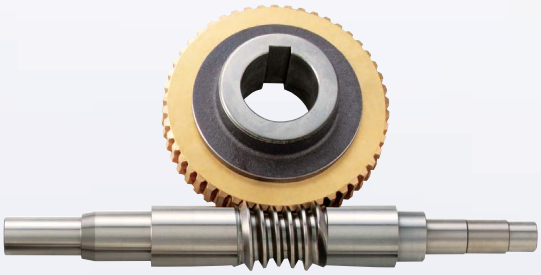


Two Choices of Worm Gears:

Worm gears transmit power through sliding contact with very little vibration and noise, and enables high reduction ratio with one gear set.
Worm gears may also work with its self lock function for safety drive.

Self-locking **High reduction ratio** **Low noise, low vibration**

Low backlash **Stable rotation speed**



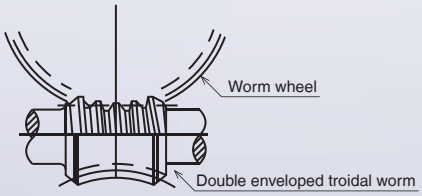
Troidal Worm Gear

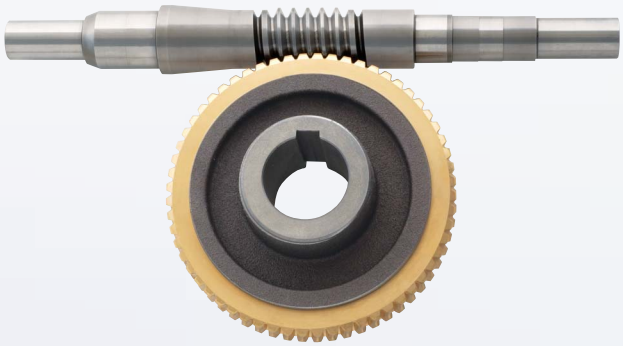
TroiDrive

High Performance Troidal Worm Gear

TD Series

Troidal Worm Gears are high performance worms that transfer the load with their entire tooth surface. This gives them a higher load transfer capacity and ideal for compact machines.





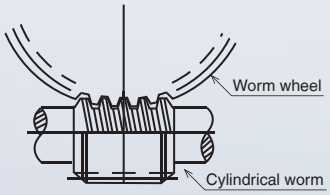
Cylindrical Worm Gear

Worm Power Drive

High Balance Cylindrical Worm Gear

EWJ/EW/SWJ/SW Series

Years of experience in designing tooth surface with unsurpassed torque transfer performance went into making a well-balanced cylindrical worm gear in terms of performance, efficiency, and cost.



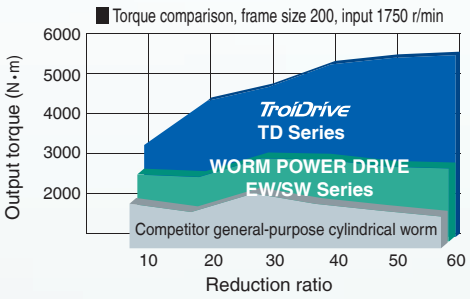
Cylindrical and Troidal Worms

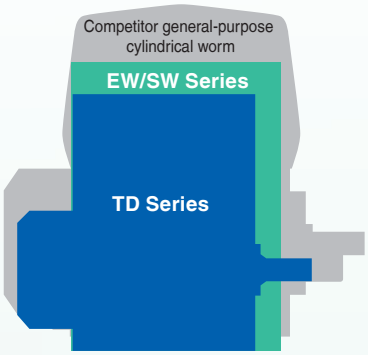
The high loading capacity of Troi Drives and Worm Power Drives allows your equipment in compact design.
We have also strengthened our ability to respond to customer demands with various options.

High torque capacity **Compact** **Various options**

High-power, lightweight, and compact

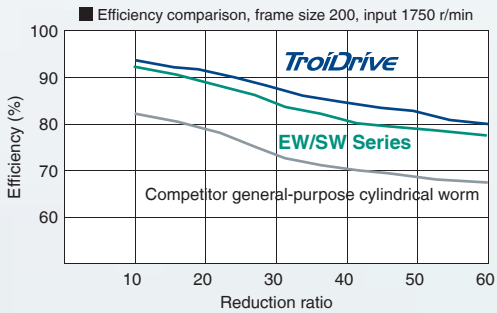
Troi Drives and Worm Power Drives are the most compact among right-angle gear reducers at the same load conditions with their high loading capacity.
Compared to general-purpose cylindrical worm gears, Tsubaki Worm Power Drives are one size smaller in frame size, and Troi Drive gears are two sizes smaller. In other words, Tsubaki worm gear boxes are 1.5 to 2 times higher in torque capacity when compared to others in same sizes.



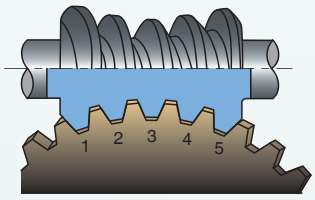


High efficiency and energy saving

Tsubaki achieved high efficiency, in pursuit for optimal teeth form for efficient smooth operation.



Silent and smooth operation

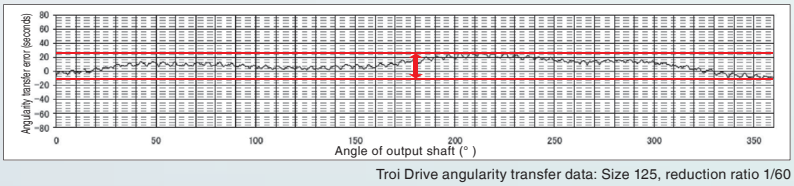


Number of teeth engaged

TroiDrive	4 to 6.5 teeth
General-purpose cylindrical worm	1.7 to 2 teeth

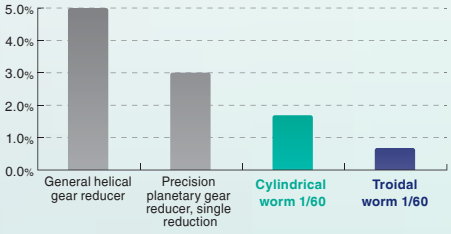
Stable rotation speed

Troi Drive has the most constant rotations among any other gear reducers.



Troi Drive angularity transfer data: Size 125, reduction ratio 1/60

Angular velocity variation

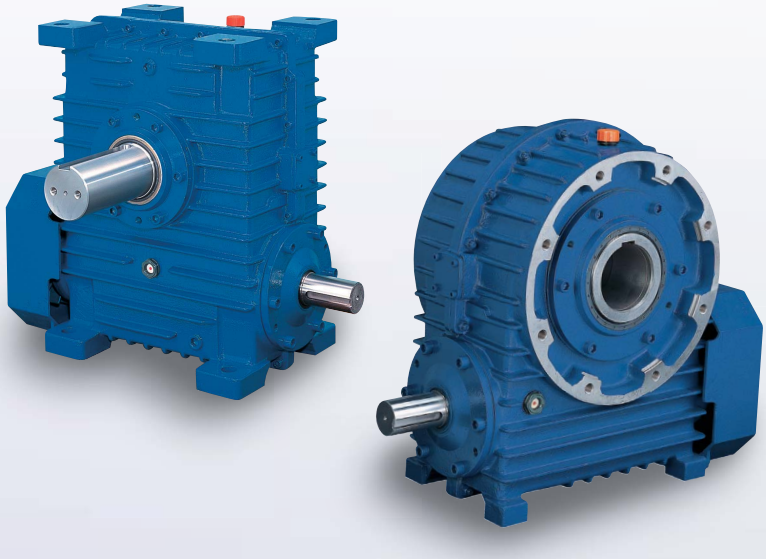


Various Lineup for a Variety

TroiDrive
High Performance Troidal Worm Gear

TD Series

Troi Drives are high-performance worms that achieve both high transmission capacity and efficiency by using a troidal worm gear. Two types of housings are available: a solid shaft type with foot mounting and a hollow shaft type with on-shaft and flange mounting. These will minimize your equipment in size and weight for all layouts.



- **High-performance worms with higher power in compact size**
- **Two output types [solid and hollow shafts]**
- **Smooth, quiet, and stable rotation**
- **Medium to large sizes [125 to 315]**

EWJ/EW/SWJ/SW/TD Series

● EW(J) · SW(J)
● TD

Size	25	35	42	50	63	70	80	100	125	150	175	200	225	250	280	315

Reduction ratio	10	15	20	25	30	40	50	60	100	150	200	250	300	400	500	600	800	1000	1200	1500	1800	2400	3000	3600

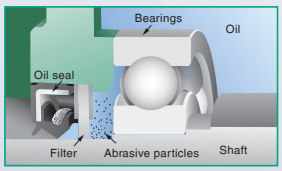
*1: TD: 450, *2: TD: 750, *3: TD: 900

Output torque (N·m)	5		50			500				5000				50000

Longer lasting oil seal

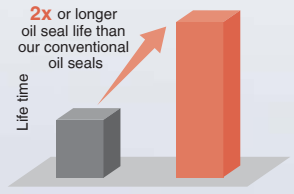
New and unique mechanism

The filter in the oil seal protects from the abrasive particles generated during operation, thus extending the life of the oil seal.



New oil seal mechanism

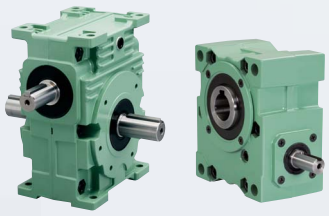
Comparison of oil seal life



Condition: Frame size 50, reduction ratio 1/60, input speed 1750 r/min, 50% rated load, 24-hour continuous operation

Baked electrostatic powder

Environmentally friendly, scratch and chip resistant



- **Improved paint surface quality**
  (Adhesive properties of paint)
- **Eco-friendly**
  (Reduces emissions of volatile organic compounds because thinner is not used)

EWJ series: Sizes 70 and smaller (single reduction)
SWJ series: Sizes 42 and smaller



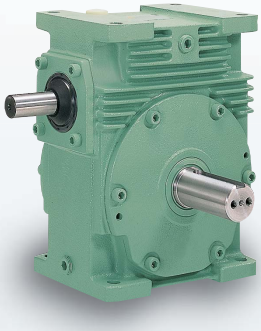
of Applications

Worm Power Drive

High Balance Cylindrical Worm Gear

EWJ/EWJM Series
EW/EWM Series

The high-precision Worm Power Drive series is compact with excellent cost performance. The optimized design featuring basic foot mounting achieves a balance between cost and maintainability, and a range of variations allow equipment to be more compact.





* The EWJ/EWJM series are available in solid shaft types only.

- Well-balanced performance, efficiency, and cost
- Two output shaft types [solid and hollow shafts]
- Foot mount type
- Small to medium sizes [25 to 200]

SWJ/SWJM Series
SW/SWM Series

This series saves both space and cost by using exclusive housings for on-shaft and flange mounting. The optimized design and available Power-Lock and taper bush shaft options contribute to simplifying equipment.



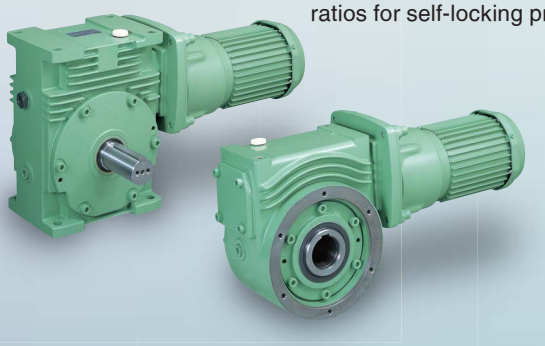


* SWJ/SWJM series are available in hollow shaft types only.

- Well-balanced performance, efficiency, and cost
- Two output shaft types [solid and hollow shafts]
- On-shaft and flange mount types
- Small to medium sizes [25 to 200]

TERUS Series

TERUS series combines worm reducers and helical gear motors to give you better layout. These advanced reducers have the high strength and quietness of worm gears plus the high efficiency and silence of a gear motor. They can be configured to meet a variety of needs including multiple gear ratios for self-locking properties.



Excellent worm characteristics

Can be configured to conform to many applications and goals, such as those that require high strength, quietness, and self-locking properties.

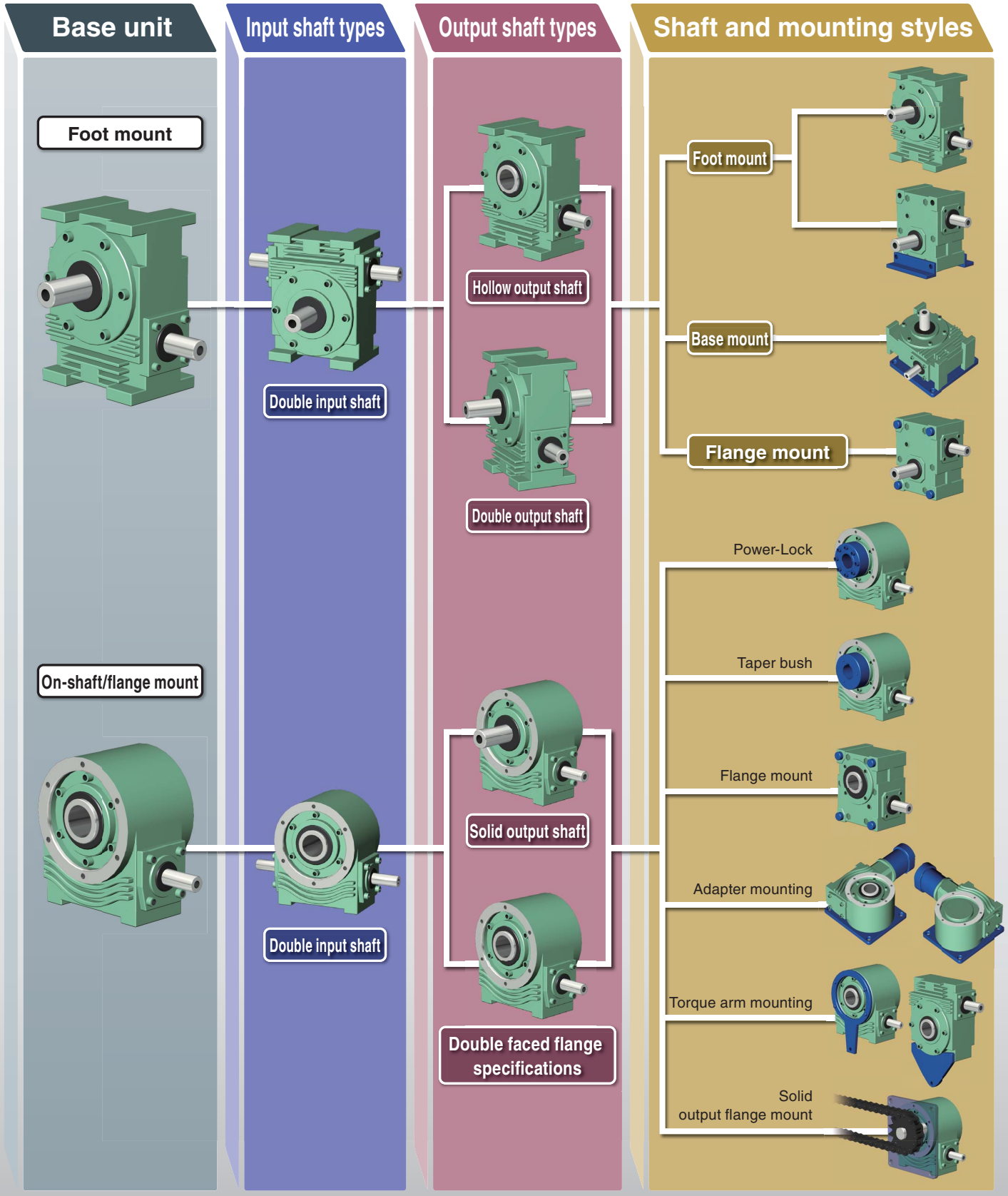
Smaller equipment footprint

Reduces equipment footprint and costs through a reduction in the number of components used.

Wide variety of options

Supports a wide variety of motor and brake options, including variable frequency motors and manual quick-release brakes.

Extensive variations support a



variety of operating condition.

Motor

- Motor flange
  - IEC standard flange
    - General purpose
      - Croise motor
      - → Page 202
    - Specially designed flange (and coupling)
      - Gear motor GMTA Series
        - Right angle reducer
        - TERUS
        - → Page 170
      - Servo motor
        - TERVO
        - → Page 196
  - Motor mounting base
    - Mountable on housing

Motor options

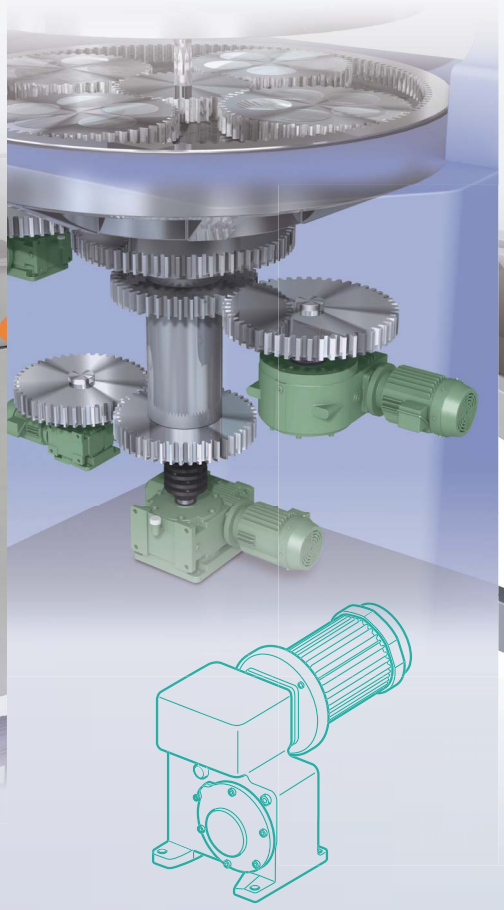
- Brake motor
- Global series (international standards)
- Inverter motor
- Hard terminal box
- Outdoor type
- Voltage option
- Manual quick-release brake
- Manual release shaft
- Encoders

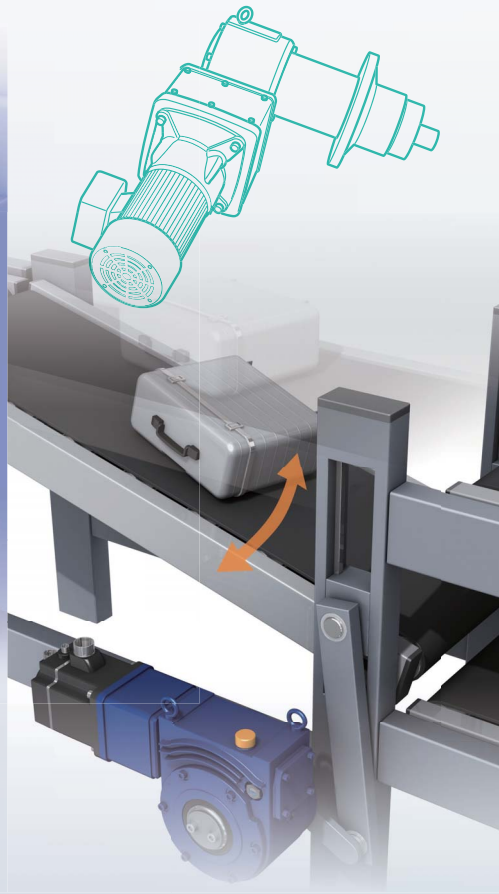
Solutions for Various Applications

Tsubaki delivers products with special specifications created through our ability to accommodate applications for customers and our ability to build solutions based on experience.

Our Troi Drives and Worm Power Drives are available with a full range of options for various situations and are highly customizable.

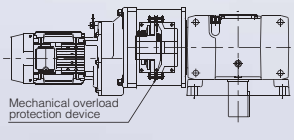




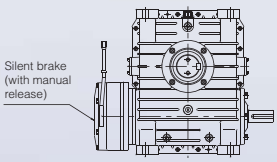


Application Examples

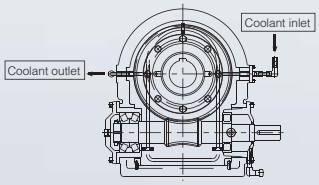
With overload protection



Braked models for lifts



Water cooled design



Medical equipment

Mixers

Polishing, Lapping machines

Stage equipment

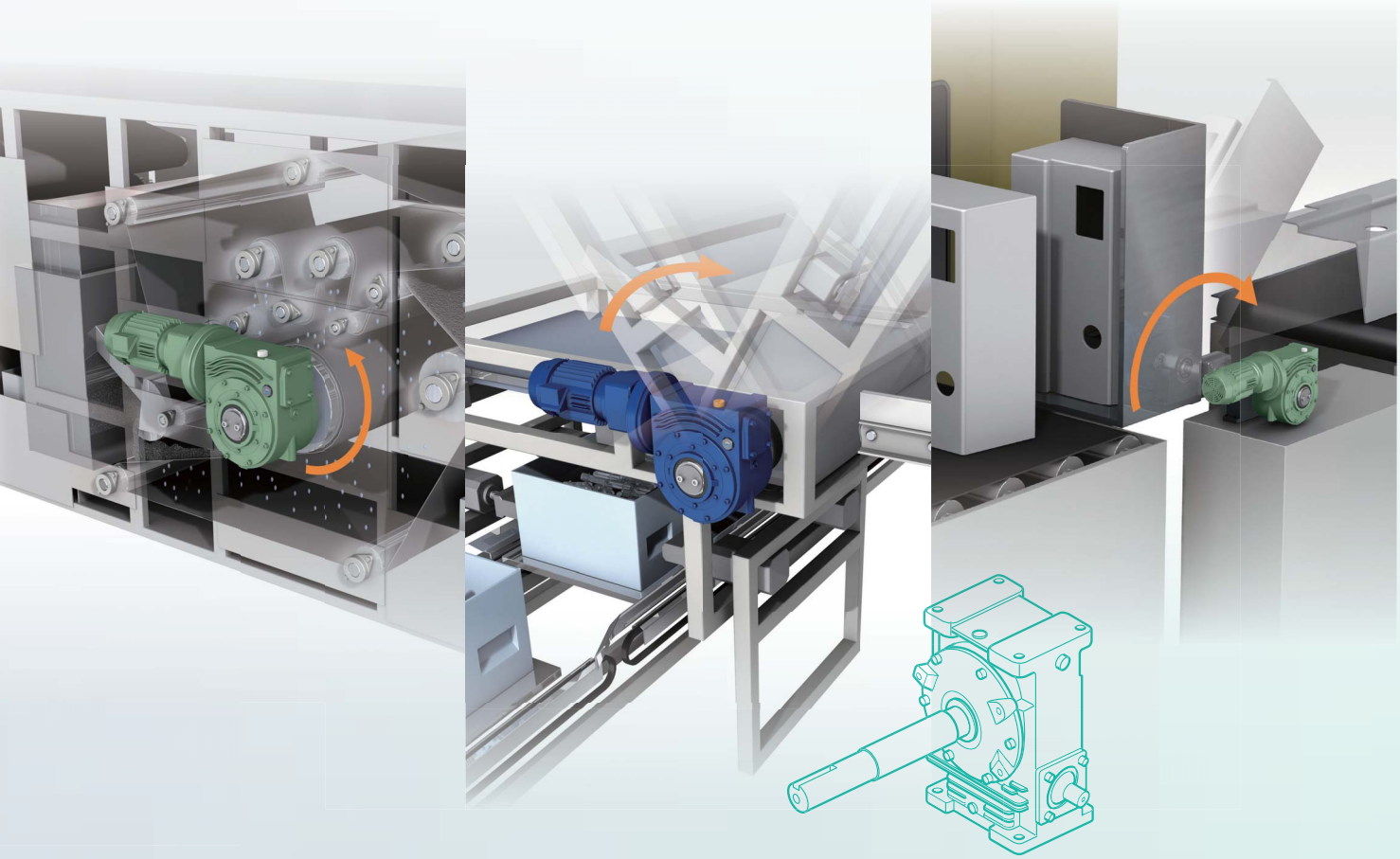
Automated storage

Car washing machines

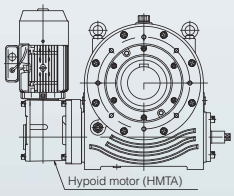
Printing machines

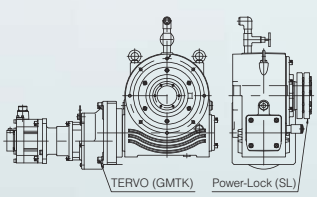
Elevators

Reverse machines

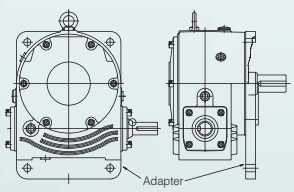


Integrated double reduction unit (TERUS)

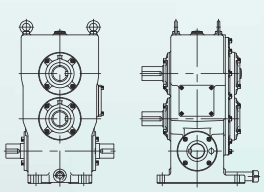




With mounting adapter



Parallel output shafts



SELECTION

Worm Power Drive

P22

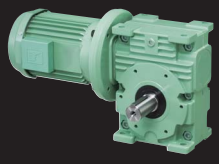
High Balance Cylindrical Worm Gear

Well-balanced worms

EWJ/EWJM Series
EW/EWM Series



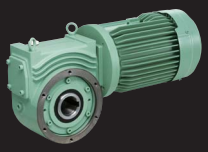
Foot mount



SWJ/SWJM Series
SW/SWM Series



On-shaft/flange mount



Size 25 to 200

Torque 12 to 5300 N • m

With motor 0.1 to 5.5 kW

Reduction ratio Single reduction 1/10 to 1/60 Double reduction 1/100 to 1/3600

TroiDrive

P120

High Performance Troidal Worm Gear

High-performance worms

TD Series



Foot mount



On-shaft/flange mount

Size 125 to 315

Torque 2700 to 47000 N • m

Reduction ratio Single reduction 1/10 to 1/60 Double reduction 1/100 to 1/3600

TERUS Series

P170

Tsubaki Reducer Unit Strategy

EW(J)GM/SW(J)GM

Size 50 to 200

Reduction ratio 1/100 to 1/3600

TDGM

Size 125 to 315

Reduction ratio 1/100 to 1/3600

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- Lineup — 11
- Specification — 13
- Sizing — 15
  - Sizing Flowchart
  - Procedures
  - Examples

EWJ/EWJM/EW/EWM Series
SWJ/SWJM/SW/SWM Series — 22

- **Single Reduction (1/10 to 1/60)**
  - Model
  - Shaft Arrangement
  - Motor Options
  - Mounting Examples
  - Motor and Reduction Ratio Combinations
  - Sizing Chart
  - Technical Data
  - Structure
  - Dimensional Drawings
- **Double Reduction (1/100 to 1/3600)**
  - Model
  - Shaft Arrangement
  - Motor Options
  - Mounting Examples
  - Motor and Reduction Ratio Combinations
  - Sizing Chart
  - Technical Data
  - Structure
  - Dimensional Drawings

TD Series — 120

- Model
- Shaft Arrangement
- Structure

- **Single Reduction (1/10 to 1/60)**
  - Technical Data
  - Dimensional Drawings
- **Double Reduction (1/100 to 1/3600)**
  - Rating Table
  - Technical Data
  - Dimensional Drawings

TERUS Series — 170

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Models/Specification/Sizing

▶ **Models** ..... **11 - 12**

▶ **Specification** ..... **13 - 14**

- Standard Model
- Motor

▶ **Sizing** ..... **15 - 20**

- Flowchart for EWJ/EW/SWJ/SW Series
- Procedures
- Examples
- Load Categories by Application

Models

EWJ/EW/SWJ/SW Series (without motor)

Single Reduction (Reduction Ratio: 1/10 to 1/60)

		Size	25		35		42		50		63		70	
			EWJ25	SWJ25	EWJ35	SWJ35	EWJ42	SWJ42	EWJ50	SWJ50	EWJ63	SWJ63	EWJ70	SWJ70
Input shaft		Double	○	—	○	○	○	○	△	△	△	△	△	△
Output shaft	Solid	Single	○	—	○	—	○	—	○	—	○	—	○	—
		Double	○	—	○	—	○	—	○	—	○	—	○	—
	Hollow	Hollow	—	○	—	○	—	○	—	○	—	○	—	○
		Power-Lock	—	—	—	—	—	—	—	□	—	□	—	□
		Taper bushing	—	—	—	—	—	—	—	—	—	—	—	△

		Size	80		100		125		150		175		200	
			EW80	SW80	EW100	SW100	EW125	SW125	EW150	SW150	EW175	SW175	EW200	SW200
Input shaft		Double	□	□	□	□	□	□	□	□	□	□	□	□
Output shaft	Solid	Single	○	○	○	○	○	○	○	○	○	○	○	○
		Double	○	□	○	□	○	□	○	□	○	□	○	□
	Hollow	Hollow	○	○	○	○	○	○	○	○	○	○	○	○
		Power-Lock	*	□	*	□	*	□	*	□	*	□	*	□
		Taper bushing	*	△	*	△	*	△	*	△	—	—	—	—

EWJM/EWM/SWJM/SWM Series (with motor)

Refer to Motor and Reduction Ratio Combinations for reducer size and motor kW combinations.

Single Reduction (Reduction Ratio: 1/10 to 1/60)

		Size	25		35		42		50		63		70	
			EWJM25	SWJM25	EWJM35	SWJM35	EWJM42	SWJM42	EWJM50	SWJM50	EWJM63	SWJM63	EWJM70	SWJM70
Input shaft		Double	*	*	□	□	□	□	□	□	□	□	□	□
Output shaft	Solid	Single	*	—	□	—	○	—	○	—	○	—	○	—
		Double	*	—	□	—	○	—	○	—	○	—	○	—
	Hollow	Hollow	—	*	—	○	—	○	—	○	—	○	—	○
		Power-Lock	—	—	—	—	—	—	—	△	—	△	—	△
		Taper bushing	—	—	—	—	—	—	—	—	—	—	—	△

		Size	80		100		125		150		175		200	
			EWM80	SWM80	EWM100	SWM100	EWM125	SWM125	EWM150	SWM150	EWM175	SWM175	EWM200	SWM200
Input shaft		Double	□	□	□	□	□	□	□	□	□	□	□	□
Output shaft	Solid	Single	○	○	○	○	○	○	○	○	□	□	□	□
		Double	○	□	○	□	○	□	○	□	□	□	□	□
	Hollow	Hollow	○	○	○	○	○	○	○	○	□	□	□	□
		Power-Lock	*	△	*	△	*	△	*	△	*	△	*	△
		Taper bushing	*	△	*	△	*	△	*	△	—	—	—	—

TD Series (without motor)

Single Reduction (Reduction Ratio: 1/10 to 1/60)

		Size	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
Input shaft		Double	□	□	□	□	□	□	□	□
Output shaft	Solid	Single	○	○	○	○	○	○	○	○
		Double	△	△	△	△	△	△	△	△
	Hollow	Hollow	○	○	○	○	○	○	○	○
		Power-Lock	□	□	□	□	□	□	□	□

Double Reduction (Reduction Ratio: 1/100 to 1/3600)

		Size	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
Output shaft	Solid	Single	○	○	○	○	○	○	○	○
		Double	△	△	△	△	△	△	△	△
	Hollow	Hollow	○	○	○	○	○	○	○	○
		Power-Lock	□	□	□	□	□	□	□	□

○: Standard △: Option □ and *: Made to order —: not available

EWJ/EW/SW Series (Without Motor)

Double Reduction (Reduction Ratio: 1/100 to 1/3600)

		Size	25		35		42		50		63		70	
			EWJ25	SWJ25	EWJ35	SWJ35	EWJ42	SWJ42	EWJ50	SWJ50	EWJ63	SWJ63	EWJ70	SWJ70
Output shaft	Solid	Single	—	—	—	—	—	—	○	—	○	—	○	—
		Double	—	—	—	—	—	—	○	—	○	—	○	—
	Hollow	Hollow	—	—	—	—	—	—	—	—	—	—	—	*
		Power-Lock	—	—	—	—	—	—	—	—	—	—	—	*
		Taper bushing	—	—	—	—	—	—	—	—	—	—	—	*

		Size	80		100		125		150		175		200	
			EW80	SW80	EW100	SW100	EW125	SW125	EW150	SW150	EW175	SW175	EW200	SW200
Output shaft	Solid	Single	○	○	○	○	○	○	○	○	○	○	○	○
		Double	○	□	○	□	○	□	○	□	○	□	○	□
	Hollow	Hollow	○	○	○	○	○	○	○	○	○	○	○	○
		Power-Lock	*	△	*	△	*	△	*	△	*	△	*	△
		Taper bushing	*	△	*	△	*	△	*	△	—	—	—	—

EWJM/EWM/SWM Series (With Motor)

Refer to Motor and Reduction Ratio Combinations for reducer size and motor kW combinations.

Double Reduction (Reduction Ratio: 1/100 to 1/3600)

		Size	25		35		42		50		63		70	
			EWJM25	SWJM25	EWJM35	SWJM35	EWJM42	SWJM42	EWJM50	SWJM50	EWJM63	SWJM63	EWJM70	SWJM70
Output shaft	Solid	Single	—	—	—	—	—	—	○	—	○	—	○	—
		Double	—	—	—	—	—	—	○	—	○	—	○	—
	Hollow	Hollow	—	—	—	—	—	—	—	—	—	—	—	*
		Power-Lock	—	—	—	—	—	—	—	—	—	—	—	*
		Taper bushing	—	—	—	—	—	—	—	—	—	—	—	*

		Size	80		100		125		150		175		200	
			EWM80	SWM80	EWM100	SWM100	EWM125	SWM125	EWM150	SWM150	EWM175	SWM175	EWM200	SWM200
Output shaft	Solid	Single	○	○	○	○	○	○	○	○	○	○	○	○
		Double	○	□	○	□	○	□	○	□	○	□	○	□
	Hollow	Hollow	○	○	○	○	○	○	○	○	○	○	○	○
		Power-Lock	*	△	*	△	*	△	*	△	*	△	*	△
		Taper bushing	*	△	*	△	*	△	*	△	—	—	—	—

Specification

Standard Gear Reducer

EWJ/EWJM(R)/EW/EWM(R)/SWJ/SWJM(R)/SW/SWM(R), TD Series

Item			Standard		
			EWJ/EWJM(R)/ SWJ/SWJM(R) Series	EW/EWM(R)/ SW/SWM(R) Series	Troi Drive TD Series
Reducer	Reduction method	Single reduction	Worm gear Reduction ratio: 1/10, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60		Worm gear Nominal reduction ratio: 1/10, 1/20, 1/30, 1/40, 1/50, 1/60
		Double reduction	Worm gear x worm gear Reduction ratio: 1/100, 1/150, 1/200, 1/250, 1/300, 1/400, 1/500, 1/600, 1/800, 1/1000, 1/1200, 1/1500, 1/1800, 1/2400, 1/3000, 1/3600 * Except EWJ25 to 42, EWJM42, SWJ25 to 70, and SWJM35 to 70.		Worm gear x worm gear Nominal reduction ratio: 1/100, 1/150, 1/200, 1/250, 1/300, 1/450, 1/600, 1/750, 1/900, 1/1200, 1/1500, 1/1800, 1/2400, 1/3000,1/3600
	Lubrication method		Oil bath		
			Daphne Alpha Oil TE260		Single reduction: Daphne Alpha Oil TE260 Double reduction: Daphne Alpha Oil TE380
	Keyway		New JIS standard, JIS B1301-1976 (key supplied with solid shaft models) (Input shaft keyways for single reduction type (EW125 to 200, SW125 to 200) and double reduction type (EW200, SW200, and TD200 to 315) reducers may fall out of tolerance due to strain from hardening.)		
	Paint specifications		Munsell Green (2.5G 6/3)		Munsell Blue (5PB 2/6)
			Baked electrostatic powder: Epoxy polyester binder * Only lacquer-based finish coating is applied to EWJM42 to 70, SWJM35 to 42, and EWJ(M) double reduction series. SWJ, SWJM50 to 70 are painted to specifications on the right.	Primer: lacquer primer Finish coat: lacquer-based paint	
	Rust proofing		Rust proof effective for 6 months when stored indoors.		
			Outside: rust-proofing grease Inside: sealed after filled with lubrication oil		
Ambient conditions	Installation		Indoors		
	Ambient temperature		-10°C to 50°C (0°C to 40°C for EWJM, EWM, SWJM, SWM series)		
	Ambient humidity		95% or less (no condensation) (85% or less (no condensation) for EWJM, EWM, SWJM, SWM series)		
	Altitude		No more than 1,000 m above sea level		
	Atmosphere		Area must be free of corrosive and explosive gases, steam, condensation, and have little or no dust.		
Installation direction			Horizontal or vertical (models EWJ25 to 70, EWJM42 to 70, SWJ25 to 70, and SWJM35 to 70 may install in any direction)		

Motor

Refer to gear reducer specifications for ambient conditions.

Item			EWJM(R)/EWM(R)/SWJM(R)/SWM(R)	
Motor	Output		3-phase 0.1, 0.2, 0.4 kW With/without brake	3-phase 0.75, 1.5, 2.2, 3.7, 5.5 kW With/without brake
	Efficiency class		-	Premium efficiency: IE3
	Power source		200/200/220 V 50/60/60 Hz	0.75 to 2.2 kW: 200/200/220 V, 50/60/60 Hz 3.7, 5.5 kW: 200/200/220/230 V, 50/60/60/60 Hz
	Poles		4	
	Protection		0.1 kW Totally enclosed (IP44), 0.2 to 0.4 kW Totally enclosed fan-cooled (IP44)	Totally enclosed fan-cooled (IP44)
	Cooling		0.1 kW Air-cooled (IC410), 0.2 to 0.4 kW Self-cooled (IC411)	Self-cooled (IC411)
	Rating		Continuous (S1)	Continuous (S1)
	Heat-resistance class		120 (E)	0.75 kW: 155 (F) 1.5 to 5.5 kW: 130 (B)
	Brake unit	Style	DC electromagnetic brake	
		Power source	90 VDC	0.75 to 3.7 kW: 90 VDC 5.5 kW: Instantaneous 180 VDC, Continuous 50 VDC
		Braking system	Engaged when de-energized	
		Rated torque	150% or more than rated motor torque	
		Heat-resistance class	130 (B)	0.75 to 3.7 kW: 130 (B) 5.5 kW: 120 (E)

Note) Motors with brake have a protection rating of IP20.

0.1 to 0.4 kW

No. of phases	Output (kW)	Poles	Frequency (Hz)	Voltage (V)	Rated current (A)	Rated speed (r/min)	Brake current on AC side A (Reference) at 20°C
3	0.1	4	50/60/60	200/200/220 (400/400/440)	0.63/0.57/0.58 (0.32/0.29/0.29)	1420/1680/1710 (1440/1740/1740)	0.12
	0.2				1.2/1.1/1.1 (0.59/0.55/0.55)	1420/1700/1720 (1410/1690/1720)	0.12
	0.4				2.3/2.0/2.0 (1.2/1.0/1.0)	1380/1650/1680 (1390/1670/1700)	0.16

Note 1) Figures in ( ) under rated current and rated speed are for a 400/400/440 V motor.
2) If the motor has a brake, add the brake current listed above if the brake leads are connected to the motor leads. Brake current on the AC side are for a 200 VAC 60 Hz motor.

0.75 to 5.5 kW, IE3

No. of phases	Output (kW)	Poles	Frequency (Hz)	Voltage (V)	Rated current (A)	Rated speed (r/min)	Energy efficiency (%)	Efficiency class (IE codes)	Brake current on AC side A (Reference) at 20°C
3	0.75	4	50/60/60 (50/50/60/60)	200/200/220 (380/400/400/440)	4.0/3.5/3.4 (1.9/2.0/1.75/1.7)	1440/1730/1740 (1435/1440/1730/1740)	83.9/86.4/86.4 (83.6/83.9/86.4/86.4)	IE3	0.17
	1.5				6.6/6.0/5.8 (3.4/3.3/3.0/2.9)	1450/1745/1755 (1445/1450/1745/1755)	86.9/88.6/89.1 (86.7/86.9/88.6/89.1)		0.10
	2.2				9.6/8.8/8.4 (4.8/4.8/4.4/4.2)	1450/1745/1755 (1445/1450/1745/1755)	88.2/89.9/90.2 (88.1/88.2/89.9/90.2)		0.10
	3.7				15.4/14.4/13.6 (7.8/7.7/7.2/6.8)	1450/1745/1755 (1445/1450/1745/1755)	89.2/89.8/90.7 (88.6/89.2/89.8/90.7)		0.08
	5.5				22.6/20.8/20.0 (11.3/11.3/10.4/10.0)	1465/1760/1765 (1460/1465/1760/1765)	91.2/92.1/92.4 (91.2/91.2/92.1/92.4)		0.10

Note 1) Figures in ( ) under rated current and rated speed are for a 380/400/400/440 V motor.
2) If the motor has a brake, add the brake current listed above if the brake leads are connected to the motor leads. Brake current on the AC side are for a 200 VAC 60 Hz motor.
3) Characteristics are for Japanese-market IE3 motors. Please see page 242 for global specification.

Sizing

Sizing Flowchart for EWJ/EW/SWJ/SW Series

Procedures

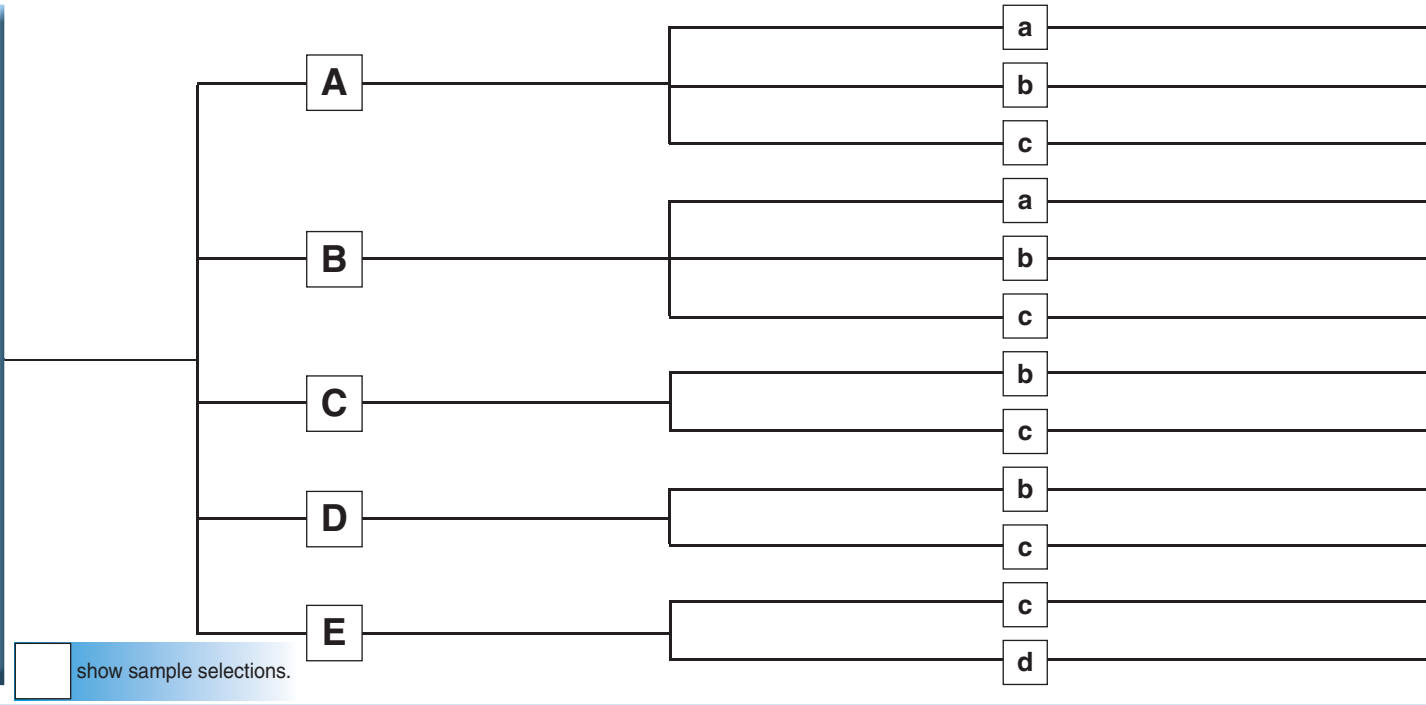
I Determine operating conditions

	Operating conditions
A	Intermittent: Repeats cycle of 10 min or less run, 10 min stop
B	Intermittent: 30 min run, 30 min stop
C	Intermittent: 1 hour or less run
D	Intermittent: 2 hours or less run
E	Continuous

II Determine total operating time

	Total operating time
a	0.5 hours/day
b	2 hours/day
c	10 hours/day
d	24 hours/day

Flowchart



show sample selections.

Sample Sizing Flowchart

I Determine operating conditions

Choose operating condition from A, B, C, D, or E.

Runs intermittently 30 minutes/cycle, stops 30 minutes

B

II Determine total operating time

Choose operating hours/day from a, b, c, or d.

Less than 2 hours/day

b

III Determine sizing table to use

Operating conditions ---- B
Total operating time ---- b

2

*** For TD series, refer to the procedures on page 17.**

III Determine sizing table to use

Sizing table	EWJ/EW Series		SWJ/SW Series	
	1/10 to 1/60 (Single reduction)	1/100 to 1/3600 (Double reduction)	1/10 to 1/60 (Single reduction)	1/100 to 1/3600 (Double reduction)
1	Page 28	Pages 79 to 81	Page 28	Pages 80 to 81
2	Page 28	Pages 79 to 81	Page 28	Pages 80 to 81
3	Pages 29 to 30	Pages 79 to 81	Pages 29 to 30	Pages 80 to 81

1
1
3
1
2
3
2
3
2
3
3
3

IV Determine specification

Sizing table 2

Determine motor capacity, reduction ratio, with motor, without motor

Determine model number from sizing table

Determine installation direction (B, T, or V)
Determine shaft arrangement (L, R, or LF, RF)

Determine radial load (O.H.L)
(Listed on page 17)

Sizing table 3

Based on the operating condition, check the capacity by following the steps on page 17 [Procedures] to determine the size and model.

IV Determine specification

(Motor capacity, reduction ratio, with motor, without motor)

Motor capacity: 2.2 kW
(Speed: 1750 r/min)
Reduction ratio: 1/40
Motor: none

Determine model and size

Apply the specifications in section IV to the sizing table in section III. From sizing table 2 (page 28),

EW100 ☐ 40 (☐ indicates installation direction)

Determine installation direction, shaft arrangement

From Installation direction: T, shaft arrangement: L

we arrive at EW100T40L

Check radial load (O. H. L)

From the formula for checking radial loads at the bottom of page 17,
Allowable radial load = 11505 N
radial load = 7742 N
Allowable radial load > radial load
Make sure that the radial load satisfies the allowable radial load.

Sizing

■ Procedures

Follow these procedures for sizing a TD series reducer, or when the operating conditions in "Sizing table 3" fall outside sizing table 1 or 2 for a EWJ/EW/SWJ/SW series reducer.

These conditions are necessary for sizing: load torque or transfer kW, input speed, reduction ratio, load characteristics, operating hours, start/stop frequency, etc.

1. Determine compensation factor

The transfer capacities listed in Sizing Table 3 are based on a service factor (Sf) of 1.0. Choose either service factor (Sf) or thermal rating factor (only applicable to the EWJ/EW/SWJ/SW series) depending on the load characteristics, operating hours, and start frequency. Use the larger value as the compensation factor. Refer to the table of Load Categories by Machine Type on page 20 for the load characteristics. If you cannot find your application, choose the closest or contact us for assistance.

Table 1. Service factor (Sf)

Load characteristics	Operating hours (per day) 2	10	24
U: Constant load	1.00 (1.25)	1.00 (1.25)	1.25 (1.50)
M: Load with light impact	1.00 (1.25)	1.25 (1.50)	1.50 (1.75)
H: Load with heavy impact	1.25 (1.50)	1.50 (1.75)	1.75 (2.00)

Note 1) Use the figure within ( ) if the reducer is to be started more than 10 times per hour.
2) This table represents general guidelines. Determine the usage factor based on actual usage conditions.

Table 2. Thermal rating factor (EWJ/EW/SWJ/SW series)

Input speed r/min	Size	Reduction ratio Hours of use	Thermal rating factor
1750, 1450	EWJ25 to 70 SWJ25 to 42	1/10 to 1/60 Continuous	1.3
	SWJ50 to 70	1 hour or more	1.15
1750, 1450	EW80 to 200 SW80 to 200	1/10 to 1/60 Continuous	1.5
1150, 950	EW80 to 200 SW80 to 200	2 hours or more	1.15
For any other size			1.0

2. Determine compensation kW and compensation torque

Use the compensation kW or compensation torque to calculate formula 1.

Compensation kW = load kW x compensation factor ... (Formula 1)
Compensation torque = load torque x compensation factor ... (Formula 1)

3. Determine reduction ratio

Use the actual input speed you will be using, and the required output speed to determine the reduction ratio. Contact us if you wish to drive the input faster than 1750 r/min.
Note) The reduction ratios for TD Series are given as nominal reduction ratios. Refer to page 127 or page 151 for the actual reduction ratios.

4. Determine size and model

From the Transfer Capacity table, select the size and model that satisfies the compensation kW or compensation torque.
If the reducer is to be driven slower than 100 r/min, select from the output torque column for 100 r/min.
Note these factors when sizing a TD series reducer.

(Equivalent thermal capacity: TD Series)

Determine the temperature compensation factor (f1) from the actual ambient temperature and temperature compensation factor table (Table 3). Calculate the equivalent thermal capacity, then use formula 2 to check that it is within the capacity in the Transfer Capacity table.

Equivalent thermal capacity = load kW (or torque) × f1 … (Formula 2)

Table 3. Temperature compensation factors (f1) (TD series)

Ambient temperature	Temperature compensation factors
30°C or lower	1.0
40°C or lower	1.3
50°C or lower	1.5

5. Check shaft load

Use formula 3 to check that the radial load on the shaft is within the allowable radial load for each series.

$$\text{Allowable radial load (N \{kgf\})} \geq \frac{T \times f \times Lf}{R} \quad \text{... (Formula 3)}$$

T: Compensation torque (N·m {kgf·m})
f: O.H.L. factor (see table below)
Lf: Point of action factor (see table below)
R: Pitch radius (m) of sprockets and pulleys

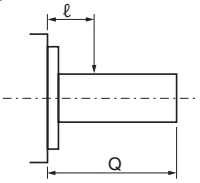
O.H.L. factor (f)

Chain	1.00
Gear Toothed belt	1.25
V belt Tough toothed belt	1.5

(Solid shaft type)
Point of action factor (Lf)

$\ell \leq \frac{Q}{2}$ ..... Lf = 1

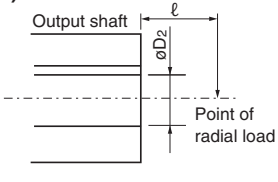
$\ell > \frac{Q}{2}$ ..... $Lf = \frac{2\ell}{Q}$



(Hollow shaft type)
Point of action factor (Lf)

$\ell \leq D_2$ ..... Lf = 1

$\ell > D_2$ ..... $Lf = \frac{\ell}{D_2}$



(Check axial load)

If axial loads are anticipated on the output shaft, make sure they are within the allowable axial loads for each series.
Contact us if radial and axial loads occur simultaneously

(Alternating loads)

In situations where alternating loads are frequently applied, such as with index driving, there is a risk of unexpected trouble due to the backlash of the reducer and the looseness of fastening parts.
When considering such applications, enter the usage conditions on the Specifications Check Form for Selection (page 259) and contact us for details.

6. Calculate required input kW

$$\text{Required input kW} = \frac{\text{Rated input kW x load torque}}{\text{rated output torque}} \times Sf$$

■ Notes

● Efficiency

• Calculating efficiency

Use the formula shown below to calculate the efficiency (catalog efficiency) at the listed input speed.

$$\text{Catalog efficiency (\%)} = \frac{\text{Output torque (N·m)} \times \text{Input speed (r/min)} \times 100}{9550 \times \text{input kW} \times \text{reduction ratio}}$$

*The catalog efficiency refers to the efficiency of the reducer running under these conditions: load ratio at 100%, using manufacturer-specified lubrication oil, running continuous and at steady oil temperature, with all parts fully run in. Theoretical efficiencies of the gears, frictional resistance of the bearings and oil seals, and loss of oil during operation due to splash up are not reflected.

• Starting efficiency

When using the reducer for lifts, elevators, and variable frequency control applications, it is necessary to consider the starting efficiency when determining the required input torque.
Starting efficiency ratios are listed on page 35 for single reduction reducers, and page 83 for double reduction reducers.
Contact us for the Troi Drive TD Series.

$$\text{Required input torque} = \frac{\text{Load torque}}{(\text{Starting efficiency} \times \text{reduction ratio})}$$

• Motor sizing

An undersized motor may result current overload due to the reducer's no-load loss. Always select a motor with enough capacity.

• Transfer capacity before oil temperature settles

The transfer capacities listed in this catalog assume the reducer is driving a load rate of 100% using the recommended oil in continuous operation, and at constant oil temperature.
Efficiencies will lower during cold starts, and when the oil temperature has yet to stabilize due to frequent starts and stops. This is due to the low fluidity of the lubrication oil which increases the mixing resistance of the oil, thus resulting in less transfer capacity than published in our catalog.
To make a general estimate, discount the capacity using the ratios given below.

Efficiency ratio (reference) to use before oil temperature settles.

Reduction ratio	Efficiency ratio
10 to 15	-4 to -8%
20 to 30	-7 to -11%
40 to 60	-12 to -15%

* Contact us for information about the double reduction type.

● Self-locking

A reducer is said to have self-locking properties if the input shaft does not begin to turn when force is applied to the output shaft, or if the input shaft turns but requires a large force on the output shaft. This is the characteristics of the worm gear reducer.
Our standard Worm Power Drives with a reduction ratio of 1/60 and our Troi Drive TD Series with a reduction ratio of 1/60 can be expected to be self-locking from a standstill condition. However, because the drives are designed for efficiency, self-locking performance is slightly less than conventional models.

Notes about self-locking

Self-locking reinforced specifications (made to order) are available when a self-locking mechanism is expected for lifts or reversing machines. Contact us for more information.

(1) Shocks or vibration may reduce the self-locking effect. Self-locking is not guaranteed. For applications that require the output to be held still, the user should furnish a brake or other means of restraint.

(2) If the braking effect occurs in applications where an extremely heavy load inertia is being moved (such as equipment that travels or swings), the self-locking properties can be dangerous. For such applications, select a reduction ratio from 1/10 to 1/20.

● Using a servo motor for the input

Servo motor may be used within the input capacity (kW) rating given for each input speed of the reducer.
Always slowly accelerate and decelerate.
Contact us if you wish to drive the input faster than 1750 r/min. We also offer "TERVO®" (TERVO reducer for servo motor) applications, which can be driven at speeds of up to 3000 r/min.

Sizing

■ Examples

Follow the procedures for sizing a TD series reducer, or when the operating conditions fall outside the "Sizing flowchart" for a EWJ/EW/SWJ/SW series reducer.

[Conditions]

- Application : Agitator (pure liquid)
- Motor : 15 kW, 1450 r/min
- Output shaft speed : 24 r/min
- Output shaft torque : 4000 N·m {408 kgf·m}
- Other : Vertical, hollow output shaft
- Output shaft load : Axial load only 18000 N
- Operating hours : 10 hours/day
- Operating frequency : 1 time/hour
- Ambient temperature : 30°C

[Sizing]

1. Determine compensation factor

From the table of Load Categories by application, pure liquids have uniform load (U), which gives a service factor (Table1), Sf = 1.0.

2. Determine compensation kW and compensation torque

Use the service factor and load torque to obtain the compensation torque.

Compensation torque = 4000 N·m x 1.0 = 4000 N·m

3. Determine reduction ratio

Use the motor speed and output speed to obtain the reduction ratio.

Reduction ratio = 1450 r/min ÷ 24 r/min ≈ 60

4. Determine size and model number

From the Transfer Capacity table, select the size that satisfies the compensation torque.

Size: TD175 Nominal reduction ratio: 60 (At input of 1450 r/min, output torque is 4785 N·m)

Checking the equivalent thermal capacity * for TD Series only

Look up the temperature compensation factor (Table 3) where the ambient temperature of 30°C arrive at f1 = 1.0.

Equivalent thermal capacity = 4000 N·m x 1.0 = 4000 N·m

5. Check shaft load

Check that the axial load on the output shaft is within the allowable load.

Axial load: 18000 N < allowable axial load = 34255 N, and is acceptable (hollow output shaft: H, output 59 r/min or less)

6. Calculate required input kW

Look up the required motor capacity (kW) for TD175-1/60 in the Transfer Capacity table.

$$\text{Required input kW} = \frac{14.2\ \text{kW} \times 4000\ \text{N·m}}{4785\ \text{N·m}} \times 1.0 = 11.87\ \text{kW}$$ gives 15 kW, and is acceptable.

From vertical mount (V type), hollow output shaft (H), your selection is **Model: TD175H60VRF (LF)**.

■ Load Categories by Application (Load Characteristics)

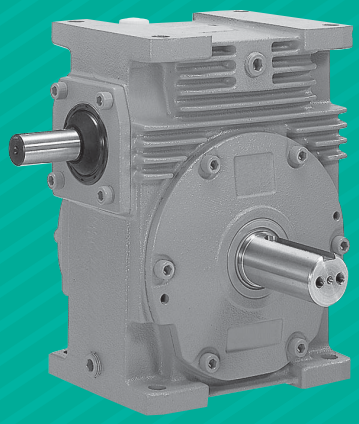
Application		Load category
Cranes	Stacker cranes, container cranes, mechanical parking lifts, hoists	*
Constant load conveyors	Belt, bucket, chain, flow, flight, screw, assembly	U
Heavy load conveyors	Belt, bucket, chain, flow, flight, screw, assembly	M
Elevators Escalators	Elevators, escalators, centrifugal, belt bucket (constant load)	U
	Gravity lifts, flight, chain bucket (constant load), blt bucket (heavy load)	M
	Chain bucket (heavy load)	H
Feeders	Disk, stocker	U
	Belt, apron, cold, screw, dust	M
	Reciprocating	H
Agitator	Pure liquids	U
	Liquids and solids, varying densities	M
Mixers	Uniform granularity	U
	Varying granularity, mortar mixers, kneaders, ribbon mixers, concrete mixers (constant load)	M
Plastic extruders	Mixing (low viscosity), films, sheets, coatings	U
	Mixing (high viscosity)	M
Rubber extruders	Sheets	M
	Mixing	H

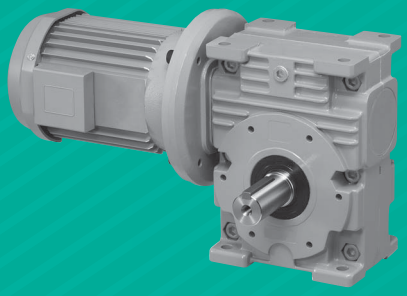
Application		Load category
Crusher	Kilns, cement mills, ball mills, rod mills, crushers (for sugar making), sand mullers, scum breakers	M
	Crushers (minerals, rubble, used paper, plastic, rubber), tumbler mills, hammer mills	H
Environmental sanitation equipment	Sludge scrapers, sediment pumps, clarifiers, bar screens	U
	Thickeners, classifiers, flocculators, flash mixers, vacuum filters, belt presses	M
	Aerators	*
Machine tools	Tapping machines	U
	Bending rolls	M
	Geared punching press, tumblers, tapping machines, planers	H
Steels, non-ferrites	Wire drawing, rolling machines, wire winders, slitters	M
	Forming machines, draw bench (carriage drive)	H
	Pinch rolls, dryers, scrubber rolls, roller table	*
Pulp mills, paper making	Concentrate screw conveyor, conveyors, bleachers, suction rolls, presses	U
	Barker (mechanical, hydraulic), beaters/pulpers, reels (for pulpers), washers/thickeners, agitators, calenders, couch rollers, dryers	M
	Drum barkers, conveyors (for lumber), cutters, platers, super calenders	H

Application		Load category
Textiles	Spinning machines, looms, dyeing machines, washing machines	M
Foods	Rice mills, canning machines	U
	Bottle washers, noodle making machines, meat grinders	M
Brewing	Distillers (constant load), cookers (constant load), bottling machines	U
	Scale hoppers	M
Sugar making	Cane knives, crystal can mixers	M
	Mills	H
Sorters	Screens (air, water method), classifiers	U
	Screen (rotary, for gravel and stones)	M
Pumps	Centrifugal, rotary (gear driven)	U
	Variable stroke pumps, reciprocating pump	M
Pottery	General pottery machines, mixing machines, pug mills	M
	Brick forming machines, Briquette making machines	H
Other	Line shaft (light load), centrifugal fans, centrifugal blowers	U
	Line shaft (heavy load), winches, cable reels, washing machines, fan, blowers	M
	Printing machines, woodworking machines	*

* These load categories are reference when driving the reducer with a general motor. Contact us when driving with a special motor or an engine.
U: constant load M: Load with light impact H: Load with heavy impact
*: various load possibilities depending on operating condition. Contact Tsubaki for more details.

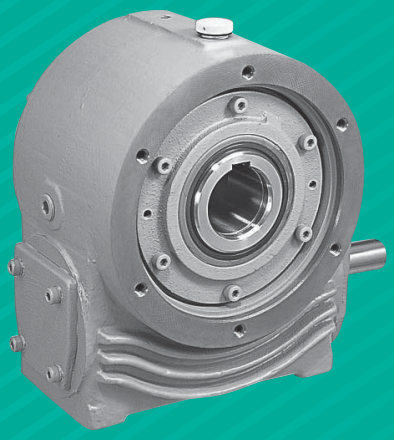
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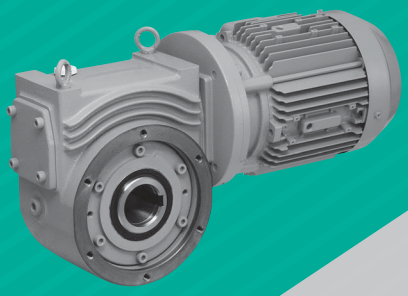




EWJ/EW/SWJ/SW Series

Single Reduction (Reduction ratio 1/10 to 1/60)





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  - Allowable Loads on Shafts
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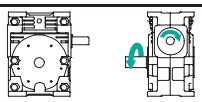
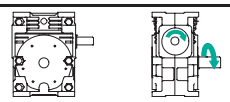
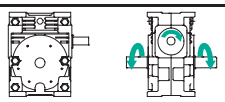
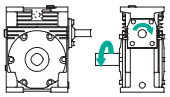
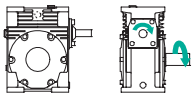
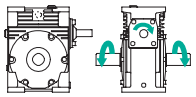
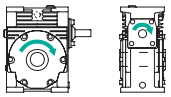
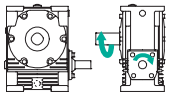
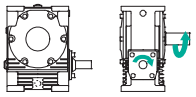
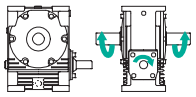
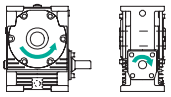
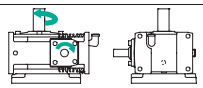
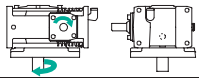
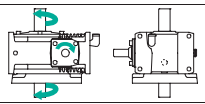
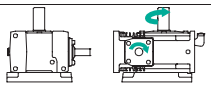
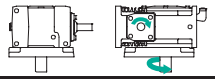
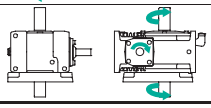
Model

Series		Size	Installation direction	Reduction ratio	Shaft arrangement	Motor kW	Motor specifications		Option
Single Reduction									
Without motor	**EWJ**	**25**	**E**	**10**	**L**			-	**T2**
	SWJ	**50**	**E**	**20**	**DF**				
	EW	**100**	**B**	**30**	**R**				
	SW	**100**	**B**	**40**	**LF**				
With motor	**EWJM**	**42**	**E**	**30**	**LR**	**040**	**S**		
	SWJM(R)	**63**	**E**	**40**	**DF**	**075**		-	**H-K**
	EWM(R)	**100**	**T**	**25**	**H**	**370**			
	SWM(R)	**100**	**V**	**60**	**SRF**	**220**	**B**	-	**V**
EWJ EWJM EW EWM SWJ SWJM SW SWM Series	With motor EWJMR EWMR SWJMR SWMR	EWJ/SWJ 25/35/42 50/63/70 . . . . . . EWJM(R) 42/50 63/70 . . . . . . SWJM 35/42/50 63/70 . . . . . . SWJMR 50/63/70 . . . . . . EW/SW 80/100 125/150 175/200 . . . . . . EWM(R)/ SWM(R) 80/100 125/150	EWJ25 to 42 EWJM42 SWJ25 to 70 SWJM35 to 70 E: E type . . . . . . EWJ50 to 70 EWJM50 to 70 E: E type V: V type . . . . . . EW/EWM SW/SWM 80 to 200 T: T type B: B type V: V type	10: 1/10 15: 1/15 20: 1/20 25: 1/25 30: 1/30 40: 1/40 50: 1/50 60: 1/60	Refer to page 24	(3-phase) 010: 0.1 kW 020: 0.2 kW 040: 0.4 kW 075: 0.75 kW 150: 1.5 kW 220: 2.2 kW 370: 3.7 kW 550: 5.5 kW	0.1 to 0.4 kW S: Standard motor mounted. SB: Standard motor with brake mounted. SX: Customer-supplied motor mounted. Y: Customer to mount motor . . . . . . 0.75 to 5.5 kW No code: IE3 motor without brake mounted. B: IE3 motor with brake mounted.		Reducer Refer to pages 229 to 241 . . . . . . Motor Refer to pages 242 to 243

Shaft Arrangement

EWJ/EW Series

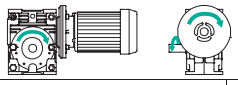
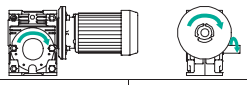
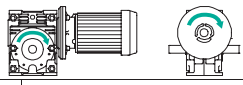
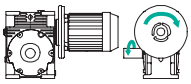
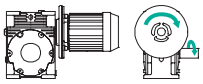
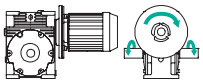
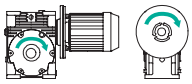
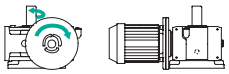
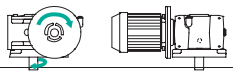
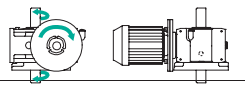
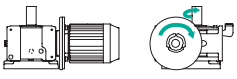
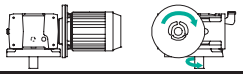
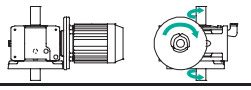
Arrows in figures indicate direction of rotation.

E type	 E-L	 E-R	 E-LR	
T type	 T-L	 T-R	 T-LR	 T-H
B type	 B-L	 B-R	 B-LR	 B-H
V type	 V-LU	 V-LD	 V-LUD	
	 V-RU	 V-RD	 V-RUD	

Note 1) E type applies to the EWJ series. 2) The hollow output shaft type (-H) applies to the EW series.
3) Keyway positions do not match one another on double output shafts. Please contact Tsubaki representative when required.

EWJM(R)/EWM(R) Series

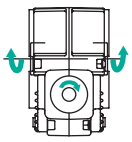
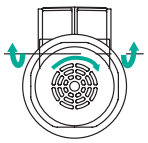
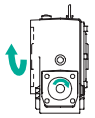
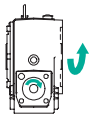
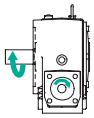
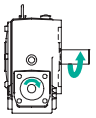
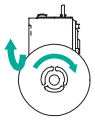
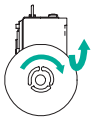
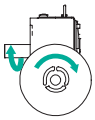
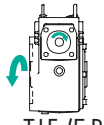
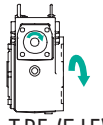
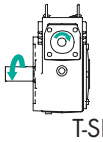
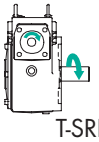
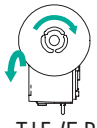
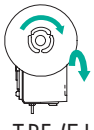
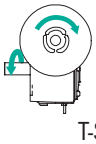
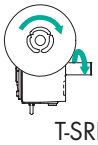
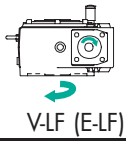
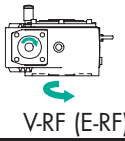
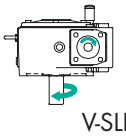
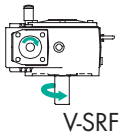
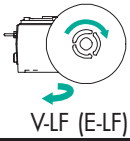
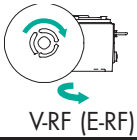
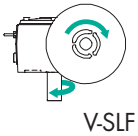
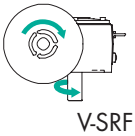
Arrows in figures indicate direction of rotation.

E type	 E-L	 E-R	 E-LR	
T type	 T-L	 T-R	 T-LR	 T-H
V type	 V-LU	 V-LD	 V-LUD	
	 V-RU	 V-RD	 V-RUD	

Note 1) E type applies to the EWJM(R) series. 2) The hollow output shaft type (-H) applies to the EWM(R) series.
3) Keyway positions do not match one another on double output shafts. Please contact Tsubaki representative when required.

SWJ/SW/SWJM(R)/SWM(R) Series

Arrows in figures indicate direction of rotation.

	Without motor				With motor			
E type	 E-DF				 E-DF			
B type (E type)	 B-LF (E-LF)	 B-RF (E-RF)	 B-SLF	 B-SRF	 B-LF (E-LF)	 B-RF (E-RF)	 B-SLF	 B-SRF
T type (E type)	 T-LF (E-RF)	 T-RF (E-LF)	 T-SLF	 T-SRF	 T-LF (E-RF)	 T-RF (E-LF)	 T-SLF	 T-SRF
V type (E type)	 V-LF (E-LF)	 V-RF (E-RF)	 V-SLF	 V-SRF	 V-LF (E-LF)	 V-RF (E-RF)	 V-SLF	 V-SRF

Note 1) The solid output shaft type (-SLF, -SRF) applies to the SW/SWM series. 2) The shaft arrangement for SWJ25 to 63 and SWJM35 to 63 is E–DF. 3) Keyway positions do not match one another on double output shafts. Please contact Tsubaki representative when required.

Models

Series			EWJ	SWJ	EW	SW	EW	SW	EWJ/EW	SW	Reducer options	EWJ/SWJ	EW/SW	SWJ/SW	SWJ/SW
Installation direction			E		T		B		V			E	T, B, V	E, T, B, V	E, T, B, V
Shaft arrangement		Solid output shaft	L R LR	—	L R LR	SLF SRF	L R LR	SLF SRF	LU LD LUD RU RD RUD	SLF SRF		Double input shaft: T2	Double input shaft: Refer to page 232 for information on symbols.	—	—
		Hollow output shaft	—	DF LF RF	H	LF RF	H	LF RF	—	LF RF				Power-Lock specification: K	Taper bush specification: TB
Without motor	EWJ/SWJ25		○	○	—	—	—	—	—	—		○	—	—	—
	EWJ/SWJ35		○	○	—	—	—	—	—	—		○	—	—	—
	EWJ/SWJ42		○	○	—	—	—	—	—	—		○	—	—	—
	EWJ/SWJ50		○	○	—	—	—	—	○	—		△	—	□	—
	EWJ/SWJ63		○	○	—	—	—	—	○	—		△	—	□	—
	EWJ/SWJ70		○	○	—	—	—	—	○	—		△	—	□	△
	EW/SW80		—	—	○	○	○	○	○	○		—	□	□	△
	EW/SW100		—	—	○	○	○	○	○	○		—	□	□	△
	EW/SW125		—	—	○	○	○	○	○	○		—	□	□	△
	EW/SW150		—	—	○	○	○	○	○	○		—	□	□	△
	EW/SW175		—	—	○	○	○	○	○	○		—	□	□	—
	EW/SW200		—	—	○	○	○	○	○	○		—	□	□	—
With motor	SWJM35		○	○	—	—	—	—	—	—		○	—	—	—
	EWJM(R)/SWJM(R)42		○	○	—	—	—	—	—	—		○	—	—	—
	EWJM(R)/SWJM(R)50		○	○	—	—	—	—	○	—		△	—	□	—
	EWJM(R)/SWJM(R)63		○	○	—	—	—	—	○	—		△	—	□	—
	EWJM(R)/SWJM(R)70		○	○	—	—	—	—	○	—		△	—	□	△
	EWM(R)/SWM(R)80		—	—	○	○	○	○	○	○		—	□	□	△
	EWM(R)/SWM(R)100		—	—	○	○	○	○	○	○		—	□	□	△
	EWM(R)/SWM(R)125		—	—	○	○	○	○	○	○		—	□	□	△
	EWM(R)/SWM(R)150		—	—	○	○	○	○	○	○		—	□	□	△
	EWM(R)/SWM(R)175		—	—	□	□	□	□	□	□		—	□	□	—
	EWM(R)/SWM(R)200		—	—	□	□	□	□	□	□		—	□	□	—

○: Standard product △: Option □: Made to order.

Motor Options

Motor option	Description
Z	Inverter ready motors (0.4 kW or less)
W	Outdoor specification
V	400 V class [3]
V1	380 V, 50 Hz (0.4 kW or less, 3.7 kW, 5.5 kW)
V2	380 V, 60 Hz (0.4 kW or less)
V3	415 V, 50 Hz (0.4 kW or less)
V4	460 V, 60 Hz (0.4 kW or less)
N	200 V class CE compliant
N2	200 V class UL compliant
N3	200 V class CCC compliant
VN	400 V class CE compliant
VN2	400 V class UL compliant
VN3	400 V class CCC compliant
H	Hard terminal box (0.4 kW or less)
Q	Manual quick-release brake
M	Manual shaft (motor fan cover side) (2.2 kW or less)

(Without brake)

Z	ZW	ZWV	V	VN
	ZV	ZVH		VN2
	ZH			VN3
W	WV			VH
	WV1		V1	V1H
	WV2		V2	V2H
	WV3		V3	V3H
	WV4		V4	V4H
	WN	WVN	N	
	WN3	WVN3	N2	
			N3	
			H	

(With brake)

Z	ZV	ZVH		V1	V1H
		ZVQ		V2	V2H
		ZVM		V3	V3H
	ZH	ZHQ		V4	V4H
		ZHM	N		
	ZQ	ZQM	N2		
	ZM		N3		
V	VN		H	HQ	HQM
	VN3			HM	
	VH	VHQ	Q	QM	
		VHM	M		
	VQ	VQM			
	VM				

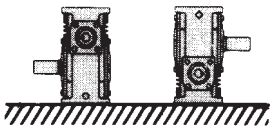
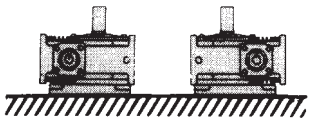
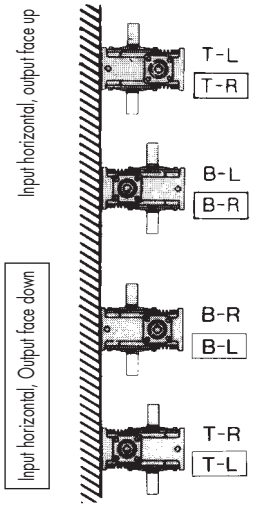
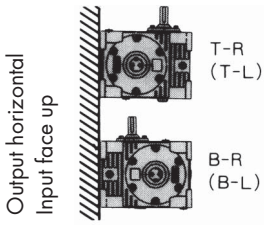
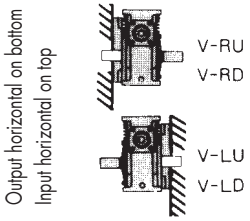
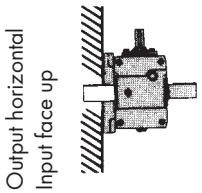
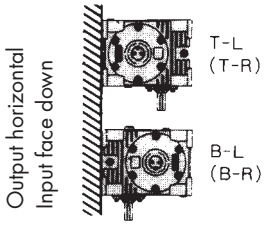
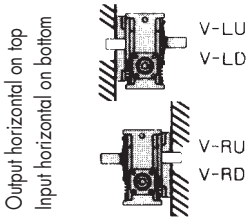
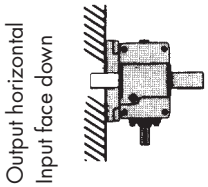
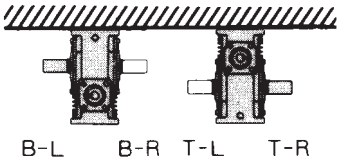
Note 1) Shaded options are for 0.2 kW and 0.4 kW motors.
2) 0.75 kW or larger brake motors for outdoor use are made to order.
Contact Tsubaki reperesentatives for details.
3) 400 V class voltage frequency

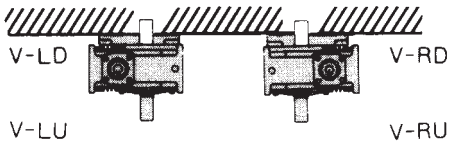
0.1 to 0.4 kW	400/400/440 V	50/60/60 Hz
0.75 to 2.2 kW	380/400/400/440 V	50/50/60/60 Hz
3.7 to 5.5 kW without brake	380/400/400/440 V	50/60/60/60 Hz
with brake	380/400/400/440 V	50/50/60/60 Hz

Mounting Examples

EW/EWM(R) Series

- Pressure vent and oil gauge positions will change when mounting EW sizes 80-200 on walls or ceilings. Make sure to specify the mounting method when ordering.
- The EWJ/EWJM(R) series may be mounted on any side.

<table>
<tr><td></td><td colspan="2">Installation direction T/B type</td><td colspan="2">Installation direction V type</td></tr>
<tr><td>Standard mounting</td><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td rowspan="4">Wall mount</td><td>Ex. 1 Ex. 2</td><td>Ex. 3</td><td>Ex. 5</td><td>Ex. 7</td></tr>
<tr><td> 
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<tr><td>Ex. 4</td><td>Ex. 6</td><td>Ex. 8</td></tr>
<tr><td> 
</td><td> 
</td><td> 
</td></tr>
<tr><td>Ceiling mount</td><td>Ex. 9</td><td colspan="2"> 

Mount using top of housing.</td><td>Ex. 10</td><td> 
</td></tr>
</table>

SW/SWM(R) Series

- Pressure vent and oil gauge positions will change depending on the mounting method of SW sizes 80 to 200. Make sure to specify the mounting method when ordering.
- The SWJ/SWJM(R) series may be mounted on any side.

Motor and Reduction Ratio Combinations

- Output torque values are for motor speeds of 1450 r/min, 1750 r/min (50/60 Hz).
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using. (Thermal rating factor is 1.0)
- Torque values may be lower if the ambient temperature is cold. Contact Tsubaki representative for further details.
- Refer to pages 17 to 18 for sizing.

EWJM(R)/EWM(R) Series

Efficiency class	With standard motor (IE1)						With motor (IE3)															
	0.2 kW			0.4 kW			0.75 kW			1.5 kW			2.2 kW			3.7 kW			5.5 kW		
	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}
10	Select from the Croise motor series. Refer to page 194						50	44.0 {4.5}	37.0 {3.8}	63	90 {9.1}	75 {7.6}	70	132 {13.5}	110 {11.2}	80	224 {22.8}	187 {19.1}	100	337 {34.3}	281 {28.6}
15				42	32.2 {3.3}	27.0 {2.8}	50	64.0 {6.5}	53.0 {5.5}	63	129 {13.2}	108 {11.0}	70	191 {19.4}	160 {16.3}	80	325 {33.1}	272 {27.7}	100	491 {50.1}	410 {41.8}
20				42	40.8 {4.2}	34.4 {3.5}	50	83.0 {8.4}	69.0 {7.1}	63	167 {17.0}	140 {14.3}	70	247 {25.2}	207 {21.1}	80	412 {42.0}	353 {36.0}	100	637 {65.0}	533 {54.4}
25				42	49.2 {5.0}	41.5 {4.2}	50	100 {10.2}	84.0 {8.6}	63	196 {20.0}	171 {17.4}	80	305 {31.2}	256 {26.2}	100	525 {53.6}	440 {44.9}	125	791 {80.7}	662 {67.6}
30				42	51.1 {5.2}	47.3 {4.8}	50	103 {10.5}	95 {9.7}	63	198 {20.2}	180 {18.4}	80	350 {35.7}	295 {30.1}	100	607 {61.9}	510 {52.1}	125	916 {93.5}	770 {78.5}
40	42	34.1 {3.5}	29.0 {3.0}	50	76 {7.8}	65.0 {6.6}	63	145 {14.8}	123 {12.6}	80	302 {30.8}	256 {26.1}	100	457 {46.7}	386 {39.4}	125	792 {80.8}	667 {68.0}	150	1193 {122}	1003 {102}
50	42	40.0 {4.1}	34.2 {3.5}	50	90 {9.2}	76 {7.8}	63	174 {17.7}	147 {15.0}	80	362 {36.9}	307 {31.3}	100	552 {56.3}	467 {47.6}	125	949 {96.8}	802 {81.8}	150	1453 {148}	1225 {125}
60	42	45.2 {4.6}	38.8 {4.0}	50	92 {9.4}	86 {8.8}	63	177 {18.1}	163 {16.7}	80	376 {38.4}	342 {34.9}	100	628 {64.1}	543 {55.4}	125	1017 {104}	931 {95.0}	150	1561 {159}	1401 {143}

SWJM(R)/SWM(R) Series

Efficiency class	With standard motor (IE1)						With motor (IE3)															
	0.2 kW			0.4 kW			0.75 kW			1.5 kW			2.2 kW			3.7 kW			5.5 kW		
	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}
10	35	11.2 {1.1}	9.3 {1.0}	42	22.5 {2.3}	18.8 {1.9}	50	44 {4.5}	37 {3.8}	63	90.0 {9.1}	75 {7.6}	70	132 {13.5}	110 {11.2}	80	224 {22.8}	187 {19.1}	100	337 {34.4}	281 {28.6}
15	35	15.9 {1.6}	13.4 {1.4}	42	32.2 {3.3}	27.0 {2.8}	50	64 {6.5}	53 {5.5}	63	129 {13.2}	108 {11.0}	*80	210 {21.4}	250 {25.5}	80	325 {33.1}	272 {27.7}	100	491 {50.1}	410 {41.8}
20	35	20.1 {2.1}	16.9 {1.7}	42	40.8 {4.2}	34.4 {3.5}	63	83 {8.5}	70 {7.1}	70	168 {17.2}	141 {14.4}	80	250 {25.5}	210 {21.4}	80	412 {42.0}	353 {36.0}	100	637 {65.0}	533 {54.4}
25	35	24.2 {2.5}	20.4 {2.1}	42	49.2 {5.0}	41.5 {4.2}	63	102 {10.4}	85 {8.7}	70	205 {20.8}	172 {17.6}	80	305 {31.2}	256 {26.2}	100	525 {53.6}	440 {44.9}	125	791 {80.7}	662 {67.6}
30	42	28.0 {2.9}	23.7 {2.4}	50	60 {6.6}	51 {5.2}	63	115 {11.8}	98 {9.9}	*80	184 {18.8}	165 {16.8}	80	350 {35.7}	295 {30.1}	100	607 {61.9}	510 {52.1}	125	916 {93.5}	770 {78.5}
40	42	34.1 {3.5}	29.0 {3.0}	50	76 {7.8}	65 {6.6}	63	145 {14.8}	123 {12.6}	80	302 {30.8}	256 {26.1}	100	457 {46.7}	386 {39.4}	125	792 {80.8}	667 {68.0}	150	1193 {122}	1003 {102}
50	42	40.0 {4.1}	39.2 {3.5}	50	86 {8.8}	76 {7.8}	63	168 {17.1}	147 {15.0}	80	362 {36.9}	307 {31.3}	100	552 {56.3}	467 {47.6}	125	949 {96.8}	802 {81.8}	150	1453 {145}	1225 {125}
60	42	45.2 {4.6}	38.8 {4.0}	50	86 {8.7}	80 {8.2}	70	171 {17.5}	15.8 {16.2}	80	376 {38.4}	342 {34.9}	100	628 {64.1}	543 {55.4}	125	1017 {104}	931 {95.0}	150	1561 {159}	1401 {143}

* Non-standard combination, contact Tsubaki representative.

Sizing Chart (Sizing Table 1)

Common for EWJ/EW/SWJ/SW Series

Input r/min	Reduction ratio	Motor kW																							
		0.2		0.4		0.75		1.5		2.2		3.7		5.5		7.5		11		15		18.5		22		30	
		EWJ	SWJ	EWJ	SWJ	EWJ	SWJ	EWJ EW	SWJ SW	EWJ EW	SWJ SW	EWJ EW	SW	EW	SW	EW	SW	EW	SW	EW	SW	EW	SW	EW	SW	EW	SW
1750	10	35		35		50		50		63		70	80	80		80		100		125		125		125		150	
	15	35		42		50		50	63	63	70	80		80		100		125		125		150		150		175	
	20	35		42		50		63		70		80		100		100		125		150		150		175		200	
	25	35		42		50		63	70	80		80		100		125		150		150		175		200			
	30	35		50		50	63	63	70	80		100		100		125		150		175		175		200			
	40	35		50		63		70	80	80		100		125		150		175		200		200					
	50	42		50		63		80		80		125		125		150		175		200							
	60	42		50		63		80		100		125		150		175		200		125							
1450	10	35		35		50		50		63		70	80	80		80		100									
	15	35		42		50		63		70		80		80		100		125		125		125		150		150	
	20	35		42		50		63		80		80		100		125		125		150		150		150		175	
	25	35		50		50		63	70	80		80		100		125		150		175		175		175		200	
	30	35		50		50		63	80	80		100		125		125		150		175		175		200			
	40	42		50		63		70	80	80		100		125		150		175		200		200		200			
	50	42		50		63		80		100		125		150		150		200									
	60	42		50	63	63	70	80		100		125		150		175		200									
1150	10	35		35		50		50		63		70	80	80		100		100		125		150		150		175	
	15	35		42		50		63		63	70	80		100		100		125		150		150		175		200	
	20	35		42		50		63		70	80	80		100		125		150		150		175		200		200	
	25	35		50		50		63	70	80		100		125		125		150		175		200		200			
	30	35		50		63		70		80		100		125		125		150		200		200					
	40	42		50		63		80		80		100		125		150		175		200							
	50	42		50		63		80		100		125		150		175		200									
	60	42		63		70		80		100		125		150		175		200									
950	10	35		42		50		63		63		70	80	80		100		125		125		150		150		175	
	15	35		42		50		63		70		80		100		125		125		150		150		175		200	
	20	35		42		50		63	70	70	80	100		100		125		150		150		175		200			
	25	35		50		63		70		80		100		125		125		150		175		200		200			
	30	35		50		63		70	80	80		100		125		150		175		200		200					
	40	42		50		63		80		100		125		125		150		200		200							
	50	42		63		63		80		100		125		150		175		200									
	60	50		63		70		100		125		125		150		175											

Note) See the table on page 27 when selecting a model with a motor.

Sizing Chart (Sizing Table 2)

Common for EWJ/EW/SWJ/SW Series

Input r/min	Reduction ratio	Motor kW																							
		0.2		0.4		0.75		1.5		2.2		3.7		5.5		7.5		11		15		18.5		22		30	
		EWJ	SWJ	EWJ	SWJ	EWJ EW	SWJ SW	EWJ EW	SWJ SW	EWJ EW	SWJ SW	EWJ EW	SWJ SW	EW	SW	EW	SW	EW	SW	EW	SW	EW	SW	EW	SW	EW	SW
1750	10	35		42		50		50	63	63		70	80	80		100		125		125		150		150		175	
	15	35		42		50		63		70	80	80		100		100		125		150		150		175		200	
	20	35		50		50		70		70	80	80		100		125		150		150		175		200		200	
	25	35		50		50	63	70		80		100		125		125		150		175		200		200			
	30	42		50		63		70	80	80		100		125		150		175		175		200					
	40	42		50		63		80		100		125		125		150		175		200							
	50	42		50	63	63	70	80		100		125		150		175		200									
	60	42		63		70	80	100		100		125		175		175											
1450	10	35		42		50		50	63	63	70	70	80	80		100		125		125		150		150		175	
	15	35		42		50		63		70	80	80		100		125		125		150		175		175		200	
	20	35		50		50	63	70		80		100		100		125		150		175		175		200			
	25	35		50		63		70	80	80		100		125		125		150		175		200					
	30	42		50		63		70	80	80		100		125		150		175		200		200					
	40	42		50		63	70	80		100		125		150		150		200									
	50	42		50	63	63	70	80		100		125		150		175		200									
	60	50		63		70	80	100		100		150		175		200											
1150	10	35		42		50		63		63	70	80		80		100		125		150		150		150		175	
	15	35		50		50		63		70	80	80		100		125		150		150		175		200		200	
	20	35		50		50		63	70	80		100		125		125		150		175		200		200			
	25	42		50		50		70	80	80		100		125		150		175		200		200					
	30	42		50		50		80		80		100		125		150		175		200							
	40	42		50		63		80		100		125		150		175		200									
	50	50		63		63	70	80		100		125		150		175											
	60	50		63		63	80	100		125		150		175		200											
950	10	35		42		50		63		63	70	80		100		100		125		150		150		175		200	
	15	35		50		50		63	70	70	80	100		100		125		150		150		175		200			
	20	35		50		63		70	80	80		100		125		125		150		175		200		200			
	25	42		50		63		80		80		100		125		150		175		200							
	30	42		50		63		80		100		125		125		150		200		200							
	40	42		63		63	70	80		100		125		150		175		200									
	50	50		63		70	80	100		100		125		175		200											
	60	50		63		80		100		125		150		175		200											

Note) See the table on page 27 when selecting a model with a motor.

Sizing Chart (Sizing Table 3)

Transfer Capacity Table (EWJ25 to 70, SWJ25 to 70)

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ25 SWJ25	10	0.27	12.4{1.26}	0.24	13.3{1.36}	0.22	14.8{1.51}	0.18	14.9{1.52}	0.10	14.9{1.52}	0.021	14.9{1.52}
	15	0.20	12.9{1.31}	0.18	13.9{1.41}	0.16	14.9{1.52}	0.13	14.9{1.52}	0.07	14.9{1.52}	0.016	14.9{1.52}
	20	0.16	13.5{1.38}	0.15	14.5{1.48}	0.12	14.9{1.52}	0.10	14.9{1.52}	0.06	14.9{1.52}	0.013	14.9{1.52}
	25	0.14	13.9{1.42}	0.13	14.9{1.52}	0.10	14.9{1.52}	0.09	14.9{1.52}	0.05	14.9{1.52}	0.011	14.9{1.52}
	30	0.12	13.6{1.39}	0.11	14.7{1.50}	0.09	14.9{1.52}	0.08	14.9{1.52}	0.04	14.9{1.52}	0.010	14.9{1.52}
	40	0.10	13.9{1.42}	0.09	14.9{1.52}	0.08	14.9{1.52}	0.07	14.9{1.52}	0.04	14.9{1.52}	0.009	14.9{1.52}
	50	0.09	13.9{1.42}	0.08	14.4{1.47}	0.07	14.9{1.52}	0.06	14.9{1.52}	0.03	14.9{1.52}	0.008	14.9{1.52}
	60	0.07	13.0{1.33}	0.06	13.5{1.37}	0.06	13.9{1.42}	0.05	14.3{1.46}	0.03	14.3{1.46}	0.007	14.3{1.46}
EWJ35 SWJ35	10	0.59	27.6{2.81}	0.53	29.7{3.03}	0.49	33.8{3.45}	0.44	36.5{3.73}	0.24	37.3{3.81}	0.053	37.3{3.81}
	15	0.41	27.5{2.81}	0.37	29.7{3.03}	0.34	33.5{3.42}	0.32	37.7{3.85}	0.18	37.7{3.85}	0.039	37.7{3.85}
	20	0.33	27.8{2.84}	0.30	30.0{3.06}	0.27	33.7{3.44}	0.26	37.7{3.85}	0.14	37.7{3.85}	0.032	37.7{3.85}
	25	0.28	28.7{2.93}	0.26	31.0{3.16}	0.23	34.7{3.54}	0.21	37.7{3.85}	0.12	37.7{3.85}	0.027	37.7{3.85}
	30	0.25	29.3{2.99}	0.23	31.6{3.22}	0.21	35.3{3.60}	0.19	37.7{3.85}	0.11	37.7{3.85}	0.025	37.7{3.85}
	40	0.20	28.8{2.94}	0.19	31.1{3.18}	0.17	34.7{3.54}	0.16	37.7{3.85}	0.09	37.7{3.85}	0.022	37.7{3.85}
	50	0.18	29.6{3.02}	0.16	31.9{3.26}	0.15	35.5{3.63}	0.14	37.7{3.85}	0.08	37.7{3.85}	0.019	37.7{3.85}
	60	0.16	29.5{3.01}	0.15	31.8{3.25}	0.14	35.3{3.61}	0.12	37.0{3.78}	0.07	37.0{3.78}	0.018	37.0{3.78}
EWJ42 SWJ42	10	0.87	41.1{4.20}	0.81	45.5{4.65}	0.73	51.3{5.23}	0.67	56.5{5.76}	0.45	68.8{7.02}	0.097	68.8{7.02}
	15	0.67	45.2{4.61}	0.61	48.8{4.98}	0.55	55.0{5.62}	0.50	59.5{6.07}	0.32	68.9{7.03}	0.070	68.9{7.03}
	20	0.54	46.3{4.73}	0.49	50.0{5.10}	0.45	56.1{5.73}	0.40	60.6{6.19}	0.26	69.0{7.04}	0.058	69.0{7.04}
	25	0.46	47.8{4.88}	0.42	51.6{5.27}	0.38	57.8{5.90}	0.35	62.5{6.38}	0.22	69.0{7.04}	0.049	69.0{7.04}
	30	0.40	47.3{4.83}	0.37	51.1{5.21}	0.33	57.0{5.82}	0.30	61.6{6.29}	0.19	69.0{7.04}	0.045	69.0{7.04}
	40	0.33	47.8{4.88}	0.30	51.6{5.27}	0.28	57.5{5.87}	0.25	62.1{6.34}	0.16	69.0{7.04}	0.039	69.0{7.04}
	50	0.29	49.1{5.01}	0.26	53.0{5.40}	0.24	58.9{6.01}	0.22	63.6{6.49}	0.14	69.0{7.04}	0.034	69.0{7.04}
	60	0.26	50.1{5.12}	0.24	54.1{5.52}	0.22	60.0{6.13}	0.20	63.2{6.45}	0.12	64.3{6.56}	0.029	64.3{6.56}
EWJ50	10	1.70	84{ 8.6}	1.54	91{ 9.3}	1.34	99{10.1}	1.20	106{10.9}	0.67	109{11.1}	0.14	109{11.1}
	15	1.28	91{ 9.3}	1.16	99{10.1}	1.03	109{11.1}	0.86	109{11.1}	0.47	109{11.1}	0.10	109{11.1}
	20	1.02	94{ 9.6}	0.92	101{10.4}	0.80	109{11.1}	0.67	109{11.1}	0.37	109{11.1}	0.08	109{11.1}
	25	0.85	95{ 9.7}	0.76	101{10.3}	0.66	108{11.1}	0.56	109{11.1}	0.31	109{11.1}	0.07	109{11.1}
	30	0.75	95{ 9.7}	0.68	103{10.5}	0.59	109{11.1}	0.50	109{11.1}	0.28	109{11.1}	0.07	109{11.1}
	40	0.59	94{ 9.6}	0.53	101{10.3}	0.47	108{11.1}	0.40	109{11.1}	0.22	109{11.1}	0.05	109{11.1}
	50	0.48	91{ 9.3}	0.43	98{10.0}	0.38	104{10.6}	0.34	109{11.1}	0.19	109{11.1}	0.05	109{11.1}
	60	0.40	86{ 8.8}	0.36	92{ 9.4}	0.32	98{10.0}	0.28	103{10.5}	0.17	106{10.8}	0.04	106{10.8}
SWJ50	10	1.56	77{ 7.9}	1.40	83{ 8.5}	1.28	94{ 9.6}	1.15	102{10.4}	0.67	109{11.1}	0.14	109{11.1}
	15	1.13	81{ 8.2}	1.02	87{ 8.9}	0.89	94{ 9.6}	0.78	99{10.1}	0.47	109{11.1}	0.10	109{11.1}
	20	0.91	84{ 8.6}	0.82	91{ 9.2}	0.71	97{ 9.9}	0.63	102{10.4}	0.37	109{11.1}	0.08	109{11.1}
	25	0.77	86{ 8.8}	0.69	92{ 9.4}	0.58	96{ 9.8}	0.51	101{10.3}	0.31	109{11.1}	0.07	109{11.1}
	30	0.65	83{ 8.5}	0.60	90{ 9.2}	0.52	97{ 9.9}	0.46	102{10.4}	0.28	109{11.1}	0.06	109{11.1}
	40	0.52	84{ 8.5}	0.47	90{ 9.1}	0.41	96{ 9.8}	0.36	101{10.3}	0.22	109{11.1}	0.05	109{11.1}
	50	0.42	81{ 8.2}	0.38	86{ 8.8}	0.34	92{ 9.4}	0.30	97{ 9.9}	0.19	109{11.1}	0.05	109{11.1}
	60	0.37	80{ 8.2}	0.34	86{ 8.7}	0.29	91{ 9.3}	0.26	95{ 9.7}	0.17	105{10.7}	0.04	106{10.8}
EWJ63	10	3.22	161{16.4}	2.98	178{18.2}	2.65	197{20.1}	2.36	211{21.6}	1.36	224{22.9}	0.29	224{22.9}
	15	2.41	174{17.7}	2.23	192{19.6}	1.98	212{21.6}	1.75	224{22.9}	0.96	224{22.9}	0.21	224{22.9}
	20	1.91	179{18.2}	1.76	196{20.0}	1.56	215{22.0}	1.36	224{22.9}	0.75	224{22.9}	0.17	224{22.9}
	25	1.57	179{18.3}	1.44	196{20.0}	1.27	213{21.7}	1.12	224{22.9}	0.62	224{22.9}	0.14	224{22.9}
	30	1.38	180{18.4}	1.29	198{20.2}	1.15	218{22.3}	1.00	224{22.9}	0.56	224{22.9}	0.13	224{22.9}
	40	1.09	178{18.2}	1.01	196{20.0}	0.91	215{21.9}	0.80	224{22.9}	0.46	224{22.9}	0.11	224{22.9}
	50	0.88	173{17.7}	0.81	188{19.2}	0.73	205{20.9}	0.65	217{22.1}	0.39	224{22.9}	0.09	224{22.9}
	60	0.72	163{16.7}	0.67	177{18.1}	0.59	192{19.6}	0.53	203{20.7}	0.31	204{20.8}	0.07	204{20.8}
SWJ63	10	2.70	135{13.7}	2.43	145{14.8}	2.20	164{16.8}	1.99	178{18.1}	1.36	224{22.9}	0.29	224{22.9}
	15	1.95	140{14.3}	1.76	152{15.5}	1.59	170{17.4}	1.44	184{18.8}	0.96	224{22.9}	0.21	224{22.9}
	20	1.56	145{14.8}	1.41	157{16.0}	1.28	176{17.9}	1.16	190{19.4}	0.75	224{22.9}	0.17	224{22.9}
	25	1.32	151{15.4}	1.20	163{16.6}	1.08	182{18.5}	0.99	197{20.1}	0.62	224{22.9}	0.14	224{22.9}
	30	1.13	147{15.0}	1.03	158{16.2}	0.93	177{18.0}	0.85	191{19.5}	0.56	224{22.9}	0.13	224{22.9}
	40	0.92	150{15.3}	0.84	163{16.6}	0.76	181{18.5}	0.70	196{20.0}	0.46	224{22.9}	0.11	224{22.9}
	50	0.79	155{15.8}	0.72	168{17.1}	0.66	186{19.0}	0.61	202{20.6}	0.39	224{22.9}	0.09	224{22.9}
	60	0.70	158{16.2}	0.64	171{17.5}	0.59	190{19.4}	0.52	200{20.4}	0.31	204{20.8}	0.07	204{20.8}
EWJ70	10	4.28	214{21.9}	3.85	231{23.6}	3.51	263{26.8}	3.16	284{29.0}	1.96	324{33.1}	0.42	324{33.1}
	15	3.09	225{22.9}	2.80	242{24.7}	2.54	273{27.9}	2.29	295{30.1}	1.38	324{33.1}	0.30	324{33.1}
	20	2.50	235{24.0}	2.26	254{25.9}	2.05	285{29.1}	1.86	309{31.5}	1.08	324{33.1}	0.24	324{33.1}
	25	2.12	243{24.8}	1.92	263{26.8}	1.74	294{30.0}	1.56	314{32.0}	0.89	324{33.1}	0.20	324{33.1}
	30	1.80	236{24.0}	1.64	255{26.0}	1.49	284{29.0}	1.36	308{31.4}	0.81	324{33.1}	0.19	324{33.1}
	40	1.45	241{24.6}	1.35	265{27.0}	1.22	295{30.1}	1.11	315{32.2}	0.65	324{33.1}	0.15	324{33.1}
	50	1.18	235{23.9}	1.10	258{26.3}	0.99	283{28.9}	0.89	302{30.8}	0.55	324{33.1}	0.13	324{33.1}
	60	0.97	222{22.7}	0.90	243{24.8}	0.81	266{27.1}	0.73	282{28.8}	0.46	311{31.7}	0.11	311{31.8}
SWJ70	10	3.14	157{16.0}	2.94	176{18.0}	2.62	196{20.0}	2.35	211{21.6}	1.62	268{27.4}	0.39	300{30.6}
	15	2.43	176{18.0}	2.27	197{20.1}	1.95	210{21.5}	1.76	227{23.1}	1.18	276{28.1}	0.30	317{32.3}
	20	2.03	191{19.5}	1.94	217{22.2}	1.63	227{23.1}	1.48	245{25.0}	0.92	277{28.2}	0.23	310{31.6}
	25	1.71	196{20.0}	1.56	213{21.7}	1.38	233{23.8}	1.25	252{25.7}	0.72	263{26.8}	0.19	301{30.7}
	30	1.45	190{19.4}	1.36	212{21.6}	1.24	236{24.1}	1.12	254{25.9}	0.71	283{28.9}	0.18	317{32.3}
	40	1.20	200{20.4}	1.13	222{22.7}	1.00	242{24.7}	0.91	259{26.4}	0.58	292{29.8}	0.15	316{32.2}
	50	0.97	194{19.8}	0.91	214{21.8}	0.81	233{23.7}	0.73	248{25.3}	0.46	273{27.9}	0.12	294{30.0}
	60	0.80	184{18.8}	0.75	201{20.6}	0.66	218{22.3}	0.60	232{23.6}	0.38	253{25.9}	0.10	276{28.2}

When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on page 17 to factor this into your selection.

Sizing Chart (Sizing Table 3)

Transfer Capacity Table (EW80 to 200, SW80 to 200)

Size	Input Reduction ratio	1750 r/min Input kW	1750 r/min Output torque N·m {kgf·m}	1450 r/min Input kW	1450 r/min Output torque N·m {kgf·m}	1150 r/min Input kW	1150 r/min Output torque N·m {kgf·m}	950 r/min Input kW	950 r/min Output torque N·m {kgf·m}	500 r/min Input kW	500 r/min Output torque N·m {kgf·m}	100 r/min Input kW	100 r/min Output torque N·m {kgf·m}
EW80 SW80	10	6.52	329{33.6}	6.16	372{38.0}	5.52	417{42.5}	4.86	441{45.0}	2.83	474{48.3}	0.61	474{48.3}
	15	4.88	358{36.5}	4.53	397{40.5}	3.98	434{44.3}	3.52	459{46.9}	1.98	473{48.3}	0.44	474{48.3}
	20	3.88	370{37.7}	3.62	412{42.0}	3.18	449{45.8}	2.80	473{48.3}	1.55	473{48.3}	0.34	473{48.3}
	25	3.21	374{38.1}	2.99	414{42.3}	2.67	460{46.9}	2.31	474{48.3}	1.28	474{48.3}	0.29	474{48.3}
	30	2.77	371{37.9}	2.62	416{42.4}	2.30	451{46.0}	2.03	474{48.3}	1.14	474{48.3}	0.27	474{48.3}
	40	2.17	370{37.8}	2.05	413{42.2}	1.86	461{47.0}	1.62	473{48.3}	0.92	473{48.3}	0.22	474{48.3}
	50	1.76	361{36.8}	1.66	400{40.8}	1.50	443{45.2}	1.36	473{48.3}	0.78	474{48.3}	0.19	474{48.3}
	60	1.44	342{34.9}	1.35	376{38.4}	1.21	414{42.3}	1.07	429{43.8}	0.62	429{43.8}	0.15	430{43.8}
EW100 SW100	10	10.81	552{56.3}	9.83	602{61.4}	9.10	696{71.1}	8.14	748{76.3}	5.29	899{91.8}	1.14	899{91.8}
	15	8.05	600{61.2}	7.37	657{67.1}	6.66	741{75.6}	5.88	784{80.0}	3.68	900{91.8}	0.81	900{91.8}
	20	6.35	616{62.8}	5.85	677{69.1}	5.28	760{77.5}	4.67	804{82.0}	2.88	900{91.8}	0.64	900{91.8}
	25	5.06	603{61.5}	4.81	683{69.7}	4.39	774{79.0}	3.91	822{83.9}	2.16	822{83.9}	0.49	822{83.9}
	30	4.52	623{63.6}	4.18	685{69.9}	3.81	774{78.9}	3.39	818{83.5}	2.09	899{91.8}	0.48	900{91.8}
	40	3.52	618{63.1}	3.27	680{69.4}	3.04	778{79.4}	2.74	829{84.6}	1.68	900{91.8}	0.40	900{91.8}
	50	2.75	584{59.6}	2.64	661{67.5}	2.43	748{76.3}	2.23	812{82.9}	1.30	828{84.5}	0.31	830{84.7}
	60	2.27	559{57.1}	2.16	628{64.1}	1.98	705{72.0}	1.72	722{73.6}	0.98	719{73.4}	0.24	720{73.5}
EW125 SW125	10	17.70	909{92.7}	16.42	1012{103}	14.66	1130{115}	13.80	1279{131}	9.55	1637{167}	2.14	1705{174}
	15	13.13	987{101}	12.20	1099{112}	10.98	1233{126}	10.32	1390{142}	6.90	1704{174}	1.52	1704{174}
	20	10.27	1011{103}	9.57	1126{115}	8.69	1274{130}	8.10	1420{145}	5.33	1704{174}	1.19	1704{174}
	25	8.46	1020{104}	7.64	1098{112}	7.20	1286{131}	6.70	1429{146}	4.27	1648{168}	0.96	1648{168}
	30	7.33	1025{105}	6.85	1141{117}	6.23	1285{131}	5.88	1444{147}	3.88	1704{174}	0.90	1705{174}
	40	5.63	1015{104 }	5.28	1131{115}	4.85	1281{131}	4.55	1425{145}	3.07	1705{174}	0.73	1705{174}
	50	4.55	986{101}	4.15	1065{109}	3.95	1245{127}	3.71	1382{141}	2.54	1656{169}	0.62	1666{170}
	60	3.72	936{95.5}	3.42	1018{104}	3.25	1182{121}	3.04	1306{133}	1.91	1430{146}	0.47	1439{147}
EW150 SW150	10	26.45	1364{139}	24.52	1519{155}	22.36	1734{177}	20.31	1894{193}	14.51	2508{256}	3.29	2646{270}
	15	19.58	1482{151}	18.19	1650{168}	16.62	1883{192}	15.21	2068{211}	10.41	2600{265}	2.33	2646{270}
	20	15.33	1519{155}	14.26	1691{173}	12.65	1869{191}	12.05	2134{218}	8.19	2646{270}	1.83	2646{270}
	25	12.45	1522{155}	11.59	1695{173}	10.48	1906{195}	9.85	2143{219}	6.69	2646{270}	1.50	2646{270}
	30	10.87	1539{157}	10.15	1713{175}	9.35	1956{200}	8.31	2074{212}	5.42	2421{247}	1.38	2646{270}
	40	8.36	1525{156}	7.83	1698{173}	7.03	1883{192}	6.74	2144{219}	4.69	2646{270}	1.12	2646{270}
	50	6.62	1474{151}	6.21	1642{168}	5.68	1849{189}	5.38	2077{212}	3.89	2646{270}	0.93	2646{270}
	60	5.43	1402{143}	5.11	1561{159}	4.69	1758{179}	4.45	1974{201}	3.31	2563{262}	0.82	2586{264}
EW175 SW175	10	37.09	1921{196}	34.37	2139{218}	30.78	2400{245}	27.07	2539{259}	17.86	3110{317}	4.19	3395{347}
	15	27.43	2088{213}	25.06	2288{234}	21.87	2496{255}	19.27	2641{270}	12.78	3223{329}	2.96	3396{347}
	20	21.44	2140{218}	19.82	2370{242}	17.27	2575{263}	15.24	2725{278}	10.15	3318{339}	2.31	3396{347}
	25	16.85	2068{211}	15.68	2302{235}	14.36	2625{268}	12.70	2777{283}	8.50	3378{345}	1.93	3395{347}
	30	15.16	2170{221}	13.46	2300{235}	11.63	2467{252}	10.23	2589{264}	6.66	3031{309}	1.74	3396{347}
	40	11.62	2149{219}	10.87	2393{244}	9.70	2640{269}	8.62	2794{285}	5.89	3390{346}	1.40	3396{347}
	50	8.93	2001{204}	8.37	2228{227}	7.75	2544{260}	7.18	2795{285}	4.95	3396{347}	1.20	3396{347}
	60	7.52	1973{201}	7.06	2197{224}	6.35	2428{248}	6.12	2773{283}	4.28	3396{347}	1.05	3396{347}
EW200 SW200	10	50.13	2597{265}	46.43	2892{295}	42.28	3301{337}	39.17	3682{376}	26.44	4613{471}	7.05	5704{582}
	15	36.95	2813{287}	34.28	3132{320}	31.29	3576{365}	28.46	3907{399}	18.91	4776{487}	4.99	5703{582}
	20	28.93	2888{295}	26.88	3216{328}	24.59	3671{375}	22.49	4025{411}	15.01	4910{501}	3.92	5704{582}
	25	22.86	2804{286}	21.27	3122{319}	19.49	3564{364}	18.16	3975{406}	12.56	4992{509}	3.27	5704{582}
	30	20.38	2916{298}	19.00	3247{331}	17.29	3671{375}	15.21	3855{393}	9.94	4526{462}	2.95	5704{582}
	40	15.67	2894{295}	14.65	3223{329}	13.51	3680{376}	12.66	4105{419}	8.71	5018{512}	2.39	5703{582}
	50	12.11	2709{276}	11.35	3017{308}	10.50	3444{352}	9.87	3842{392}	7.41	5073{518}	2.06	5703{582}
	60	10.15	2646{270}	9.53	2947{301}	8.85	3365{343}	8.34	3754{383}	6.55	5137{524}	1.83	5703{582}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

Technical Data

■ Actual Reduction Ratio

Reduction ratios for EWJ/EW/EWJM(R)/EWM(R)/SWJ/SW/SWJM(R)/SWM(R) series are all actual.

■ Allowable Loads on Shafts

1. Solid output shaft Allowable radial load

EWJ/EW/EWJM(R)/EWM(R) Series

Size	EWJ25	EWJ35	EWJ42	EWJ50	EWJ63	EWJ70	EW80	EW100	EW125	EW150	EW175	EW200
Allowable radial load N {kgf}	666 {68}	1019 {104}	1450 {148}	2264 {231}	2901 {296}	3881 {396}	7575 {773}	11505 {1174}	15131 {1544}	21825 {2227}	24451 {2495}	29743 {3035}

SW/SWM(R) Series (Shaft Arrangement: SLF/SRF)

Size	SW80	SW100	SW125	SW150	SW175	SW200
Allowable radial load N {kgf}	10427 {1064}	11525 {1176}	21184 {2162}	22754 {2322}	26558 {2710}	29743 {3035}

2. Hollow output shaft Allowable radial load

EW/EWM(R) Series (Shaft Arrangement: H)

Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
EW80	10	3383	{345}	3464	{353}	3661	{374}	3916	{400}	5258	{537}	8310	{848}
	15	4192	{428}	4390	{448}	4707	{480}	5027	{513}	6719	{686}	8310	{848}
	20	4841	{494}	5076	{518}	5457	{557}	5833	{595}	7787	{795}	8310	{848}
	25	5403	{551}	5664	{578}	6078	{620}	6556	{669}	8661	{884}	8310	{848}
	30	5889	{601}	6193	{632}	6677	{681}	7144	{729}	8310	{848}	8310	{848}
	40	6724	{686}	7061	{721}	7590	{774}	8173	{834}	8310	{848}	8310	{848}
	50	7463	{762}	7866	{803}	8310	{848}	8310	{848}	8310	{848}	8310	{848}
	60	8155	{832}	8310	{848}	8310	{848}	8310	{848}	8310	{848}	8310	{848}
EW100	10	4483	{457}	4705	{480}	4879	{498}	5217	{532}	6477	{661}	9369	{956}
	15	5568	{568}	5850	{597}	6252	{638}	6680	{682}	8291	{846}	9369	{956}
	20	6432	{656}	6764	{690}	7261	{741}	7757	{792}	9369	{956}	9369	{956}
	25	7226	{737}	7543	{770}	8054	{822}	8598	{877}	9369	{956}	9369	{956}
	30	7786	{795}	8212	{838}	8825	{901}	9369	{956}	9369	{956}	9369	{956}
	40	8863	{904}	9357	{955}	9369	{956}	9369	{956}	9369	{956}	9369	{956}
	50	9369	{956}	9369	{956}	9369	{956}	9369	{956}	9369	{956}	9369	{956}
	60	9369	{956}	9369	{956}	9369	{956}	9369	{956}	9369	{956}	9369	{956}
EW125	10	7715	{787}	8025	{819}	8503	{868}	8740	{892}	10585	{1080}	13083	{1335}
	15	9500	{969}	9932	{1014}	10547	{1076}	10983	{1121}	13083	{1335}	13083	{1335}
	20	10913	{1114}	11440	{1167}	12146	{1239}	12715	{1297}	13083	{1335}	13083	{1335}
	25	12126	{1237}	12860	{1312}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}
	30	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}
	40	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}
	50	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}
	60	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}	13083	{1335}
EW150	10	6706	{684}	6913	{705}	7148	{729}	7449	{760}	8665	{884}	19965	{2037}
	15	8523	{870}	8859	{904}	9265	{945}	9685	{988}	11897	{1214}	24265	{2476}
	20	9950	{1015}	10385	{1060}	11091	{1132}	11421	{1165}	14145	{1443}	24265	{2476}
	25	11168	{1140}	11687	{1193}	12415	{1267}	12921	{1319}	16039	{1637}	24265	{2476}
	30	12195	{1244}	12787	{1305}	13541	{1382}	14512	{1481}	18306	{1868}	24265	{2476}
	40	13982	{1427}	14697	{1500}	15748	{1607}	16433	{1677}	20444	{2086}	24265	{2476}
	50	15573	{1589}	16402	{1674}	17528	{1789}	18415	{1879}	22705	{2317}	24265	{2476}
	60	16989	{1734}	17921	{1829}	19181	{1957}	20196	{2061}	24265	{2476}	24265	{2476}
EW175	10	8504	{868}	8770	{895}	9229	{942}	9866	{1007}	12232	{1248}	24451	{2495}
	15	10827	{1105}	11386	{1162}	12224	{1247}	13057	{1332}	16214	{1655}	24451	{2495}
	20	12635	{1289}	13264	{1353}	14276	{1457}	15247	{1556}	18942	{1933}	24451	{2495}
	25	14373	{1467}	15060	{1537}	15926	{1625}	17074	{1742}	21207	{2164}	24451	{2495}
	30	15480	{1580}	16538	{1688}	17894	{1826}	19147	{1954}	24040	{2453}	24451	{2495}
	40	17723	{1808}	18632	{1901}	20066	{2048}	21418	{2185}	24451	{2495}	24451	{2495}
	50	19857	{2026}	20925	{2135}	22298	{2275}	23596	{2408}	24451	{2495}	24451	{2495}
	60	21499	{2194}	22679	{2314}	24369	{2487}	24451	{2495}	24451	{2495}	24451	{2495}
EW200	10	10452	{1067}	10795	{1101}	11190	{1142}	11485	{1172}	14045	{1433}	29131	{2973}
	15	13202	{1347}	13736	{1402}	14388	{1468}	15157	{1547}	18819	{1920}	35790	{3652}
	20	15347	{1566}	16028	{1636}	16875	{1722}	17795	{1816}	22106	{2256}	35790	{3652}
	25	17397	{1775}	18230	{1860}	19281	{1967}	20163	{2057}	24841	{2535}	35790	{3652}
	30	18758	{1914}	19675	{2008}	20990	{2142}	22473	{2293}	28250	{2883}	35790	{3652}
	40	21447	{2189}	22548	{2301}	23955	{2444}	25221	{2574}	31346	{3199}	35790	{3652}
	50	23993	{2448}	25282	{2580}	26940	{2749}	28363	{2894}	34615	{3532}	35790	{3652}
	60	26029	{2656}	27459	{2802}	29305	{2990}	30897	{3153}	35790	{3652}	35790	{3652}

2. Hollow output shaft Allowable radial load

SWJ/SWJM(R)/SW/SWM(R) Series

Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
SWJ25	10	701	{72}	743	{76}	793	{81}	850	{87}	850	{87}	850	{87}
	30	850	{87}	850	{87}	850	{87}	850	{87}	850	{87}	850	{87}
	60	850	{87}	850	{87}	850	{87}	850	{87}	850	{87}	850	{87}
SWJ35	10	1468	{150}	1553	{158}	1653	{169}	1742	{178}	2131	{217}	2391	{244}
	30	2226	{227}	2342	{239}	2391	{244}	2391	{244}	2391	{244}	2391	{244}
	60	2391	{244}	2391	{244}	2391	{244}	2391	{244}	2391	{244}	2391	{244}
SWJ42	10	1782	{182}	1878	{192}	2005	{205}	2113	{216}	2529	{258}	3783	{386}
	30	2681	{274}	2845	{290}	3055	{312}	3230	{330}	3783	{386}	3783	{386}
	60	3428	{350}	3634	{371}	3783	{386}	3783	{386}	3783	{386}	3783	{386}
SWJ50	10	2267	{231}	2405	{245}	2565	{262}	2722	{278}	3305	{337}	5517	{563}
	30	3514	{359}	3733	{381}	4011	{409}	4263	{435}	5262	{537}	5517	{563}
	60	4603	{470}	4892	{499}	5268	{538}	5517	{563}	5517	{563}	5517	{563}
SWJ63	10	2304	{235}	2426	{248}	2570	{262}	2700	{276}	3153	{322}	6505	{664}
	30	3595	{367}	3811	{389}	4080	{416}	4328	{442}	5404	{551}	7066	{721}
	60	4771	{487}	5062	{517}	5437	{555}	5864	{598}	7066	{721}	7066	{721}
SWJ70	10	2607	{266}	2711	{277}	2854	{291}	2985	{305}	3591	{366}	6990	{713}
	30	4119	{420}	4337	{443}	4617	{471}	4878	{498}	6103	{623}	9320	{951}
	60	5499	{561}	5832	{595}	6290	{642}	6704	{684}	8385	{856}	9320	{951}
SW80	10	3383	{345}	3464	{353}	3661	{374}	3916	{400}	5258	{537}	10956	{1118}
	15	4192	{428}	4390	{448}	4707	{480}	5027	{513}	6719	{686}	13274	{1354}
	20	4841	{494}	5076	{518}	5457	{557}	5833	{595}	7787	{795}	15011	{1532}
	25	5403	{551}	5664	{578}	6078	{620}	6556	{669}	8661	{884}	15513	{1583}
	30	5889	{601}	6193	{632}	6677	{681}	7144	{729}	9389	{958}	15513	{1583}
	40	6724	{686}	7061	{721}	7590	{774}	8173	{834}	10643	{1086}	15513	{1583}
	50	7463	{762}	7866	{803}	8439	{861}	9028	{921}	11693	{1193}	15513	{1583}
	60	8155	{832}	8621	{880}	9269	{946}	9983	{1019}	12824	{1309}	15513	{1583}
SW100	10	4106	{419}	4292	{438}	4388	{448}	4661	{476}	5856	{598}	13136	{1340}
	15	5199	{531}	5443	{555}	5759	{588}	6154	{628}	7899	{806}	16280	{1661}
	20	6070	{619}	6365	{649}	6778	{692}	7239	{739}	9334	{952}	17199	{1755}
	25	6882	{702}	7150	{730}	7567	{772}	8087	{825}	10793	{1101}	17199	{1755}
	30	7432	{758}	7820	{798}	8345	{852}	8911	{909}	11457	{1169}	17199	{1755}
	40	8514	{869}	8970	{915}	9541	{974}	10184	{1039}	13077	{1334}	17199	{1755}
	50	9544	{974}	10004	{1021}	10667	{1088}	11299	{1153}	14715	{1502}	17199	{1755}
	60	10411	{1062}	10956	{1118}	11724	{1196}	12656	{1291}	16297	{1663}	17199	{1755}
SW125	10	7715	{787}	8025	{819}	8503	{868}	8740	{892}	10585	{1080}	22485	{2294}
	15	9500	{969}	9932	{1014}	10547	{1076}	10983	{1121}	13710	{1399}	27605	{2817}
	20	10913	{1114}	11440	{1167}	12146	{1239}	12715	{1297}	16022	{1635}	28763	{2935}
	25	12126	{1237}	12860	{1312}	13548	{1382}	14229	{1452}	18015	{1838}	28763	{2935}
	30	13144	{1341}	13824	{1411}	14752	{1505}	15504	{1582}	19539	{1994}	28763	{2935}
	40	14936	{1524}	15738	{1606}	16802	{1715}	17704	{1807}	22240	{2269}	28763	{2935}
	50	16477	{1681}	17489	{1785}	18588	{1897}	19625	{2003}	24524	{2502}	28763	{2935}
	60	17897	{1826}	18981	{1937}	20241	{2065}	21417	{2185}	27148	{2770}	28763	{2935}
SW150	10	6706	{684}	6913	{705}	7148	{729}	7449	{760}	8665	{884}	19965	{2037}
	15	8523	{870}	8859	{904}	9265	{945}	9685	{988}	11897	{1214}	25303	{2582}
	20	9950	{1015}	10385	{1060}	11091	{1132}	11421	{1165}	14145	{1443}	29111	{2970}
	25	11168	{1140}	11687	{1193}	12415	{1267}	12921	{1319}	16039	{1637}	32180	{3284}
	30	12195	{1244}	12787	{1305}	13541	{1382}	14512	{1481}	18306	{1868}	34936	{3565}
	40	13982	{1427}	14697	{1500}	15748	{1607}	16433	{1677}	20444	{2086}	36231	{3697}
	50	15573	{1589}	16402	{1674}	17528	{1789}	18415	{1879}	22705	{2317}	36231	{3697}
	60	16989	{1734}	17921	{1829}	19181	{1957}	20196	{2061}	24727	{2523}	36231	{3697}
SW175	10	8504	{868}	8770	{895}	9229	{942}	9866	{1007}	12232	{1248}	26211	{2675}
	15	10827	{1105}	11386	{1162}	12224	{1247}	13057	{1332}	16214	{1655}	32851	{3352}
	20	12635	{1289}	13264	{1353}	14276	{1457}	15247	{1556}	18942	{1933}	37597	{3836}
	25	14373	{1467}	15060	{1537}	15926	{1625}	17074	{1742}	21207	{2164}	41498	{4235}
	30	15480	{1580}	16538	{1688}	17894	{1826}	19147	{1954}	24040	{2453}	44873	{4579}
	40	17723	{1808}	18632	{1901}	20066	{2048}	21418	{2185}	26611	{2715}	47785	{4876}
	50	19857	{2026}	20925	{2135}	22298	{2275}	23596	{2408}	29387	{2999}	47785	{4876}
	60	21499	{2194}	22679	{2314}	24369	{2487}	25569	{2609}	31814	{3246}	47785	{4876}
SW200	10	10452	{1067}	10795	{1101}	11190	{1142}	11485	{1172}	14045	{1433}	29131	{2973}
	15	13202	{1347}	13736	{1402}	14388	{1468}	15157	{1547}	18819	{1920}	37348	{3811}
	20	15347	{1566}	16028	{1636}	16875	{1722}	17795	{1816}	22106	{2256}	43175	{4406}
	25	17397	{1775}	18230	{1860}	19281	{1967}	20163	{2057}	24841	{2535}	47945	{4892}
	30	18758	{1914}	19675	{2008}	20990	{2142}	22473	{2293}	28250	{2883}	52064	{5313}
	40	21447	{2189}	22548	{2301}	23955	{2444}	25221	{2574}	31346	{3199}	55272	{5640}
	50	23993	{2448}	25282	{2580}	26940	{2749}	28363	{2894}	34615	{3532}	55272	{5640}
	60	26029	{2656}	27459	{2802}	29305	{2990}	30897	{3153}	37462	{3823}	55272	{5640}

Technical Data

3. Hollow output shaft Allowable axial load

EW/EWM(R) Series (Shaft Arrangement: H)

Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
EW80	10	4729	{483}	4851	{495}	5224	{533}	5748	{587}	8757	{894}	11593	{1183}
	15	6963	{711}	7423	{757}	8161	{833}	8911	{909}	11593	{1183}	11593	{1183}
	20	8632	{881}	9223	{941}	10165	{1037}	11095	{1132}	11593	{1183}	11593	{1183}
	25	10050	{1025}	10739	{1096}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}
	30	11449	{1168}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}
	40	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}
	50	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}
	60	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}	11593	{1183}
EW100	10	6009	{613}	6410	{654}	6682	{682}	7352	{750}	9965	{1017}	15572	{1589}
	15	8834	{901}	9451	{964}	10346	{1056}	11304	{1154}	15100	{1541}	15572	{1589}
	20	11013	{1124}	11804	{1204}	12983	{1325}	14162	{1445}	15572	{1589}	15572	{1589}
	25	12874	{1314}	13691	{1397}	14970	{1528}	15572	{1589}	15572	{1589}	15572	{1589}
	30	14440	{1474}	15532	{1585}	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}
	40	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}
	50	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}
	60	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}	15572	{1589}
EW125	10	10598	{1081}	11149	{1138}	12050	{1230}	12449	{1270}	16238	{1657}	25833	{2636}
	15	15145	{1545}	16108	{1644}	17495	{1785}	18524	{1890}	24919	{2543}	25833	{2636}
	20	18511	{1889}	19768	{2017}	21477	{2192}	22908	{2338}	25833	{2636}	25833	{2636}
	25	21497	{2194}	23253	{2373}	25075	{2559}	25833	{2636}	25833	{2636}	25833	{2636}
	30	24213	{2471}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}
	40	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}
	50	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}
	60	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}	25833	{2636}
EW150	10	8983	{917}	9318	{951}	9686	{988}	10236	{1044}	12613	{1287}	37818	{3859}
	15	13886	{1417}	14671	{1497}	15650	{1597}	16661	{1700}	22055	{2251}	37818	{3859}
	20	17493	{1785}	18598	{1898}	20355	{2077}	21329	{2176}	28365	{2894}	37818	{3859}
	25	20419	{2084}	21779	{2222}	23695	{2418}	25136	{2565}	33441	{3412}	37818	{3859}
	30	23490	{2397}	25136	{2565}	27298	{2785}	29829	{3044}	37818	{2859}	37818	{3859}
	40	27994	{2857}	30035	{3065}	32979	{3365}	35163	{3588}	37818	{3859}	37818	{3859}
	50	31912	{3256}	34298	{3500}	37568	{3833}	37818	{3859}	37818	{3859}	37818	{3859}
	60	35555	{3628}	37818	{3859}	37818	{3859}	37818	{3859}	37818	{3859}	37818	{3859}
EW175	10	11295	{1153}	11732	{1197}	12567	{1282}	13849	{1413}	18849	{1923}	47638	{4861}
	15	17406	{1776}	18668	{1905}	20575	{2100}	22493	{2295}	30125	{3074}	47638	{4861}
	20	21896	{2234}	23434	{2391}	25877	{2640}	28238	{2881}	37663	{3843}	47638	{4861}
	25	26113	{2665}	27900	{2847}	30225	{3084}	33085	{3376}	44010	{4491}	47638	{4861}
	30	29355	{2995}	31983	{3264}	35450	{3617}	38686	{3948}	47638	{4861}	47638	{4861}
	40	34933	{3565}	37488	{3825}	41361	{4220}	45011	{4593}	47638	{4861}	47638	{4861}
	50	40145	{4096}	43176	{4406}	47188	{4815}	47638	{4861}	47638	{4861}	47638	{4861}
	60	44302	{4521}	47638	{4861}	47638	{4861}	47638	{4861}	47638	{4861}	47638	{4861}
EW200	10	13789	{1407}	14377	{1467}	15056	{1536}	15558	{1588}	20761	{2118}	56379	{5753}
	15	20769	{2119}	21993	{2244}	23536	{2402}	25311	{2583}	33902	{3459}	56379	{5753}
	20	25924	{2645}	27603	{2817}	29762	{3037}	32035	{3269}	42722	{4359}	56379	{5753}
	25	30728	{3136}	32849	{3352}	35610	{3634}	38006	{3878}	50135	{5116}	56379	{5753}
	30	34491	{3520}	36938	{3769}	40411	{4124}	44120	{4502}	56379	{5753}	56379	{5753}
	40	40950	{4179}	43958	{4486}	47920	{4890}	51525	{5258}	56379	{5735}	56379	{5753}
	50	46951	{4791}	50503	{5153}	55206	{5633}	56379	{5753}	56379	{5753}	56379	{5753}
	60	51932	{5299}	55922	{5706}	56379	{5753}	56379	{5753}	56379	{5753}	56379	{5753}

3. Hollow output shaft Allowable axial load

SWJ/SWJM(R)/SW/SWM(R) Series

Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
SWJ25	10	1093	{112}	1180	{120}	1287	{131}	1443	{147}	1838	{188}	1838	{188}
	30	1838	{188}	1838	{188}	1838	{188}	1838	{188}	1838	{188}	1838	{188}
	60	1838	{188}	1838	{188}	1838	{188}	1838	{188}	1838	{188}	1838	{188}
SWJ35	10	2787	{284}	3005	{307}	3263	{333}	3501	{357}	4141	{423}	4141	{423}
	30	4141	{423}	4141	{423}	4141	{423}	4141	{423}	4141	{423}	4141	{423}
	60	4141	{423}	4141	{423}	4141	{423}	4141	{423}	4141	{423}	4141	{423}
SWJ42	10	3449	{352}	3698	{377}	4034	{412}	4329	{442}	5505	{562}	5733	{585}
	30	5733	{585}	5733	{585}	5733	{585}	5733	{585}	5733	{585}	5733	{585}
	60	5733	{585}	5733	{585}	5733	{585}	5733	{585}	5733	{585}	5733	{585}
SWJ50	10	3643	{372}	3940	{402}	4291	{438}	4645	{474}	6016	{614}	7546	{770}
	30	6845	{698}	7410	{756}	7546	{770}	7546	{770}	7546	{770}	7546	{770}
	60	7546	{770}	7546	{770}	7546	{770}	7546	{770}	7546	{770}	7546	{770}
SWJ63	10	4148	{423}	4443	{453}	4798	{490}	5126	{523}	6252	{638}	8281	{845}
	30	7512	{767}	8099	{826}	8281	{845}	8281	{845}	8281	{845}	8281	{845}
	60	8281	{845}	8281	{845}	8281	{845}	8281	{845}	8281	{845}	8281	{845}
SWJ70	10	4846	{494}	5107	{521}	5474	{559}	5818	{594}	7475	{763}	11613	{1185}
	30	9409	{960}	10107	{1031}	11031	{1126}	11613	{1185}	11613	{1185}	11613	{1185}
	60	11613	{1185}	11613	{1185}	11613	{1185}	11613	{1185}	11613	{1185}	11613	{1185}
SW80	10	4729	{483}	4851	{495}	5224	{533}	5748	{587}	8757	{894}	13217	{1349}
	15	6963	{711}	7423	{757}	8161	{833}	8911	{909}	12984	{1325}	14190	{1448}
	20	8632	{881}	9223	{941}	10165	{1037}	11095	{1132}	14793	{1509}	14582	{1488}
	25	10050	{1025}	10739	{1096}	11806	{1205}	13000	{1327}	15011	{1532}	14808	{1511}
	30	11449	{1168}	12284	{1254}	13563	{1384}	14794	{1510}	15356	{1567}	15146	{1546}
	40	13579	{1386}	14553	{1485}	15673	{1599}	15626	{1595}	15544	{1586}	15339	{1565}
	50	15451	{1577}	15899	{1622}	15793	{1612}	15731	{1605}	15651	{1597}	15453	{1577}
	60	16067	{1640}	15993	{1632}	15903	{1623}	15876	{1620}	15807	{1613}	15625	{1594}
SW100	10	5189	{529}	5502	{561}	5594	{571}	6102	{623}	8515	{869}	20964	{2139}
	15	8101	{827}	8635	{881}	9339	{953}	10217	{1043}	14258	{1455}	21560	{2200}
	20	10331	{1054}	11039	{1126}	12042	{1229}	13138	{1341}	18234	{1861}	21560	{2200}
	25	12232	{1248}	12949	{1321}	14033	{1432}	15309	{1562}	21560	{2200}	21560	{2200}
	30	13815	{1410}	14830	{1513}	16219	{1655}	17663	{1802}	21560	{2200}	21560	{2200}
	40	16521	{1686}	17760	{1812}	19371	{1977}	21077	{2151}	21560	{2200}	21560	{2200}
	50	18962	{1935}	20295	{2071}	21560	{2200}	21560	{2200}	21560	{2200}	21560	{2200}
	60	21074	{2150}	21560	{2200}	21560	{2200}	21560	{2200}	21560	{2200}	21560	{2200}
SW125	10	10598	{1081}	11149	{1138}	12050	{1230}	12449	{1270}	16238	{1657}	30488	{3111}
	15	15145	{1545}	16108	{1644}	17495	{1785}	18524	{1890}	24919	{2543}	32787	{3346}
	20	18511	{1889}	19768	{2017}	21477	{2192}	22908	{2338}	31008	{3164}	33615	{3430}
	25	21497	{2194}	23253	{2373}	25075	{2559}	26857	{2741}	34822	{3553}	34348	{3505}
	30	24213	{2471}	25979	{2651}	28410	{2899}	30473	{3109}	35522	{3625}	35053	{3577}
	40	28527	{2911}	30668	{3129}	33558	{3424}	36087	{3682}	35921	{3665}	35464	{3619}
	50	32330	{3299}	34989	{3570}	36505	{3725}	36505	{3725}	36278	{3702}	35829	{3656}
	60	35787	{3652}	36505	{3725}	36505	{3725}	36505	{3725}	36505	{3725}	36343	{3708}
SW150	10	8983	{917}	9318	{951}	9686	{988}	10236	{1044}	12613	{1287}	16089	{1642}
	15	13886	{1417}	14671	{1497}	15650	{1597}	16661	{1700}	19897	{2030}	19105	{1949}
	20	17493	{1785}	18598	{1898}	20355	{2077}	21329	{2176}	20914	{2134}	20283	{2070}
	25	20419	{2084}	21779	{2222}	22945	{2341}	22465	{2292}	21372	{2181}	20762	{2119}
	30	23490	{2397}	24185	{2468}	23828	{2431}	23663	{2415}	23011	{2348}	22077	{2253}
	40	24782	{2529}	24569	{2507}	24324	{2482}	23989	{2448}	23261	{2374}	22657	{2312}
	50	24960	{2547}	24767	{2527}	24515	{2501}	24236	{2473}	23479	{2396}	22893	{2336}
	60	25216	{2573}	25053	{2556}	24840	{2535}	24604	{2511}	23869	{2436}	23306	{2378}
SW175	10	11295	{1153}	11732	{1197}	12567	{1282}	13849	{1413}	18849	{1923}	26945	{2749}
	15	17406	{1776}	18668	{1905}	20575	{2100}	22493	{2295}	30125	{3074}	30319	{3094}
	20	21896	{2234}	23434	{2391}	25877	{2640}	28238	{2881}	32465	{3313}	31634	{3228}
	25	26113	{2665}	27900	{2847}	30225	{3084}	33085	{3376}	33208	{3389}	32508	{3317}
	30	29355	{2995}	31983	{3264}	35450	{3617}	35456	{3618}	34756	{3546}	33645	{3433}
	40	34933	{3565}	36177	{3692}	35932	{3666}	35744	{3647}	34957	{3567}	34291	{3499}
	50	36818	{3757}	36608	{3736}	36306	{3705}	36061	{3680}	35373	{3609}	34723	{3543}
	60	36967	{3772}	36774	{3752}	36556	{3730}	36245	{3698}	35588	{3631}	34949	{3566}
SW200	10	13789	{1407}	14377	{1467}	15056	{1536}	15558	{1588}	20761	{2118}	22785	{2325}
	15	20769	{2119}	21993	{2244}	23536	{2402}	25311	{2583}	30020	{3063}	27350	{2791}
	20	25924	{2645}	27603	{2817}	29762	{3037}	32035	{3269}	31325	{3196}	29171	{2977}
	25	30728	{3136}	32849	{3352}	34204	{3490}	33663	{3435}	32237	{3289}	30367	{3099}
	30	34491	{3520}	35464	{3619}	35066	{3578}	34852	{3556}	33993	{3469}	31861	{3251}
	40	36262	{3700}	35987	{3672}	35591	{3632}	35238	{3596}	34291	{3499}	32756	{3342}
	50	36677	{3743}	36451	{3719}	36123	{3686}	35807	{3654}	34763	{3547}	33347	{3403}
	60	36913	{3767}	36714	{3746}	36425	{3717}	36144	{3688}	35098	{3581}	33781	{3447}

Technical Data

■ EWJ/EW/SWJ/SW Worm Starting Efficiency (Reference)

Size	Reduction ratio	Starting efficiency	Size	Reduction ratio	Starting efficiency	Size	Reduction ratio	Starting efficiency	Size	Reduction ratio	Starting efficiency
	10	62%		10	64%		10	65%		10	66%
	15	52%		15	57%		15	57%		15	59%
	20	48%		20	53%		20	53%		20	55%
EWJ25	25	45%	EWJ50	25	49%	EW80	25	50%	EW150	25	53%
SWJ25	30	39%	SWJ50	30	41%	SW80	30	42%	SW150	30	44%
	40	33%		40	37%		40	37%		40	39%
	50	29%		50	33%		50	34%		50	37%
	60	27%		60	30%		60	32%		60	33%
	10	61%		10	64%		10	66%		10	66%
	15	54%		15	56%		15	59%		15	59%
	20	47%		20	52%		20	54%		20	55%
EWJ35	25	43%	EWJ63	25	49%	EW100	25	51%	EW175	25	51%
SWJ35	30	39%	SWJ63	30	41%	SW100	30	44%	SW175	30	44%
	40	31%		40	36%		40	38%		40	39%
	50	28%		50	33%		50	35%		50	36%
	60	24%		60	31%		60	33%		60	33%
	10	61%		10	63%		10	66%		10	65%
	15	54%		15	56%		15	59%		15	58%
	20	47%		20	52%		20	55%		20	53%
EWJ42	25	44%	EWJ70	25	48%	EW125	25	51%	EW200	25	49%
SWJ42	30	38%	SWJ70	30	40%	SW125	30	44%	SW200	30	42%
	40	32%		40	36%		40	39%		40	37%
	50	29%		50	33%		50	35%		50	33%
	60	26%		60	30%		60	32%		60	30%

Note) Starting efficiencies are from a standstill speed of 0 r/min. Starting a reducer requires a higher amount of power than during normal operation. Use the values given above for reference. Refer to the “Catalogue efficiency” and its calculation on page 18 for normal operation.

■ Moment of Inertia on Input Shaft (Solid Output Shaft / Hollow Output Shaft)

EWJ/EW Series

Moment of inertia on input shaft {GD^2} : × 10^{-3} kg·m^2 {× 10^{-3} kgf·m^2}

Size / Reduction ratio	EWJ25	EWJ35	EWJ42	EWJ50	EWJ63	EWJ70	EW80	EW100	EW125	EW150	EW175	EW200
10	0.005 {0.02}	0.01 {0.06}	0.02 {0.10}	0.17 {0.67}	0.38 {1.5}	0.64 {2.5}	0.8 {3.4}	2.1 {8.3}	4.6 {18.3}	9.2 {36.8}	16.7 {67.0}	29.1 {116.6}
15	0.005 {0.02}	0.01 {0.06}	0.02 {0.09}	0.16 {0.65}	0.36 {1.4}	0.61 {2.5}	0.8 {3.1}	1.9 {7.6}	4.1 {16.3}	8.1 {32.4}	14.4 {57.5}	24.4 {97.8}
20	0.005 {0.02}	0.01 {0.05}	0.02 {0.09}	0.15 {0.62}	0.34 {1.4}	0.57 {2.3}	0.7 {2.9}	1.8 {7.1}	3.5 {14.0}	6.7 {27.0}	11.5 {46.2}	21.5 {86.0}
25	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.15 {0.60}	0.33 {1.3}	0.55 {2.2}	0.7 {2.7}	1.7 {6.7}	3.3 {13.1}	6.0 {23.9}	10.2 {40.9}	19.8 {79.4}
30	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.16 {0.63}	0.35 {1.4}	0.60 {2.4}	0.7 {3.0}	1.8 {7.2}	3.8 {15.1}	7.4 {29.8}	13.0 {51.9}	21.6 {86.5}
40	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.15 {0.61}	0.34 {1.3}	0.57 {2.3}	0.7 {2.8}	1.7 {6.8}	3.3 {13.3}	6.4 {25.5}	10.7 {43.0}	19.9 {79.7}
50	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.15 {0.60}	0.33 {1.3}	0.55 {2.2}	0.7 {2.7}	1.6 {6.5}	3.2 {12.7}	5.7 {22.9}	9.8 {39.1}	19.0 {76.0}
60	0.004 {0.02}	0.01 {0.05}	0.02 {0.08}	0.15 {0.60}	0.32 {1.3}	0.54 {2.2}	0.6 {2.5}	1.5 {6.2}	3.1 {12.3}	5.6 {22.2}	9.1 {36.4}	18.6 {74.3}

■ Moment of Inertia on Input Shaft (Solid Output Shaft / Hollow Output Shaft)

EWJM(R)/EWM(R) Series

Moment of inertia on input shaft {GD²} : × 10^{-3} kg·m² {× 10^{-3} kgf·m²}

Size / Reduction ratio	EWJM42		EWJM50		EWJM63		EWJM70		EWM80		EWM100		EWM125		EWM150	
	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft
10	0.75	2.3 {9.3}	0.75	2.4 {9.6}	1.5	6.9 {27.7}	2.2	9.9 {39.6}	3.7	21.3 {85.0}	5.5	40.4 {161.4}	—		—	
15	0.4	1.0 {4.2}	0.75	2.4 {9.6}	1.5	6.9 {27.6}	2.2	9.9 {39.54}	3.7	21.3 {85.0}	5.5	40.4 {161.4}	—		—	
20	0.4	1.0 {4.2}	0.75	2.4 {9.6}	1.5	6.9 {27.5}	2.2	9.8 {39.34}	3.7	21.3 {85.0}	5.5	40.1 {160.4}	—		—	
25	0.4	1.0 {4.2}	0.75	2.4 {9.6}	1.5	6.9 {27.5}	1.5	7.1 {28.4}	2.2	10.0 {40.0}	3.7	22.3 {89.0}	5.5	41.7 {166.6}	—	
30	0.4	1.0 {4.2}	0.75	2.4 {9.6}	1.5	6.9 {27.6}	1.5	7.2 {28.6}	2.2	10.0 {40.0}	3.7	22.3 {89.0}	5.5	42.2 {168.6}	—	
40	0.2	0.5 {2.0}	0.4	1.1 {4.5}	0.75	2.6 {10.3}	0.75	2.8 {11.2}	1.5	7.2 {28.8}	2.2	11.0 {44.04}	3.7	23.8 {95.0}	5.5	44.7 {178.6}
50	0.2	0.5 {2.0}	0.4	1.1 {4.5}	0.75	2.6 {10.2}	0.75	2.8 {11.1}	1.5	7.2 {28.8}	2.2	11.0 {44.04}	3.7	23.8 {95.0}	5.5	44.2 {176.6}
60	0.2	0.5 {2.0}	0.4	1.1 {4.5}	0.75	2.6 {10.2}	0.75	2.8 {11.1}	1.5	7.2 {28.8}	2.2	10.8 {43.04}	3.7	23.5 {94.0}	5.5	43.9 {175.6}

* For motors with brakes, add the moment of inertia and GD² listed in the Brake Characteristics table on page 222.

SWJ/SW Series

Moment of inertia on input shaft {GD²} : × 10^{-3} kg·m² {× 10^{-3} kgf·m²}

Size / Reduction ratio	SWJ25	SWJ35	SWJ42	SWJ50	SWJ63	SWJ70	SW80	SW100	SW125	SW150	SW175	SW200
10	0.005 {0.02}	0.02 {0.06}	0.03 {0.11}	0.09 {0.37}	0.38 {1.5}	0.33 {1.3}	0.8 {3.4}	2.1 {8.3}	4.6 {18.3}	9.2 {36.8}	16.7 {67.0}	29.1 {116.6}
15	0.005 {0.02}	0.01 {0.06}	0.02 {0.09}	0.09 {0.35}	0.36 {1.4}	0.30 {1.2}	0.8 {3.1}	1.9 {7.6}	4.1 {16.3}	8.1 {32.4}	14.4 {57.5}	24.4 {97.8}
20	0.005 {0.02}	0.01 {0.05}	0.02 {0.09}	0.08 {0.31}	0.34 {1.4}	0.29 {1.2}	0.7 {2.9}	1.8 {7.1}	3.5 {14.0}	6.7 {27.0}	11.5 {46.2}	21.5 {86.0}
25	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.08 {0.30}	0.33 {1.3}	0.26 {1.0}	0.7 {2.7}	1.7 {6.7}	3.3 {13.1}	6.0 {23.9}	10.2 {40.9}	19.8 {79.4}
30	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.08 {0.33}	0.35 {1.4}	0.28 {1.1}	0.7 {3.0}	1.8 {7.2}	3.8 {15.1}	7.4 {29.8}	13.0 {51.9}	21.6 {86.5}
40	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.08 {0.31}	0.34 {1.3}	0.29 {1.1}	0.7 {2.8}	1.7 {6.8}	3.3 {13.3}	6.4 {25.5}	10.7 {43.0}	19.9 {79.7}
50	0.005 {0.02}	0.01 {0.05}	0.02 {0.08}	0.07 {0.30}	0.33 {1.3}	0.25 {1.0}	0.7 {2.7}	1.6 {6.5}	3.2 {12.7}	5.7 {22.9}	9.8 {39.1}	19.0 {76.0}
60	0.004 {0.02}	0.01 {0.05}	0.02 {0.08}	0.07 {0.29}	0.32 {1.3}	0.23 {0.9}	0.6 {2.5}	1.5 {6.2}	3.1 {12.3}	5.6 {22.2}	9.1 {36.4}	18.6 {74.3}

SWJM(R)/SWM(R) Series

Moment of inertia on input shaft {GD²} : × 10^{-3} kg·m² {× 10^{-3} kgf·m²}

Size / Reduction ratio	SWJM35		SWJM42		SWJM50		SWJM63		SWJM70		SWM80		SWM100		SWM125		SWM150	
	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft	Motor kW	Moment of inertia on input shaft
10	0.2	0.5 {1.9}	0.4	1.1 {4.2}	0.75	2.6 {16.5}	1.5	7.2 {28.9}	2.2	10.4 {41.6}	3.7	21.3 {85.0}	5.5	40.4 {161.6}	—		—	
15	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.75	2.6 {16.5}	1.5	4.5 {28.9}	1.5	7.1 {28.6}	3.7	21.3 {85.0}	5.5	40.4 {161.6}	—		—	
20	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.4	1.3 {5.3}	0.75	2.9 {11.6}	1.5	7.1 {28.6}	3.7	21.3 {85.0}	5.5	40.2 {160.6}	—		—	
											2.2	10.0 {39.8}						
25	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.4	1.3 {5.3}	0.75	2.9 {11.5}	1.5	7.1 {28.4}	2.2	10.0 {40.0}	3.7	22.3 {89.0}	5.5	41.7 {166.6}	—	
30	—		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.9 {11.6}	0.75	2.8 {11.3}	2.2	10.0 {40.0}	3.7	22.3 {89.0}	5.5	42.2 {168.6}	—	
40	—		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.9 {11.5}	0.75	2.8 {11.3}	1.5	7.2 {28.8}	2.2	11.0 {44.0}	3.7	23.8 {95.0}	5.5	44.7 {178.6}
50	—		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.9 {11.5}	0.75	2.8 {11.2}	1.5	7.2 {28.8}	2.2	11.0 {44.0}	3.7	23.8 {95.0}	5.5	44.2 {176.6}
60	—		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.9 {11.5}	0.75	2.8 {11.1}	1.5	7.2 {28.8}	2.2	10.8 {43.0}	3.7	23.5 {94.0}	5.5	43.9 {175.6}

* For motors with brakes, add the moment of inertia and GD² listed in the Brake Characteristics table on page 222.

Structure

EWJ/EW Series

■ Reduction Ratio

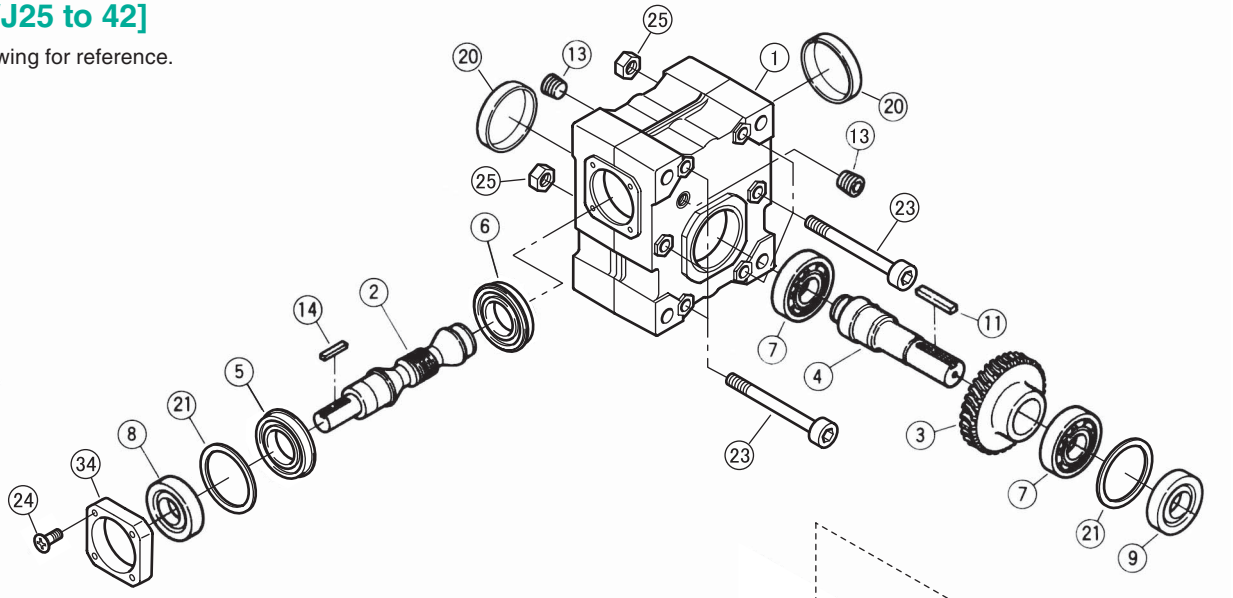
Single	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60

■ Center Distance

Size	25	35	42	50	63	70	80	100	125	150	175	200
Center distance	25 mm	35 mm	42 mm	50 mm	63 mm	70 mm	80 mm	100 mm	125 mm	150 mm	175 mm	200 mm

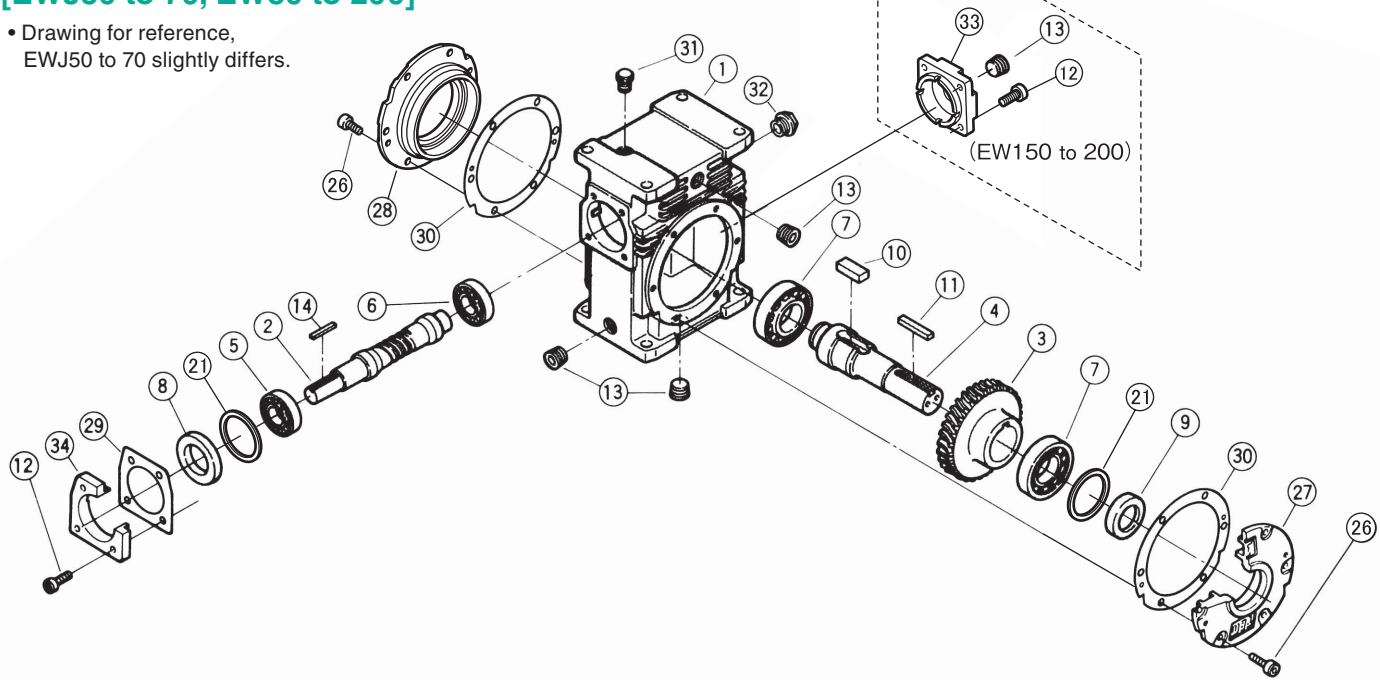
[EWJ25 to 42]

• Drawing for reference.



[EWJ50 to 70, EW80 to 200]

• Drawing for reference,
EWJ50 to 70 slightly differs.



■ Part list

Refer to the part list on pages 256 to 257 for bearings and oilseals.

No.	Part	No.	Part	No.	Part	No.	Part	No.	Part	No.	Part
1	Case	6	Input shaft bearing B	11	Flat key square	20	Seal cap	25	Hex nut	30	Shim II
2	Worm	7	Output shaft bearing	12	Hex cap bolt	21	Filter set	26	Hex cap bolt	31	Pressure vent
3	Worm wheel	8	Input shaft oil seal	13	Plug with hole			27	Output bearing support I	32	Oil gauge
4	Output shaft	9	Output shaft oil seal	14	Flat key square	23	Hex cap bolt	28	Output bearing support II	33	Input cap
5	Input shaft bearing A	10	Flat key square			24	Cross-recessed countersunk flat head screw	29	Shim I	34	Input seal support

EWJM(R)/EWM(R) Series

■ Reduction Ratio

Single	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60

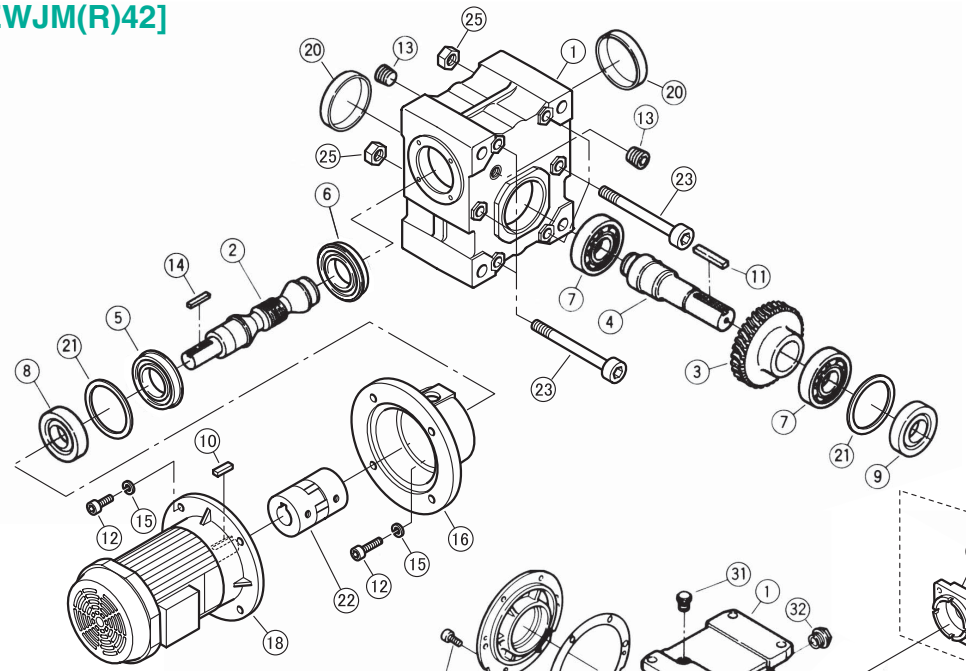
■ Standard Motor

Size	42	50	63	70	80	100	125	150
Motor kW	0.2 to 0.75	0.4 to 0.75	0.75 to 1.5	0.75 to 2.2	1.5 to 3.7	2.2 to 5.5	3.7 to 5.5	5.5

■ Center Distance

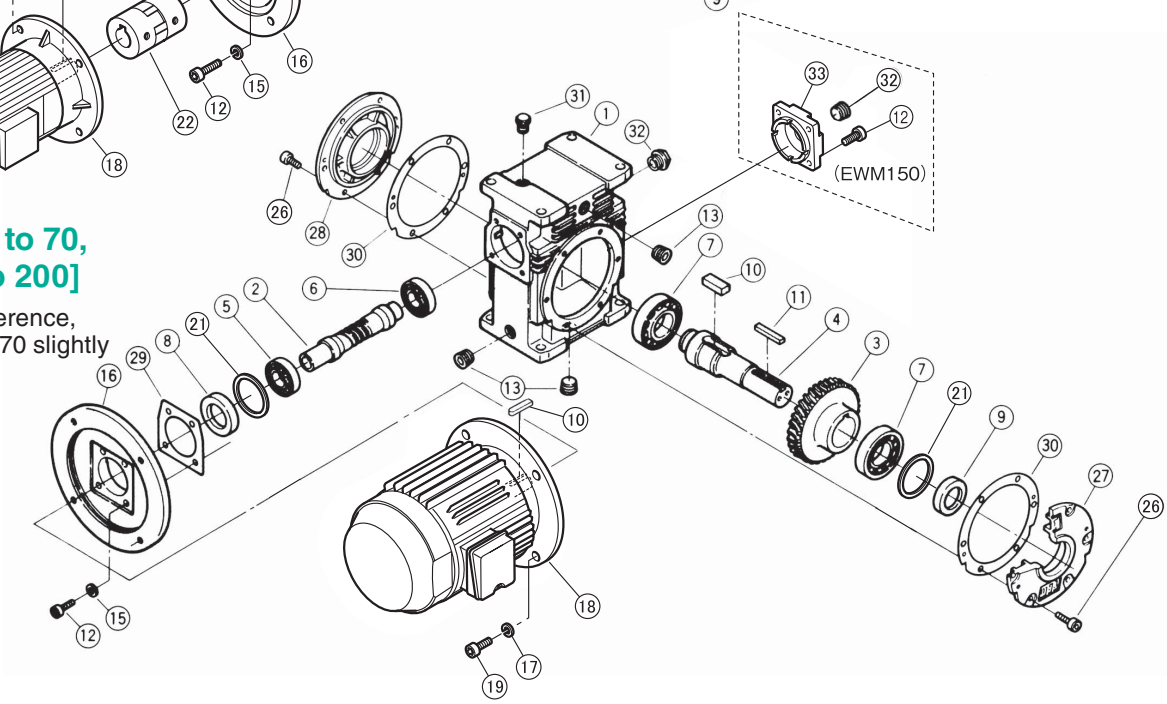
Size	42	50	63	70	80	100	125	150
Center distance	42 mm	50 mm	63 mm	70 mm	80 mm	100 mm	125 mm	150 mm

[EWJM(R)42]



[EWJM(R)50 to 70, EWM(R)80 to 200]

• Drawing for reference, EWJM(R)50 to 70 slightly differs.



■ Part list

Refer to the part list on pages 256 to 257 for bearings and oilseals.

No.	Part	No.	Part	No.	Part	No.	Part	No.	Part	No.	Part
1	Case	7	Output shaft bearing	13	Plug with hole	19	Hex cap bolt	25	Hex nut	31	Pressure vent
2	Worm	8	Input shaft oil seal	14	Flat key square	20	Seal cap	26	Hex cap bolt	32	Oil gauge
3	Worm wheel	9	Output shaft oil seal	15	Spring washer	21	Filter set	27	Output bearing support I	33	Input cap
4	Output shaft	10	Flat key square	16	M Flange	22	coupling	28	Output bearing support II		
5	Input shaft bearing A	11	Flat key square	17	Spring washer	23	Hex cap bolt	29	Shim I		
6	Input shaft bearing B	12	Hex cap bolt	18	Motor			30	Shim II		

Structure

SWJ/SW Series

■ Reduction Ratio

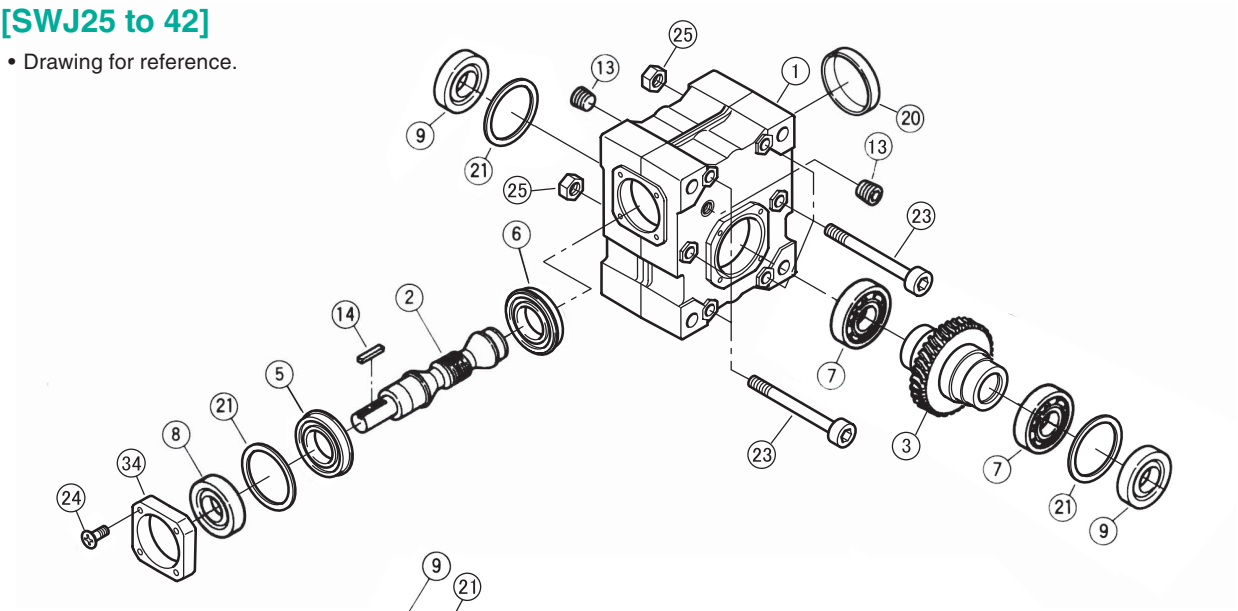
Single	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60

■ Center Distance

Size	25	35	42	50	63	70	80	100	125	150	175	200
Center distance	25 mm	35 mm	42 mm	50 mm	63 mm	70 mm	80 mm	100 mm	125 mm	150 mm	175 mm	200 mm

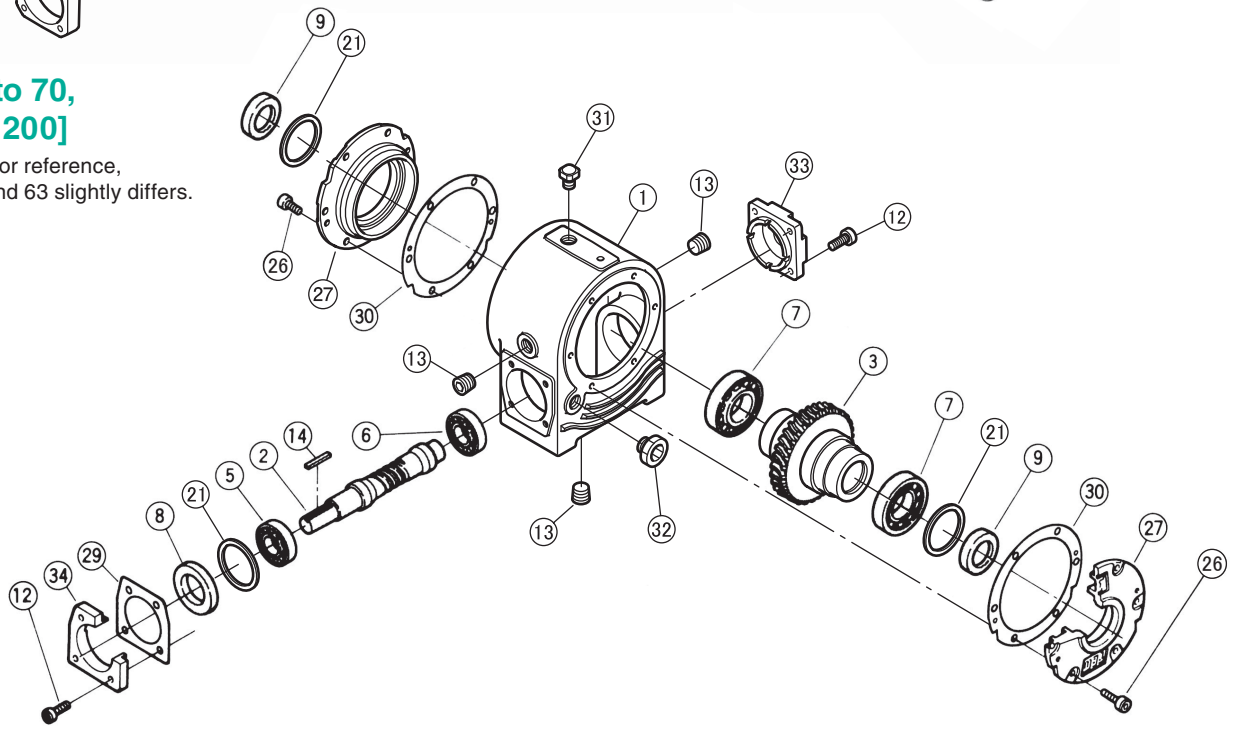
[SWJ25 to 42]

• Drawing for reference.



[SWJ50 to 70, SW80 to 200]

• Drawing for reference, SWJ50 and 63 slightly differs.



■ Part list

Refer to the part list on pages 256 to 257 for bearings and oilseals.

No.	Part	No.	Part	No.	Part	No.	Part	No.	Part	No.	Part
1	Case	6	Input shaft bearing B			20	Seal cap	25	Hex nut	30	Shim II
2	Worm	7	Output shaft bearing	12	Hex cap bolt	21	Filter set	26	Hex cap bolt	31	Pressure vent
3	Integral output shaft with worm wheel	8	Input shaft oil seal	13	Plug with hole			27	Output bearing support I	32	Oil gauge
		9	Output shaft oil seal	14	Flat key square	23	Hex cap bolt			33	Input cap
5	Input shaft bearing A					24	Cross-recessed countersunk flat head screw	29	Shim I	34	Input seal support

SWJM(R)/SWM(R) Series

■ Reduction Ratio

Single	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60

■ Standard Motor

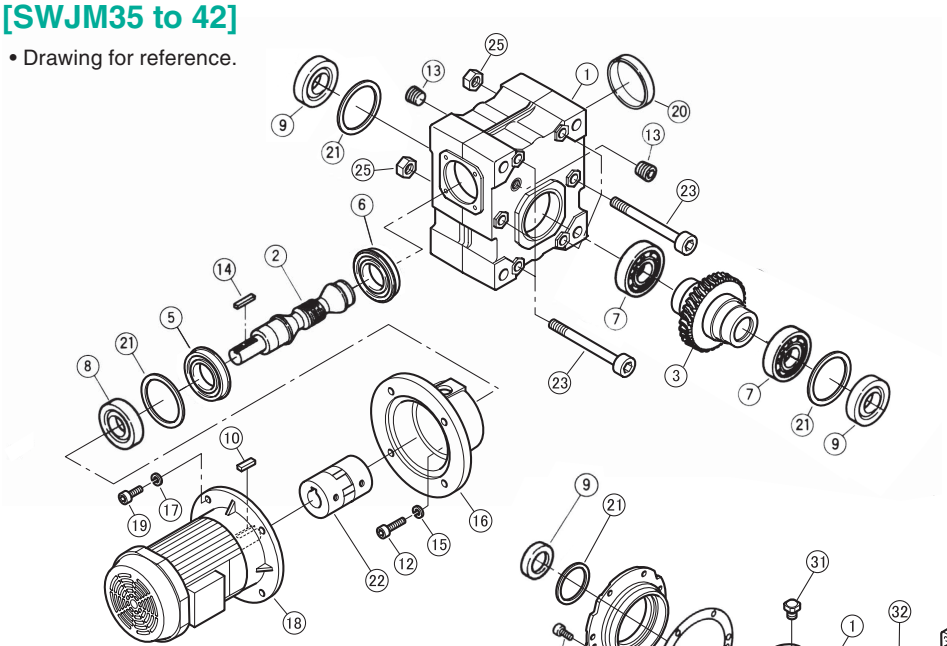
Size	35	42	50	63	70	80	100	125	150
Motor kW	0.2	0.2 to 0.4	0.4 to 0.75	0.75 to 1.5	0.75 to 2.2	1.5 to 3.7	2.2 to 5.5	3.7 to 5.5	5.5

■ Center Distance

Size	35	42	50	63	70	80	100	125	150
Center distance	35 mm	42 mm	50 mm	63 mm	70 mm	80 mm	100 mm	125 mm	150 mm

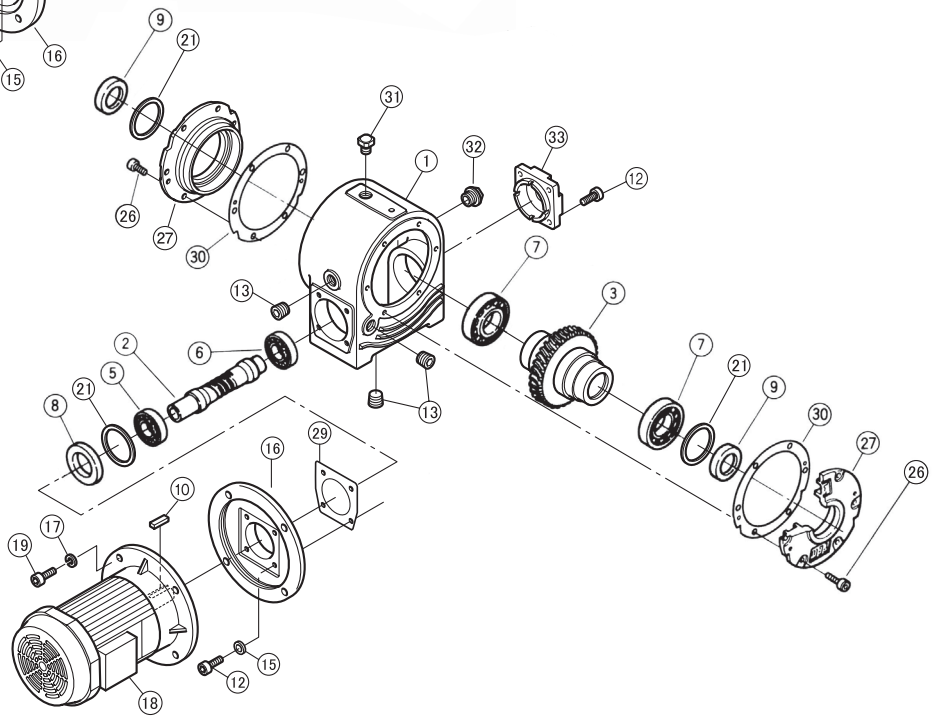
[SWJM35 to 42]

• Drawing for reference.



[SWJM(R)50 to 70, SWM(R)80 to 200]

• Drawing for reference,
SWJM(R)50 and 63 slightly differs.



■ Part list

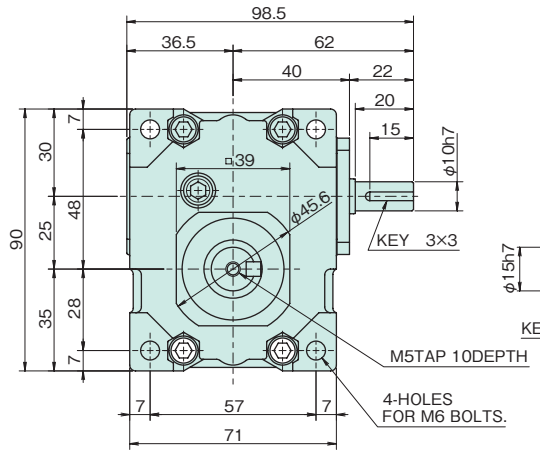
Refer to the part list on pages 256 to 257 for bearings and oilseals.

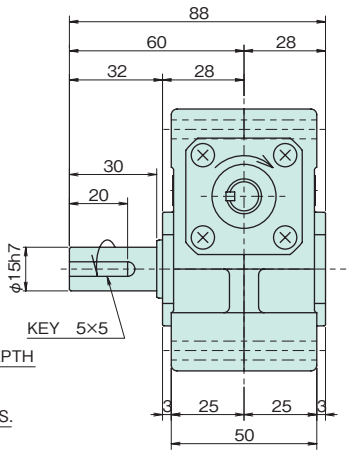
No.	Part	No.	Part	No.	Part	No.	Part	No.	Part	No.	Part
1	Case	7	Output shaft bearing	13	Plug with hole	19	Hex cap bolt	25	Hex nut	31	Pressure vent
2	Worm	8	Input shaft oil seal	14	Flat key square	20	Seal cap	26	Hex cap bolt	32	Oil gauge
3	Integral output shaft with worm wheel	9	Output shaft oil seal	15	Spring washer	21	Filter set	27	Output bearing support I	33	Input cap
		10	Flat key square	16	M Flange						
5	Input shaft bearing A	11	Flat key square	17	Spring washer	23	Hex cap bolt A	29	Shim I		
6	Input shaft bearing B	12	Hex cap bolt	18	Motor			30	Shim II		

Dimensional Drawings EWJ25E/SWJ25E

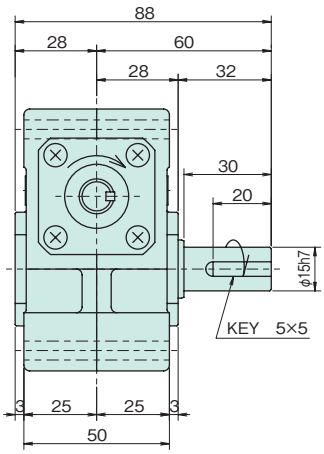
EWJ25E

[L]





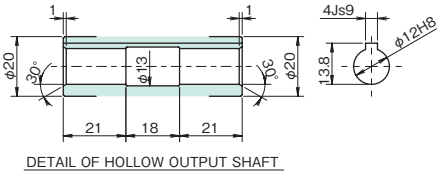
[R]

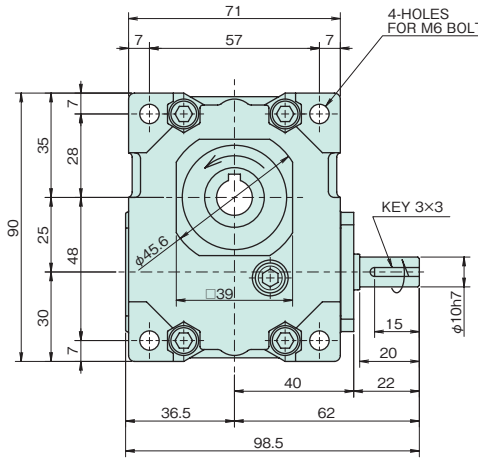


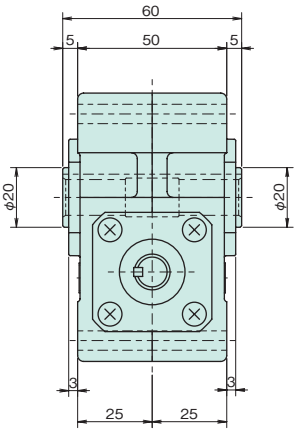
Estimated mass 1.1 kg

SWJ25E

[DF]







Estimated mass 1.0 kg

* Tsubaki offers optional mounting bolts and mounting feet. Refer to page 229.

* Refer to page 24 for shaft arrangements and relative direction of rotation.

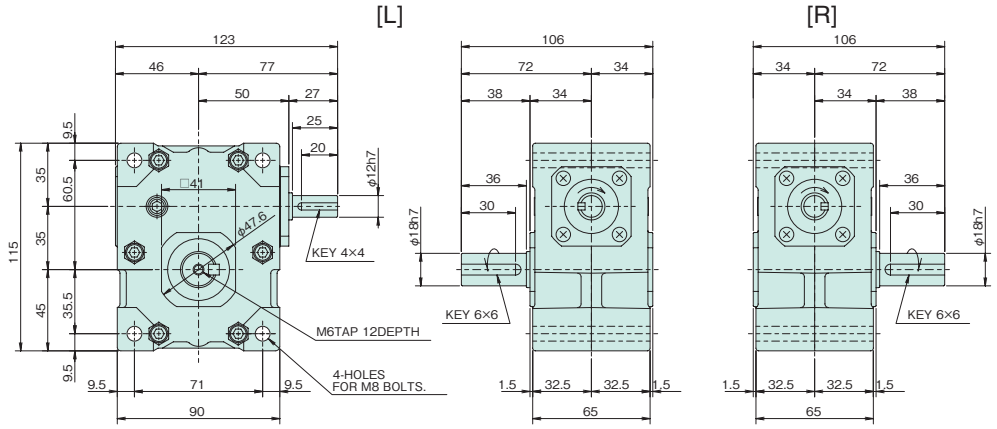
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ25 SWJ25	10	0.27	12.4{1.26}	0.24	13.3{1.36}	0.22	14.8{1.51}	0.18	14.9{1.52}	0.10	14.9{1.52}	0.021	14.9{1.52}
	15	0.20	12.9{1.31}	0.18	13.9{1.41}	0.16	14.9{1.52}	0.13	14.9{1.52}	0.07	14.9{1.52}	0.016	14.9{1.52}
	20	0.16	13.5{1.38}	0.15	14.5{1.48}	0.12	14.9{1.52}	0.10	14.9{1.52}	0.06	14.9{1.52}	0.013	14.9{1.52}
	25	0.14	13.9{1.42}	0.13	14.9{1.52}	0.10	14.9{1.52}	0.09	14.9{1.52}	0.05	14.9{1.52}	0.011	14.9{1.52}
	30	0.12	13.6{1.39}	0.11	14.7{1.50}	0.09	14.9{1.52}	0.08	14.9{1.52}	0.04	14.9{1.52}	0.010	14.9{1.52}
	40	0.10	13.9{1.42}	0.09	14.9{1.52}	0.08	14.9{1.52}	0.07	14.9{1.52}	0.04	14.9{1.52}	0.009	14.9{1.52}
	50	0.09	13.9{1.42}	0.08	14.4{1.47}	0.07	14.9{1.52}	0.06	14.9{1.52}	0.03	14.9{1.52}	0.008	14.9{1.52}
	60	0.07	13.0{1.33}	0.06	13.5{1.37}	0.06	13.9{1.42}	0.05	14.3{1.46}	0.03	14.3{1.46}	0.007	14.3{1.46}

When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on page 17 to factor this into your selection.

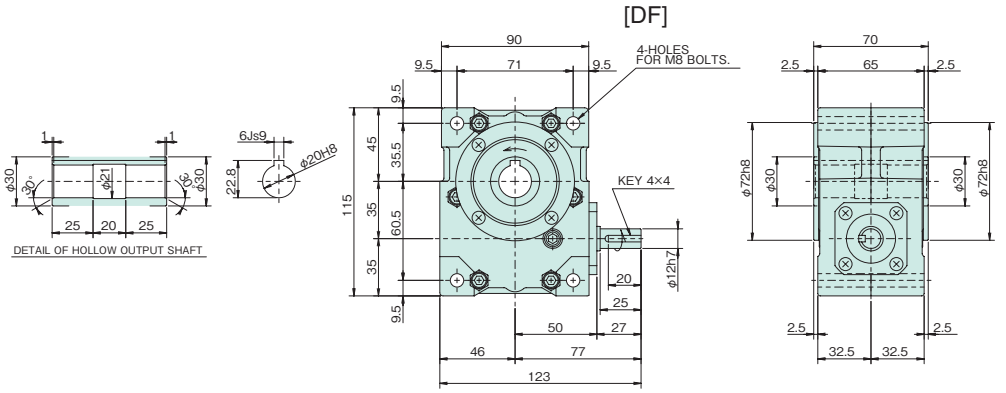
Dimensional Drawings EWJ35E/SWJ35E/SWJM35E

EWJ35E



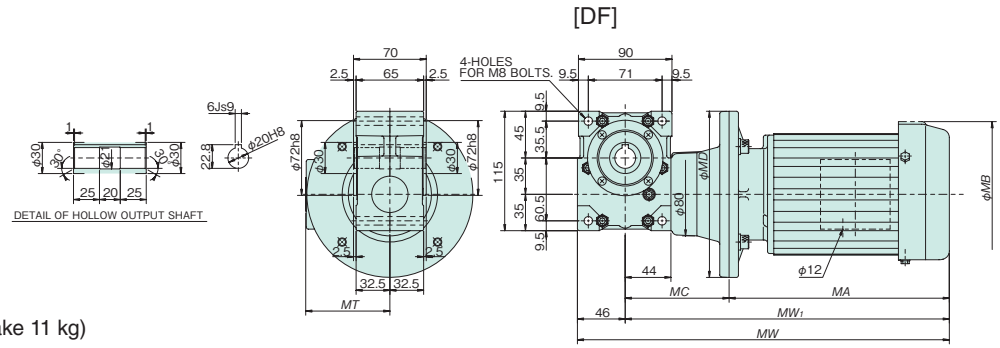
Estimated mass 1.9 kg

SWJ35E



Estimated mass 1.9 kg

SWJM35E



Estimated mass 9.1 kg (With brake 11 kg)

* Tsubaki offers optional mounting bolts and mounting feet. Refer to page 229.

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Input Reduction ratio	1750 r/min Input kW	1750 r/min Output torque N·m {kgf·m}	1450 r/min Input kW	1450 r/min Output torque N·m {kgf·m}	1150 r/min Input kW	1150 r/min Output torque N·m {kgf·m}	950 r/min Input kW	950 r/min Output torque N·m {kgf·m}	500 r/min Input kW	500 r/min Output torque N·m {kgf·m}	100 r/min Input kW	100 r/min Output torque N·m {kgf·m}
EWJ35 SWJ35	10	0.59	27.6{2.81}	0.53	29.7{3.03}	0.49	33.8{3.45}	0.44	36.5{3.73}	0.24	37.3{3.81}	0.053	37.3{3.81}
	15	0.41	27.5{2.81}	0.37	29.7{3.03}	0.34	33.5{3.42}	0.32	37.7{3.85}	0.18	37.7{3.85}	0.039	37.7{3.85}
	20	0.33	27.8{2.84}	0.30	30.0{3.06}	0.27	33.7{3.44}	0.26	37.7{3.85}	0.14	37.7{3.85}	0.032	37.7{3.85}
	25	0.28	28.7{2.93}	0.26	31.0{3.16}	0.23	34.7{3.54}	0.21	37.7{3.85}	0.12	37.7{3.85}	0.027	37.7{3.85}
	30	0.25	29.3{2.99}	0.23	31.6{3.22}	0.21	35.3{3.60}	0.19	37.7{3.85}	0.11	37.7{3.85}	0.025	37.7{3.85}
	40	0.20	28.8{2.94}	0.19	31.1{3.18}	0.17	34.7{3.54}	0.16	37.7{3.85}	0.09	37.7{3.85}	0.022	37.7{3.85}
	50	0.18	29.6{3.02}	0.16	31.9{3.26}	0.15	35.5{3.63}	0.14	37.7{3.85}	0.08	37.7{3.85}	0.019	37.7{3.85}
	60	0.16	29.5{3.01}	0.15	31.8{3.25}	0.14	35.3{3.61}	0.12	37.0{3.78}	0.07	37.0{3.78}	0.018	37.0{3.78}

When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on page 17 to factor this into your selection.

Size	Standard combination Motor kW	Reduction ratio	1750 r/min Output torque N·m {kgf·m}	1450 r/min Output torque N·m {kgf·m}	Values in ( ) for the motor indicates dimensions for a motor with a brake. MA	MC	MW_1	MW	MB	MD	MT	Estimated mass kg
SWJM35	0.2	10	9.30 {0.95}	11.2 {1.14}	212 (229)	100 (100)	312 (329)	358 (375)	140 (140)	160 (160)	81 (104.5)	9.2 (11)
		15	13.4 {1.36}	15.9 {1.62}								
		20	16.9 {1.73}	20.1 {2.05}								
		25	20.4 {2.08}	24.2 {2.47}								

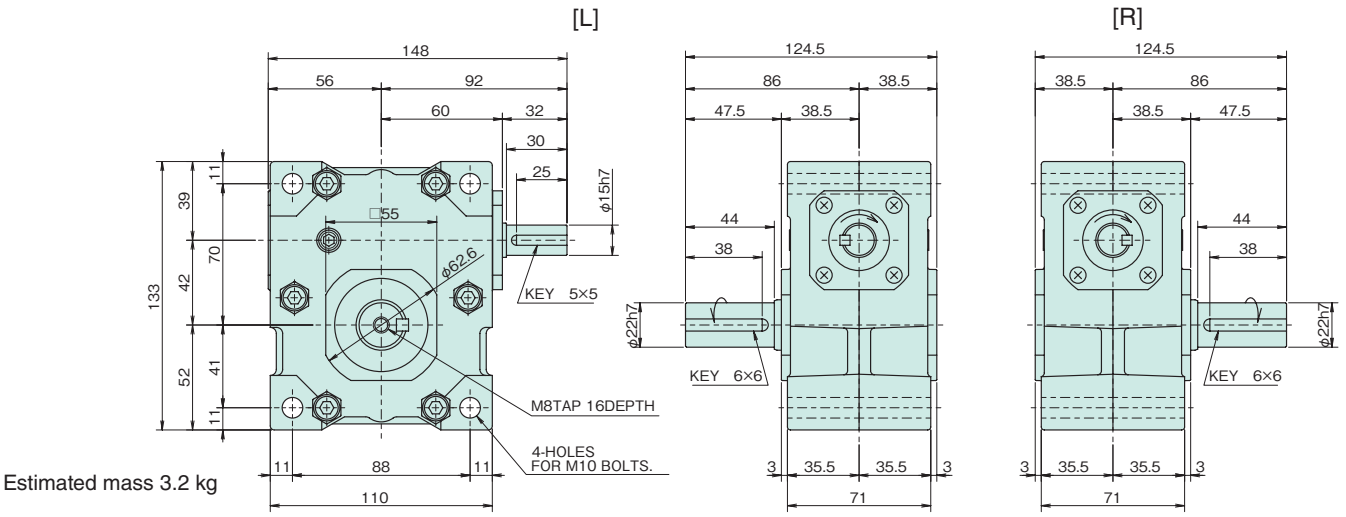
* Motor/reducer combinations shown are standard.

* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EWJ42E/SWJ42E

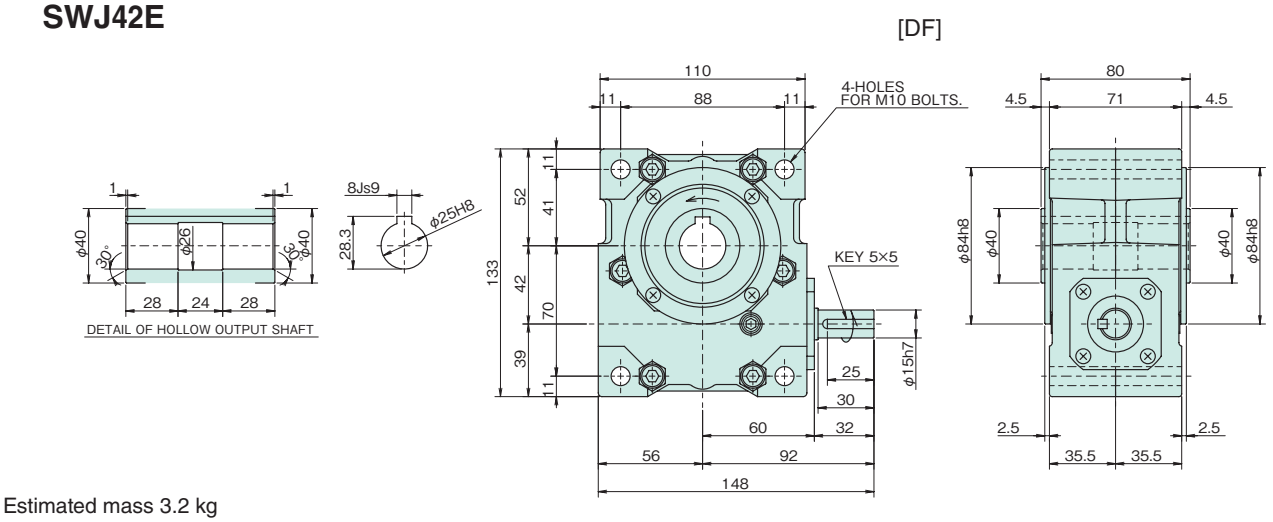
See next page for reducers with motors

EWJ42E



Estimated mass 3.2 kg

SWJ42E



Estimated mass 3.2 kg

* Tsubaki offers optional mounting bolts and mounting feet. Refer to page 229.

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ42 SWJ42	10	0.87	41.1{4.20}	0.81	45.5{4.65}	0.73	51.3{5.23}	0.67	56.5{5.76}	0.45	68.8{7.02}	0.097	68.8{7.02}
	15	0.67	45.2{4.61}	0.61	48.8{4.98}	0.55	55.0{5.62}	0.50	59.5{6.07}	0.32	68.9{7.03}	0.070	68.9{7.03}
	20	0.54	46.3{4.73}	0.49	50.0{5.10}	0.45	56.1{5.73}	0.40	60.6{6.19}	0.26	69.0{7.04}	0.058	69.0{7.04}
	25	0.46	47.8{4.88}	0.42	51.6{5.27}	0.38	57.8{5.90}	0.35	62.5{6.38}	0.22	69.0{7.04}	0.049	69.0{7.04}
	30	0.40	47.3{4.83}	0.37	51.1{5.21}	0.33	57.0{5.82}	0.30	61.6{6.29}	0.19	69.0{7.04}	0.045	69.0{7.04}
	40	0.33	47.8{4.88}	0.30	51.6{5.27}	0.28	57.5{5.87}	0.25	62.1{6.34}	0.16	69.0{7.04}	0.039	69.0{7.04}
	50	0.29	49.1{5.01}	0.26	53.0{5.40}	0.24	58.9{6.01}	0.22	63.6{6.49}	0.14	69.0{7.04}	0.034	69.0{7.04}
	60	0.26	50.1{5.12}	0.24	54.1{5.52}	0.22	60.0{6.13}	0.20	63.2{6.45}	0.12	64.3{6.56}	0.029	64.3{6.56}

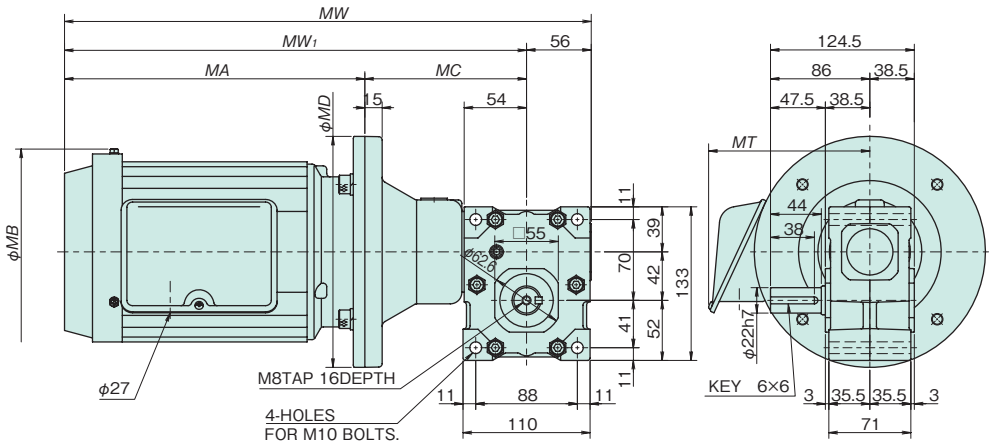
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings EWJM(R)42E/SWJM42E

See previous page for reducers without motors

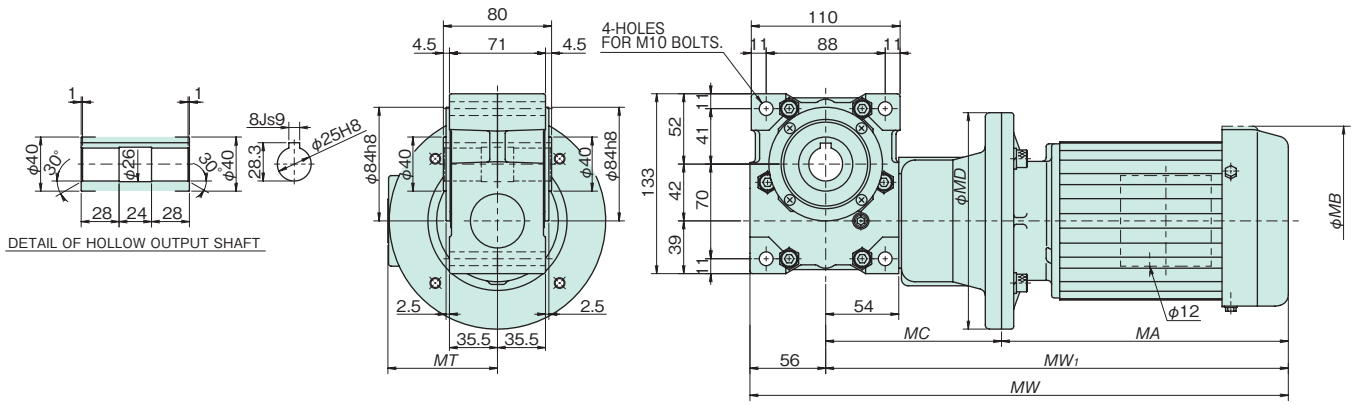
EWJM(R)42E

[R]



SWJM42E

[DF]



* Tsubaki offers optional mounting bolts and mounting feet. Refer to page 229.

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.							
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*1	*MW*	*MB*	*MD*	*MT*	Estimated mass kg
EWJM42	0.2	40	29.0 {2.96}	34.1 {3.48}	212 (229)	130 (130)	342 (359)	398 (415)	140 (140)	160 (160)	81 (104.5)	11 (14)
		50	34.2 {3.49}	40.0 {4.08}								
		60	38.8 {3.96}	45.2 {4.62}								
	0.4	15	27.0 {2.76}	32.2 {3.29}	224 (241)	130 (130)	354 (371)	410 (427)	140 (140)	160 (160)	81 (104.5)	12 (15)
		20	34.4 {3.51}	40.8 {4.17}								
		25	41.5 {4.23}	49.2 {5.02}								
		30	47.3 {4.83}	51.1 {5.21}								
EWJMR42	0.75	10	35.3 {3.60}	42.4 {4.30}	260 (305)	140 (140)	400 (445)	456 (501)	178 (140)	200 (200)	140 (104.5)	20 (23)
SWJM42	0.2	30	23.7 {2.42}	28.0 {2.85}	212 (229)	130 (130)	342 (359)	398 (415)	140 (140)	160 (160)	81 (104.5)	11 (13)
		40	29.0 {2.96}	34.1 {3.48}								
		50	34.2 {3.49}	40.0 {4.08}								
		60	38.8 {3.96}	45.2 {4.62}								
	0.4	10	18.8 {1.92}	22.5 {2.29}	224 (241)	130 (130)	354 (371)	410 (427)	140 (140)	160 (160)	81 (104.5)	12 (15)
		15	27.0 {2.76}	32.2 {3.29}								
		20	34.4 {3.51}	40.8 {4.17}								
		25	41.5 {4.23}	49.2 {5.02}								

* Motor/reducer combinations shown are standard.

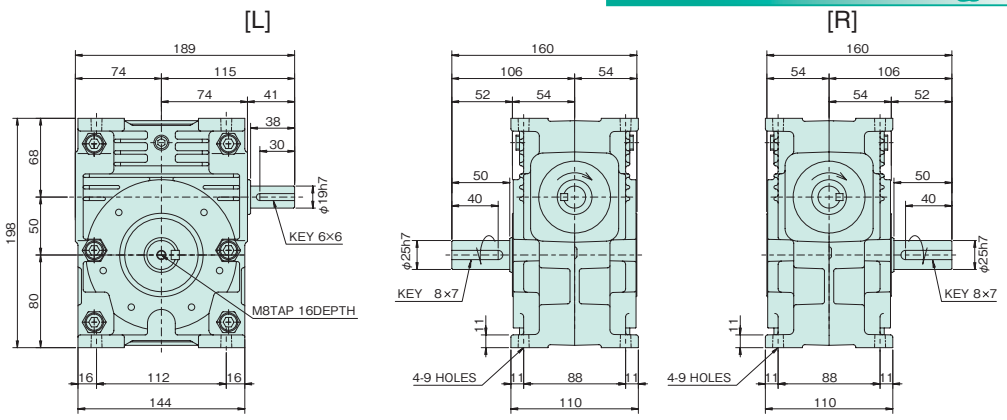
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.

* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EWJ50E/EWJ50V/SWJ50E

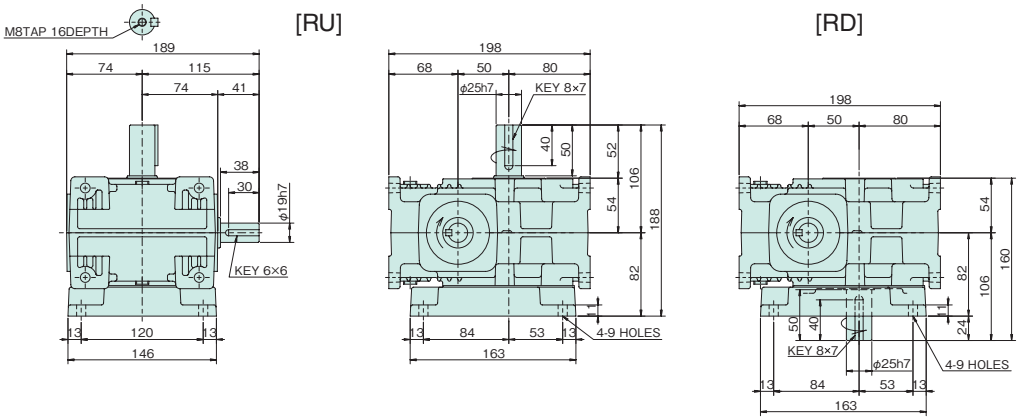
See next page for reducers with motors

EWJ50E



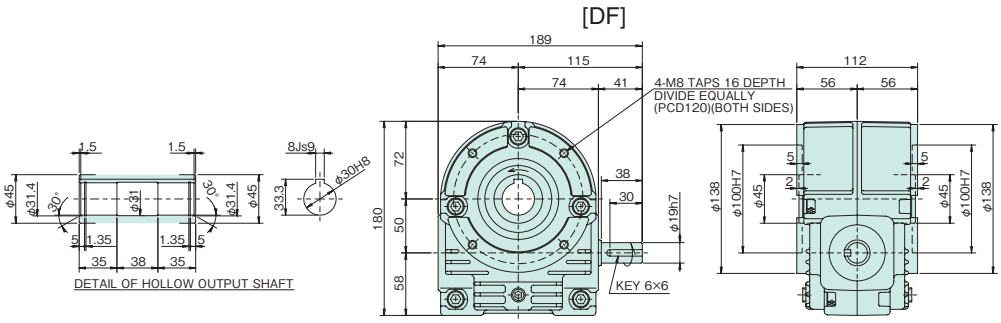
Estimated mass 7.0 kg

EWJ50V



Estimated mass 7.6 kg

SWJ50E



Estimated mass 11 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ50	10	1.70	84 {8.6}	1.54	91 { 9.3}	1.34	99 {10.1}	1.20	106 {10.9}	0.67	109 {11.1}	0.14	109 {11.1}
	15	1.28	91 {9.3}	1.16	99 {10.1}	1.03	109 {11.1}	0.86	109 {11.1}	0.47	109 {11.1}	0.10	109 {11.1}
	20	1.02	94 {9.6}	0.92	101 {10.4}	0.80	109 {11.1}	0.67	109 {11.1}	0.37	109 {11.1}	0.08	109 {11.1}
	25	0.85	95 {9.7}	0.76	101 {10.3}	0.66	108 {11.1}	0.56	109 {11.1}	0.31	109 {11.1}	0.07	109 {11.1}
	30	0.75	95 {9.7}	0.68	103 {10.5}	0.59	109 {11.1}	0.50	109 {11.1}	0.28	109 {11.1}	0.07	109 {11.1}
	40	0.59	94 {9.6}	0.53	101 {10.3}	0.47	108 {11.1}	0.40	109 {11.1}	0.22	109 {11.1}	0.05	109 {11.1}
	50	0.48	91 {9.3}	0.43	98 {10.0}	0.38	104 {10.6}	0.34	109 {11.1}	0.19	109 {11.1}	0.05	109 {11.1}
	60	0.40	86 {8.8}	0.36	92 { 9.4}	0.32	98 {10.0}	0.28	103 {10.5}	0.17	106 {10.8}	0.04	106 {10.8}
SWJ50	10	1.56	77 {7.9}	1.40	83 { 8.5}	1.28	94 { 9.6}	1.15	102 {10.4}	0.67	109 {11.1}	0.14	109 {11.1}
	15	1.13	81 {8.2}	1.02	87 { 8.9}	0.89	94 { 9.6}	0.78	99 {10.1}	0.47	109 {11.1}	0.10	109 {11.1}
	20	0.91	84 {8.6}	0.82	91 { 9.2}	0.71	97 { 9.9}	0.63	102 {10.4}	0.37	109 {11.1}	0.08	109 {11.1}
	25	0.77	86 {8.8}	0.69	92 { 9.4}	0.58	96 { 9.8}	0.51	101 {10.3}	0.31	109 {11.1}	0.07	109 {11.1}
	30	0.65	83 {8.5}	0.60	90 { 9.2}	0.52	97 { 9.9}	0.46	102 {10.4}	0.28	109 {11.1}	0.06	109 {11.1}
	40	0.52	84 {8.5}	0.47	90 { 9.1}	0.41	96 { 9.8}	0.36	101 {10.3}	0.22	109 {11.1}	0.05	109 {11.1}
	50	0.42	81 {8.2}	0.38	86 { 8.8}	0.34	92 { 9.4}	0.30	97 { 9.9}	0.19	109 {11.1}	0.05	109 {11.1}
	60	0.37	80 {8.2}	0.34	86 { 8.7}	0.29	91 { 9.3}	0.26	95 { 9.7}	0.17	105 {10.7}	0.04	106 {10.8}

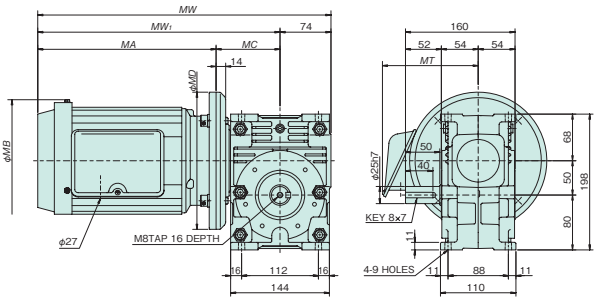
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings EWJM(R)50E/EWJM(R)50V/SWJM(R)50E

See previous page for reducers without motors

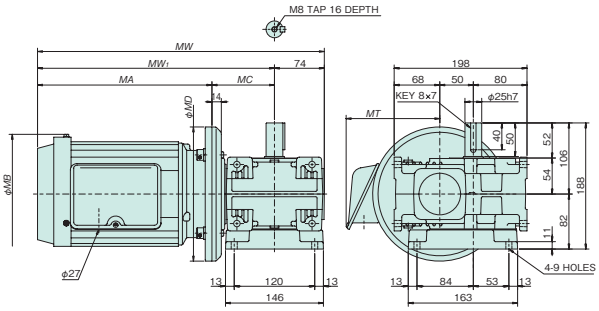
EWJM(R)50E

[R]



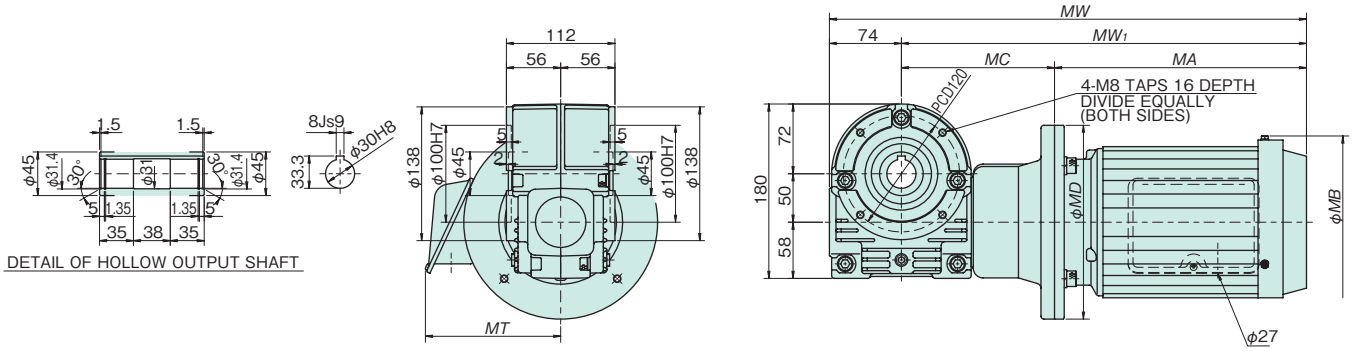
EWJM(R)50V

[LU]



SWJM(R)50E

[DF]



* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

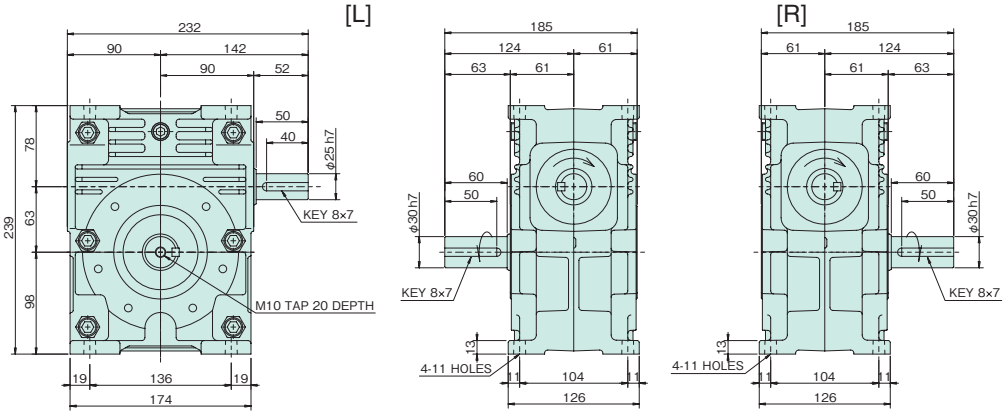
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	MW_1	*MW*	*MB*	*MD*	*MT*	E type Estimated mass kg	V type Estimated mass kg
EWJM50	0.4	40	65 {6.6}	76 { 7.8}	224 (241)	91 (91)	315 (332)	389 (406)	140 (140)	160 (160)	81 (104.5)	15 (17)	15 (18)
		50	76 {7.8}	90 { 9.2}									
		60	86 {8.8}	92 { 9.4}									
EWJMR50	0.75	10	37 {3.8}	44 { 4.5}	260 (305)	93 (93)	353 (398)	427 (472)	178 (178)	200 (200)	140 (140.0)	21 (24)	22 (25)
		15	53 {5.5}	64 { 6.5}									
		20	69 {7.1}	83 { 8.4}									
		25	84 {8.6}	100 {10.2}									
		30	95 {9.7}	103 {10.5}									
SWJM50	0.4	20	37 {3.8}	44 { 4.5}	224 (241)	148 (148)	372 (389)	446 (463)	140 (140)	160 (160)	81 (104.5)	21 (24)	–
		25	45 {4.6}	53 { 5.4}									
		30	51 {5.2}	60 { 6.1}									
		40	65 {6.6}	76 { 7.8}									
		50	76 {7.8}	86 { 8.8}									
		60	80 {8.2}	86 { 8.8}									
SWJMR50	0.75	10	37 {3.8}	44 { 4.5}	260 (305)	158 (158)	418 (463)	492 (537)	178 (178)	200 (200)	140 (140.0)	27 (30)	–
		15	53 {5.5}	64 { 6.5}									

* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EWJ63E/EWJ63V/SWJ63E

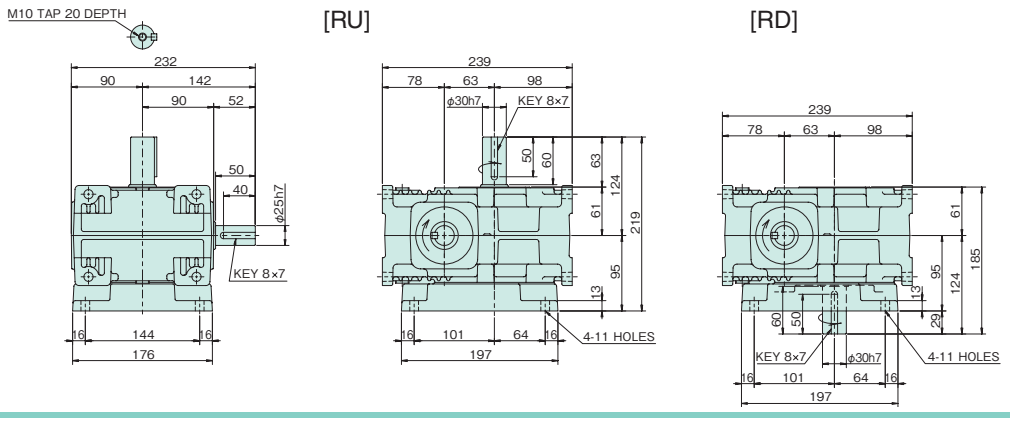
See next page for reducers with motors

EWJ63E



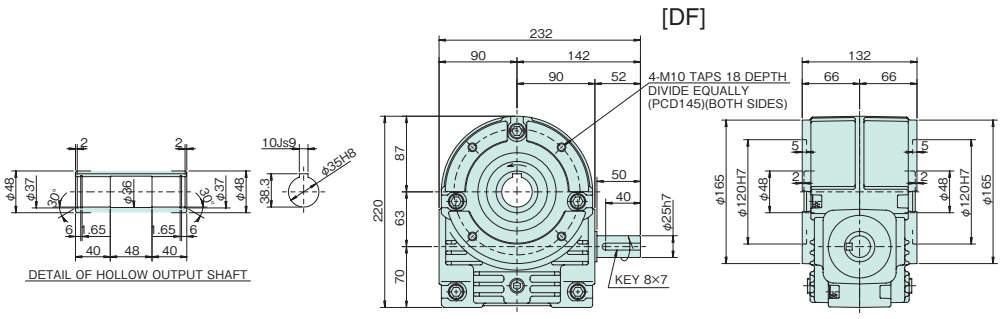
Estimated mass 11 kg

EWJ63V



Estimated mass 12 kg

SWJ63E



Estimated mass 16 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ63	10	3.22	161 {16.4}	2.98	178 {18.2}	2.65	197 {20.1}	2.36	211 {21.6}	1.36	224 {22.9}	0.29	224 {22.9}
	15	2.41	174 {17.7}	2.23	192 {19.6}	1.98	212 {21.6}	1.75	224 {22.9}	0.96	224 {22.9}	0.21	224 {22.9}
	20	1.91	179 {18.2}	1.76	196 {20.0}	1.56	215 {22.0}	1.36	224 {22.9}	0.75	224 {22.9}	0.17	224 {22.9}
	25	1.57	179 {18.3}	1.44	196 {20.0}	1.27	213 {21.7}	1.12	224 {22.9}	0.62	224 {22.9}	0.14	224 {22.9}
	30	1.38	180 {18.4}	1.29	198 {20.2}	1.15	218 {22.3}	1.00	224 {22.9}	0.56	224 {22.9}	0.13	224 {22.9}
	40	1.09	178 {18.2}	1.01	196 {20.0}	0.91	215 {21.9}	0.80	224 {22.9}	0.46	224 {22.9}	0.11	224 {22.9}
	50	0.88	173 {17.7}	0.81	188 {19.2}	0.73	205 {20.9}	0.65	217 {22.1}	0.39	224 {22.9}	0.09	224 {22.9}
	60	0.72	163 {16.7}	0.67	177 {18.1}	0.59	192 {19.6}	0.53	203 {20.7}	0.31	204 {20.8}	0.07	204 {20.8}
SWJ63	10	2.70	135 {13.7}	2.43	145 {14.8}	2.20	164 {16.8}	1.99	178 {18.1}	1.36	224 {22.9}	0.29	224 {22.9}
	15	1.95	140 {14.3}	1.76	152 {15.5}	1.59	170 {17.4}	1.44	184 {18.8}	0.96	224 {22.9}	0.21	224 {22.9}
	20	1.56	145 {14.8}	1.41	157 {16.0}	1.28	176 {17.9}	1.16	190 {19.4}	0.75	224 {22.9}	0.17	224 {22.9}
	25	1.32	151 {15.4}	1.20	163 {16.6}	1.08	182 {18.5}	0.99	197 {20.1}	0.62	224 {22.9}	0.14	224 {22.9}
	30	1.13	147 {15.0}	1.03	158 {16.2}	0.93	177 {18.0}	0.85	191 {19.5}	0.56	224 {22.9}	0.13	224 {22.9}
	40	0.92	150 {15.3}	0.84	163 {16.6}	0.76	181 {18.5}	0.70	196 {20.0}	0.46	224 {22.9}	0.11	224 {22.9}
	50	0.79	155 {15.8}	0.72	168 {17.1}	0.66	186 {19.0}	0.61	202 {20.6}	0.39	224 {22.9}	0.09	224 {22.9}
	60	0.70	158 {16.2}	0.64	171 {17.5}	0.59	190 {19.4}	0.52	200 {20.4}	0.31	204 {20.8}	0.07	204 {20.8}

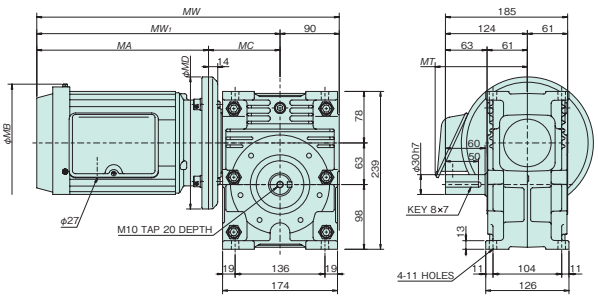
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings EWJMR63E/EWJMR63V/SWJMR63E

See previous page for reducers without motors

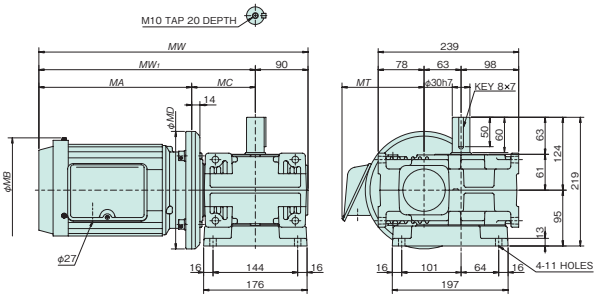
EWJMR63E

[R]



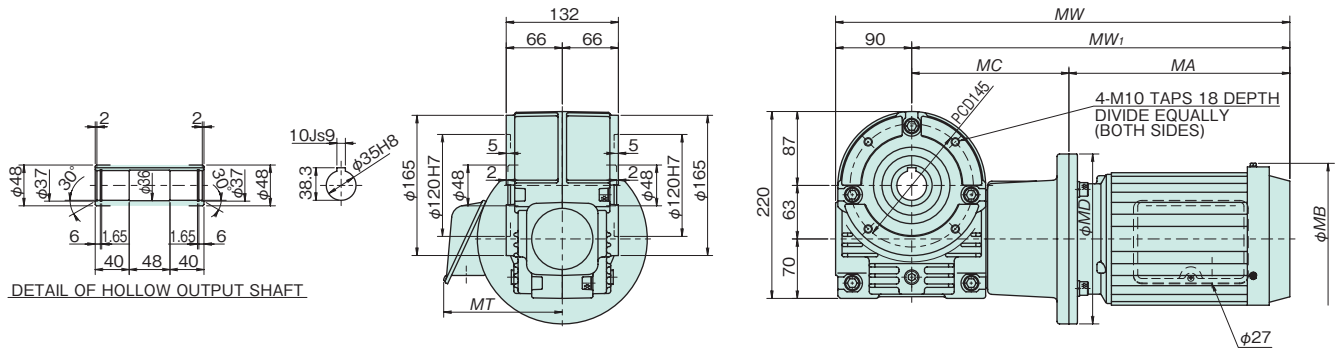
EWJMR63V

[LU]



SWJMR63E

[DF]



* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

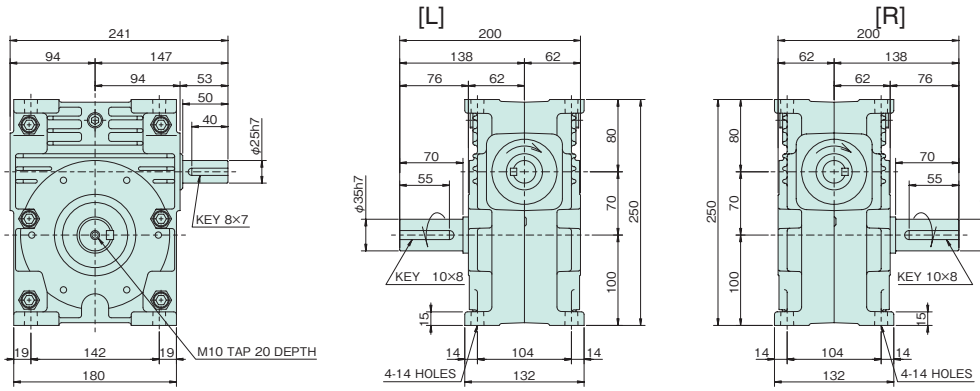
Size	Standard combination Motor kW	Reduction ratio	1750 r/min Output torque N·m {kgf·m}	1450 r/min Output torque N·m {kgf·m}	Values in ( ) for the motor indicates dimensions for a motor with a brake. MA	MC	MW_1	MW	MB	MD	MT	E type Estimated mass kg	V type Estimated mass kg
EWJMR63	0.75	40	123 {12.6}	145 {14.8}	260 (305)	108 (108)	368 (413)	458 (503)	178 (178)	200 (200)	140 (140.0)	25 (28)	27 (30)
		50	147 {15.0}	174 {17.7}									
		60	163 {16.7}	177 {18.1}									
	1.5	10	75 { 7.6}	90 { 9.1}	296 (360)	108 (108)	404 (468)	494 (558)	204 (202)	200 (200)	158 (155.0)	35 (40)	36 (41)
		15	108 {11.0}	129 {13.2}									
		20	140 {14.3}	167 {17.0}									
		25	171 {17.4}	196 {20.0}									
		30	180 {18.4}	198 {20.2}									
SWJMR63	0.75	20	70 { 7.1}	83 { 8.5}	260 (305)	185 (185)	445 (490)	535 (580)	178 (178)	200 (200)	140 (140.0)	33 (36)	—
		25	85 { 8.7}	102 {10.4}									
		30	98 { 9.9}	115 {11.8}									
		40	123 {12.6}	145 {14.8}									
		50	147 {15.0}	168 {17.1}									
		60	158 {16.2}	171 {17.5}									
	1.5	10	75 { 7.6}	90 { 9.1}	296 (360)	185 (185)	481 (545)	571 (635)	204 (202)	200 (200)	158 (155.0)	43 (48)	—
		15	108 {11.0}	129 {13.2}									

* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EWJ70E/EWJ70V/SWJ70E

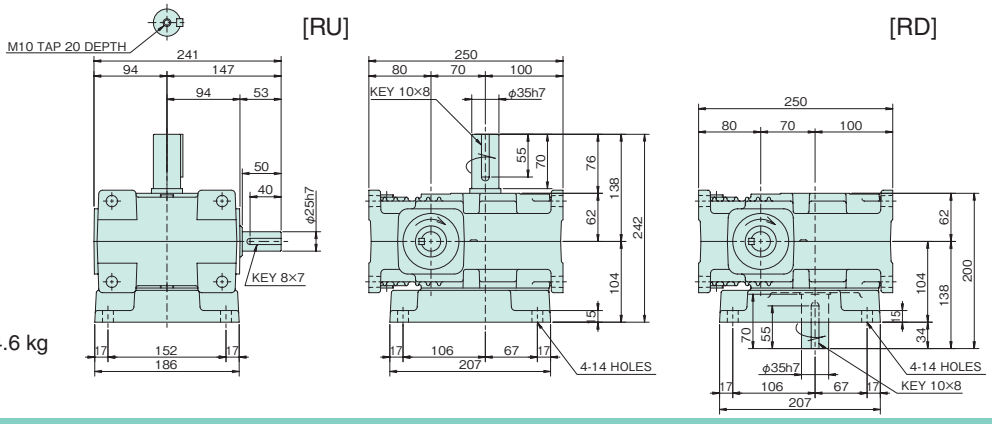
See next page for reducers with motors

EWJ70E



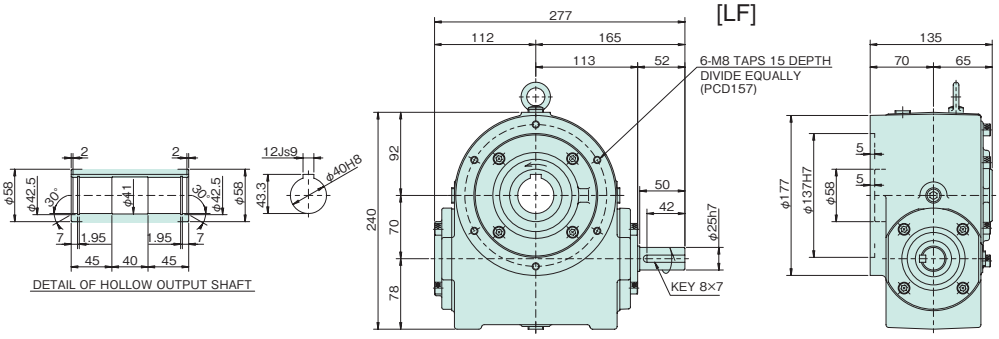
Estimated mass 13 kg

EWJ70V



Estimated mass 14.6 kg

SWJ70E



Estimated mass 21 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ70	10	4.28	214 {21.9}	3.85	231 {23.6}	3.51	263 {26.8}	3.16	284 {29.0}	1.96	324 {33.1}	0.42	324 {33.1}
	15	3.09	225 {22.9}	2.80	242 {24.7}	2.54	273 {27.9}	2.29	295 {30.1}	1.38	324 {33.1}	0.30	324 {33.1}
	20	2.50	235 {24.0}	2.26	254 {25.9}	2.05	285 {29.1}	1.86	309 {31.5}	1.08	324 {33.1}	0.24	324 {33.1}
	25	2.12	243 {24.8}	1.92	263 {26.8}	1.74	294 {30.0}	1.56	314 {32.0}	0.89	324 {33.1}	0.20	324 {33.1}
	30	1.80	236 {24.0}	1.64	255 {26.0}	1.49	284 {29.0}	1.36	308 {31.4}	0.81	324 {33.1}	0.19	324 {33.1}
	40	1.45	241 {24.6}	1.35	265 {27.0}	1.22	295 {30.1}	1.11	315 {32.2}	0.65	324 {33.1}	0.15	324 {33.1}
	50	1.18	235 {23.9}	1.10	258 {26.3}	0.99	283 {28.9}	0.89	302 {30.8}	0.55	324 {33.1}	0.13	324 {33.1}
	60	0.97	222 {22.7}	0.90	243 {24.8}	0.81	266 {27.1}	0.73	282 {28.8}	0.46	311 {31.7}	0.11	311 {31.8}
SWJ70	10	3.14	157 {16.0}	2.94	176 {18.0}	2.62	196 {20.0}	2.35	211 {21.6}	1.62	268 {27.4}	0.39	300 {30.6}
	15	2.43	176 {18.0}	2.27	197 {20.1}	1.95	210 {21.5}	1.76	227 {23.1}	1.18	276 {28.1}	0.30	317 {32.3}
	20	2.03	191 {19.5}	1.94	217 {22.2}	1.63	227 {23.1}	1.48	245 {25.0}	0.92	277 {28.2}	0.23	310 {31.6}
	25	1.71	196 {20.0}	1.56	213 {21.7}	1.38	233 {23.8}	1.25	252 {25.7}	0.72	263 {26.8}	0.19	301 {30.7}
	30	1.45	190 {19.4}	1.36	212 {21.6}	1.24	236 {24.1}	1.12	254 {25.9}	0.71	283 {28.9}	0.18	317 {32.3}
	40	1.20	200 {20.4}	1.13	222 {22.7}	1.00	242 {24.7}	0.91	259 {26.4}	0.58	292 {29.8}	0.15	316 {32.2}
	50	0.97	194 {19.8}	0.91	214 {21.8}	0.81	233 {23.7}	0.73	248 {25.3}	0.46	273 {27.9}	0.12	294 {30.0}
	60	0.80	184 {18.8}	0.75	201 {20.6}	0.66	218 {22.3}	0.60	232 {23.6}	0.38	253 {25.9}	0.10	276 {28.2}

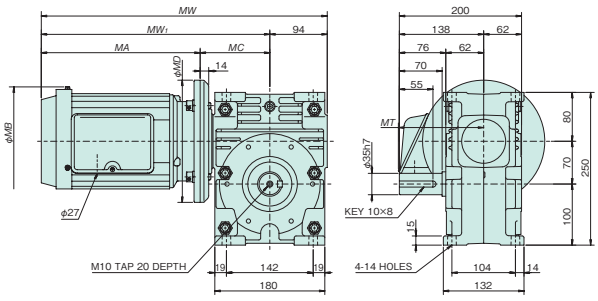
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings EWJMR70E/EWJMR70V/SWJMR70E

See previous page for reducers without motors

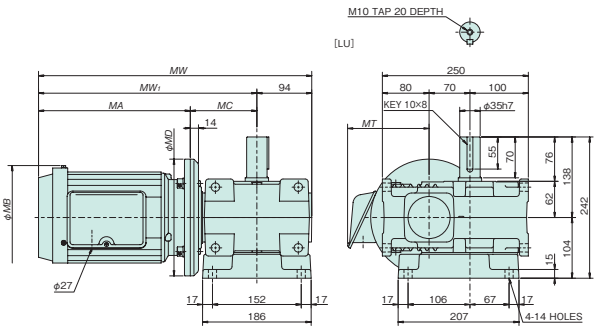
EWJMR70E

[R]



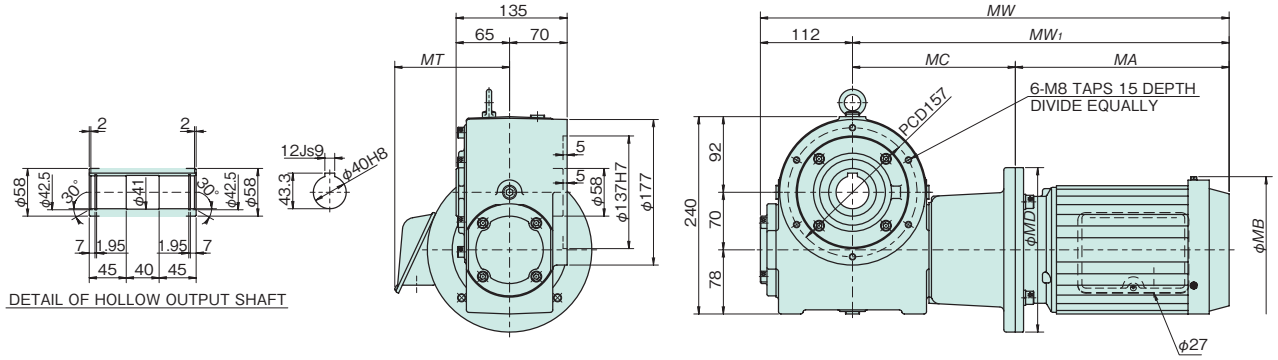
EWJMR70V

[LU]



SWJMR70E

[LF]



* Refer to page 24 for shaft arrangements and relative direction of rotation.

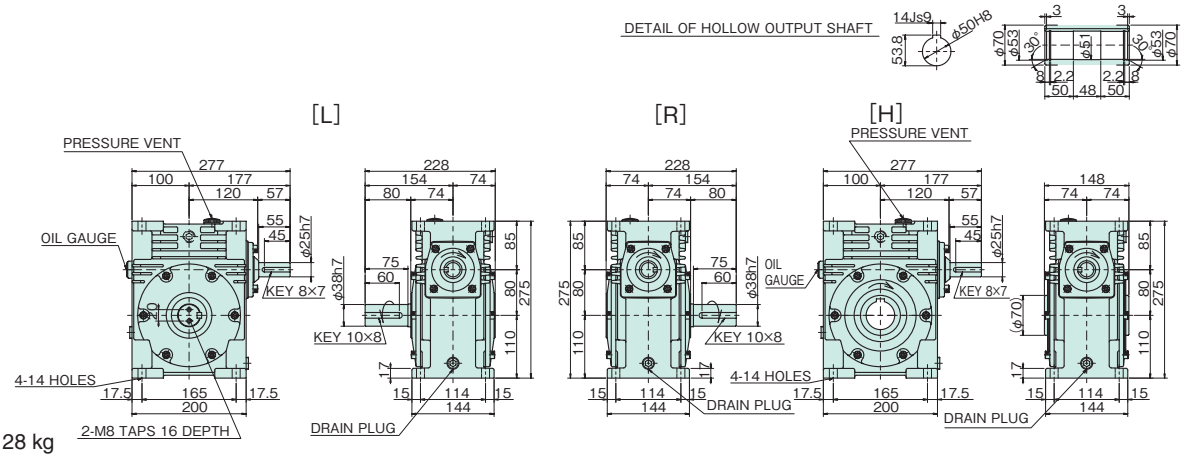
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	MW	MB	MD	MT	E type Estimated mass kg	V type Estimated mass kg
EWJMR70	0.75	40	125 {12.7}	148 {15.1}	260 (305)	114 (114)	374 (419)	468 (513)	178 (178)	200 (200)	140 (140.0)	28 (31)	29 (32)
		50	150 {15.3}	176 {18.0}									
		60	172 {17.6}	203 {20.7}									
	1.5	25	172 {17.6}	205 {20.9}	296 (360)	114 (114)	410 (474)	504 (568)	204 (178)	200 (200)	158 (140.0)	37 (42)	39 (44)
		30	197 {20.1}	233 {23.8}									
	2.2	10	110 {11.2}	132 {13.5}	318 (374)	114 (114)	432 (488)	526 (582)	218 (226)	250 (250)	169 (166.0)	48 (53)	50 (55)
		15	160 {16.3}	191 {19.4}									
		20	207 {21.1}	247 {25.2}									
SWJMR70	0.75	30	98 {10.0}	116 {11.9}	260 (305)	198 (198)	458 (503)	570 (615)	178 (178)	200 (200)	140 (140.0)	41 (44)	–
		40	125 {12.7}	148 {15.1}									
		50	150 {15.3}	176 {18.0}									
		60	172 {17.6}	201 {20.6}									
	1.5	15	109 {11.1}	130 {13.3}	296 (360)	198 (198)	494 (558)	606 (670)	204 (202)	200 (200)	158 (155.0)	51 (56)	–
		20	141 {14.4}	168 {17.2}									
		25	172 {17.6}	205 {20.9}									
	2.2	10	110 {11.2}	132 {13.5}	318 (374)	222 (222)	540 (596)	652 (708)	218 (226)	250 (250)	169 (166.0)	61 (66)	–

* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

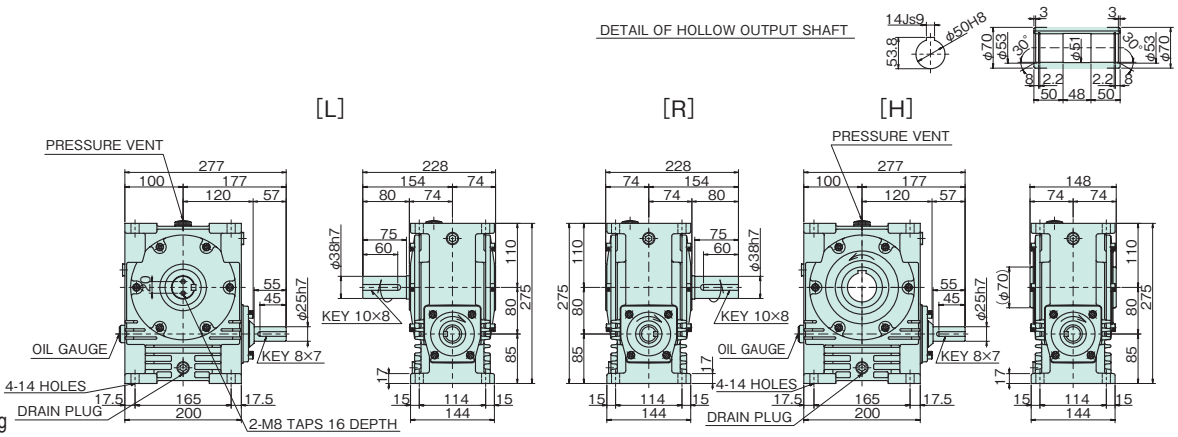
Dimensional Drawings EW80T/EW80B/EW80V

EW80T



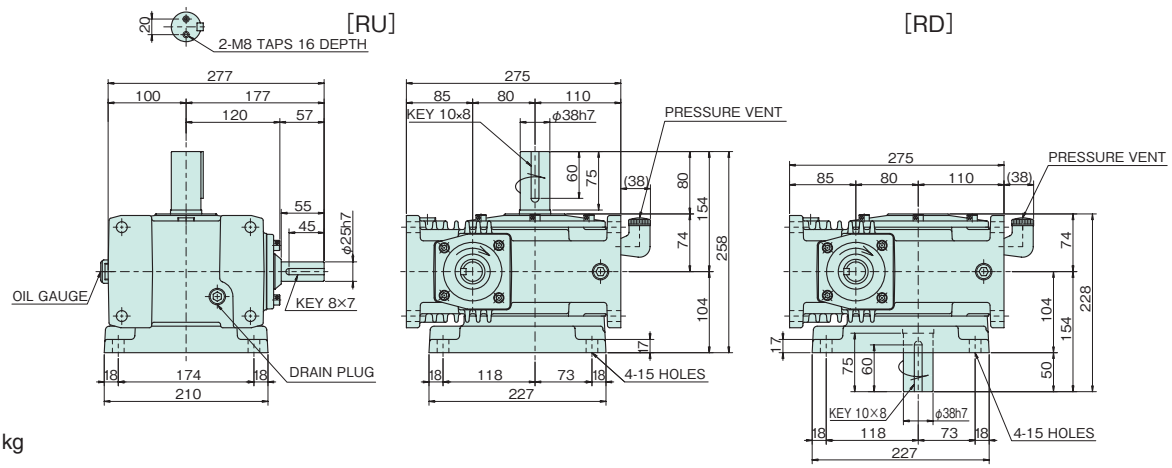
Estimated mass 28 kg

EW80B



Estimated mass 27 kg

EW80V



Estimated mass 30 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

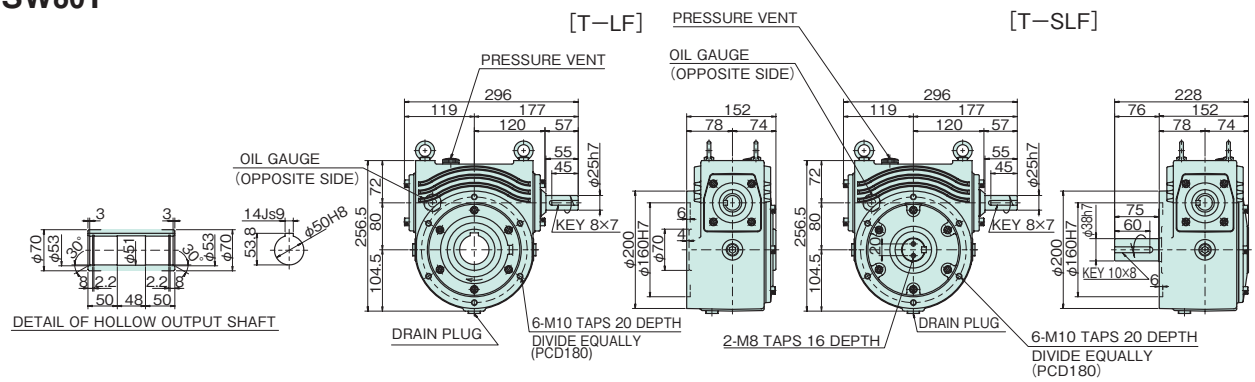
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW80	10	6.52	329 {33.6}	6.16	372 {38.0}	5.52	417 {42.5}	4.86	441 {45.0}	2.83	474 {48.3}	0.61	474 {48.3}
	15	4.88	358 {36.5}	4.53	397 {40.5}	3.98	434 {44.3}	3.52	459 {46.9}	1.98	473 {48.3}	0.44	474 {48.3}
	20	3.88	370 {37.7}	3.62	412 {42.0}	3.18	449 {45.8}	2.80	473 {48.3}	1.55	473 {48.3}	0.34	473 {48.3}
	25	3.21	374 {38.1}	2.99	414 {42.3}	2.67	460 {46.9}	2.31	474 {48.3}	1.28	474 {48.3}	0.29	474 {48.3}
	30	2.77	371 {37.9}	2.62	416 {42.4}	2.30	451 {46.0}	2.03	474 {48.3}	1.14	474 {48.3}	0.27	474 {48.3}
	40	2.17	370 {37.8}	2.05	413 {42.2}	1.86	461 {47.0}	1.62	473 {48.3}	0.92	473 {48.3}	0.22	474 {48.3}
	50	1.76	361 {36.8}	1.66	400 {40.8}	1.50	443 {45.2}	1.36	473 {48.3}	0.78	474 {48.3}	0.19	474 {48.3}
	60	1.44	342 {34.9}	1.35	376 {38.4}	1.21	414 {42.3}	1.07	429 {43.8}	0.62	429 {43.8}	0.15	430 {43.8}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings SW80T/SW80B/SW80V

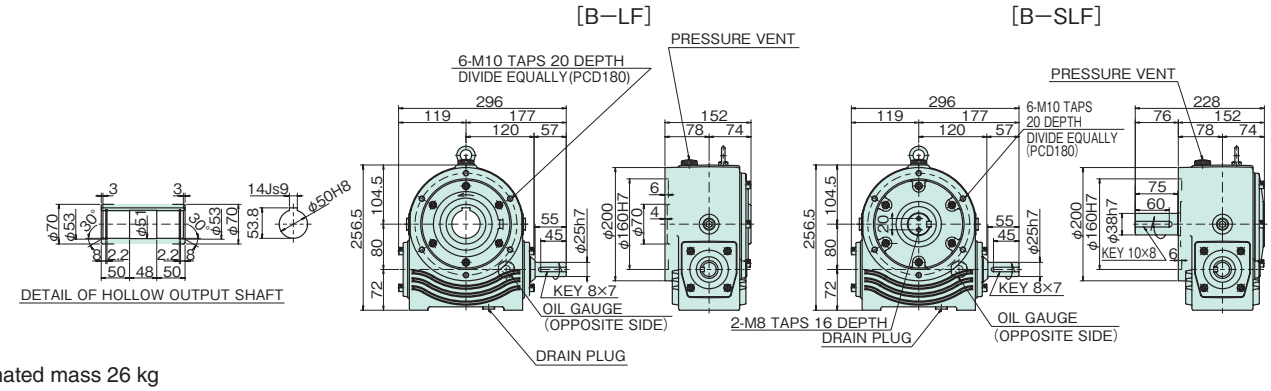
See next page for reducers with motors

SW80T



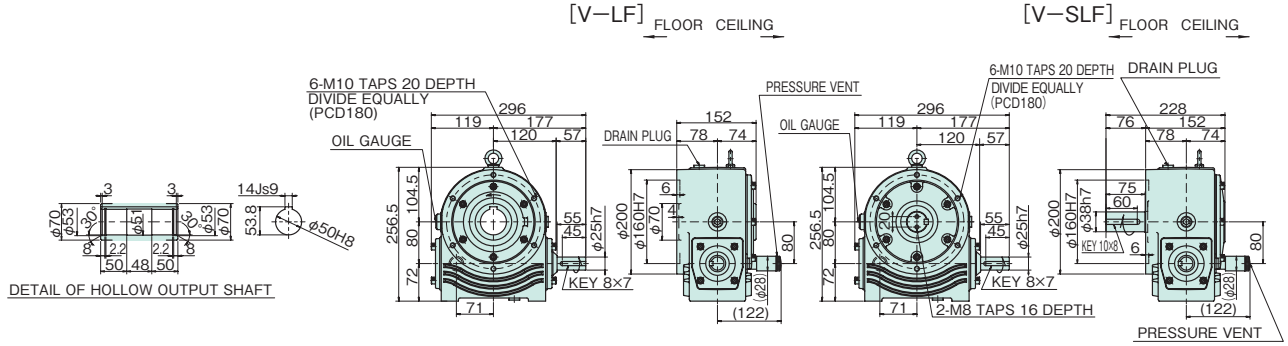
Estimated mass 26 kg

SW80B



Estimated mass 26 kg

SW80V



Estimated mass 26 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

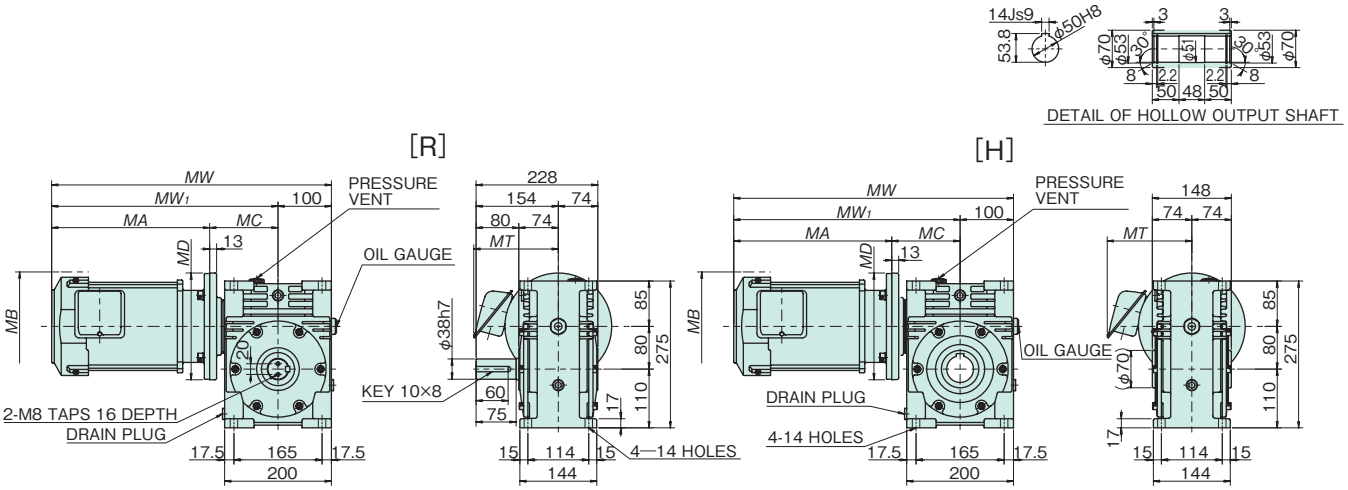
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW80	10	6.52	329 {33.6}	6.16	372 {38.0}	5.52	417 {42.5}	4.86	441 {45.0}	2.83	474 {48.3}	0.61	474 {48.3}
	15	4.88	358 {36.5}	4.53	397 {40.5}	3.98	434 {44.3}	3.52	459 {46.9}	1.98	473 {48.3}	0.44	474 {48.3}
	20	3.88	370 {37.7}	3.62	412 {42.0}	3.18	449 {45.8}	2.80	473 {48.3}	1.55	473 {48.3}	0.34	473 {48.3}
	25	3.21	374 {38.1}	2.99	414 {42.3}	2.67	460 {46.9}	2.31	474 {48.3}	1.28	474 {48.3}	0.29	474 {48.3}
	30	2.77	371 {37.9}	2.62	416 {42.4}	2.30	451 {46.0}	2.03	474 {48.3}	1.14	474 {48.3}	0.27	474 {48.3}
	40	2.17	370 {37.8}	2.05	413 {42.2}	1.86	461 {47.0}	1.62	473 {48.3}	0.92	473 {48.3}	0.22	474 {48.3}
	50	1.76	361 {36.8}	1.66	400 {40.8}	1.50	443 {45.2}	1.36	473 {48.3}	0.78	474 {48.3}	0.19	474 {48.3}
	60	1.44	342 {34.9}	1.35	376 {38.4}	1.21	414 {42.3}	1.07	429 {43.8}	0.62	429 {43.8}	0.15	430 {43.8}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

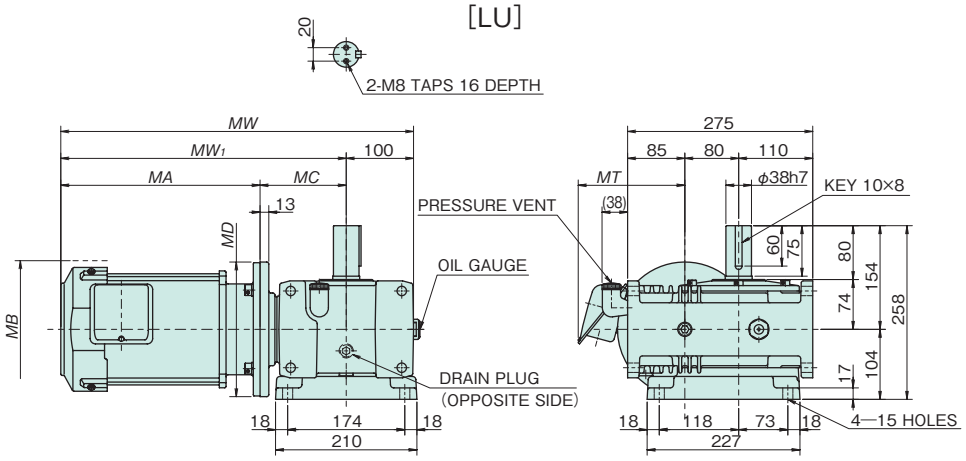
Dimensional Drawings EWMR80T/EWMR80V

See previous page for reducers without motors

EWMR80T



EWMR80V



Transfer Capacity Table

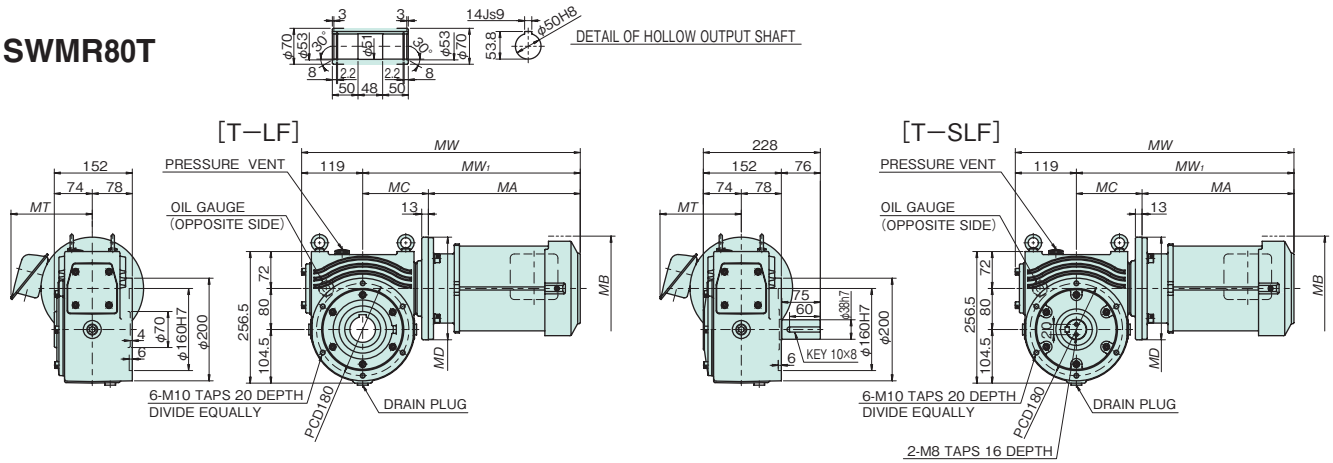
* Refer to page 24 for shaft arrangements and relative direction of rotation.

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	*MW*	*MB*	*MD*	*MT*	T type Estimated mass kg	V type Estimated mass kg
EWMR80	1.5	40	256 {26.1}	302 {30.8}	296 (360)	128 (128)	424 (488)	524 (588)	204 (202)	200 (200)	158 (155.0)	60 (65)	62 (67)
		50	307 {31.3}	362 {36.9}									
		60	342 {34.9}	376 {38.4}									
	2.2	25	256 {26.2}	305 {31.2}	318 (374)	128 (128)	446 (502)	546 (602)	218 (202)	250 (250)	169 (155.0)	73 (78)	75 (80)
		30	295 {30.1}	350 {35.7}									
	3.7	10	187 {19.1}	224 {22.8}	343 (424)	128 (128)	471 (552)	571 (652)	237 (235)	250 (250)	181 (178.0)	82 (92)	84 (94)
		15	272 {27.7}	325 {33.1}									
		20	353 {36.0}	412 {42.0}									

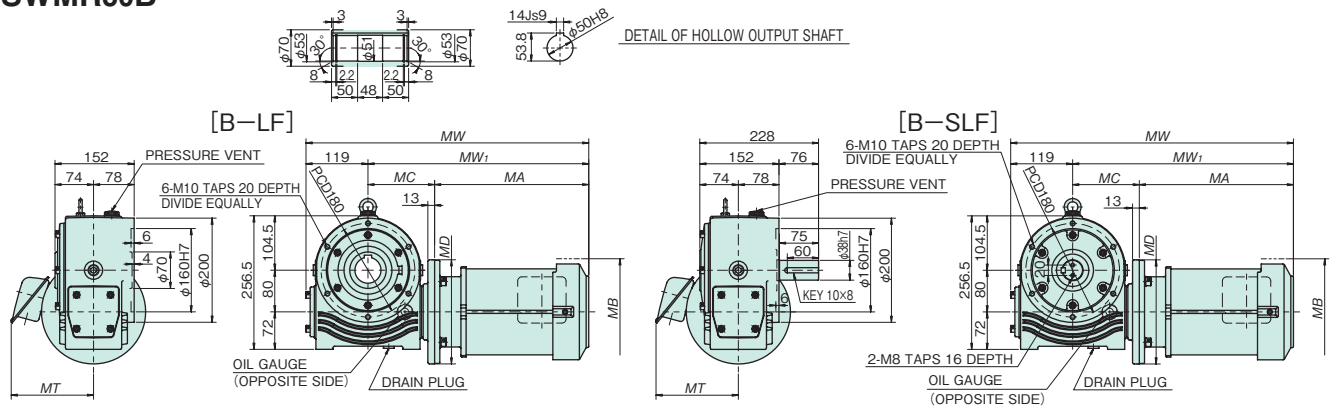
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWMR80T/SWMR80B/SWMR80V

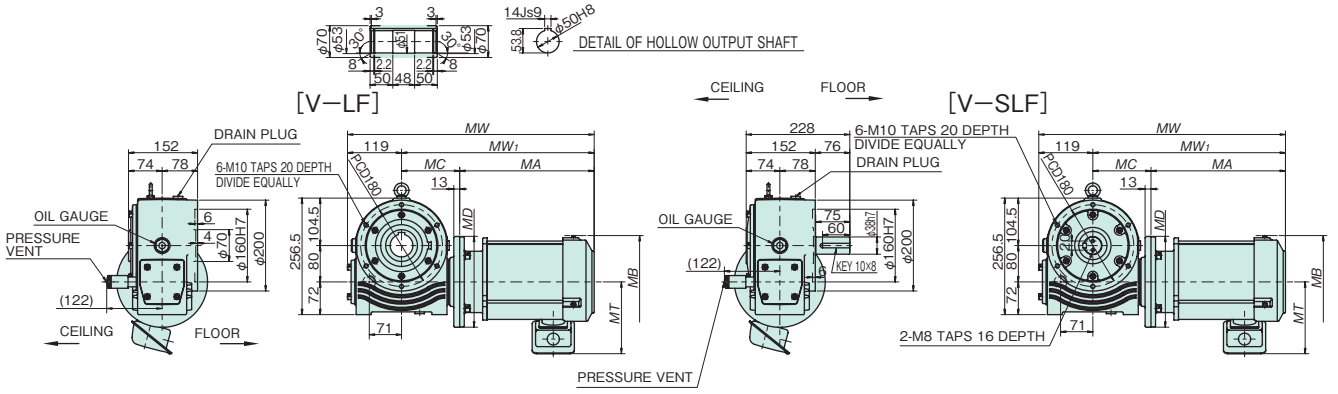
SWMR80T



SWMR80B



SWMR80V



* Refer to page 24 for shaft arrangements and relative direction of rotation.

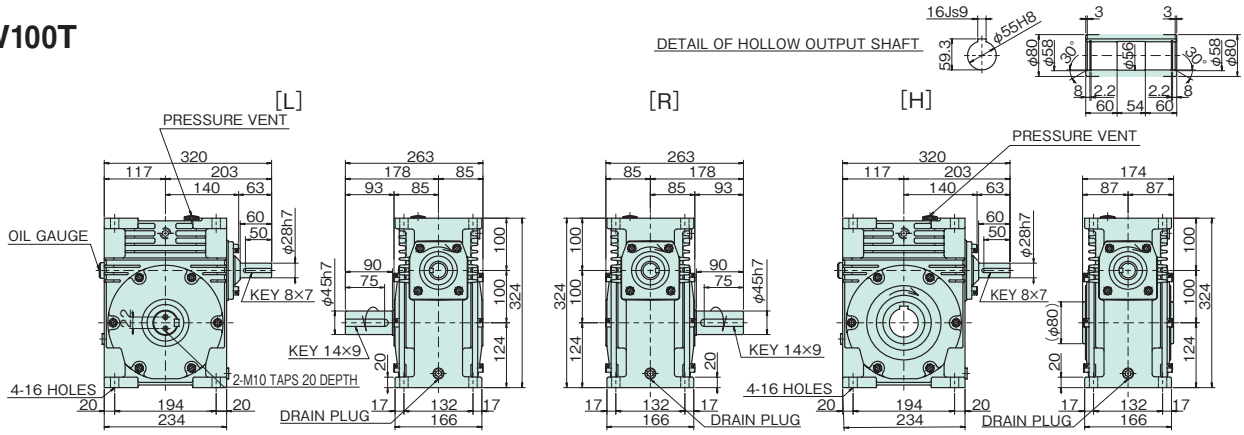
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.							
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	*MW*	*MB*	*MD*	*MT*	Estimated mass kg
SWMR80	1.5	40	256 {26.1}	302 {30.8}	296 (360)	128 (128)	424 (488)	543 (607)	204 (202)	200 (200)	158 (155.0)	53 (58)
		50	307 {31.3}	362 {36.9}								
		60	342 {34.9}	376 {38.4}								
	2.2	20	210 {21.4}	250 {25.5}	318 (374)	128 (128)	446 (502)	565 (621)	218 (226)	250 (250)	169 (166.0)	67 (72)
		25	256 {26.2}	305 {31.2}								
		30	295 {30.1}	350 {35.7}								
	3.7	10	187 {19.1}	224 {22.8}	343 (424)	128 (128)	471 (552)	590 (671)	237 (235)	250 (250)	181 (178.0)	74 (84)
		15	272 {27.7}	325 {33.1}								
		20	353 {36}	412 {42}								

* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

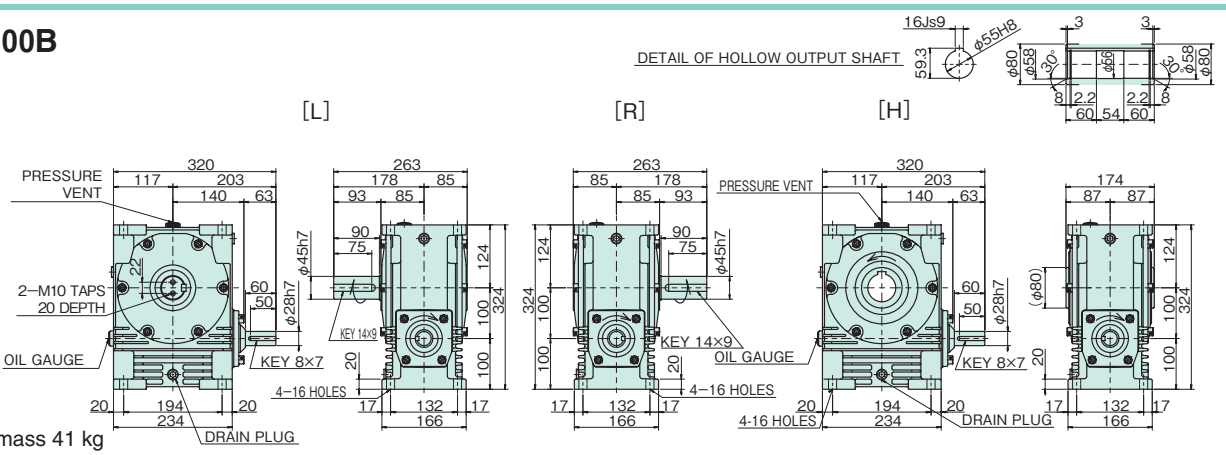
Dimensional Drawings EW100T/EW100B/EW100V

EW100T



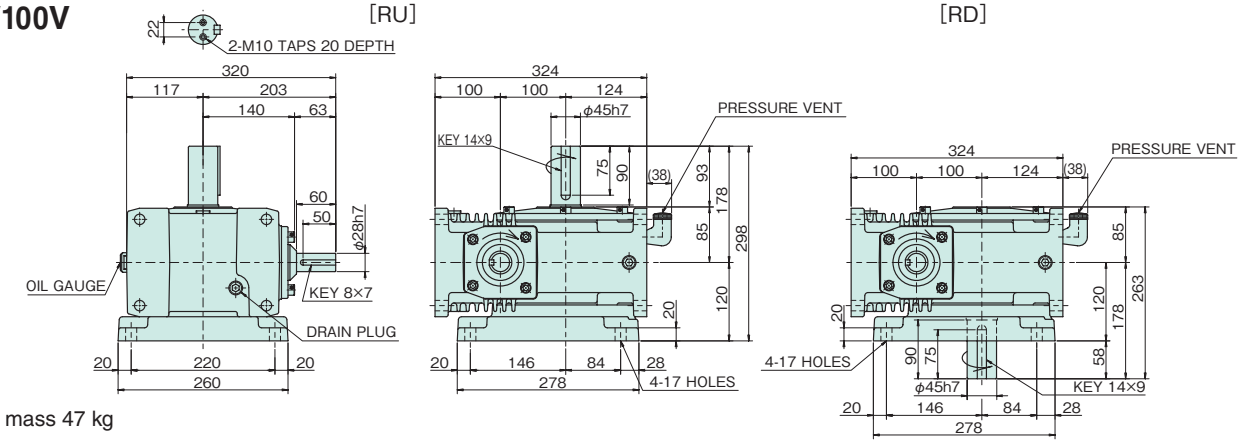
Estimated mass 43 kg

EW100B



Estimated mass 41 kg

EW100V



Estimated mass 47 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

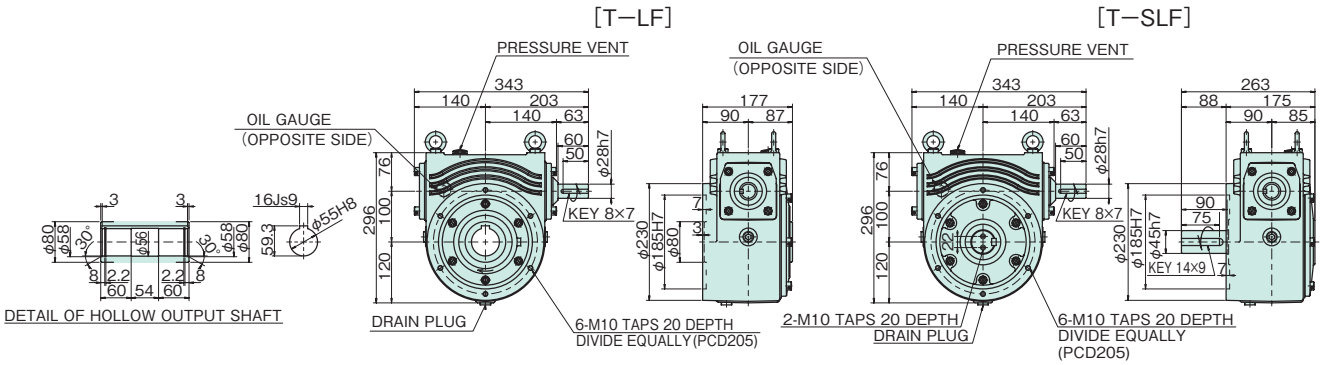
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW100	10	10.81	552 {56.3}	9.83	602 {61.4}	9.10	696 {71.1}	8.14	748 {76.3}	5.29	899 {91.8}	1.14	899 {91.8}
	15	8.05	600 {61.2}	7.37	657 {67.1}	6.66	741 {75.6}	5.88	784 {80.0}	3.68	900 {91.8}	0.81	900 {91.8}
	20	6.35	616 {62.8}	5.85	677 {69.1}	5.28	760 {77.5}	4.67	804 {82.0}	2.88	900 {91.8}	0.64	900 {91.8}
	25	5.06	603 {61.5}	4.81	683 {69.7}	4.39	774 {79.0}	3.91	822 {83.9}	2.16	822 {83.9}	0.49	822 {83.9}
	30	4.52	623 {63.6}	4.18	685 {69.9}	3.81	774 {78.9}	3.39	818 {83.5}	2.09	899 {91.8}	0.48	900 {91.8}
	40	3.52	618 {63.1}	3.27	680 {69.4}	3.04	778 {79.4}	2.74	829 {84.6}	1.68	900 {91.8}	0.40	900 {91.8}
	50	2.75	584 {59.6}	2.64	661 {67.5}	2.43	748 {76.3}	2.23	812 {82.9}	1.30	828 {84.5}	0.31	830 {84.7}
	60	2.27	559 {57.1}	2.16	628 {64.1}	1.98	705 {72.0}	1.72	722 {73.6}	0.98	719 {73.4}	0.24	720 {73.5}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings SW100T/SW100B/SW100V

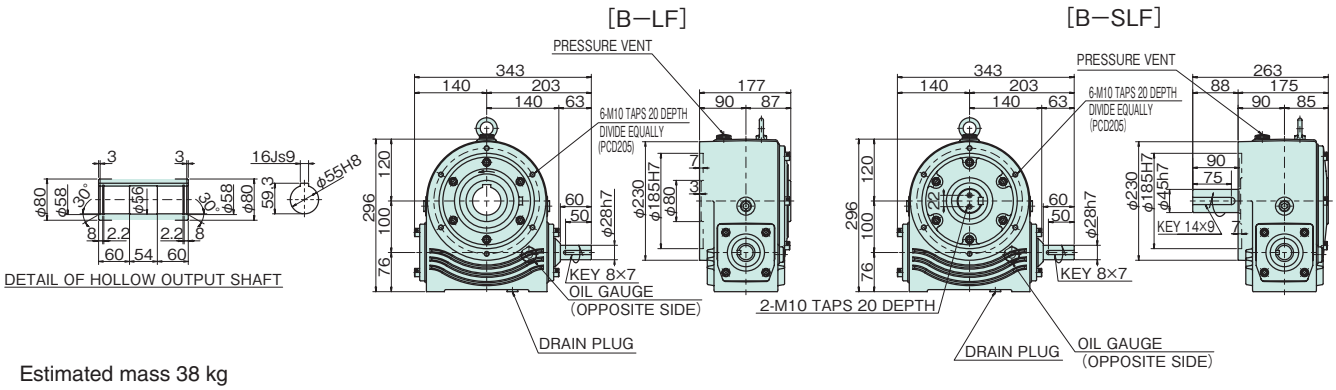
See next page for reducers with motors

SW100T



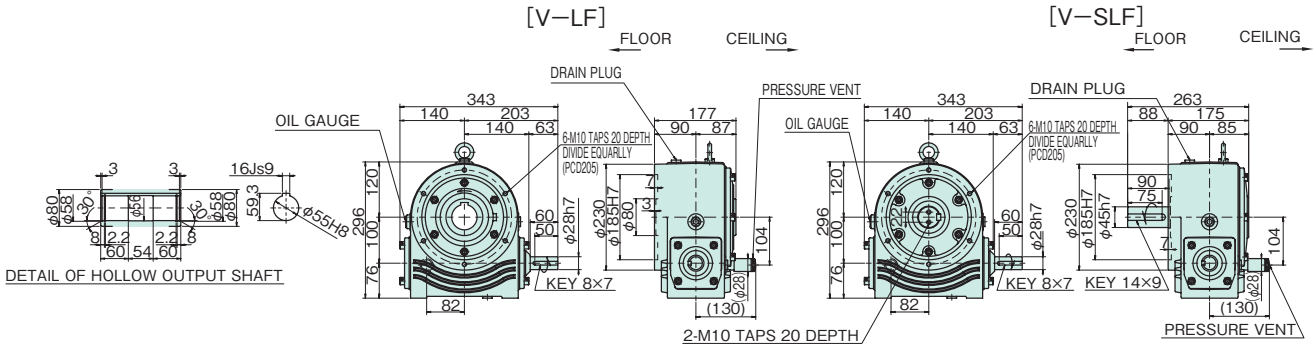
Estimated mass 38 kg

SW100B



Estimated mass 38 kg

SW100V



Estimated mass 38 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

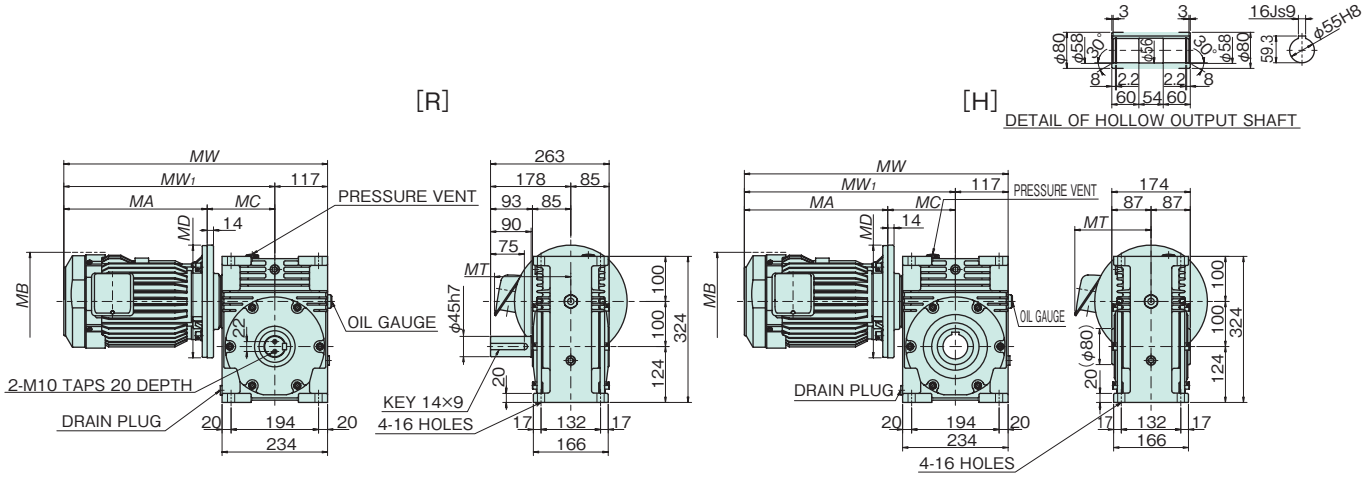
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW100	10	10.81	552 {56.3}	9.83	602 {61.4}	9.10	696 {71.1}	8.14	748 {76.3}	5.29	899 {91.8}	1.14	899 {91.8}
	15	8.05	600 {61.2}	7.37	657 {67.1}	6.66	741 {75.6}	5.88	784 {80.0}	3.68	900 {91.8}	0.81	900 {91.8}
	20	6.35	616 {62.8}	5.85	677 {69.1}	5.28	760 {77.5}	4.67	804 {82.0}	2.88	900 {91.8}	0.64	900 {91.8}
	25	5.06	603 {61.5}	4.81	683 {69.7}	4.39	774 {79.0}	3.91	822 {83.9}	2.16	822 {83.9}	0.49	822 {83.9}
	30	4.52	623 {63.6}	4.18	685 {69.9}	3.81	774 {78.9}	3.39	818 {83.5}	2.09	899 {91.8}	0.48	900 {91.8}
	40	3.52	618 {63.1}	3.27	680 {69.4}	3.04	778 {79.4}	2.74	829 {84.6}	1.68	900 {91.8}	0.40	900 {91.8}
	50	2.75	584 {59.6}	2.64	661 {67.5}	2.43	748 {76.3}	2.23	812 {82.9}	1.30	828 {84.5}	0.31	830 {84.7}
	60	2.27	559 {57.1}	2.16	628 {64.1}	1.98	705 {72.0}	1.72	722 {73.6}	0.98	719 {73.4}	0.24	720 {73.5}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

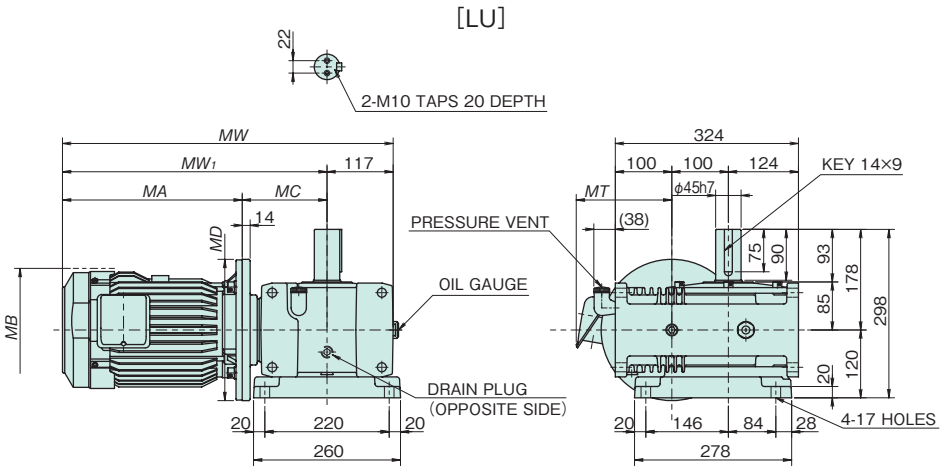
Dimensional Drawings EWMR100T/EWMR100V

See previous page for reducers without motors

EWMR100T



EWMR100V



Transfer Capacity Table

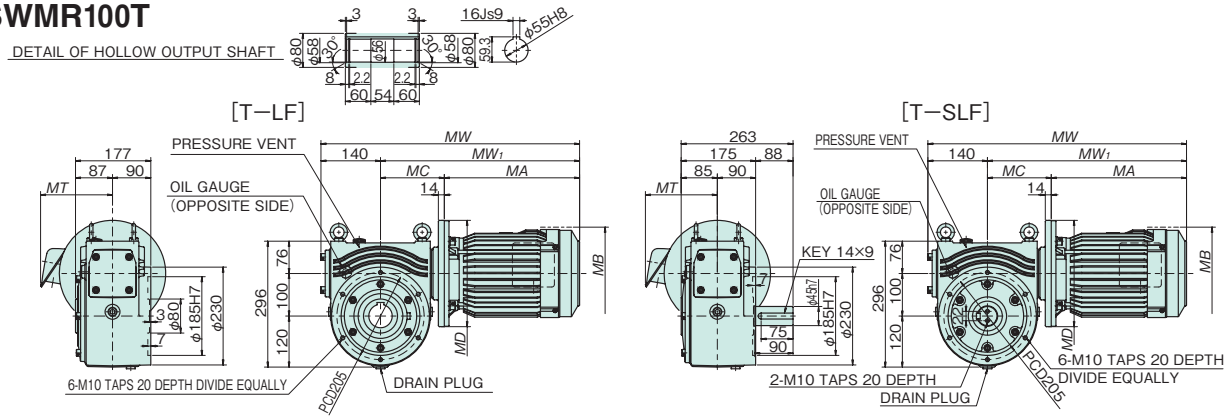
* Refer to page 24 for shaft arrangements and relative direction of rotation.

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	*MW*	*MB*	*MD*	*MT*	T type Estimated mass kg	V type Estimated mass kg
EWMR100	2.2	40	386 {39.4}	457 {46.7}	318 (374)	150 (150)	468 (524)	585 (641)	218 (226)	250 (250)	169 (166.0)	85 (90)	90 (95)
		50	467 {47.6}	552 {56.3}									
		60	543 {55.4}	628 {64.1}									
	3.7	25	440 {44.9}	525 {53.6}	343 (424)	150 (150)	493 (574)	610 (691)	237 (226)	250 (250)	181 (166.0)	94 (104)	99 (109)
		30	510 {52.1}	607 {61.9}									
	5.5	10	281 {28.6}	337 {34.3}	402 (475)	157 (157)	559 (632)	676 (749)	277 (275)	300 (300)	197 (200.0)	116 (128)	121 (133)
		15	410 {41.8}	491 {50.1}									
		20	533 {54.4}	637 {65.0}									

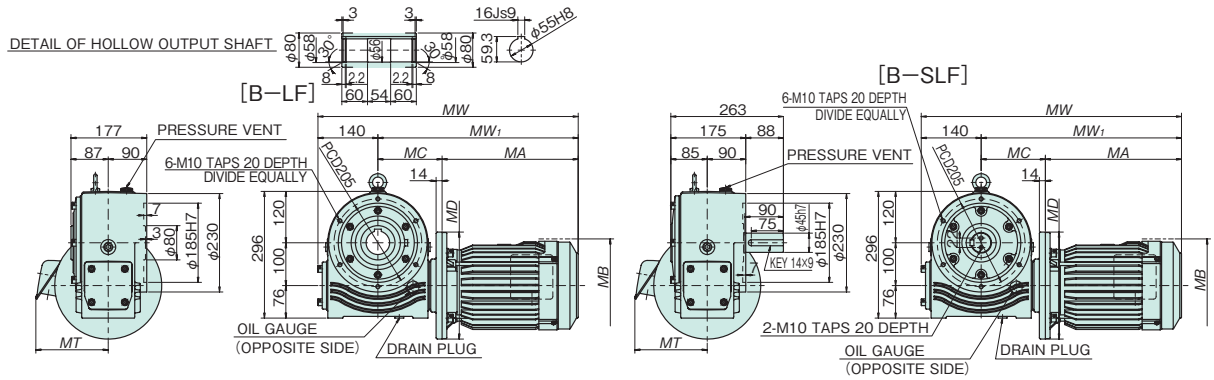
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWMR100T/SWMR100B/SWMR100V

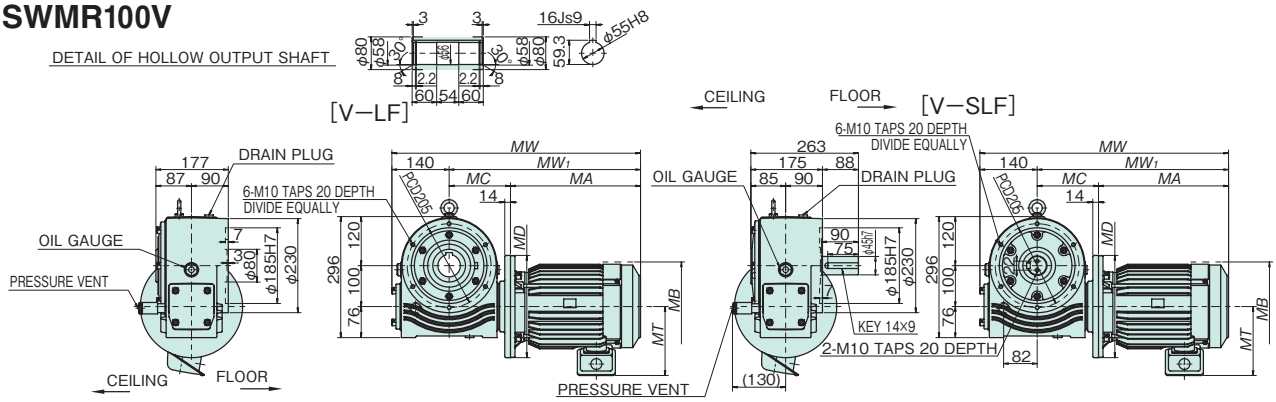
SWMR100T



SWMR100B



SWMR100V



Transfer Capacity Table

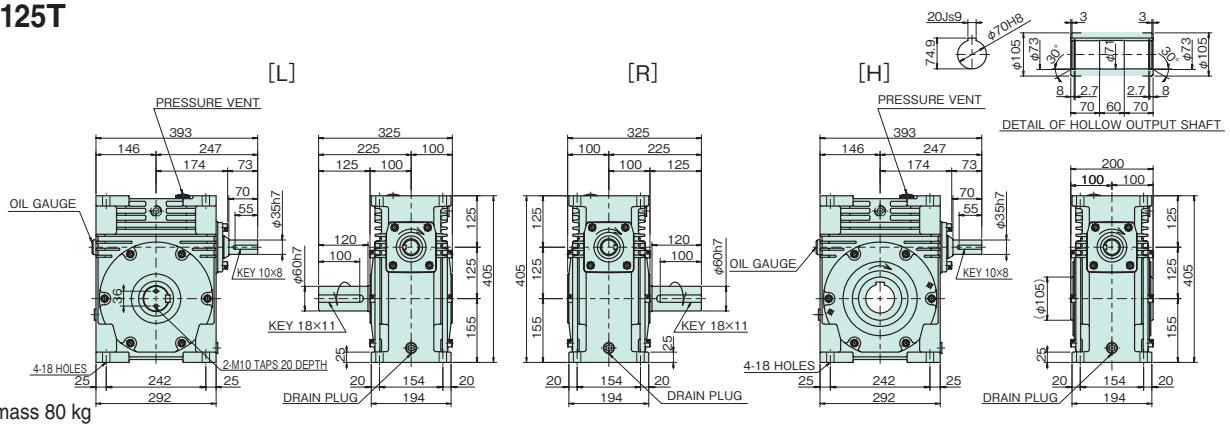
* Refer to page 24 for shaft arrangements and relative direction of rotation.

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.							
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	*MW*	*MB*	*MD*	*MT*	Estimated mass kg
SWMR100	2.2	40	386 {39.4}	457 {46.7}	318 (374)	150 (150)	468 (524)	608 (664)	218 (226)	250 (250)	169 (166.0)	80 (85)
		50	467 {47.6}	552 {56.3}								
		60	543 {55.4}	628 {64.1}								
	3.7	25	440 {44.9}	525 {53.6}	343 (424)	150 (150)	493 (574)	633 (714)	237 (235)	250 (250)	181 (178.0)	87 (97)
		30	510 {52.1}	607 {61.9}								
	5.5	10	281 {28.6}	337 {34.3}	402 (475)	157 (157)	559 (632)	699 (772)	277 (275)	300 (300)	197 (200.0)	101 (113)
		15	410 {41.8}	491 {50.1}								
		20	533 {54.4}	637 {65.0}								

* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

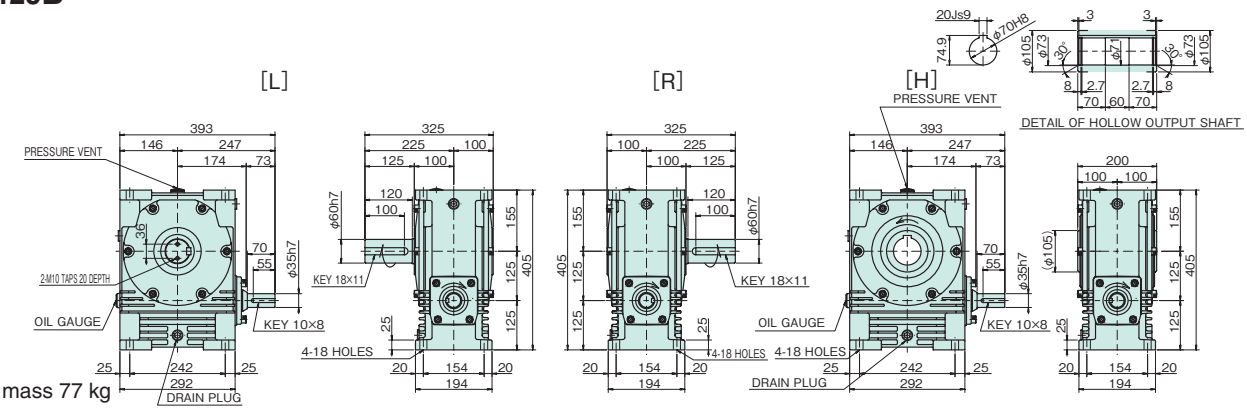
Dimensional Drawings EW125T/EW125B/EW125V

EW125T



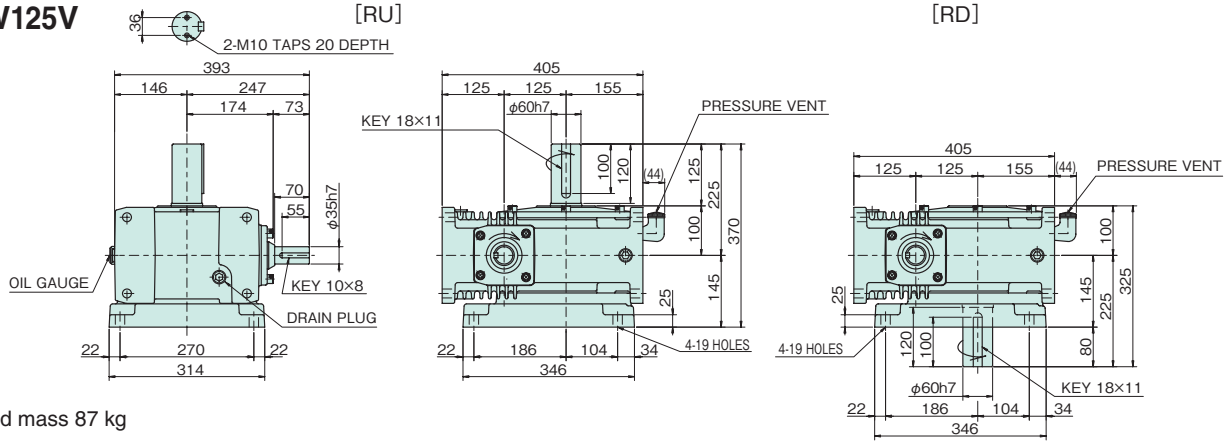
Estimated mass 80 kg

EW125B



Estimated mass 77 kg

EW125V



Estimated mass 87 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

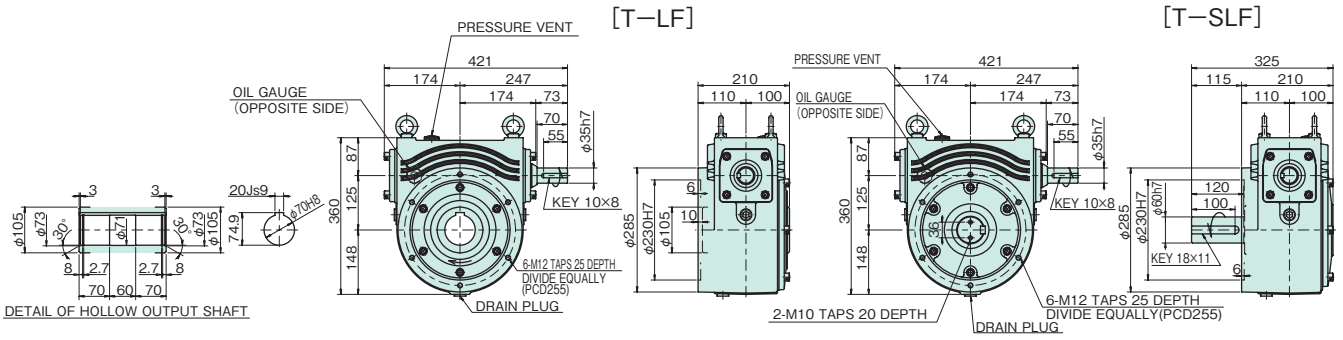
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW125	10	17.70	909 {92.7}	16.42	1012 {103}	14.66	1130 {115}	13.80	1279 {131}	9.55	1637 {167}	2.14	1705 {174}
	15	13.13	987 {101}	12.20	1099 {112}	10.98	1233 {126}	10.32	1390 {142}	6.90	1704 {174}	1.52	1704 {174}
	20	10.27	1011 {103}	9.57	1126 {115}	8.69	1274 {130}	8.10	1420 {145}	5.33	1704 {174}	1.19	1704 {174}
	25	8.46	1020 {104}	7.64	1098 {112}	7.20	1286 {131}	6.70	1429 {146}	4.27	1648 {168}	0.96	1648 {168}
	30	7.33	1025 {105}	6.85	1141 {117}	6.23	1285 {131}	5.88	1444 {147}	3.88	1704 {174}	0.90	1705 {174}
	40	5.63	1015 {104}	5.28	1131 {115}	4.85	1281 {131}	4.55	1425 {145}	3.07	1705 {174}	0.73	1705 {174}
	50	4.55	986 {101}	4.15	1065 {109}	3.95	1245 {127}	3.71	1382 {141}	2.54	1656 {169}	0.62	1666 {170}
	60	3.72	936 {95.5}	3.42	1018 {104}	3.25	1182 {121}	3.04	1306 {133}	1.91	1430 {146}	0.47	1439 {147}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings SW125T/SW125B/SW125V

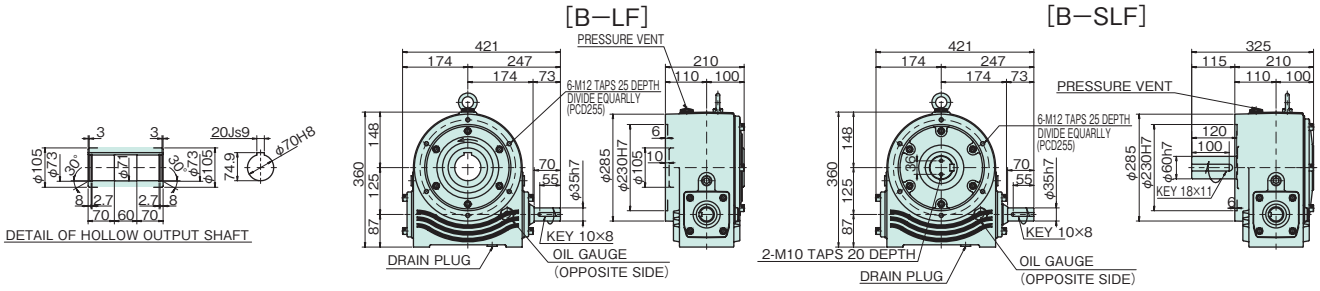
See next page for reducers with motors

SW125T



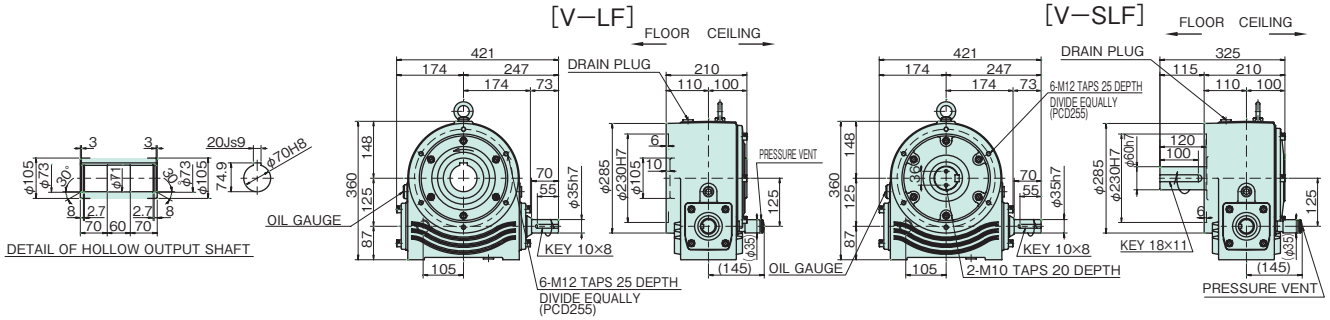
Estimated mass 72 kg

SW125B



Estimated mass 72 kg

SW125V



Estimated mass 72 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

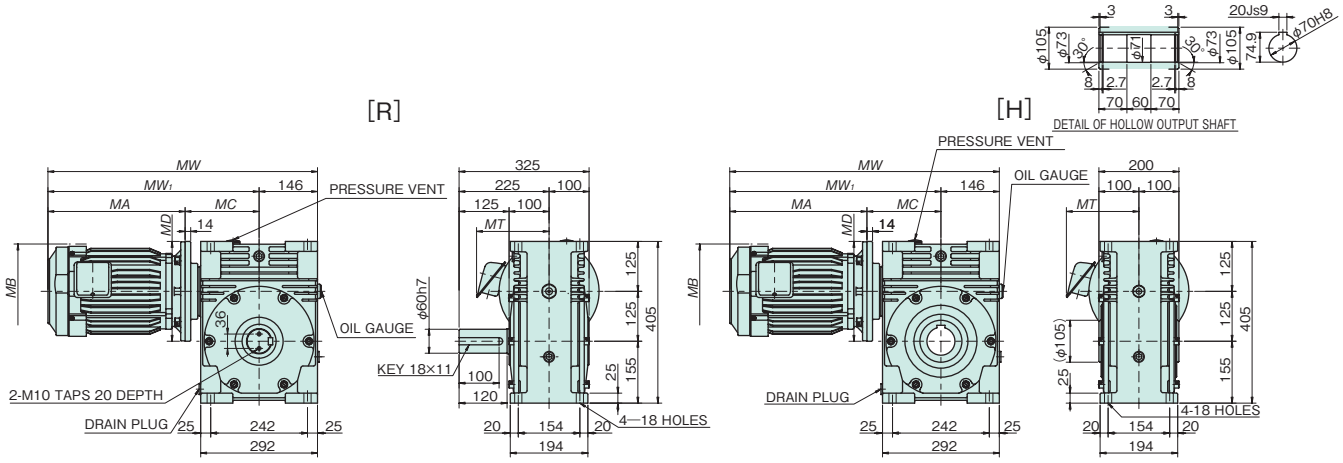
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW125	10	17.70	909 {92.7}	16.42	1012 {103}	14.66	1130 {115}	13.80	1279 {131}	9.55	1637 {167}	2.14	1705 {174}
	15	13.13	987 {101}	12.20	1099 {112}	10.98	1233 {126}	10.32	1390 {142}	6.90	1704 {174}	1.52	1704 {174}
	20	10.27	1011 {103}	9.57	1126 {115}	8.69	1274 {130}	8.10	1420 {145}	5.33	1704 {174}	1.19	1704 {174}
	25	8.46	1020 {104}	7.64	1098 {112}	7.20	1286 {131}	6.70	1429 {146}	4.27	1648 {168}	0.96	1648 {168}
	30	7.33	1025 {105}	6.85	1141 {117}	6.23	1285 {131}	5.88	1444 {147}	3.88	1704 {174}	0.90	1705 {174}
	40	5.63	1015 {104}	5.28	1131 {115}	4.85	1281 {131}	4.55	1425 {145}	3.07	1705 {174}	0.73	1705 {174}
	50	4.55	986 {101}	4.15	1065 {109}	3.95	1245 {127}	3.71	1382 {141}	2.54	1656 {169}	0.62	1666 {170}
	60	3.72	936 {95.5}	3.42	1018 {104}	3.25	1182 {121}	3.04	1306 {133}	1.91	1430 {146}	0.47	1439 {147}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

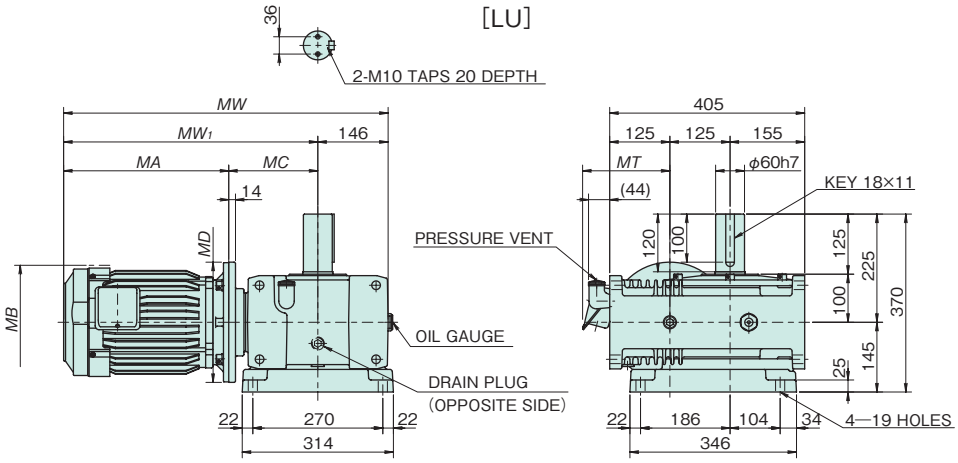
Dimensional Drawings EWMR125T/EWMR125V

See previous page for reducers without motors

EWMR125T



EWMR125V



Transfer Capacity Table

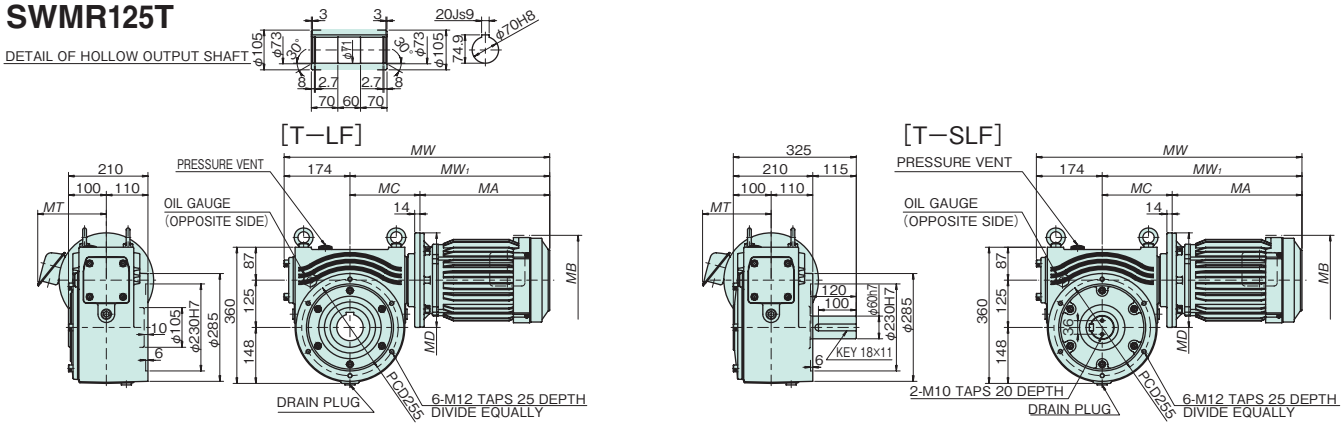
* Refer to page 24 for shaft arrangements and relative direction of rotation.

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	*MW*	*MB*	*MD*	*MT*	T type Estimated mass kg	V type Estimated mass kg
EWMR125	3.7	40	667 {68.0}	792 {80.8}	343 (424)	185 (185)	528 (609)	674 (755)	237 (235)	250 (250)	181 (178.0)	134 (144)	141 (151)
		50	802 {81.8}	949 {96.8}									
		60	931 {95.0}	1018 {104}									
	5.5	25	662 {67.6}	791 {80.7}	402 (475)	185 (185)	587 (660)	733 (806)	277 (235)	300 (300)	197 (178.0)	156 (168)	163 (175)
		30	770 {78.5}	916 {93.5}									

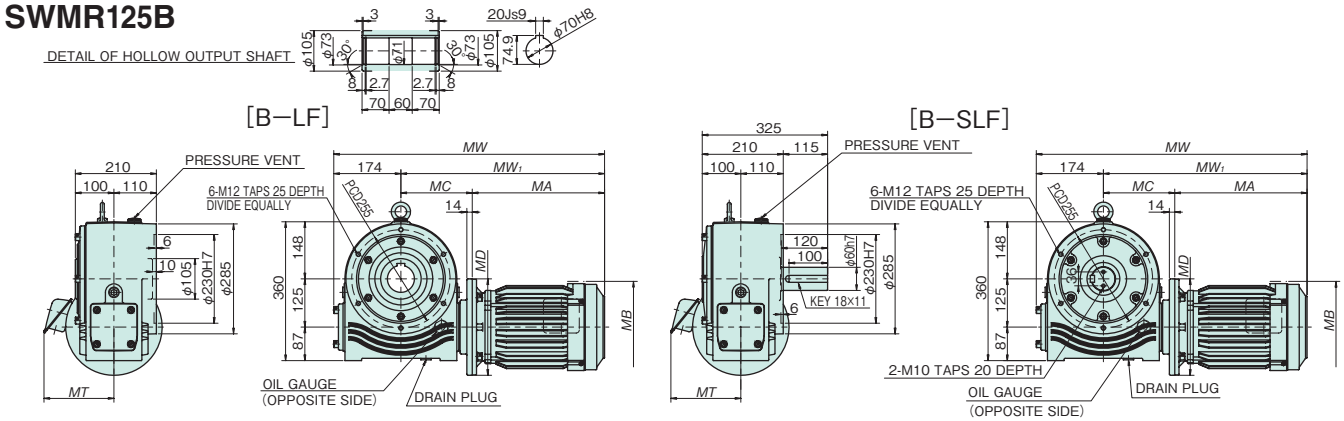
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWMR125T/SWMR125B/SWMR125V

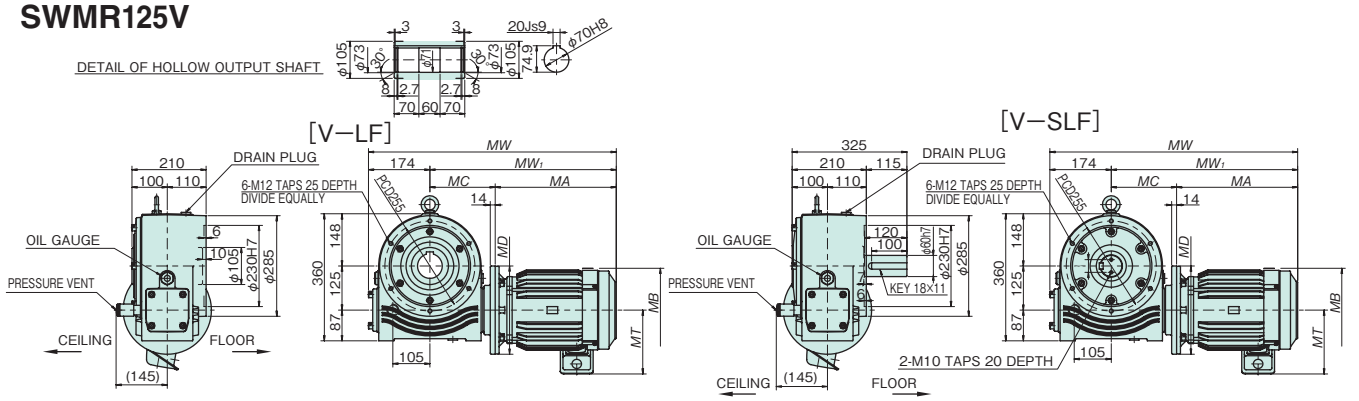
SWMR125T



SWMR125B



SWMR125V



Transfer Capacity Table

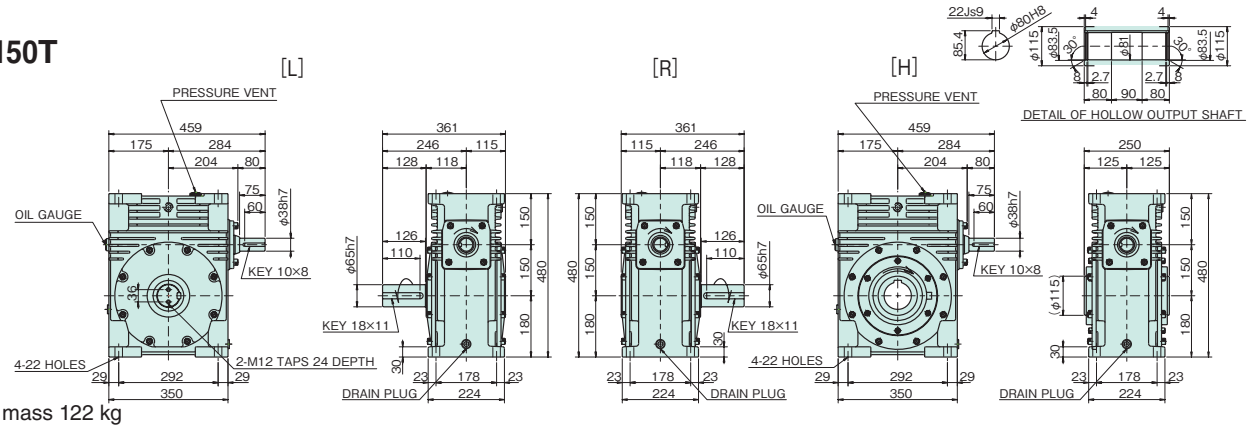
* Refer to page 24 for shaft arrangements and relative direction of rotation.

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.							
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	MW	MB	MD	MT	Estimated mass kg
SWMR125	3.7	40	667 {68.0}	792 {80.8}	343 (424)	185 (185)	528 (609)	702 (783)	237 (235)	250 (250)	181 (178.0)	120 (130)
		50	802 {81.8}	949 {96.8}								
		60	931 {95.0}	1018 {104}								
	5.5	25	662 {67.6}	791 {80.7}	402 (475)	185 (185)	587 (660)	761 (834)	277 (275)	300 (300)	197 (200.0)	135 (147)
		30	770 {78.5}	916 {93.5}								

* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

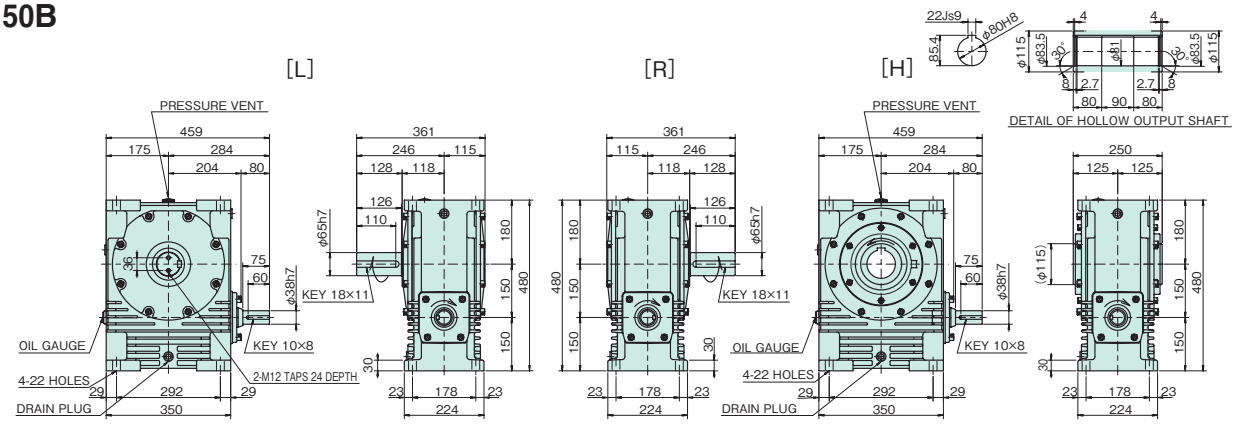
Dimensional Drawings EW150T/EW150B/EW150V

EW150T



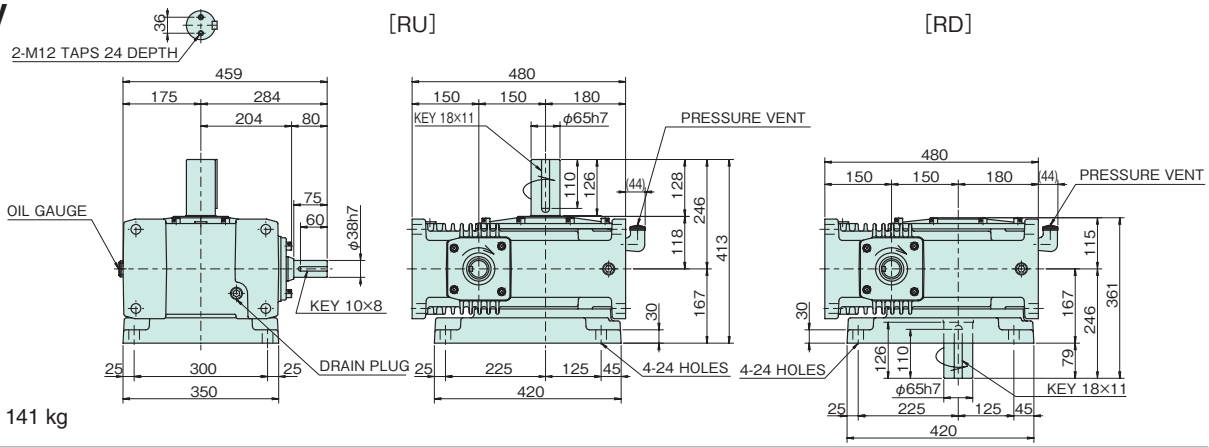
Estimated mass 122 kg

EW150B



Estimated mass 116 kg

EW150V



Estimated mass 141 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

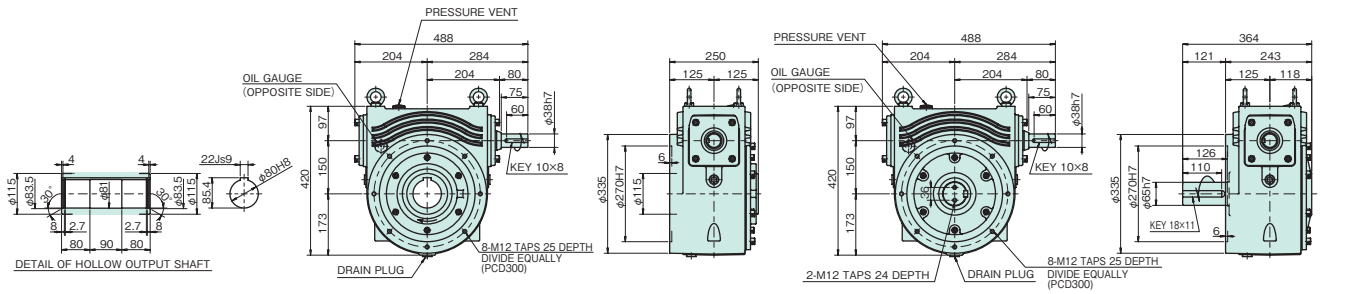
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW150	10	26.45	1364 {139}	24.52	1519 {155}	22.36	1734 {177}	20.31	1894 {193}	14.51	2508 {256}	3.29	2646 {270}
	15	19.58	1482 {151}	18.19	1650 {168}	16.62	1883 {192}	15.21	2068 {211}	10.41	2600 {265}	2.33	2646 {270}
	20	15.33	1519 {155}	14.26	1691 {173}	12.65	1869 {191}	12.05	2134 {218}	8.19	2646 {270}	1.83	2646 {270}
	25	12.45	1522 {155}	11.59	1695 {173}	10.48	1906 {195}	9.85	2143 {219}	6.69	2646 {270}	1.50	2646 {270}
	30	10.87	1539 {157}	10.15	1713 {175}	9.35	1956 {200}	8.31	2074 {212}	5.42	2421 {247}	1.38	2646 {270}
	40	8.36	1525 {156}	7.83	1698 {173}	7.03	1883 {192}	6.74	2144 {219}	4.69	2646 {270}	1.12	2646 {270}
	50	6.62	1474 {151}	6.21	1642 {168}	5.68	1849 {189}	5.38	2077 {212}	3.89	2646 {270}	0.93	2646 {270}
	60	5.43	1402 {143}	5.11	1561 {159}	4.69	1758 {179}	4.45	1974 {201}	3.31	2563 {262}	0.82	2586 {264}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

Dimensional Drawings SW150T/SW150B/SW150V

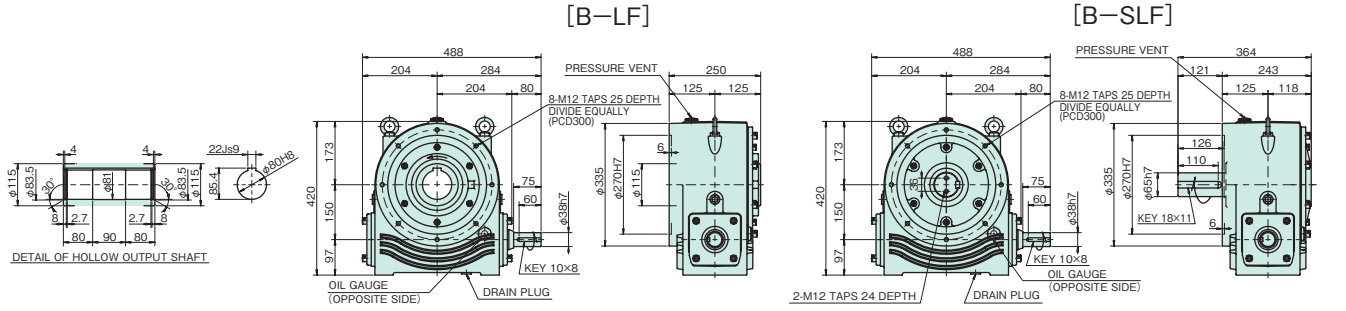
See next page for reducers with motors

SW150T



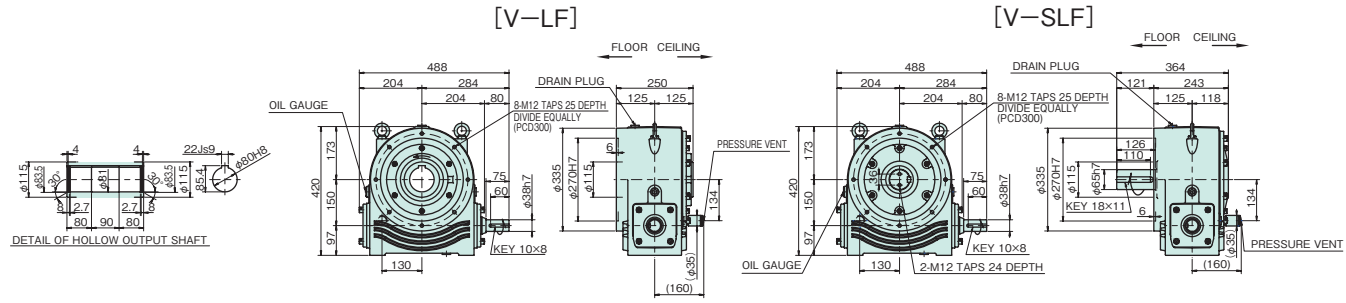
Estimated mass 113 kg

SW150B



Estimated mass 113 kg

SW150V



Estimated mass 113 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

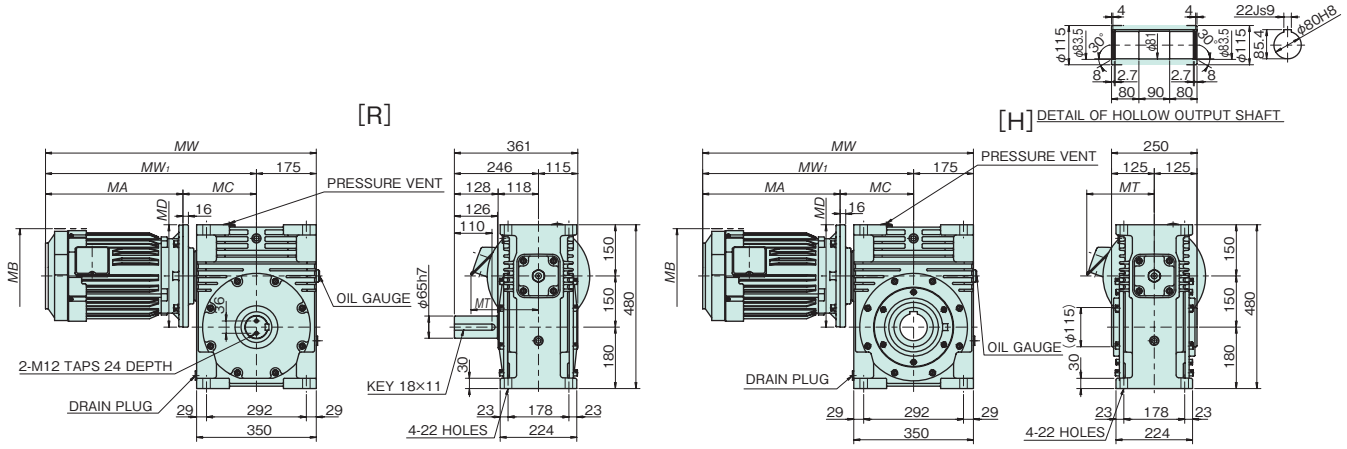
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW150	10	26.45	1364 {139}	24.52	1519 {155}	22.36	1734 {177}	20.31	1894 {193}	14.51	2508 {256}	3.29	2646 {270}
	15	19.58	1482 {151}	18.19	1650 {168}	16.62	1883 {192}	15.21	2068 {211}	10.41	2600 {265}	2.33	2646 {270}
	20	15.33	1519 {155}	14.26	1691 {173}	12.65	1869 {191}	12.05	2134 {218}	8.19	2646 {270}	1.83	2646 {270}
	25	12.45	1522 {155}	11.59	1695 {173}	10.48	1906 {195}	9.85	2143 {219}	6.69	2646 {270}	1.50	2646 {270}
	30	10.87	1539 {157}	10.15	1713 {175}	9.35	1956 {200}	8.31	2074 {212}	5.42	2421 {247}	1.38	2646 {270}
	40	8.36	1525 {156}	7.83	1698 {173}	7.03	1883 {192}	6.74	2144 {219}	4.69	2646 {270}	1.12	2646 {270}
	50	6.62	1474 {151}	6.21	1642 {168}	5.68	1849 {189}	5.38	2077 {212}	3.89	2646 {270}	0.93	2646 {270}
	60	5.43	1402 {143}	5.11	1561 {159}	4.69	1758 {179}	4.45	1974 {201}	3.31	2563 {262}	0.82	2586 {264}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

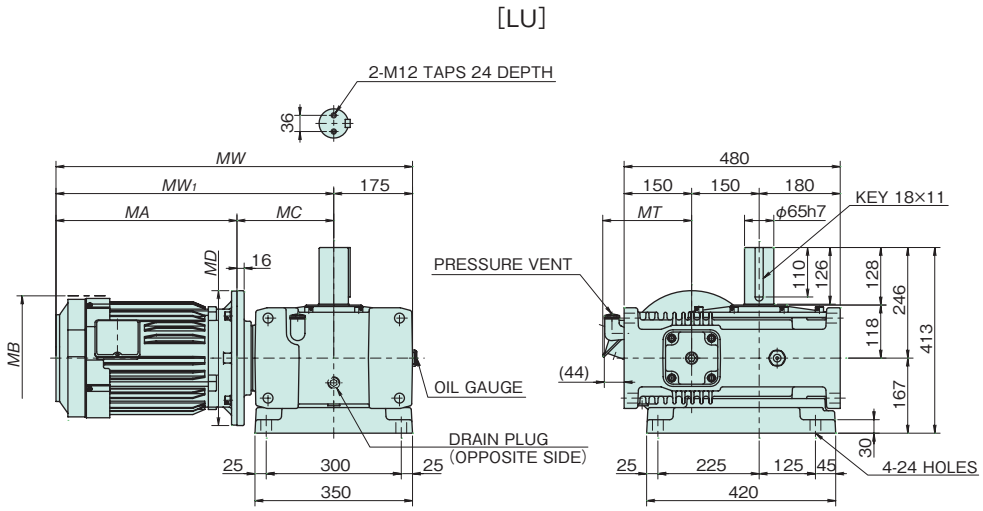
Dimensional Drawings EWMR150T/EWMR150V

See previous page for reducers without motors

EWMR150T



EWMR150V



Transfer Capacity Table

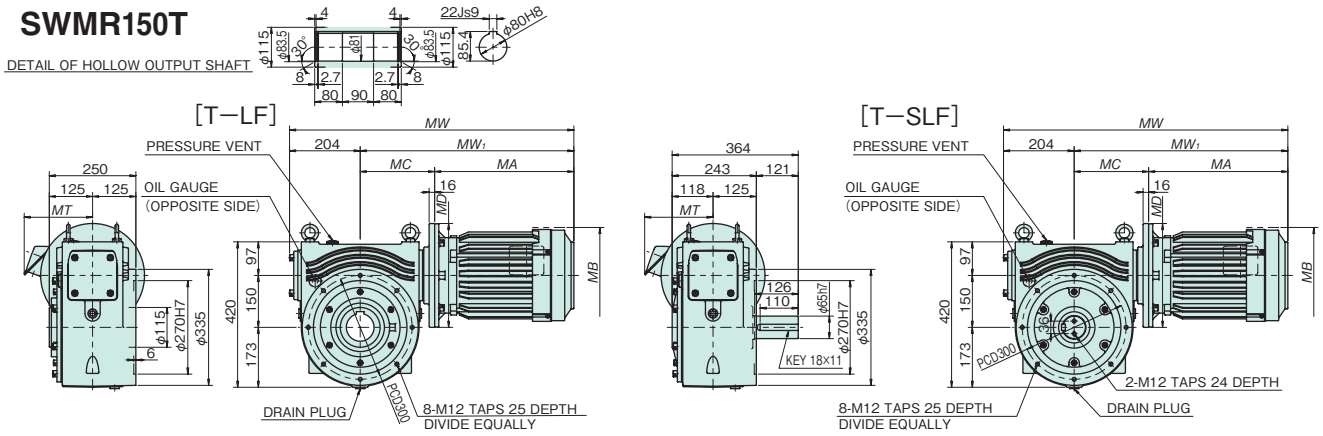
* Refer to page 24 for shaft arrangements and relative direction of rotation.

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	MW	MB	MD	MT	T type Estimated mass kg	V type Estimated mass kg
EWMR150	5.5	40	1003 {102}	1193 {122}	402 (475)	215 (215)	617 (690)	792 (865)	277 (275)	300 (300)	197 (200.0)	195 (207)	215 (227)
		50	1225 {125}	1453 {148}									
		60	1402 {143}	1561 {159}									

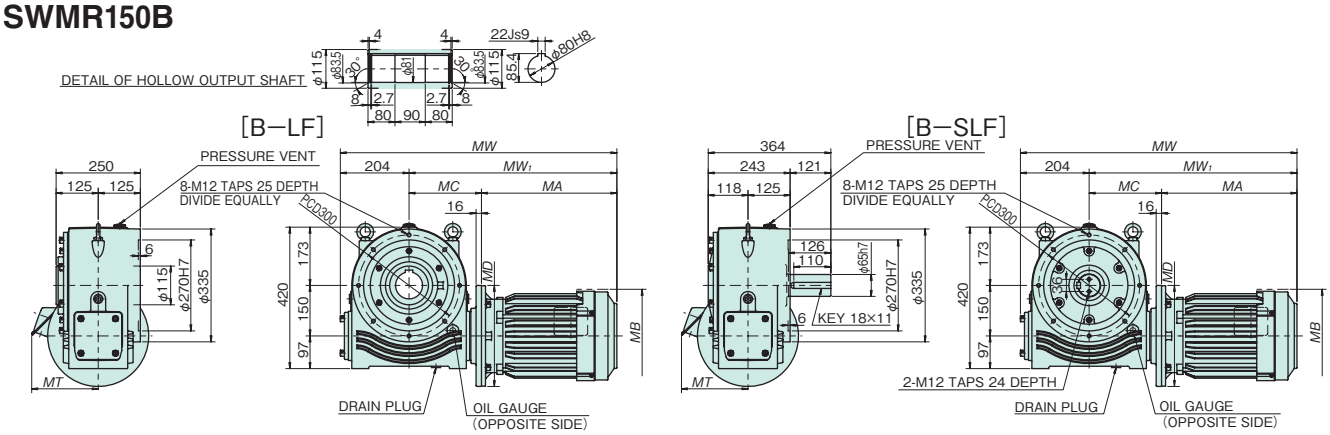
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWMR150T/SWMR150B/SWMR150V

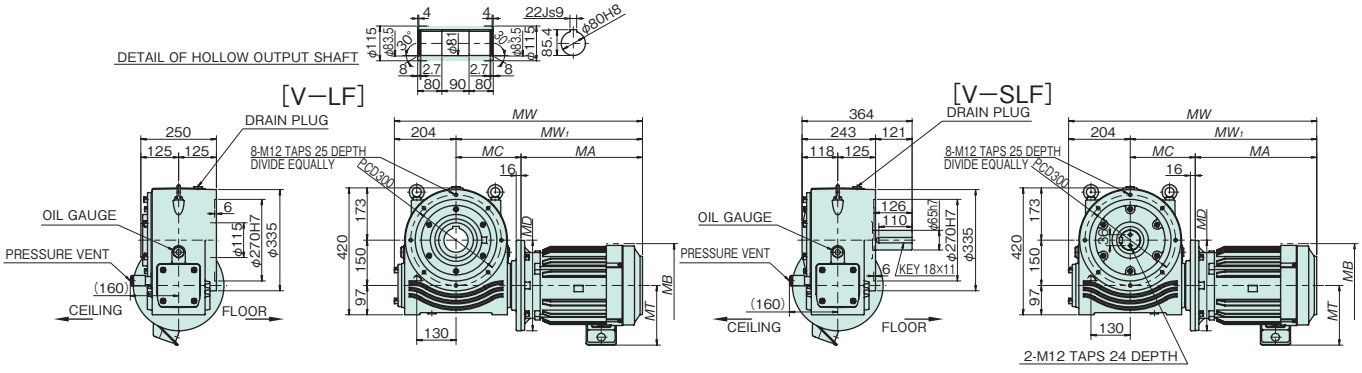
SWMR150T



SWMR150B



SWMR150V



* Refer to page 24 for shaft arrangements and relative direction of rotation.

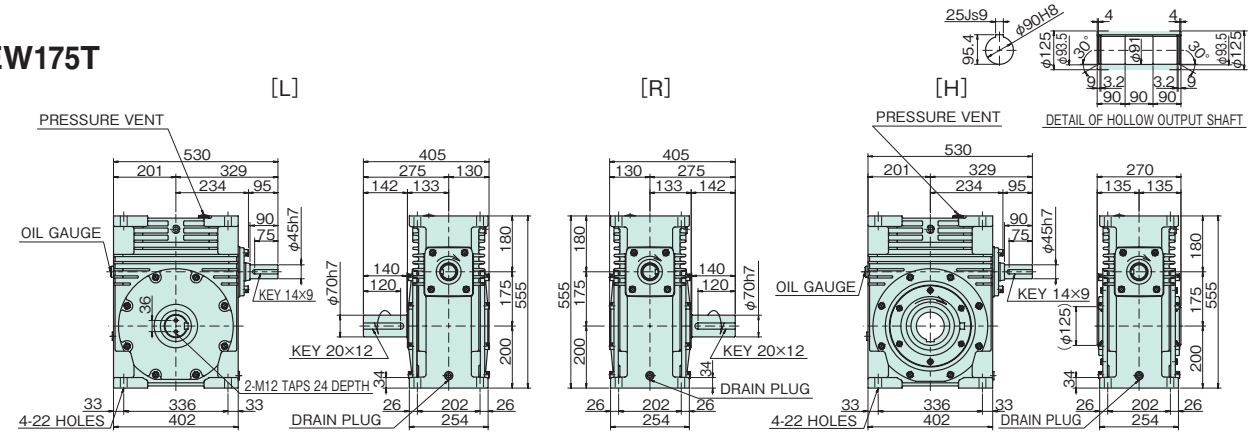
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.							
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	MW	MB	MD	MT	Estimated mass kg
SWMR150	5.5	40	1003 {102}	1193 {122}	402 (475)	215 (215)	617 (690)	821 (894)	277 (275)	300 (300)	197 (200.0)	175 (187)
		50	1225 {125}	1453 {148}								
		60	1402 {143}	1561 {159}								

* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to page 17 for sizing. * Thermal rating factor is 1.0.

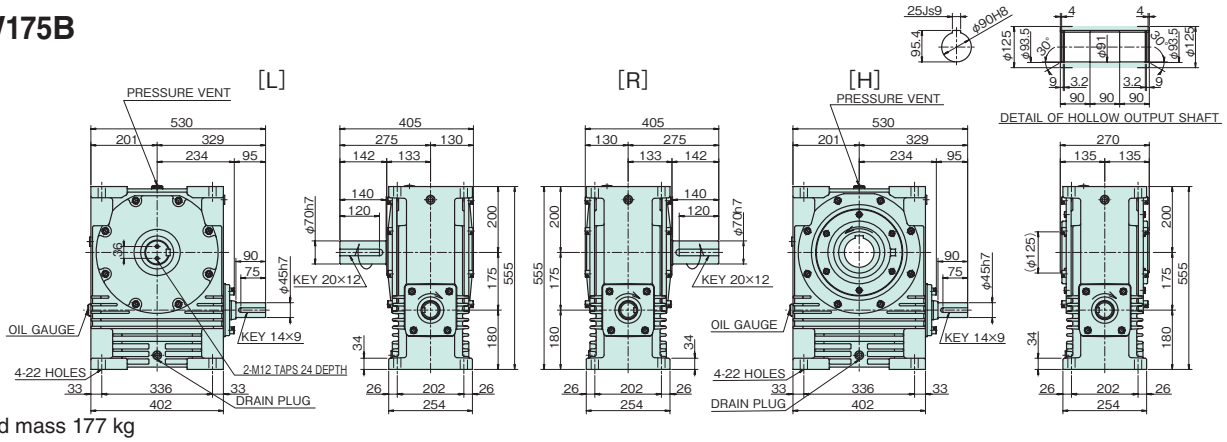
Dimensional Drawings EW175T/EW175B/EW175V

EW175T



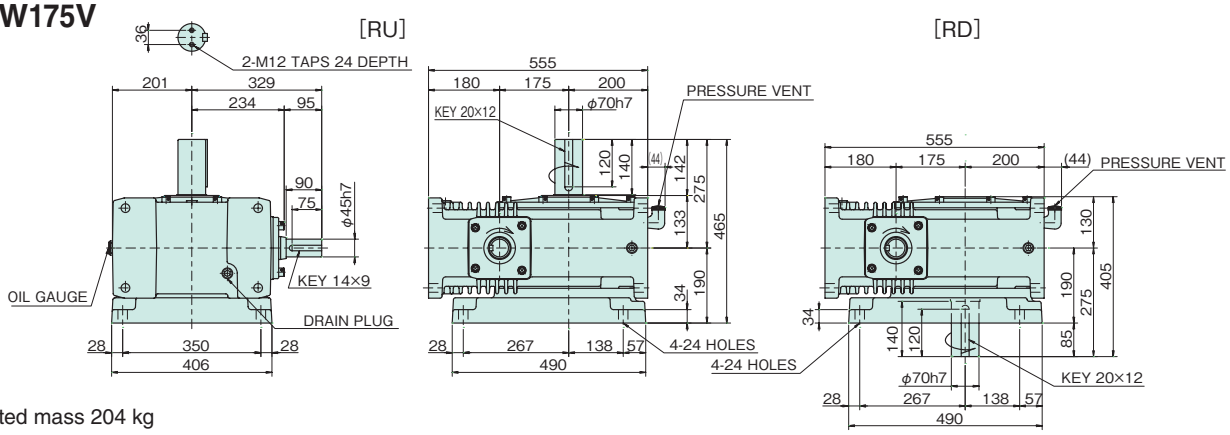
Estimated mass 184 kg

EW175B



Estimated mass 177 kg

EW175V



Estimated mass 204 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

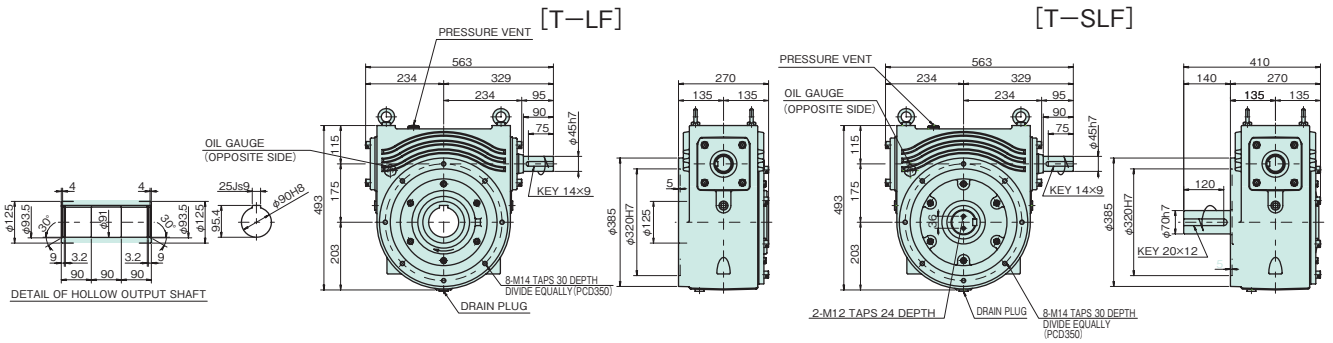
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW175	10	37.09	1921 {196}	34.37	2139 {218}	30.78	2400 {245}	27.07	2539 {259}	17.86	3110 {317}	4.19	3395 {347}
	15	27.43	2088 {213}	25.06	2288 {234}	21.87	2496 {255}	19.27	2641 {270}	12.78	3223 {329}	2.96	3396 {347}
	20	21.44	2140 {218}	19.82	2370 {242}	17.27	2575 {263}	15.24	2725 {278}	10.15	3318 {339}	2.31	3396 {347}
	25	16.85	2068 {211}	15.68	2302 {235}	14.36	2625 {268}	12.70	2777 {283}	8.50	3378 {345}	1.93	3395 {347}
	30	15.16	2170 {221}	13.46	2300 {235}	11.63	2467 {252}	10.23	2589 {264}	6.66	3031 {309}	1.74	3396 {347}
	40	11.62	2149 {219}	10.87	2393 {244}	9.70	2640 {269}	8.62	2794 {285}	5.89	3390 {346}	1.40	3396 {347}
	50	8.93	2001 {204}	8.37	2228 {227}	7.75	2544 {260}	7.18	2795 {285}	4.95	3396 {347}	1.20	3396 {347}
	60	7.52	1973 {201}	7.06	2197 {224}	6.35	2428 {248}	6.12	2773 {283}	4.28	3396 {347}	1.05	3396 {347}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

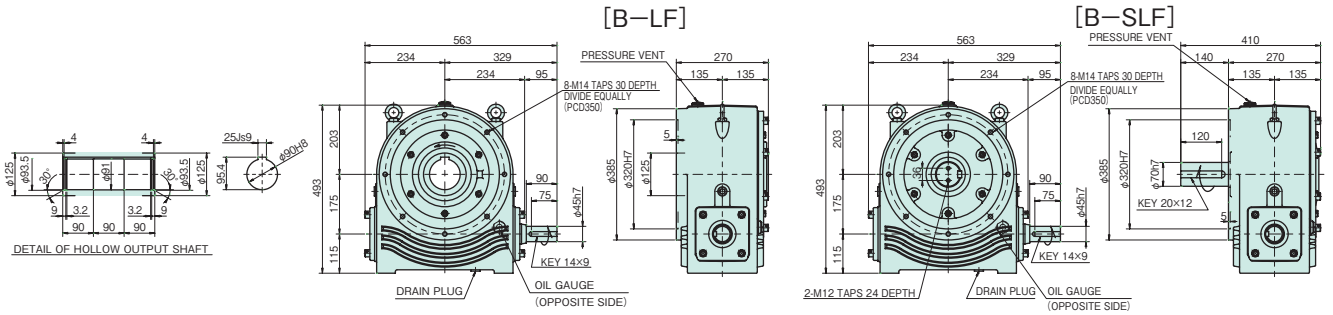
Dimensional Drawings SW175T/SW175B/SW175V

SW175T



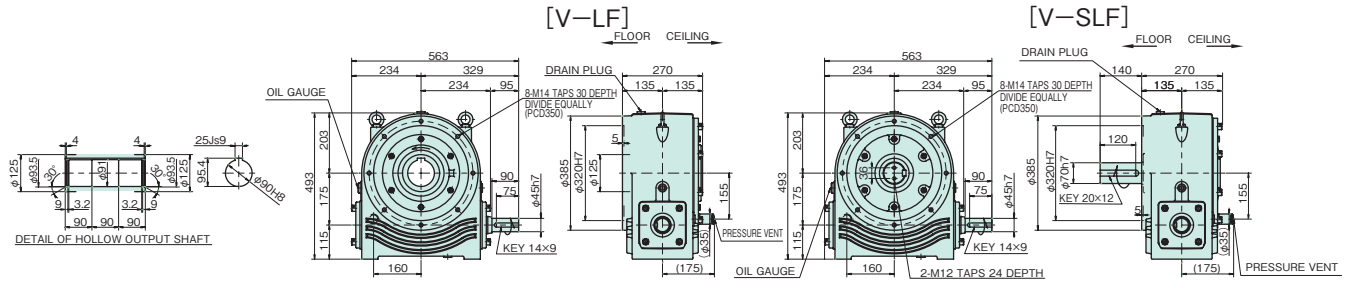
Estimated mass 168 kg

SW175B



Estimated mass 168 kg

SW175V



Estimated mass 168 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

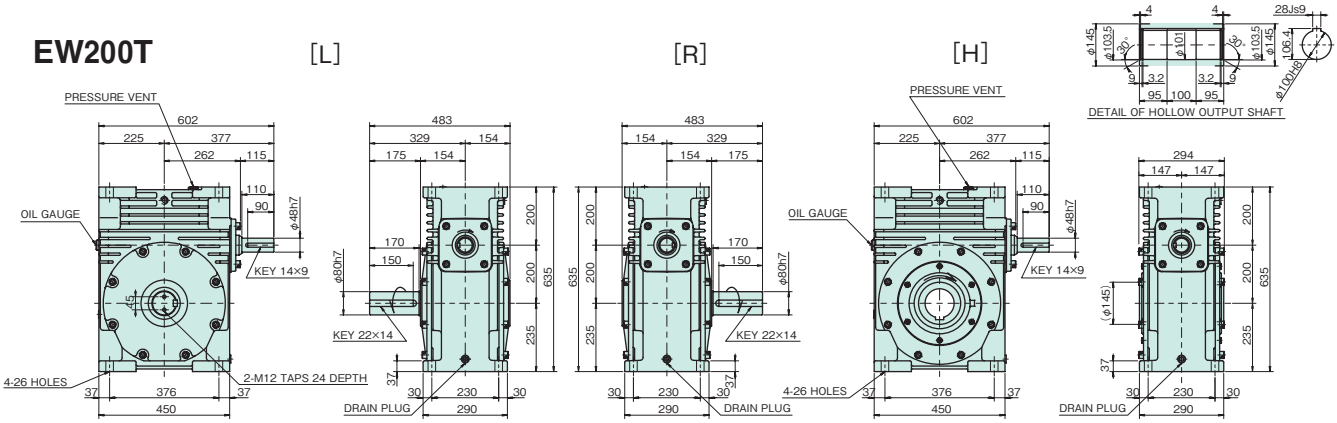
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW175	10	37.09	1921 {196}	34.37	2139 {218}	30.78	2400 {245}	27.07	2539 {259}	17.86	3110 {317}	4.19	3395 {347}
	15	27.43	2088 {213}	25.06	2288 {234}	21.87	2496 {255}	19.27	2641 {270}	12.78	3223 {329}	2.96	3396 {347}
	20	21.44	2140 {218}	19.82	2370 {242}	17.27	2575 {263}	15.24	2725 {278}	10.15	3318 {339}	2.31	3396 {347}
	25	16.85	2068 {211}	15.68	2302 {235}	14.36	2625 {268}	12.70	2777 {283}	8.50	3378 {345}	1.93	3395 {347}
	30	15.16	2170 {221}	13.46	2300 {235}	11.63	2467 {252}	10.23	2589 {264}	6.66	3031 {309}	1.74	3396 {347}
	40	11.62	2149 {219}	10.87	2393 {244}	9.70	2640 {269}	8.62	2794 {285}	5.89	3390 {346}	1.40	3396 {347}
	50	8.93	2001 {204}	8.37	2228 {227}	7.75	2544 {260}	7.18	2795 {285}	4.95	3396 {347}	1.20	3396 {347}
	60	7.52	1973 {201}	7.06	2197 {224}	6.35	2428 {248}	6.12	2773 {283}	4.28	3396 {347}	1.05	3396 {347}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

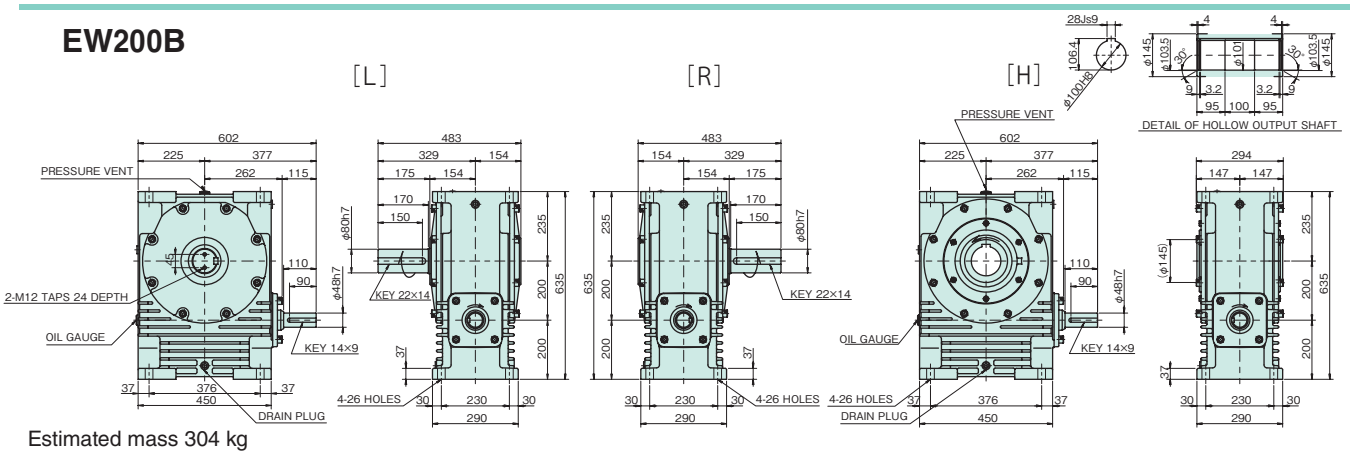
Dimensional Drawings EW200T/EW200B/EW200V

EW200T



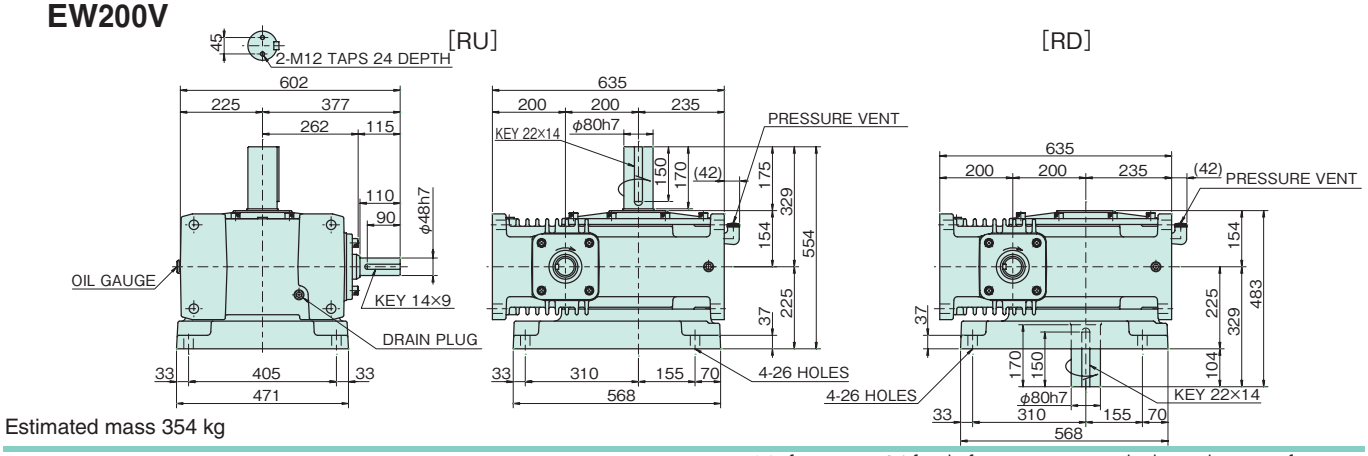
Estimated mass 314 kg

EW200B



Estimated mass 304 kg

EW200V



Estimated mass 354 kg

* Refer to page 24 for shaft arrangements and relative direction of rotation.

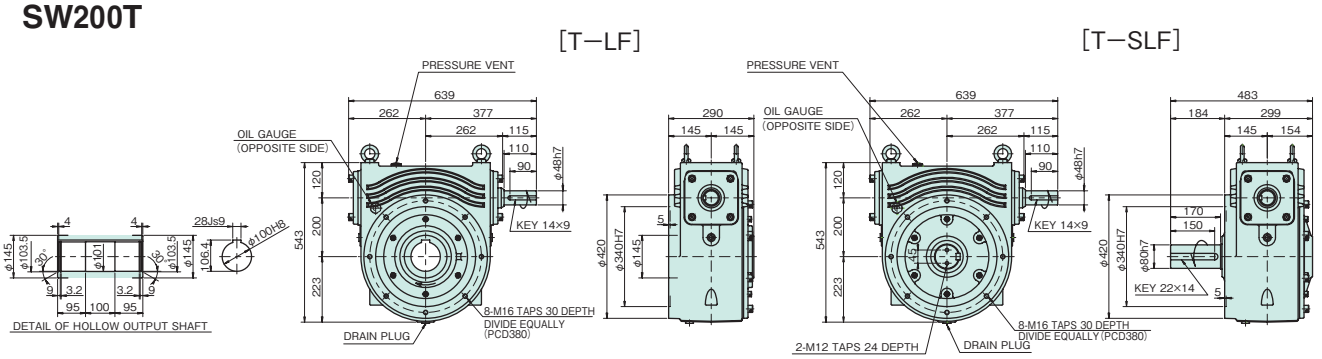
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW200	10	50.13	2597 {265}	46.43	2892 {295}	42.28	3301 {337}	39.17	3682 {376}	26.44	4613 {471}	7.05	5704 {582}
	15	36.95	2813 {287}	34.28	3132 {320}	31.29	3576 {365}	28.46	3907 {399}	18.91	4776 {487}	4.99	5703 {582}
	20	28.93	2888 {295}	26.88	3216 {328}	24.59	3671 {375}	22.49	4025 {411}	15.01	4910 {501}	3.92	5704 {582}
	25	22.86	2804 {286}	21.27	3122 {319}	19.49	3564 {364}	18.16	3975 {406}	12.56	4992 {509}	3.27	5704 {582}
	30	20.38	2916 {298}	19.00	3247 {331}	17.29	3671 {375}	15.21	3855 {393}	9.94	4526 {462}	2.95	5704 {582}
	40	15.67	2894 {295}	14.65	3223 {329}	13.51	3680 {376}	12.66	4105 {419}	8.71	5018 {512}	2.39	5703 {582}
	50	12.11	2709 {276}	11.35	3017 {308}	10.50	3444 {352}	9.87	3842 {392}	7.41	5073 {518}	2.06	5703 {582}
	60	10.15	2646 {270}	9.53	2947 {301}	8.85	3365 {343}	8.34	3754 {383}	6.55	5137 {524}	1.83	5703 {582}

When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

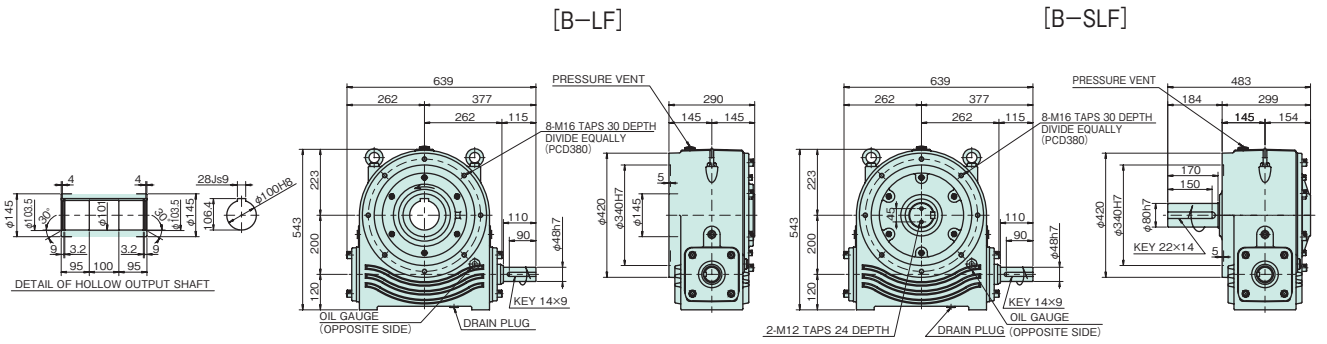
Dimensional Drawings SW200T/SW200B/SW200V

SW200T



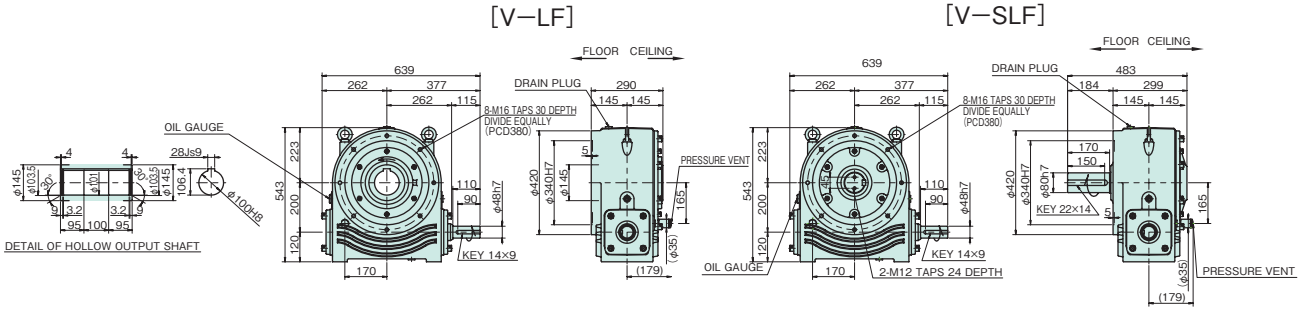
Estimated mass 234 kg

SW200B



Estimated mass 234 kg

SW200V



Estimated mass 234 kg

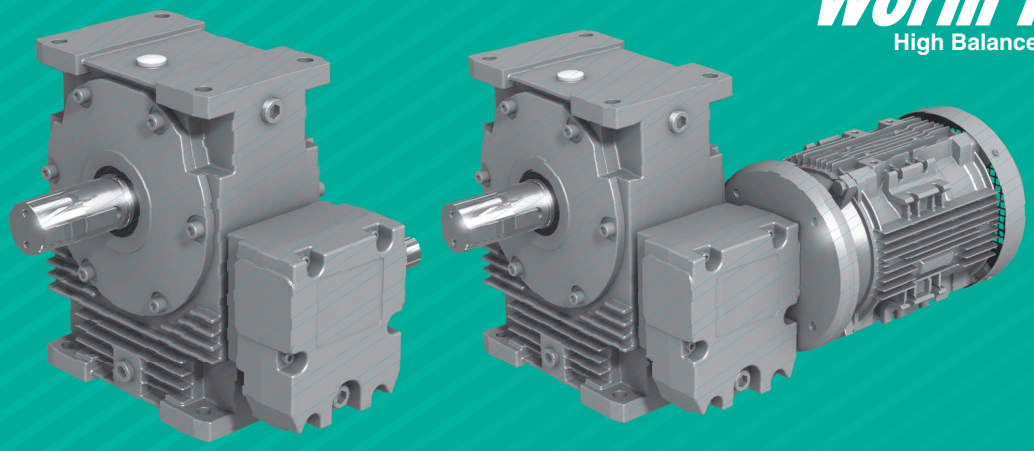
* Refer to page 24 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW200	10	50.13	2597 {265}	46.43	2892 {295}	42.28	3301 {337}	39.17	3682 {376}	26.44	4613 {471}	7.05	5704 {582}
	15	36.95	2813 {287}	34.28	3132 {320}	31.29	3576 {365}	28.46	3907 {399}	18.91	4776 {487}	4.99	5703 {582}
	20	28.93	2888 {295}	26.88	3216 {328}	24.59	3671 {375}	22.49	4025 {411}	15.01	4910 {501}	3.92	5704 {582}
	25	22.86	2804 {286}	21.27	3122 {319}	19.49	3564 {364}	18.16	3975 {406}	12.56	4992 {509}	3.27	5704 {582}
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	60	10.15	2646 {270}	9.53	2947 {301}	8.85	3365 {343}	8.34	3754 {383}	6.55	5137 {524}	1.83	5703 {582}

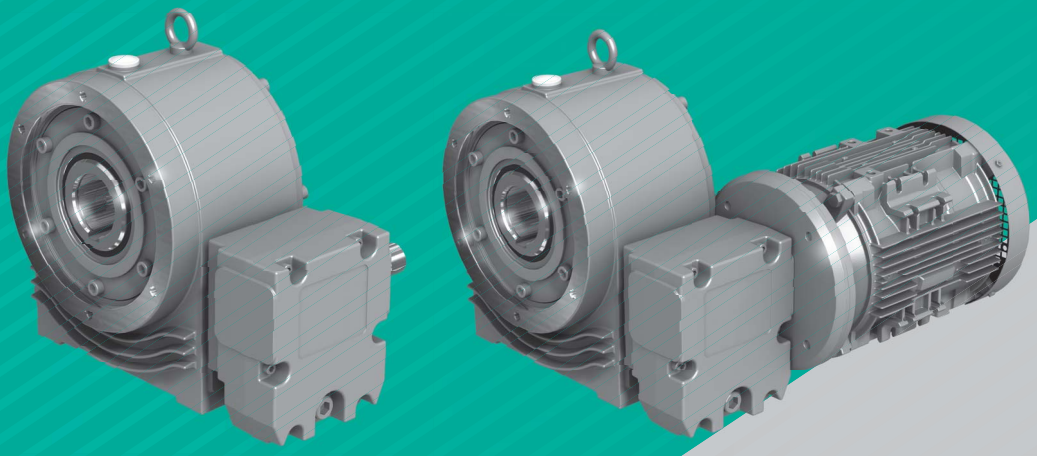
When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on page 17 to factor this into your selection.

Memo



EWJ/EW/SW Series

Double Reduction (Reduction ratio 1/100 to 1/3600)



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- Motor Options 75
- Mounting Examples 76
- Motor and Reduction Ratio Combinations ..... 77 - 78
- Sizing Chart ..... 79 - 81
- Technical Data ..... 82 - 84
  - Actual Reduction Ratio
  - Allowable Loads on Shafts
  - Starting Efficiency
  - Moment of Inertia on Input Shaft
- Structure ..... 85 - 88
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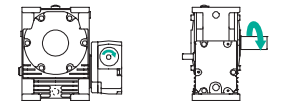
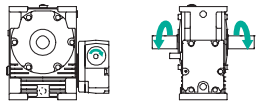
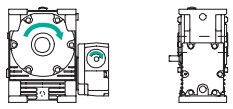
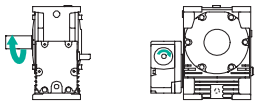
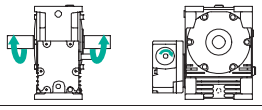
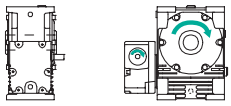
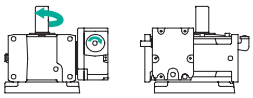
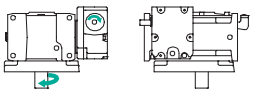
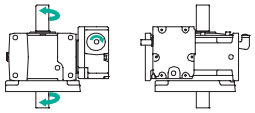
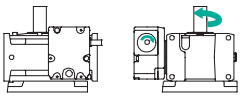
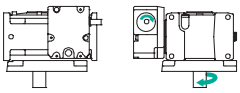
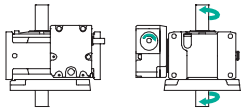
Model

Series		Size	Installation direction	Reduction ratio	Shaft arrangement	Motor kW	Motor specifications	Option
EWJ EWJM EW EWM(R) SW SWM(R) Series	Double Reduction							
	Without motor **EWJ**	**50**	**T**	**100**	**R-L**			
	EW	**100**	**B**	**300**	**L-R**			
	SW	**100**	**B**	**1200**	**R-LF**		**-**	**K**
	With motor **EWJM**	**70**	**B**	**500**	**R-L**	**020**	**S**	
	EWMR	**100**	**V**	**300**	**R-LUD**	**075**	**-**	**V**
	SWMR	**150**	**B**	**300**	**L-RF**	**370**	**B** **-**	**V**
	With motor EWMR SWMR	EWJ EWJM 50/63/70 . . . . . . EW/SW EWM(R) SWM(R) 80/100 125/150 175/200	EWJ50/63 EWJM50/63 T: T type V: V type . . . . . . EWJ70 EWJM70 EW/EWM(R) 80 to 200 SW/SWM(R) 80 to 200 B: B type V: V type	100: 1/100 150: 1/150 200: 1/200 250: 1/250 300: 1/300 400: 1/400 500: 1/500 600: 1/600 800: 1/800 1000: 1/1000 1200: 1/1200 1500: 1/1500 1800: 1/1800 2400: 1/2400 3000: 1/3000 3600: 1/3600	Refer to page 74	(3-phase) 010: 0.1 kW 020: 0.2 kW 040: 0.4 kW 075: 0.75 kW 150: 1.5 kW 220: 2.2 kW 370: 3.7 kW 550: 5.5 kW	0.1 to 0.4 kW S: Standard motor mounted. SB: Standard motor with brake mounted. SX: Customer-supplied motor mounted. Y: Customer to mount motor . . . . . . 0.75 to 5.5 kW No code: IE3 motor without brake mounted. B: IE3 motor with brake mounted.	Reducer Refer to pages 229 to 241 . . . . . . Motor Refer to pages 242 to 243

Shaft Arrangement

EWJ/EW Series

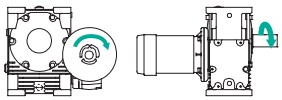
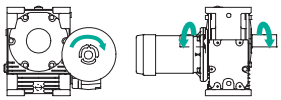
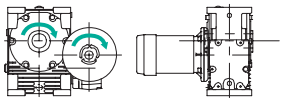
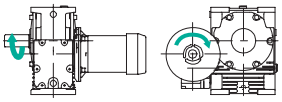
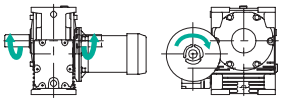
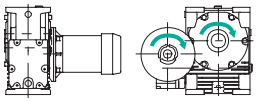
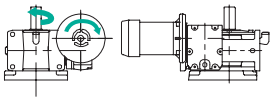
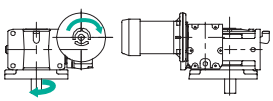
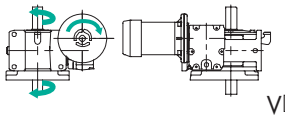
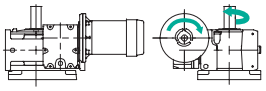
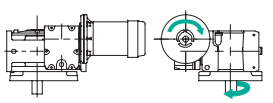
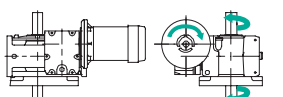
Arrows in figures indicate direction of rotation.

B type	 B□L-R	 B□L-LR	 B□L-H
	 B□R-L	 B□R-LR	 B□R-H
V type	 V□L-RU	 V□L-RD	 V□L-RUD
	 V□R-LU	 V□R-LD	 V□R-LUD

Note 1) When selecting B type for EWJ50 and EWJ63 double reduction models, the code will be “T” instead of “B”. Eg. EWJ50T100L-R
2) Hollow output shafts are available only for EW Series.
3) Keyway positions do not match one another on double ouput shafts. Please contact Tsubaki representative when required.

EWJM/EWM(R) Series

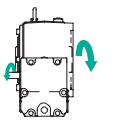
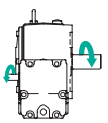
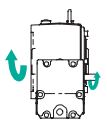
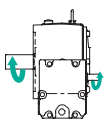
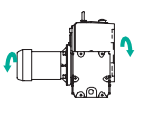
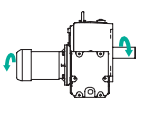
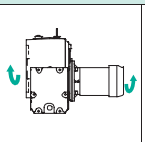
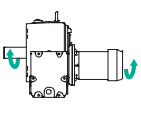
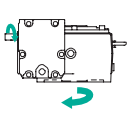
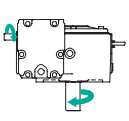
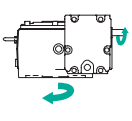
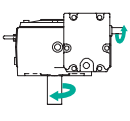
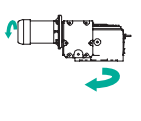
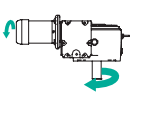
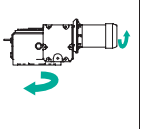
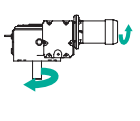
Arrows in figures indicate direction of rotation.

B type	 B□L-R	 B□L-LR	 B□L-H
	 B□R-L	 B□R-LR	 B□R-H
V type	 V□L-RU	 V□L-RD	 V□L-RUD
	 V□R-LU	 V□R-LD	 V□R-LUD

Note 1) When selecting B type for EWJM50 and EWJM63 double reduction models, the code will be “T” instead of “B”.
Eg. EWJM50T100L-R020S
2) Hollow output shafts are available only for EWM Series.
3) Keyway positions do not match one another on double ouput shafts. Please contact Tsubaki representative when required.

SW/SWM(R) Series

Arrows in figures indicate direction of rotation.

	Without motor				With motor			
B type	 B-L-RF	 B-L-SRF	 B-R-LF	 B-R-SLF	 B-L-RF	 B-L-SRF	 B-R-LF	 B-R-SLF
V type	 V-L-RF	 V-L-SRF	 V-R-LF	 V-R-SLF	 V-L-RF	 V-L-SRF	 V-R-LF	 V-R-SLF

Note) Keyway positions do not match one another on double ouput shafts. Please contact Tsubaki representative when required.

Models

Series		EWJ	EWJ/EW	SW	EWJ/EW	SW	Reducer options	SW	SW
Installation direction		T	B	B	V	V		B, V	B, V
Shaft arrangement	Solid output shaft	L-R R-L L-LR R-LR	L-R R-L L-LR R-LR	L-SRF R-SLF	L-RU R-LU L-RD R-LD L-RUD R-LUD	L-SRF R-SLF		—	—
	Hollow output shaft	—	L-H R-H	L-RF R-LF	—	L-RF R-LF		Power-Lock specification: K	Taper bushing specification: TB
Without motor	EWJ50	○	—	—	○	—		—	—
	EWJ63	○	—	—	○	—		—	—
	EWJ70	—	○*1	—	○	—		—	—
	EW/SW80	—	○	○	○	○		□	□
	EW/SW100	—	○	○	○	○		□	□
	EW/SW125	—	○	○	○	○		□	□
	EW/SW150	—	○	○	○	○		□	□
	EW/SW175	—	○	○	○	○		□	—
	EW/SW200	—	○	○	○	○		□	—
With motor	EWJM50	○	—	—	○*2*3	—		—	—
	EWJM63	○	—	—	○*2	—		—	—
	EWJM70	—	○*1	—	○*2	—		—	—
	EWM/SWM80	—	○	○	○	○		□	□
	EWM/SWM100	—	○	○	○	○		□	□
	EWM/SWM125	—	○	○	○	○		□	□
	EWM/SWM150	—	○	○	○	○		□	□
	EWM/SWM175	—	○	○	○	○		□	—
	EWM/SWM200	—	○	○	○	○		□	—

○: Standard product □: Made to order. Ask for delivery time.
The standard motor is a flange motor (with or without a brake). Contact us for non-standard motors.
*1) EWJ(M)70 output shaft: solid only.
2) Shaft arrangement L-RUD and R-LUD: Contact Tsubaki representative.
3) EWJM50 reduction ratio: 1/600 only.

Motor Options

Motor option	Description
Z	Inverter ready motors (0.4 kW or less)
W	Outdoor specification
V	400 V class [3]
V1	380 V, 50 Hz (0.4 kW or less, 3.7 kW, 5.5 kW)
V2	380 V, 60 Hz (0.4 kW or less)
V3	415 V, 50 Hz (0.4 kW or less)
V4	460 V, 60 Hz (0.4 kW or less)
N	200 V class CE compliant
N2	200 V class UL compliant
N3	200 V class CCC compliant
VN	400 V class CE compliant
VN2	400 V class UL compliant
VN3	400 V class CCC compliant
H	Hard terminal box (0.4 kW or less)
Q	Manual quick-release brake
M	Manual shaft (motor fan cover side) (2.2 kW or less)

(Without brake)

Z	ZW	ZWV
	ZV	ZVH
	ZH	
W	WV	
	WV1	
	WV2	
	WV3	
	WV4	
	WN	WVN
	WN3	WVN3

V	VN
	VN2
	VN3
	VH
V1	V1H
V2	V2H
V3	V3H
V4	V4H
N	
N2	
N3	
H	

(With brake)

Z	ZV	ZVH
		ZVQ
		ZVM
	ZH	ZHQ
		ZHM
	ZQ	ZQM
	ZM	
V	VN	
	VN3	
	VH	VHQ
		VHM
	VQ	VQM
	VM	

	V1	V1H
	V2	V2H
	V3	V3H
	V4	V4H
N		
N2		
N3		
H	HQ	HQM
	HM	
Q	QM	
M		

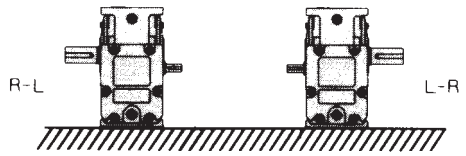
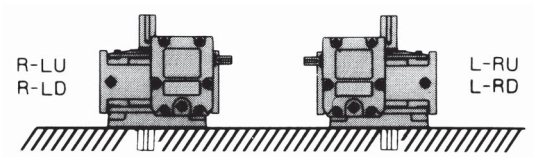
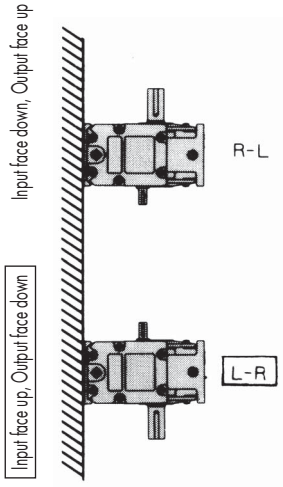
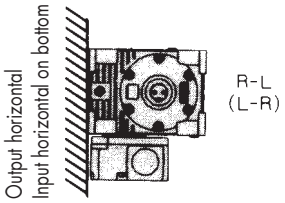
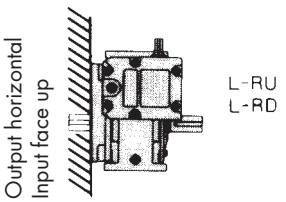
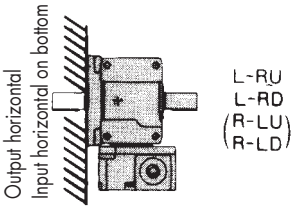
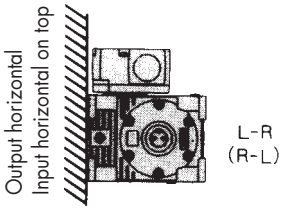
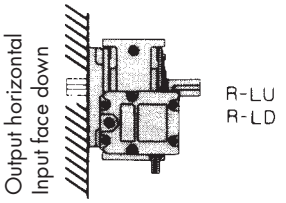
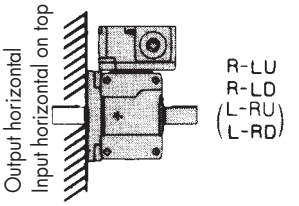
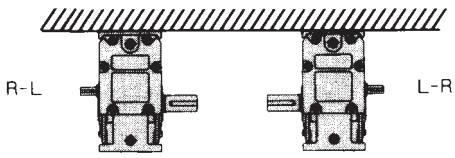
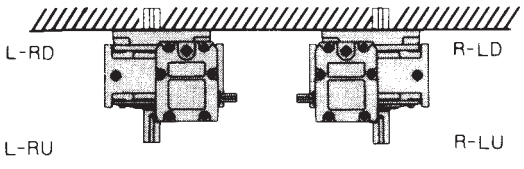
Note 1) Shaded options are for 0.2 kW and 0.4 kW motors.
2) Motors with a brake for outdoor use are made to order. Contact Tsubaki reperesentatives for details.
3) 400 V class voltage frequency

0.1 to 0.4 kW	400/400/440 V	50/60/60 Hz
0.75 to 2.2 kW	380/400/400/440 V	50/50/60/60 Hz
3.7 to 5.5 kW without brake	400/400/440/460 V	50/60/60/60 Hz
with brake	380/400/400/440 V	50/50/60/60 Hz

Mounting Examples

EW/EWM(R) Series

- Pressure vent and oil gauge positions will change when mounting EW sizes 80-200 on walls or ceilings. Make sure to specify the mounting method when ordering.
- The EWJ/EWJM(R) series may be mounted on any side.

<table>
<tr><td></td><td colspan="2">Installation direction B type</td><td colspan="2">Installation direction V type</td></tr>
<tr><td>Standard mounting</td><td colspan="2"> 
</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Wall mount</td><td>Ex. 1 Ex. 2</td><td>Ex. 3</td><td>Ex. 5</td><td>Ex. 7</td></tr>
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<tr><td>Ex. 4</td><td>Ex. 6</td><td>Ex. 8</td></tr>
<tr><td> 
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</td></tr>
<tr><td>Ceiling mount</td><td>Ex. 9</td><td> 
</td><td>Ex. 10</td><td colspan="2"> 
</td></tr>
</table>

SW/SWM(R) Series

- Pressure vent and oil gauge positions will change depending on the mounting method of SW sizes 80 to 200. Make sure to specify the mounting method when ordering.

Motor and Reduction Ratio Combinations

- Output torque values are for motor speeds at 1450 r/min and 1750 r/min (50/60 Hz).
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using. (Thermal rating factor is 1.0)
- Torque values may be lower if the ambient temperature is cold. Contact Tsubaki representative for further details.
- Refer to pages 17 to 18 for sizing.

EWJM/EWM(R) Series

Efficiency class	IE1									IE3																
	0.1 kW			0.2 kW			0.4 kW			0.75 kW			1.5 kW			2.2 kW			3.7 kW			5.5 kW				
	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}
100	Refer to Croise Motor, page 202.			50	91.1 {9.3}	76.4 {7.8}	63	185 {18.9}	156 {15.9}	80	362 {36.9}	305 {31.1}	125	749 {76.4}	631 {64.4}	150	1117 {114}	944 {96.3}	150	1882 {192}	1588 {116}	175	2862 {292}	2407 {246}
150				50	100 {10.2}	100 {10.2}	63	207 {21.1}	205 {20.9}	80	433 {44.2}	429 {43.8}	125	1058 {108}	894 {91.2}	150	1597 {163}	1343 {137}	150	2381 {243}	2264 {231}	175	3459 {353}	3441 {351}
200				50	101 {10.3}	101 {10.3}	70	293 {29.9}	291 {29.7}	100	664 {67.7}	561 {57.2}	125	1343 {137}	1137 {116}	150	2038 {208}	1725 {176}	175	3459 {353}	2969 {303}	200	5292 {540}	4469 {456}
250	50	96 {9.8}	81.3 {8.3}	63	195 {19.9}	166 {16.9}	70	294 {30.0}	293 {29.9}	100	788 {80.4}	673 {68.7}	125	1499 {153}	1382 {141}	150	2450 {250}	2078 {212}	175	3459 {353}	3459 {353}	200	5488 {560}	5240 {535}
300	50	104 {10.6}	94.1 {9.6}	63	219 {22.3}	189 {19.3}	80	455 {46.4}	404 {41.2}	100	854 {87.1}	772 {78.8}	125	1568 {160}	1548 {158}	150	2577 {263}	2362 {241}	175	3459 {353}	3459 {353}	200	5645 {575}	5537 {565}
400	50	104 {10.6}	104 {10.6}	63	220 {22.4}	219 {22.3}	80	459 {46.8}	457 {46.6}	100	862 {88.0}	856 {87.3}	125	1578 {162}	1578 {162}	150	2626 {268}	2597 {265}	200	5704 {582}	5351 {546}			
500	50	105 {10.7}	105 {10.7}	70	306 {31.2}	305 {31.1}	100	736 {75.1}	625 {63.8}	125	1392 {142}	1186 {121}	150	2656 {271}	2460 {251}	175	3459 {353}	3459 {353}	200	5704 {582}	5704 {582}			
600	50	105 {10.7}	105 {10.7}	70	307 {31.3}	306 {31.2}	100	823 {84.0}	703 {71.7}	125	1558 {159}	1333 {136}	150	2666 {272}	2656 {271}	175	3459 {353}	3459 {353}	200	5704 {582}	5704 {582}			
800	63	223 {22.7}	194 {19.8}	70	309 {31.5}	308 {31.4}	100	873 {89.1}	870 {88.8}	125	1578 {161}	1568 {160}	175	3459 {353}	3459 {353}	200	5704 {582}	5527 {564}						
1000	63	223 {22.7}	223 {22.7}	80	467 {47.6}	466 {47.5}	100	875 {89.3}	872 {89.0}	125	1558 {159}	1548 {158}	175	3459 {353}	3459 {353}	200	5704 {582}	5704 {582}						
1200	63	223 {22.7}	223 {22.7}	80	467 {47.7}	466 {47.6}	100	861 {87.9}	860 {87.7}	150	2617 {267}	2421 {247}	200	5704 {582}	5116 {522}	Refer to TERUS Series, page 170.								
1500	63	188 {19.2}	187 {19.1}	100	721 {73.6}	652 {66.5}	125	1372 {140}	1352 {138}	150	2234 {228}	2145 {226}	200	5116 {522}	5067 {517}									
1800	63	188 {19.2}	188 {19.2}	100	723 {73.8}	721 {73.6}	125	1372 {140}	1372 {140}	175	3381 {345}	3136 {320}												
2400	63	189 {19.3}	188 {19.2}	100	727 {74.2}	727 {74.2}	125	1382 {141}	1382 {141}	175	3420 {349}	3410 {348}												
3000	63	189 {19.3}	189 {19.3}	125	1245 {127}	1068 {109}	150	2264 {231}	2254 {230}	Refer to TERUS Series, page 170.														
3600	63	189 {19.3}	189 {19.3}	125	1392 {142}	1215 {124}	150	2264 {231}	2264 {231}															

- Output torque values are for motor speeds at 1450 r/min and 1750 r/min (50/60 Hz).
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using. (Thermal rating factor is 1.0)
- Torque values may be lower if the ambient temperature is cold. Contact Tsubaki representative for further details.
- Refer to pages 17 to 18 for sizing.

SWM(R) Series

Efficiency class	IE1								IE3															
	0.2 kW			0.4 kW			0.75 kW			1.5 kW			2.2 kW			3.7 kW			5.5 kW					
	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}	Size	Output torque 50 Hz N·m {kgf·m}	Output torque 60 Hz N·m {kgf·m}			
100	Refer to Croise Motor, page 202.						80	362 {36.9}	305 {31.1}	125	749 {76.4}	631 {64.4}	150	1117 {114}	944 {96.3}	150	1882 {192}	1588 {162}	175	2862 {292}	2407 {246}			
150							80	433 {44.2}	429 {43.8}	125	1058 {108}	894 {91.2}	150	1597 {163}	1343 {137}	150	2381 {243}	2264 {231}	175	3459 {353}	3441 {351}			
200				80	348 {35.5}	294 {30.0}	100	663 {67.7}	561 {57.2}	125	1343 {137}	1137 {116}	150	2038 {208}	1725 {176}	175	3459 {353}	2969 {303}	200	5292 {540}	4469 {456}			
250				80	417 {42.5}	353 {36.0}	100	788 {80.4}	673 {68.7}	125	1499 {153}	1382 {141}	150	2450 {250}	2078 {212}	175	3459 {353}	3459 {353}	200	5488 {560}	5243 {535}			
300				80	455 {46.4}	404 {41.2}	100	854 {87.1}	772 {78.8}	125	1568 {160}	1548 {158}	150	2577 {263}	2362 {241}	175	3459 {353}	3459 {353}	200	5645 {575}	5537 {565}			
400	Refer to TERUS Series, page 170.			80	459 {46.8}	457 {46.6}	100	862 {88.0}	856 {87.3}	125	1578 {162}	1578 {161}	150	2626 {268}	2597 {265}	200	5704 {582}	5351 {546}							
500	80	362 {36.9}	308 {31.4}	100	736 {75.1}	625 {63.8}	125	1392 {142}	1186 {121}	150	2656 {271}	2460 {251}	175	3459 {353}	3459 {353}	200	5704 {582}	5704 {582}						
600	80	405 {41.3}	345 {35.2}	100	823 {84.0}	703 {71.7}	125	1558 {159}	1333 {136}	150	2666 {272}	2656 {271}	175	3549 {353}	3459 {353}	200	5704 {582}	5704 {582}						
800	80	466 {47.5}	430 {43.9}	100	873 {89.1}	870 {89.0}	125	1578 {161}	1568 {160}	175	3459 {353}	3459 {353}	200	5704 {582}	5527 {564}									
1000	80	466 {47.5}	466 {47.5}	100	875 {89.0}	872 {89.0}	125	1558 {159}	1548 {158}	175	3459 {353}	3459 {353}	200	5704 {582}	5704 {582}									
1200	80	467 {47.7}	466 {47.6}	100	861 {88.0}	859 {88.0}	150	2617 {267}	2421 {247}	200	5704 {582}	5116 {522}	Refer to TERUS Series, page 170.											
1500	100	721 {73.6}	652 {66.5}	125	1372 {140}	1352 {138}	150	2234 {228}	2215 {226}	200	5116 {522}	5067 {517}												
1800	100	723 {73.8}	721 {73.6}	125	1372 {140}	1372 {140}	175	3381 {345}	3136 {320}															
2400	100	727 {74.2}	727 {74.2}	125	1382 {141}	1382 {141}	175	3420 {349}	3410 {348}															
3000	125	1245 {127}	1068 {109}	150	2264 {231}	2254 {230}	Refer to TERUS Series, page 170.																	
3600	125	1392 {142}	1215 {124}	150	2264 {231}	2264 {231}																		

Note) ☐: Made to order

Sizing Chart (Sizing Table 3)

Transfer Capacity Table (EWJ50 to 70)

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ50	100	0.255	98 {10.03}	0.217	99 {10.11}	0.178	100 {10.19}	0.150	100 {10.25}	0.085	102 {10.37}	0.020	103 {10.48}
	150	0.186	100 {10.19}	0.158	100 {10.24}	0.129	101 {10.30}	0.110	101 {10.33}	0.063	102 {10.42}	0.015	103 {10.49}
	200	0.148	101 {10.27}	0.126	101 {10.31}	0.103	101 {10.35}	0.087	102 {10.38}	0.051	102 {10.44}	0.012	103 {10.50}
	250	0.124	101 {10.31}	0.106	101 {10.35}	0.087	102 {10.38}	0.074	102 {10.40}	0.043	102 {10.45}	0.010	103 {10.50}
	300	0.110	103 {10.54}	0.094	104 {10.59}	0.077	104 {10.64}	0.065	105 {10.67}	0.036	105 {10.74}	0.009	106 {10.81}
	400	0.088	104 {10.61}	0.075	104 {10.65}	0.061	105 {10.68}	0.052	105 {10.71}	0.031	106 {10.77}	0.007	106 {10.82}
	500	0.074	104 {10.65}	0.063	105 {10.68}	0.052	105 {10.71}	0.045	105 {10.73}	0.026	106 {10.78}	0.006	106 {10.82}
	600	0.067	105 {10.68}	0.058	105 {10.71}	0.048	105 {10.73}	0.041	105 {10.75}	0.024	106 {10.79}	0.006	106 {10.82}
	800	0.055	105 {10.72}	0.048	105 {10.74}	0.040	105 {10.76}	0.034	106 {10.77}	0.020	106 {10.80}	0.005	106 {10.82}
	1000	0.048	105 {10.74}	0.041	105 {10.76}	0.035	106 {10.77}	0.030	106 {10.78}	0.018	106 {10.80}	0.004	106 {10.82}
	1200	0.044	105 {10.76}	0.038	106 {10.77}	0.032	106 {10.78}	0.027	106 {10.79}	0.016	106 {10.81}	0.004	106 {10.82}
	1500	0.034	93 { 9.45}	0.029	93 { 9.47}	0.025	93 { 9.50}	0.021	93 { 9.51}	0.013	94 { 9.55}	0.003	94 { 9.58}
	1800	0.031	93 { 9.47}	0.027	93 { 9.49}	0.023	93 { 9.51}	0.020	93 { 9.53}	0.012	94 { 9.56}	0.003	94 { 9.59}
	2400	0.026	93 { 9.50}	0.023	93 { 9.52}	0.019	93 { 9.53}	0.016	94 { 9.54}	0.010	94 { 9.57}	0.002	94 { 9.59}
	3000	0.023	93 { 9.52}	0.020	93 { 9.53}	0.017	94 { 9.54}	0.014	94 { 9.55}	0.009	94 { 9.57}	0.002	94 { 9.59}
	3600	0.021	93 { 9.53}	0.018	94 { 9.54}	0.015	94 { 9.55}	0.013	94 { 9.56}	0.008	94 { 9.57}	0.002	94 { 9.59}
EWJ63	100	0.514	201 {20.51}	0.439	203 {20.72}	0.360	205 {20.93}	0.305	207 {21.07}	0.173	210 {21.40}	0.041	213 {21.69}
	150	0.375	205 {20.92}	0.320	206 {21.06}	0.262	208 {21.21}	0.223	209 {21.30}	0.127	211 {21.52}	0.030	213 {21.72}
	200	0.298	207 {21.13}	0.255	208 {21.24}	0.209	209 {21.35}	0.177	210 {21.42}	0.103	212 {21.58}	0.024	213 {21.73}
	250	0.251	208 {21.25}	0.214	209 {21.34}	0.176	210 {21.43}	0.150	211 {21.49}	0.087	212 {21.62}	0.021	213 {21.74}
	300	0.229	217 {22.12}	0.196	218 {22.26}	0.161	220 {22.40}	0.137	220 {22.49}	0.080	223 {22.71}	0.019	224 {22.89}
	400	0.183	219 {22.33}	0.156	220 {22.43}	0.129	221 {22.54}	0.110	222 {22.61}	0.064	223 {22.76}	0.016	224 {22.91}
	500	0.154	220 {22.45}	0.132	221 {22.53}	0.109	222 {22.62}	0.093	222 {22.67}	0.055	223 {22.80}	0.013	225 {22.91}
	600	0.140	221 {22.53}	0.120	221 {22.60}	0.100	222 {22.67}	0.086	223 {22.72}	0.051	224 {22.82}	0.013	225 {22.92}
	800	0.114	222 {22.63}	0.098	222 {22.69}	0.083	223 {22.74}	0.071	223 {22.77}	0.043	224 {22.85}	0.011	225 {22.92}
	1000	0.099	222 {22.69}	0.086	223 {22.74}	0.072	223 {22.78}	0.062	224 {22.81}	0.037	224 {22.87}	0.009	225 {22.93}
	1200	0.088	223 {22.74}	0.077	223 {22.77}	0.064	223 {22.81}	0.056	224 {22.83}	0.033	224 {22.88}	0.008	225 {22.93}
	1500	0.066	187 {19.10}	0.056	188 {19.16}	0.047	188 {19.22}	0.041	189 {19.26}	0.024	190 {19.35}	0.006	190 {19.44}
	1800	0.060	188 {19.16}	0.052	188 {19.21}	0.044	189 {19.26}	0.038	189 {19.29}	0.023	190 {19.37}	0.006	191 {19.44}
	2400	0.049	188 {19.23}	0.043	189 {19.27}	0.036	189 {19.31}	0.032	189 {19.34}	0.019	190 {19.39}	0.005	191 {19.45}
	3000	0.043	189 {19.28}	0.038	189 {19.31}	0.032	190 {19.34}	0.028	190 {19.36}	0.017	190 {19.41}	0.004	191 {19.45}
	3600	0.039	189 {19.31}	0.034	189 {19.33}	0.029	190 {19.36}	0.025	190 {19.38}	0.015	190 {19.42}	0.004	191 {19.45}
EWJ70	100	0.719	281 {28.7 }	0.614	285 {29.0 }	0.504	288 {29.4 }	0.428	290 {29.6 }	0.244	295 {30.1 }	0.057	300 {30.6 }
	150	0.525	288 {29.4 }	0.449	290 {29.6 }	0.369	292 {29.8 }	0.313	294 {30.0 }	0.179	297 {30.3 }	0.043	300 {30.6 }
	200	0.419	291 {29.7 }	0.358	293 {29.9 }	0.294	294 {30.0 }	0.250	295 {30.1 }	0.145	298 {30.4 }	0.035	300 {30.6 }
	250	0.353	293 {29.9 }	0.301	294 {30.0 }	0.248	296 {30.2 }	0.211	296 {30.3 }	0.123	299 {30.5 }	0.029	300 {30.6 }
	300	0.314	300 {30.6 }	0.268	302 {30.8 }	0.221	304 {31.0 }	0.188	305 {31.2 }	0.109	309 {31.5 }	0.027	311 {31.8 }
	400	0.251	303 {30.9 }	0.215	305 {31.1 }	0.177	306 {31.2 }	0.151	307 {31.3 }	0.088	309 {31.6 }	0.022	312 {31.8 }
	500	0.212	305 {31.1 }	0.182	306 {31.2 }	0.150	307 {31.4 }	0.128	308 {31.4 }	0.075	310 {31.6 }	0.018	312 {31.8 }
	600	0.192	306 {31.2 }	0.165	307 {31.3 }	0.137	308 {31.4 }	0.118	309 {31.5 }	0.071	310 {31.7 }	0.018	312 {31.8 }
	800	0.157	308 {31.4 }	0.135	308 {31.5 }	0.113	309 {31.5 }	0.098	310 {31.6 }	0.059	311 {31.7 }	0.015	312 {31.8 }
	1000	0.135	308 {31.5 }	0.118	309 {31.5 }	0.099	310 {31.6 }	0.085	310 {31.6 }	0.051	311 {31.7 }	0.013	312 {31.8 }
	1200	0.121	309 {31.5 }	0.105	310 {31.6 }	0.088	310 {31.6 }	0.076	310 {31.7 }	0.046	311 {31.8 }	0.012	312 {31.8 }
	1500	0.092	262 {26.7 }	0.079	263 {26.8 }	0.065	264 {26.9 }	0.056	264 {27.0 }	0.034	266 {27.1 }	0.009	267 {27.3 }
	1800	0.083	263 {26.8 }	0.072	264 {26.9 }	0.060	264 {27.0 }	0.053	265 {27.0 }	0.032	266 {27.2 }	0.008	267 {27.3 }
	2400	0.069	264 {26.9 }	0.060	265 {27.0 }	0.051	265 {27.1 }	0.044	266 {27.1 }	0.027	266 {27.2 }	0.007	267 {27.3 }
	3000	0.060	265 {27.0 }	0.053	265 {27.1 }	0.044	266 {27.1 }	0.039	266 {27.1 }	0.023	267 {27.2 }	0.006	267 {27.3 }
	3600	0.054	265 {27.0 }	0.047	265 {27.1 }	0.040	266 {27.1 }	0.035	266 {27.2 }	0.021	267 {27.2 }	0.005	267 {27.3 }

Transfer Capacity Table (EW80 to 125, SW80 to 125)

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW80 SW80	100	1.032	419 { 42.8}	0.881	424{ 43.3}	0.722	430{ 43.9}	0.612	433{ 44.2}	0.347	442{ 45.1}	0.081	449{ 45.8}
	150	0.747	430 { 43.9}	0.637	433{ 44.2}	0.522	437{ 44.6}	0.442	439{ 44.8}	0.251	445{ 45.4}	0.059	450{ 45.9}
	200	0.591	435 { 44.4}	0.503	438{ 44.7}	0.412	440{ 44.9}	0.349	442{ 45.1}	0.200	446{ 45.5}	0.047	450{ 45.9}
	250	0.496	438 { 44.7}	0.423	440{ 44.9}	0.347	442{ 45.1}	0.294	444{ 45.3}	0.170	447{ 45.6}	0.040	450{ 45.9}
	300	0.447	452 { 46.1}	0.382	455{ 46.4}	0.314	459{ 46.8}	0.266	461{ 47.0}	0.153	466{ 47.5}	0.037	470{ 48.0}
	400	0.355	457 { 46.6}	0.303	459{ 46.8}	0.249	462{ 47.1}	0.211	464{ 47.3}	0.123	467{ 47.7}	0.029	470{ 48.0}
	500	0.299	460 { 46.9}	0.255	462{ 47.1}	0.210	464{ 47.3}	0.178	465{ 47.4}	0.104	467{ 47.7}	0.025	470{ 48.0}
	600	0.267	462 { 47.1}	0.229	464{ 47.3}	0.189	465{ 47.4}	0.161	466{ 47.5}	0.096	468{ 47.8}	0.024	470{ 48.0}
	800	0.215	464 { 47.3}	0.185	466{ 47.5}	0.154	466{ 47.6}	0.132	467{ 47.7}	0.078	469{ 47.9}	0.019	471{ 48.1}
	1000	0.185	466 { 47.5}	0.160	466{ 47.6}	0.134	467{ 47.7}	0.115	468{ 47.8}	0.068	469{ 47.9}	0.017	471{ 48.1}
	1200	0.165	466 { 47.6}	0.143	467{ 47.7}	0.120	468{ 47.8}	0.103	468{ 47.8}	0.062	470{ 48.0}	0.015	471{ 48.1}
	1500	0.124	390 { 39.8}	0.107	391{ 39.9}	0.088	393{ 40.1}	0.075	394{ 40.2}	0.045	396{ 40.4}	0.011	398{ 40.6}
	1800	0.112	391 { 39.9}	0.096	392{ 40.0}	0.080	394{ 40.2}	0.069	394{ 40.2}	0.042	396{ 40.4}	0.011	398{ 40.6}
	2400	0.091	393 { 40.1}	0.078	394{ 40.2}	0.066	395{ 40.3}	0.057	396{ 40.4}	0.034	397{ 40.5}	0.009	398{ 40.6}
	3000	0.078	394 { 40.2}	0.069	395{ 40.3}	0.058	396{ 40.4}	0.050	396{ 40.4}	0.030	397{ 40.5}	0.008	398{ 40.6}
	3600	0.071	395 { 40.3}	0.062	395{ 40.3}	0.052	396{ 40.4}	0.045	397{ 40.5}	0.027	397{ 40.5}	0.007	398{ 40.6}
EW100 SW100	100	1.704	705 { 71.9}	1.544	758{ 77.3}	1.271	769{ 78.5}	1.079	777{ 79.3}	0.628	813{ 83.0}	0.144	813{ 83.0}
	150	1.275	746 { 76.1}	1.122	777{ 79.3}	0.921	784{ 80.0}	0.786	795{ 81.1}	0.456	820{ 83.7}	0.106	820{ 83.7}
	200	0.998	747 { 76.2}	0.889	786{ 80.2}	0.729	792{ 80.8}	0.632	814{ 83.1}	0.360	822{ 83.9}	0.084	822{ 83.9}
	250	0.826	741 { 75.6}	0.744	788{ 80.4}	0.628	815{ 83.2}	0.532	817{ 83.4}	0.307	824{ 84.1}	0.072	824{ 84.1}
	300	0.821	846 { 86.3}	0.703	854{ 87.1}	0.579	862{ 88.0}	0.492	864{ 88.2}	0.283	875{ 89.3}	0.068	875{ 89.3}
	400	0.653	856 { 87.3}	0.559	862{ 88.0}	0.462	870{ 89.0}	0.391	872{ 89.0}	0.225	878{ 89.6}	0.054	878{ 89.6}
	500	0.550	861 { 87.9}	0.472	867{ 88.5}	0.389	873{ 89.1}	0.330	873{ 89.1}	0.192	880{ 89.8}	0.047	880{ 89.8}
	600	0.492	864 { 88.2}	0.423	870{ 88.8}	0.350	876{ 89.4}	0.298	876{ 89.4}	0.176	880{ 89.8}	0.044	880{ 89.8}
	800	0.398	870 { 88.8}	0.342	873{ 89.1}	0.283	877{ 89.5}	0.244	878{ 89.6}	0.145	882{ 90.0}	0.036	882{ 90.0}
	1000	0.341	872 { 89.0}	0.293	875{ 89.3}	0.246	879{ 89.7}	0.212	882{ 90.0}	0.127	884{ 90.2}	0.031	884{ 90.2}
	1200	0.298	859 { 87.7}	0.258	861{ 87.9}	0.220	880{ 89.8}	0.190	882{ 90.0}	0.114	884{ 90.2}	0.028	884{ 90.2}
	1500	0.221	718 { 73.3}	0.189	721{ 73.6}	0.157	724{ 73.9}	0.135	727{ 74.2}	0.081	734{ 74.9}	0.020	734{ 74.9}
	1800	0.198	721 { 73.6}	0.171	723{ 73.8}	0.142	726{ 74.1}	0.121	730{ 74.5}	0.075	734{ 74.9}	0.019	734{ 74.9}
	2400	0.162	727 { 74.2}	0.140	727{ 74.2}	0.115	728{ 74.3}	0.101	729{ 74.4}	0.062	736{ 75.1}	0.015	736{ 75.1}
	3000	0.140	729 { 74.4}	0.120	729{ 74.4}	0.102	730{ 74.5}	0.089	731{ 74.6}	0.054	736{ 75.1}	0.014	736{ 75.1}
	3600	0.125	730 { 74.5}	0.109	732{ 74.7}	0.092	733{ 74.8}	0.080	733{ 74.8}	0.047	736{ 75.1}	0.012	736{ 75.1}
EW125 SW125	100	3.08	1294 {132 }	2.82	1401{143 }	2.32	1431{146 }	1.98	1450{148 }	1.14	1490{152 }	0.27	1529{156 }
	150	2.31	1372 {140 }	2.05	1450{148 }	1.69	1470{150 }	1.46	1499{153 }	0.87	1597{163 }	0.20	1597{163 }
	200	1.93	1470 {150 }	1.66	1490{152 }	1.38	1519{155 }	1.18	1539{157 }	0.70	1607{164 }	0.17	1607{164 }
	250	1.61	1480 {151 }	1.38	1499{153 }	1.14	1519{155 }	0.97	1529{156 }	0.58	1607{164 }	0.14	1607{164 }
	300	1.49	1548 {158 }	1.28	1568{160 }	1.06	1588{162 }	0.90	1597{163 }	0.52	1627{166 }	0.13	1656{169 }
	400	1.20	1578 {161 }	1.03	1588{162 }	0.85	1607{164 }	0.72	1617{165 }	0.42	1637{167 }	0.104	1656{169 }
	500	1.01	1588 {162 }	0.86	1607{164 }	0.71	1617{165 }	0.61	1627{166 }	0.35	1637{167 }	0.088	1656{169 }
	600	0.90	1607 {164 }	0.77	1617{165 }	0.64	1627{166 }	0.55	1627{166 }	0.33	1646{168 }	0.083	1656{169 }
	800	0.68	1568 {160 }	0.59	1578{161 }	0.49	1588{162 }	0.42	1588{162 }	0.25	1597{163 }	0.064	1597{163 }
	1000	0.58	1548 {158 }	0.50	1558{159 }	0.42	1588{162 }	0.36	1597{163 }	0.22	1597{163 }	0.055	1597{163 }
	1200	0.51	1558 {159 }	0.44	1558{159 }	0.37	1588{162 }	0.32	1597{163 }	0.19	1607{164 }	0.049	1607{164 }
	1500	0.41	1362 {139 }	0.35	1372{140 }	0.29	1382{141 }	0.25	1382{141 }	0.15	1392{142 }	0.038	1392{142 }
	1800	0.37	1372 {140 }	0.32	1372{140 }	0.27	1382{141 }	0.23	1392{142 }	0.14	1392{142 }	0.036	1392{142 }
	2400	0.30	1382 {141 }	0.26	1382{141 }	0.22	1392{142 }	0.19	1392{142 }	0.12	1392{142 }	0.030	1392{142 }
	3000	0.26	1382 {141 }	0.22	1382{141 }	0.19	1392{142 }	0.16	1401{143 }	0.100	1401{143 }	0.026	1401{143 }
	3600	0.23	1392 {142 }	0.20	1392{142 }	0.17	1392{142 }	0.15	1401{143 }	0.090	1401{143 }	0.023	1401{143 }

Sizing Chart (Sizing Table 3)

Transfer Capacity Table (EW150 to 200, SW150 to 200)

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW150 SW150	100	5.24	2244 {229}	4.51	2293{234}	3.73	2352{240}	3.18	2381{243}	1.84	2470{252}	0.43	2538{259}
	150	3.84	2342 {239}	3.29	2381{243}	2.71	2421{247}	2.31	2440{249}	1.33	2499{255}	0.32	2548{260}
	200	3.06	2401 {245}	2.62	2421{247}	2.16	2450{250}	1.83	2470{252}	1.05	2509{256}	0.25	2548{260}
	250	2.57	2430 {248}	2.19	2450{250}	1.80	2470{252}	1.53	2489{254}	0.88	2519{257}	0.21	2548{260}
	300	2.37	2548 {260}	2.04	2577{263}	1.69	2617{267}	1.45	2646{270}	0.84	2695{275}	0.21	2754{281}
	400	1.91	2597 {265}	1.64	2626{268}	1.35	2656{271}	1.16	2675{273}	0.67	2715{277}	0.17	2754{281}
	500	1.60	2626 {268}	1.38	2656{271}	1.14	2675{273}	0.97	2695{275}	0.57	2724{278}	0.14	2754{281}
	600	1.43	2656 {271}	1.23	2666{272}	1.02	2685{274}	0.87	2705{276}	0.51	2734{279}	0.13	2754{281}
	800	1.09	2587 {264}	0.93	2597{265}	0.77	2617{267}	0.66	2617{267}	0.40	2636{269}	0.11	2656{271}
	1000	0.92	2597 {265}	0.79	2617{267}	0.66	2626{268}	0.57	2626{268}	0.34	2646{270}	0.09	2656{271}
	1200	0.81	2607 {266}	0.70	2617{267}	0.58	2626{268}	0.50	2636{269}	0.30	2646{270}	0.08	2656{271}
	1500	0.63	2607 {266}	0.54	2234{228}	0.45	2244{229}	0.39	2254{230}	0.23	2274{232}	0.06	2274{232}
	1800	0.56	2225 {227}	0.49	2244{229}	0.40	2254{230}	0.35	2264{231}	0.21	2274{232}	0.06	2274{232}
	2400	0.46	2244 {229}	0.40	2254{230}	0.33	2264{231}	0.28	2264{231}	0.17	2283{233}	0.05	2283{233}
	3000	0.39	2254 {230}	0.34	2264{231}	0.28	2274{232}	0.25	2274{232}	0.15	2283{233}	0.04	2283{233}
	3600	0.34	2264 {231}	0.30	2264{231}	0.25	2274{232}	0.22	2274{232}	0.13	2283{233}	0.04	2283{233}
EW175 SW175	100	7.68	3361 {343}	6.63	3450{352}	5.38	3459{353}	4.52	3459{353}	2.52	3459{353}	0.58	3459{353}
	150	5.53	3459 {353}	4.66	3459{353}	3.78	3459{353}	3.18	3459{353}	1.78	3459{353}	0.42	3459{353}
	200	4.31	3459 {353}	3.64	3459{353}	2.96	3459{353}	2.50	3459{353}	1.41	3459{353}	0.34	3459{353}
	250	3.55	3459 {353}	3.01	3459{353}	2.45	3459{353}	2.07	3459{353}	1.17	3459{353}	0.28	3459{353}
	300	3.13	3459 {353}	2.65	3459{353}	2.17	3459{353}	1.83	3459{353}	1.04	3459{353}	0.25	3459{353}
	400	2.46	3459 {353}	2.09	3459{353}	1.71	3459{353}	1.45	3459{353}	0.83	3459{353}	0.20	3459{353}
	500	2.04	3459 {353}	1.73	3459{353}	1.42	3459{353}	1.20	3459{353}	0.69	3459{353}	0.17	3459{353}
	600	1.79	3459 {353}	1.52	3459{353}	1.25	3459{353}	1.06	3459{353}	0.62	3459{353}	0.16	3459{353}
	800	1.40	3459 {353}	1.19	3459{353}	0.98	3459{353}	0.84	3459{353}	0.50	3459{353}	0.13	3459{353}
	1000	1.17	3459 {353}	1.00	3459{353}	0.83	3459{353}	0.71	3459{353}	0.42	3459{353}	0.11	3459{353}
	1200	1.02	3459 {353}	0.87	3459{353}	0.72	3459{353}	0.62	3459{353}	0.37	3459{353}	0.10	3459{353}
	1500	0.91	3352 {342}	0.78	3371{344}	0.65	3401{347}	0.56	3420{349}	0.33	3459{353}	0.09	3459{353}
	1800	0.81	3361 {343}	0.69	3381{345}	0.58	3410{348}	0.50	3430{350}	0.30	3459{353}	0.08	3459{353}
	2400	0.66	3410 {348}	0.57	3420{349}	0.48	3440{351}	0.41	3450{352}	0.25	3459{353}	0.07	3459{353}
	3000	0.56	3430 {350}	0.48	3430{350}	0.40	3400{351}	0.35	3450{352}	0.21	3459{353}	0.06	3459{353}
	3600	0.49	3440 {351}	0.43	3440{351}	0.35	3450{352}	0.31	3459{353}	0.19	3459{353}	0.05	3459{353}
EW200 SW200	100	11.16	4911 {501}	9.71	5077{518}	8.10	5238{534}	6.95	5348{546}	4.06	5605{572}	0.95	5704{582}
	150	8.04	5069 {517}	7.10	5304{541}	5.92	5451{556}	5.05	5528{564}	2.93	5703{582}	0.69	5704{582}
	200	6.41	5203 {531}	5.67	5450{556}	4.70	5562{568}	4.00	5620{573}	2.30	5704{582}	0.55	5704{582}
	250	5.34	5240 {535}	4.73	5486{560}	3.95	5629{574}	3.36	5676{579}	1.92	5704{582}	0.47	5704{582}
	300	4.90	5535 {565}	4.23	5640{576}	3.49	5704{582}	2.95	5704{582}	1.68	5704{582}	0.41	5704{582}
	400	3.94	5689 {580}	3.35	5704{582}	2.74	5704{582}	2.32	5704{582}	1.32	5704{582}	0.33	5704{582}
	500	3.28	5704 {582}	2.79	5704{582}	2.28	5704{582}	1.93	5704{582}	1.11	5704{582}	0.28	5704{582}
	600	2.87	5704 {582}	2.44	5704{582}	2.01	5704{582}	1.71	5704{582}	0.99	5704{582}	0.26	5704{582}
	800	2.28	5704 {582}	1.94	5704{582}	1.60	5704{582}	1.36	5704{582}	0.80	5704{582}	0.21	5704{582}
	1000	1.93	5704 {582}	1.65	5704{582}	1.36	5704{582}	1.16	5704{582}	0.70	5704{582}	0.19	5704{582}
	1200	1.68	5704 {582}	1.44	5704{582}	1.19	5704{582}	1.02	5704{582}	0.62	5704{582}	0.17	5704{582}
	1500	1.43	5063 {517}	1.24	5116{522}	1.03	5169{527}	0.89	5204{531}	0.53	5286{539}	0.15	5359{547}
	1800	1.27	5114 {522}	1.10	5158{526}	0.92	5203{531}	0.80	5233{534}	0.48	5301{541}	0.14	5362{547}
	2400	1.04	5179 {528}	0.90	5212{532}	0.75	5246{535}	0.67	5269{538}	0.40	5320{543}	0.11	5366{548}
	3000	0.89	5218 {532}	0.77	5245{535}	0.65	5272{538}	0.56	5290{540}	0.35	5331{544}	0.10	5368{548}
	3600	0.79	5244 {535}	0.68	5267{537}	0.57	5290{540}	0.50	5305{541}	0.31	5339{545}	0.09	5370{548}

Technical Data

■ Actual Reduction Ratio

Reduction ratios for EWJ/EW/EWJM/EWM(R)/SW/SWM(R) series are all actual.

■ Allowable Loads on Shafts

1. Solid output shaft Allowable radial load

EWJ/EW/EWJM/EWM(R) Series

Size	EWJ50	EWJ63	EWJ70	EW80	EW100	EW125	EW150	EW175	EW200
Allowable radial load N {kgf}	2558 {261}	4155 {424}	5674 {579}	7575 {773}	11505 {1174}	15131 {1544}	21825 {2227}	24451 {2495}	29743 {3035}

SW/SWM(R) Series

Size	SW80	SW100	SW125	SW150	SW175	SW200
Allowable radial load N {kgf}	10427 {1064}	11524 {1176}	27057 {2761}	29723 {3033}	26558 {2710}	29743 {3035}

2. Hollow output shaft Allowable radial load

EW/EWM(R) Series

Size	EW80	EW100	EW125	EW150	EW175	EW200
Allowable radial load N {kgf}	8849 {903}	9369 {956}	15229 {1554}	18580 {1896}	19364 {1976}	22834 {2330}

SW/SWM(R) Series

Size	SW80	SW100	SW125	SW150	SW175	SW200
Allowable radial load N {kgf}	8849 {903}	10711 {1093}	18531 {1891}	15680 {1600}	19364 {1976}	22834 {2330}

3. Hollow output shaft Allowable axial load

EW/EWM(R) Series

Size	EW80	EW100	EW125	EW150	EW175	EW200
Allowable axial load N {kgf}	11593 {1183}	15572 {1589}	25832 {2636}	24607 {2511}	29057 {2965}	31859 {3251}

SW/SWM(R) Series

Size	SW80	SW100	SW125	SW150	SW175	SW200
Allowable axial load N {kgf}	11956 {1220}	17826 {1819}	28331 {2891}	12965 {1323}	22736 {2320}	16130 {1646}

Technical Data

■ EWJ/EW/SW Worm Starting Efficiency (Reference)

Size	Reduction ratio	Starting efficiency	Size	Reduction ratio	Starting efficiency	Size	Reduction ratio	Starting efficiency
EWJ50	100	39.0%	EW80 SW80	100	41.6%	EW150 SW150	100	42.9%
	150	34.6%		150	37.1%		150	37.6%
	200	30.1%		200	34.5%		200	35.0%
	250	27.5%		250	31.9%		250	33.0%
	300	28.6%		300	30.2%		300	31.4%
	400	24.9%		400	28.1%		400	29.2%
	500	22.8%		500	26.0%		500	27.5%
	600	20.7%		600	21.7%		600	23.1%
	800	16.4%		800	19.6%		800	20.4%
	1000	14.8%		1000	17.5%		1000	18.7%
	1200	12.7%		1200	15.9%		1200	17.6%
	1500	12.9%		1500	15.7%		1500	16.5%
	1800	11.7%		1800	13.1%		1800	13.9%
	2400	9.3%		2400	11.8%		2400	12.2%
	3000	8.4%		3000	10.6%		3000	11.2%
	3600	7.2%		3600	9.6%		3600	10.6%
EWJ63	100	39.0%	EW100 SW100	100	42.2%	EW175 SW175	100	43.6%
	150	34.6%		150	37.6%		150	38.9%
	200	30.1%		200	35.0%		200	35.6%
	250	28.2%		250	32.3%		250	33.7%
	300	28.1%		300	30.8%		300	32.5%
	400	24.4%		400	28.6%		400	29.7%
	500	22.9%		500	26.5%		500	28.1%
	600	19.8%		600	22.1%		600	24.2%
	800	16.6%		800	20.0%		800	20.9%
	1000	17.2%		1000	17.8%		1000	19.3%
	1200	13.5%		1200	16.2%		1200	18.2%
	1500	13.6%		1500	16.2%		1500	16.8%
	1800	11.8%		1800	13.5%		1800	14.5%
	2400	9.9%		2400	12.2%		2400	12.5%
	3000	9.0%		3000	10.9%		3000	11.6%
	3600	8.1%		3600	9.9%		3600	10.9%
EWJ70	100	38.4%	EW125 SW125	100	42.2%	EW200 SW200	100	42.9%
	150	34.0%		150	37.0%		150	38.4%
	200	29.6%		200	34.3%		200	35.8%
	250	27.7%		250	32.3%		250	33.2%
	300	28.1%		300	30.8%		300	31.3%
	400	24.4%		400	28.6%		400	29.2%
	500	22.9%		500	27.0%		500	27.0%
	600	19.8%		600	22.6%		600	23.3%
	800	16.6%		800	19.8%		800	20.7%
	1000	17.2%		1000	18.2%		1000	18.6%
	1200	13.5%		1200	17.1%		1200	17.0%
	1500	13.2%		1500	15.7%		1500	15.3%
	1800	11.4%		1800	13.1%		1800	13.2%
	2400	9.6%		2400	11.5%		2400	11.7%
	3000	8.7%		3000	10.6%		3000	10.5%
	3600	7.8%		3600	9.9%		3600	9.6%

Note) Starting efficiencies are from a standstill speed of 0 r/min. Starting a reducer requires a higher amount of power than during normal operation. Use the values given above for reference. Refer to the “Catalogue efficiency” and its calculation on page 18 for normal operation.

■ Moment of Inertia on Input Shaft (Solid Output Shaft / Hollow Output Shaft)

EWJ/EW/SW Series

Moment of inertia on input shaft {GD²} : × 10^{-3} kg·m² {× 10^{-3} kgf·m²}

Size / Reduction ratio	EWJ50	EWJ63	EWJ70	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
100	0.01 {0.06}	0.03 {0.12}	0.03 {0.13}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.6}	0.9 { 3.6}	2.2 { 8.6}	4.1 { 16.3}
150	0.01 {0.05}	0.03 {0.10}	0.03 {0.11}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.5}	0.8 { 3.3}	2.0 { 7.8}	3.5 { 14.0}
200	0.01 {0.05}	0.02 {0.09}	0.02 {0.10}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.9}	1.8 { 7.2}	3.2 { 12.8}
250	0.01 {0.04}	0.02 {0.08}	0.02 {0.10}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.8}	1.7 { 6.7}	3.1 { 12.3}
300	0.01 {0.05}	0.03 {0.10}	0.03 {0.11}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.8 { 3.2}	1.9 { 7.7}	3.5 { 13.9}
400	0.01 {0.05}	0.02 {0.09}	0.02 {0.10}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.9}	1.8 { 7.1}	3.2 { 12.7}
500	0.01 {0.04}	0.02 {0.08}	0.02 {0.10}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.7}	1.7 { 6.7}	3.1 { 12.3}
600	0.01 {0.05}	0.02 {0.09}	0.02 {0.09}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.8 { 3.0}	1.8 { 7.3}	3.2 { 12.6}
800	0.01 {0.04}	0.02 {0.09}	0.02 {0.08}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.8}	1.7 { 6.8}	3.0 { 12.0}
1000	0.01 {0.04}	0.02 {0.08}	0.02 {0.08}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.7}	1.6 { 6.5}	3.0 { 11.8}
1200	0.01 {0.04}	0.02 {0.08}	0.02 {0.08}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.6 { 2.5}	1.6 { 6.2}	2.9 { 11.7}
1500	0.01 {0.04}	0.02 {0.08}	0.02 {0.10}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.7}	1.7 { 6.7}	3.1 { 12.3}
1800	0.01 {0.05}	0.02 {0.09}	0.02 {0.09}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.8 { 3.0}	1.8 { 7.3}	3.2 { 12.6}
2400	0.01 {0.04}	0.02 {0.09}	0.02 {0.08}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.8}	1.7 { 6.8}	3.0 { 12.0}
3000	0.01 {0.04}	0.02 {0.08}	0.02 {0.08}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.7 { 2.7}	1.6 { 6.5}	3.0 { 11.8}
3600	0.01 {0.04}	0.02 {0.08}	0.02 {0.08}	0.2 { 0.6}	0.2 { 0.7}	0.4 { 1.4}	0.6 { 2.5}	1.6 { 6.2}	2.9 { 11.7}

EWJM/EWM(R)/SWM(R) Series

Moment of inertia on input shaft {GD²} : × 10^{-3} kg·m² {× 10^{-3} kgf·m²}

Size / Reduction ratio	EWJM50		EWJM63		EWJM70	
	Motor kW	Moment of Inertia on Input Shaft	Motor kW	Moment of Inertia on Input Shaft	Motor kW	Moment of Inertia on Input Shaft
100	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.4	1.0 {4.2}
150	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.4	1.0 {4.2}
200	0.2	0.5 {1.9}	0.2	0.5 {2.0}	0.4	1.0 {4.2}
250	0.1	0.5 {1.9}	0.2	0.5 {2.0}	0.4	1.0 {4.2}
300	0.1	0.5 {1.9}	0.2	0.5 {2.0}	0.2	0.5 {2.0}
400	0.1	0.5 {1.9}	0.2	0.5 {2.0}	0.2	0.5 {2.0}
500	0.1	0.5 {1.9}	0.1	0.5 {2.0}	0.2	0.5 {2.0}
600	0.1	0.5 {1.9}	0.1	0.5 {2.0}	0.2	0.5 {2.0}
800	—		0.1	0.5 {2.0}	0.2	0.5 {2.0}
1000	—		0.1	0.5 {2.0}	0.1	0.5 {2.0}
1200	—		0.1	0.5 {2.0}	0.1	0.5 {2.0}
1500	—		0.1	0.5 {2.0}	0.1	0.5 {2.0}
1800	—		0.1	0.5 {2.0}	0.1	0.5 {2.0}
2400	—		0.1	0.5 {2.0}	0.1	0.5 {2.0}
3000	—		0.1	0.5 {2.0}	0.1	0.5 {2.0}
3600	—		0.1	0.5 {2.0}	0.1	0.5 {2.0}

Size / Reduction ratio	EWM(R)80 SWM(R)80		EWM(R)100 SWM(R)100		EWM(R)125 SWM(R)125		EWM(R)150 SWM(R)150		EWM(R)175 SWM(R)175		EWM(R)200 SWM(R)200	
	Motor kW	Moment of Inertia on Input Shaft	Motor kW	Moment of Inertia on Input Shaft	Motor kW	Moment of Inertia on Input Shaft	Motor kW	Moment of Inertia on Input Shaft	Motor kW	Moment of Inertia on Input Shaft	Motor kW	Moment of Inertia on Input Shaft
100	0.75	2.4 {9.64}	0.75	2.4 {9.74}	1.5	7 {27.8}	2.2	10.2 {40.8}	5.5	40.6 {162.2}	5.5	42.4 {169.6}
	—		—		—		3.7	21.4 {85.6}	—		—	
150	0.75	2.4 {9.64}	0.75	2.4 {9.74}	1.5	6.9 {27.7}	2.2	4.7 {18.9}	5.5	40.4 {161.4}	5.5	41.8 {167.3}
	—		—		—		3.7	21.3 {85.3}	—		—	
200	0.4	1.1 {4.5}	0.75	2.4 {9.74}	1.5	6.9 {27.6}	2.2	10 {40.1}	3.7	22.3 {89.2}	5.5	41.5 {166.1}
250	0.4	1.1 {4.5}	0.75	2.4 {9.74}	1.5	6.9 {27.6}	2.2	10 {40.0}	3.7	22.2 {88.7}	5.5	41.4 {165.6}
300	0.4	1.1 {4.5}	0.75	2.4 {9.74}	1.5	6.9 {27.6}	2.2	10.1 {40.4}	3.7	22.4 {89.7}	5.5	41.8 {167.2}
400	0.4	1.1 {4.5}	0.75	2.4 {9.74}	1.5	6.9 {27.6}	2.2	10 {40.1}	2.2	11.1 {44.3}	3.7	23.6 { 94.4}
500	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.6 {10.44}	1.5	7.2 {28.9}	2.2	11 {43.9}	3.7	23.5 { 94.0}
600	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.6 {10.44}	1.5	7.3 {29.2}	2.2	11.1 {44.5}	3.7	23.6 { 94.3}
800	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.6 {10.44}	0.75	3 {11.8}	1.5	8.3 {33.0}	2.2	12.2 { 48.9}
1000	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.6 {10.44}	0.75	2.9 {11.74}	1.5	8.2 {32.7}	2.2	12.2 { 48.7}
1200	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.4	1.3 { 5.3}	0.75	2.9 {11.54}	0.75	3.8 {15.24}	1.5	9.4 { 37.6}
1500	—		0.2	0.6 {2.4}	0.4	1.3 { 5.3}	0.75	2.9 {11.74}	0.75	3.9 {15.74}	1.5	9.6 { 38.2}
1800	—		0.2	0.6 {2.4}	0.4	1.3 { 5.3}	0.4	1.7 { 6.9}	0.75	4.1 {16.34}	—	
2400	—		0.2	0.6 {2.4}	0.4	1.3 { 5.3}	0.4	1.7 { 6.7}	0.75	4.0 {15.8}	—	
3000	—		—		0.2	0.8 { 3.1}	0.4	1.7 { 6.6}	—		—	
3600	—				0.2	0.8 { 3.1}	0.4	1.6 { 6.4}	—		—	

Note 1) For motors with brakes, add the moment of inertia and GD² listed in the Brake Characteristics table on page 222.
2) indicate non-standard combinations.

Structure

EWJ/EW Series

■ Reduction Ratio

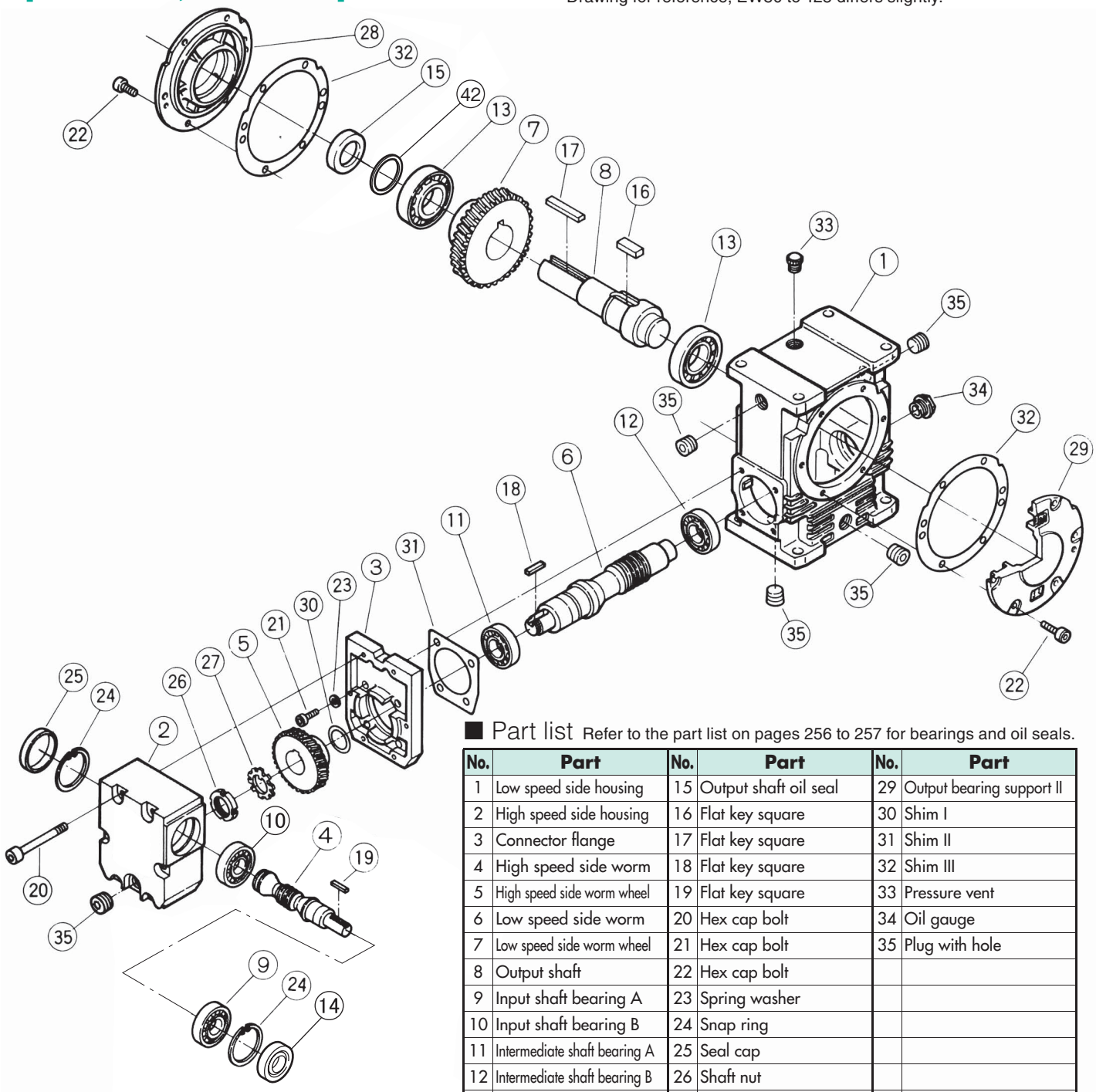
Double Reduction	1/100	1/150	1/200	1/250	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200	1/1500	1/1800	1/2400	1/3000	1/3600

■ Center Distance (lower speed side)

Size	50	63	70	80	100	125	150	175	200
Center distance	50 mm	63 mm	70 mm	80 mm	100 mm	125 mm	150 mm	175 mm	200 mm

[EWJ50 to 70, EW80 to 200]

• Drawing for reference, EW80 to 125 differs slightly.



■ Part list

Refer to the part list on pages 256 to 257 for bearings and oil seals.

No.	Part	No.	Part	No.	Part
1	Low speed side housing	15	Output shaft oil seal	29	Output bearing support II
2	High speed side housing	16	Flat key square	30	Shim I
3	Connector flange	17	Flat key square	31	Shim II
4	High speed side worm	18	Flat key square	32	Shim III
5	High speed side worm wheel	19	Flat key square	33	Pressure vent
6	Low speed side worm	20	Hex cap bolt	34	Oil gauge
7	Low speed side worm wheel	21	Hex cap bolt	35	Plug with hole
8	Output shaft	22	Hex cap bolt		
9	Input shaft bearing A	23	Spring washer		
10	Input shaft bearing B	24	Snap ring		
11	Intermediate shaft bearing A	25	Seal cap		
12	Intermediate shaft bearing B	26	Shaft nut		
13	Output shaft bearing	27	Shaft washer		
14	Input shaft oil seal	28	Output bearing support I	42	Filter set

Note: [oil seals]
EWJ50 to 70 and EW150 to 200 input: with filter
EWJ50 to 70 and EW80 to 200 output: with filter

EWJM/EWM(R) Series

■ Reduction Ratio

Double Reduction	1/100	1/150	1/200	1/250	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200	1/1500	1/1800	1/2400	1/3000	1/3600

■ Standard Motor

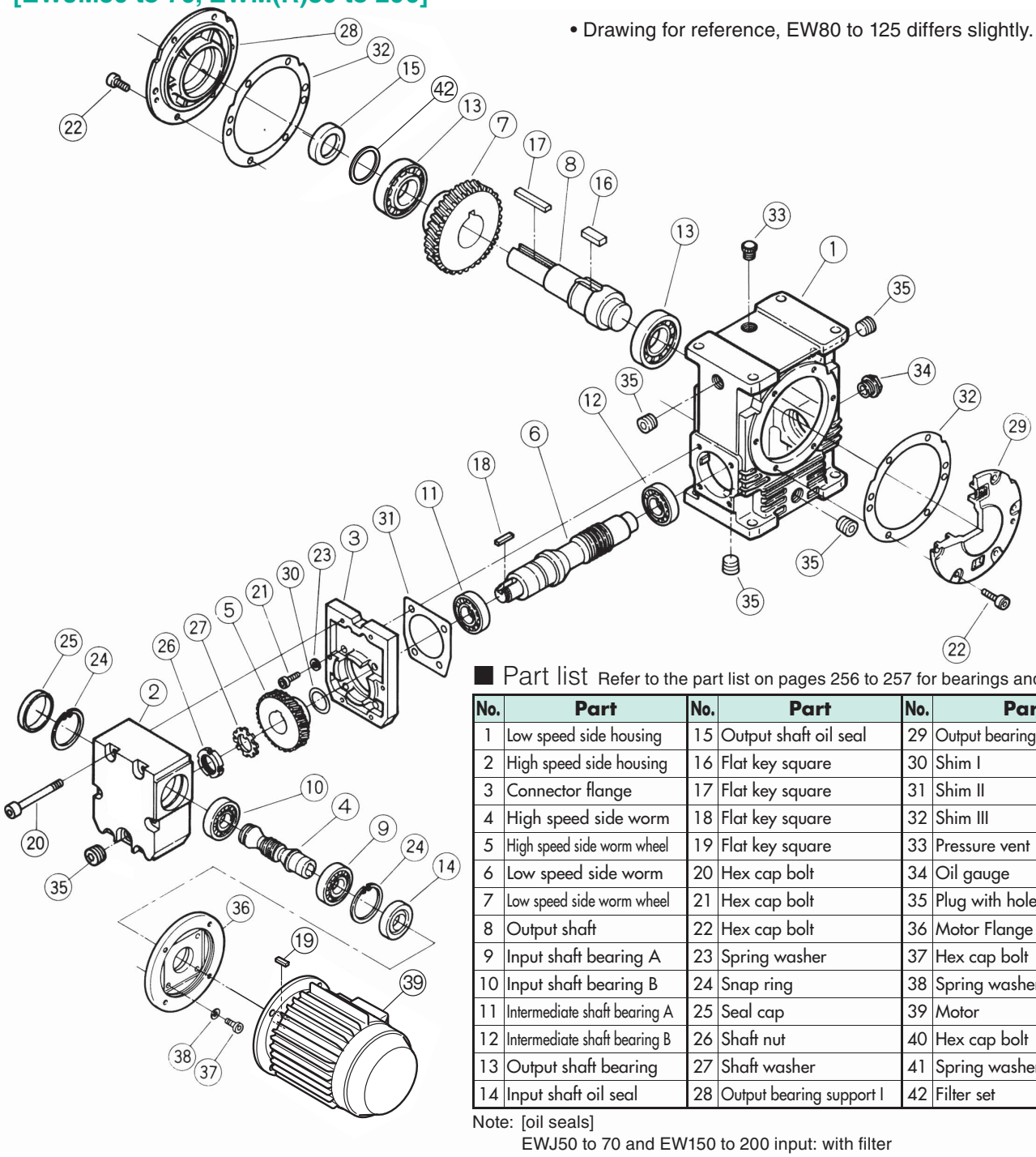
Size	50	63	70	80	100	125	150	175	200
Motor kW	0.1 to 0.2	0.1 to 0.4	0.1 to 0.4	0.2 to 0.75	0.2 to 0.75	0.2 to 1.5	0.4 to 3.7	0.75 to 3.7	1.5 to 5.5

■ Center Distance (lower speed side)

Size	50	63	70	80	100	125	150	175	200
Center Distance (low speed side)	50 mm	63 mm	70 mm	80 mm	100 mm	125 mm	150 mm	175 mm	200 mm

[EWJM50 to 70, EWM(R)80 to 200]

• Drawing for reference, EW80 to 125 differs slightly.



■ Part list

Refer to the part list on pages 256 to 257 for bearings and oil seals.

No.	Part	No.	Part	No.	Part
1	Low speed side housing	15	Output shaft oil seal	29	Output bearing support II
2	High speed side housing	16	Flat key square	30	Shim I
3	Connector flange	17	Flat key square	31	Shim II
4	High speed side worm	18	Flat key square	32	Shim III
5	High speed side worm wheel	19	Flat key square	33	Pressure vent
6	Low speed side worm	20	Hex cap bolt	34	Oil gauge
7	Low speed side worm wheel	21	Hex cap bolt	35	Plug with hole
8	Output shaft	22	Hex cap bolt	36	Motor Flange
9	Input shaft bearing A	23	Spring washer	37	Hex cap bolt
10	Input shaft bearing B	24	Snap ring	38	Spring washer
11	Intermediate shaft bearing A	25	Seal cap	39	Motor
12	Intermediate shaft bearing B	26	Shaft nut	40	Hex cap bolt
13	Output shaft bearing	27	Shaft washer	41	Spring washer
14	Input shaft oil seal	28	Output bearing support I	42	Filter set

Note: [oil seals]
EWJ50 to 70 and EW150 to 200 input: with filter
EWJ50 to 70 and EW80 to 200 output: with filter

Structure

SW Series

■ Reduction Ratio

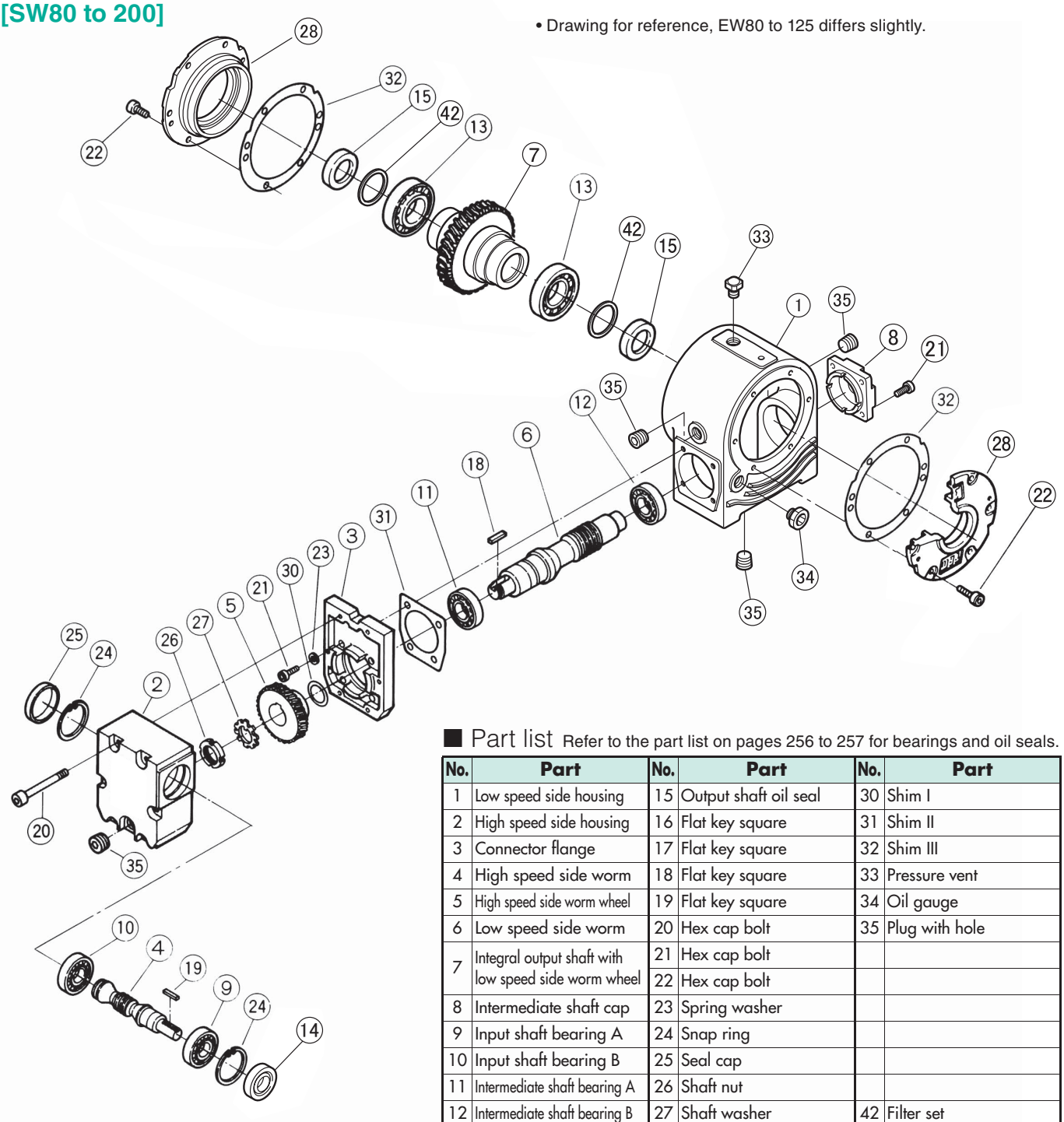
Double Reduction	1/100	1/150	1/200	1/250	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200	1/1500	1/1800	1/2400	1/3000	1/3600

■ Center Distance (lower speed side)

Size	80	100	125	150	175	200
Center distance	80 mm	100 mm	125 mm	150 mm	175 mm	200 mm

[SW80 to 200]

• Drawing for reference, EW80 to 125 differs slightly.



■ Part list

Refer to the part list on pages 256 to 257 for bearings and oil seals.

No.	Part	No.	Part	No.	Part
1	Low speed side housing	15	Output shaft oil seal	30	Shim I
2	High speed side housing	16	Flat key square	31	Shim II
3	Connector flange	17	Flat key square	32	Shim III
4	High speed side worm	18	Flat key square	33	Pressure vent
5	High speed side worm wheel	19	Flat key square	34	Oil gauge
6	Low speed side worm	20	Hex cap bolt	35	Plug with hole
7	Integral output shaft with low speed side worm wheel	21	Hex cap bolt		
		22	Hex cap bolt		
8	Intermediate shaft cap	23	Spring washer		
9	Input shaft bearing A	24	Snap ring		
10	Input shaft bearing B	25	Seal cap		
11	Intermediate shaft bearing A	26	Shaft nut		
12	Intermediate shaft bearing B	27	Shaft washer	42	Filter set
13	Output shaft bearing	28	Output bearing support I		
14	Input shaft oil seal				

Note: [oil seals]
EWJ50 to 70 and EW150 to 200 input: with filter
EWJ50 to 70 and EW80 to 200 output: with filter

SWM(R) Series

■ Reduction Ratio

Double Reduction	1/100	1/150	1/200	1/250	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200	1/1500	1/1800	1/2400	1/3000	1/3600

■ Standard Built-in Motor

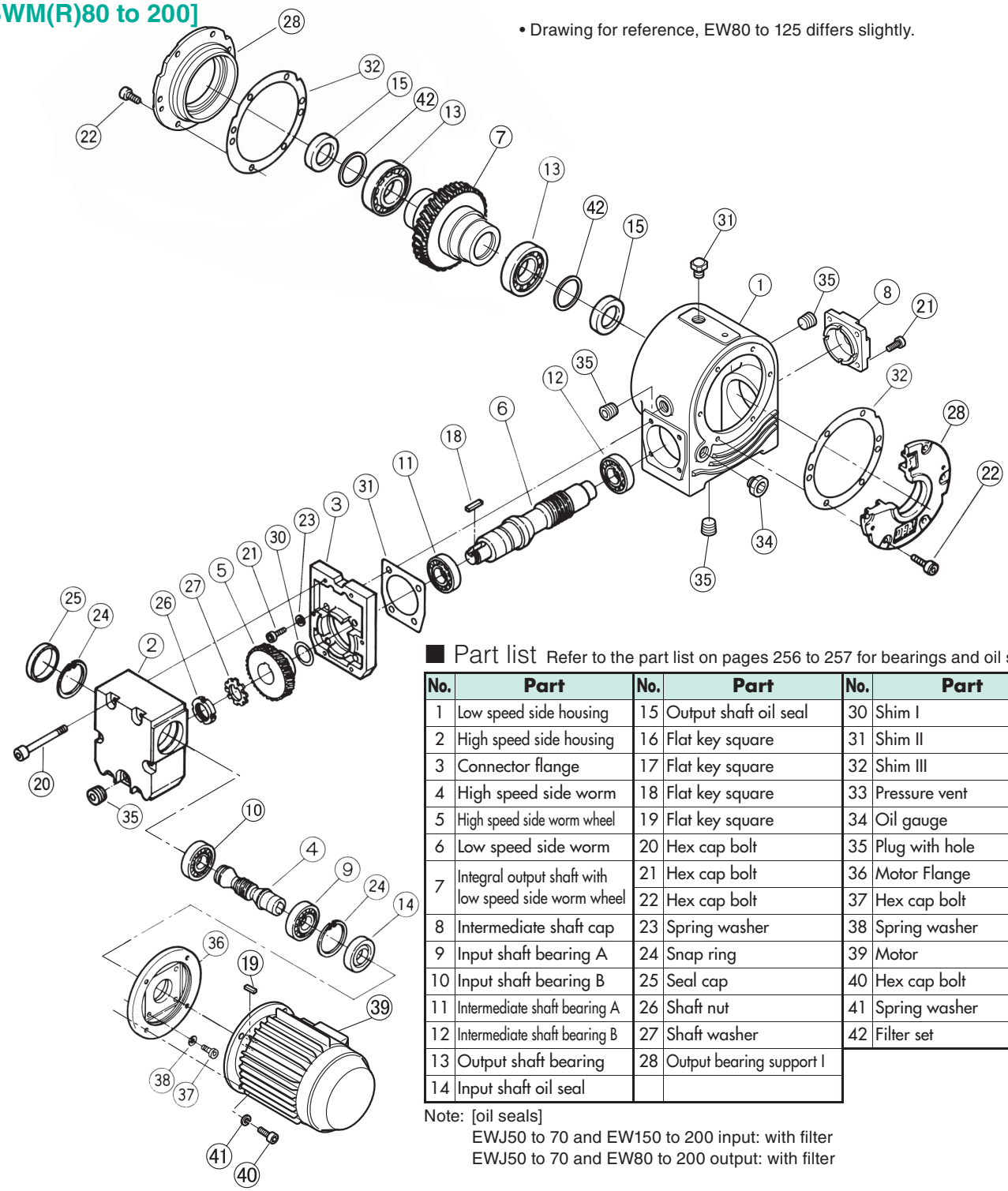
Size	80	100	125	150	175	200
Motor kW	0.2 to 0.75	0.2 to 0.75	0.2 to 1.5	0.4 to 3.7	0.75 to 3.7	1.5 to 5.5

■ Center Distance (lower speed side)

Size	80	100	125	150	175	200
Center Distance (low speed side)	80 mm	100 mm	125 mm	150 mm	175 mm	200 mm

[SWM(R)80 to 200]

• Drawing for reference, EW80 to 125 differs slightly.



■ Part list

Refer to the part list on pages 256 to 257 for bearings and oil seals.

No.	Part	No.	Part	No.	Part
1	Low speed side housing	15	Output shaft oil seal	30	Shim I
2	High speed side housing	16	Flat key square	31	Shim II
3	Connector flange	17	Flat key square	32	Shim III
4	High speed side worm	18	Flat key square	33	Pressure vent
5	High speed side worm wheel	19	Flat key square	34	Oil gauge
6	Low speed side worm	20	Hex cap bolt	35	Plug with hole
7	Integral output shaft with low speed side worm wheel	21	Hex cap bolt	36	Motor Flange
		22	Hex cap bolt	37	Hex cap bolt
8	Intermediate shaft cap	23	Spring washer	38	Spring washer
9	Input shaft bearing A	24	Snap ring	39	Motor
10	Input shaft bearing B	25	Seal cap	40	Hex cap bolt
11	Intermediate shaft bearing A	26	Shaft nut	41	Spring washer
12	Intermediate shaft bearing B	27	Shaft washer	42	Filter set
13	Output shaft bearing	28	Output bearing support I		
14	Input shaft oil seal				

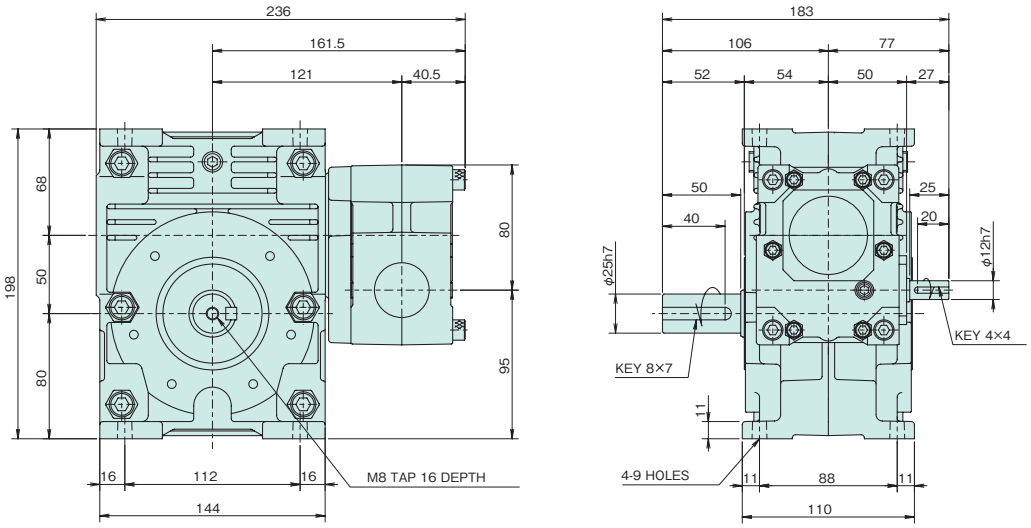
Note: [oil seals]
EWJ50 to 70 and EW150 to 200 input: with filter
EWJ50 to 70 and EW80 to 200 output: with filter

Dimensional Drawings EWJ50T/EWJ50V

See next page for reducers with motors

EWJ50T

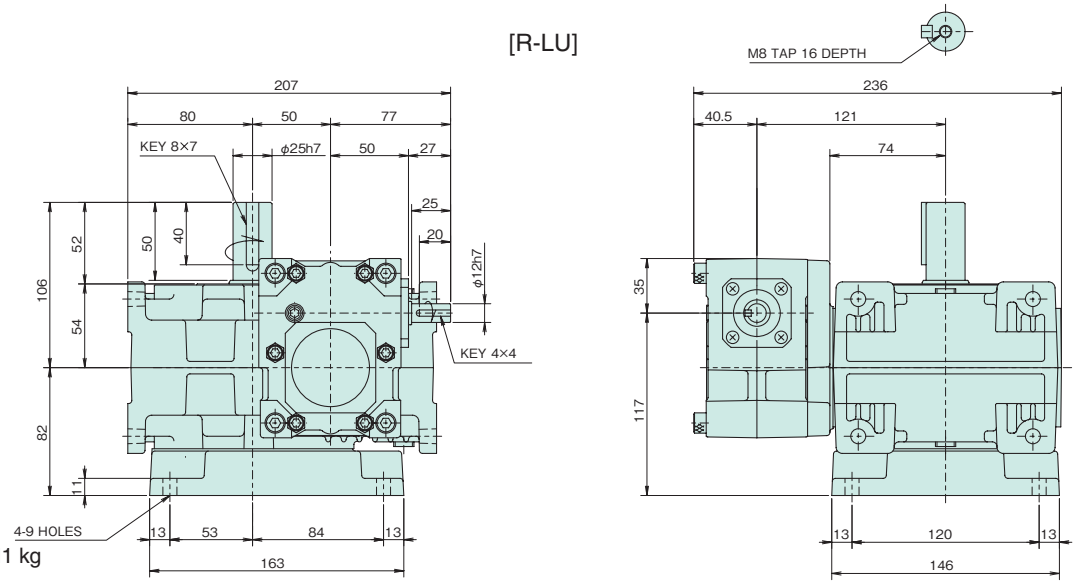
[R-L]



Estimated mass 11 kg

EWJ50V

[R-LU]



Estimated mass 11 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

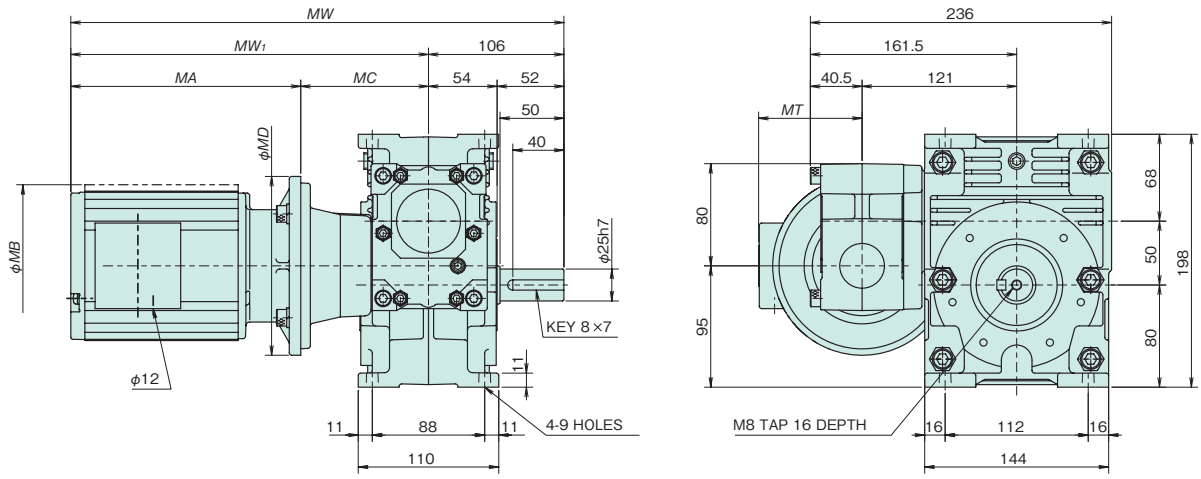
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ50	100	0.255	98 {10.03}	0.217	99 {10.11}	0.178	100 {10.19}	0.150	100 {10.25}	0.085	102 {10.37}	0.020	103 {10.48}
	150	0.186	100 {10.19}	0.158	100 {10.24}	0.129	101 {10.30}	0.110	101 {10.33}	0.063	102 {10.42}	0.015	103 {10.49}
	200	0.148	101 {10.27}	0.126	101 {10.31}	0.103	101 {10.35}	0.087	102 {10.38}	0.051	102 {10.44}	0.012	103 {10.50}
	250	0.124	101 {10.31}	0.106	101 {10.35}	0.087	102 {10.38}	0.074	102 {10.40}	0.043	102 {10.45}	0.010	103 {10.50}
	300	0.110	103 {10.54}	0.094	104 {10.59}	0.077	104 {10.64}	0.065	105 {10.67}	0.036	105 {10.74}	0.009	106 {10.81}
	400	0.088	104 {10.61}	0.075	104 {10.65}	0.061	105 {10.68}	0.052	105 {10.71}	0.031	106 {10.77}	0.007	106 {10.82}
	500	0.074	104 {10.65}	0.063	105 {10.68}	0.052	105 {10.71}	0.045	105 {10.73}	0.026	106 {10.78}	0.006	106 {10.82}
	600	0.067	105 {10.68}	0.058	105 {10.71}	0.048	105 {10.73}	0.041	105 {10.75}	0.024	106 {10.79}	0.006	106 {10.82}
	800	0.055	105 {10.72}	0.048	105 {10.74}	0.040	105 {10.76}	0.034	106 {10.77}	0.020	106 {10.80}	0.005	106 {10.82}
	1000	0.048	105 {10.74}	0.041	105 {10.76}	0.035	106 {10.77}	0.030	106 {10.78}	0.018	106 {10.80}	0.004	106 {10.82}
	1200	0.044	105 {10.76}	0.038	106 {10.77}	0.032	106 {10.78}	0.027	106 {10.79}	0.016	106 {10.81}	0.004	106 {10.82}
	1500	0.034	93 { 9.45}	0.029	93 { 9.47}	0.025	93 { 9.50}	0.021	93 { 9.51}	0.013	94 { 9.55}	0.003	94 { 9.58}
	1800	0.031	93 { 9.47}	0.027	93 { 9.49}	0.023	93 { 9.51}	0.020	93 { 9.53}	0.012	94 { 9.56}	0.003	94 { 9.59}
	2400	0.026	93 { 9.50}	0.023	93 { 9.52}	0.019	93 { 9.53}	0.016	94 { 9.54}	0.010	94 { 9.57}	0.002	94 { 9.59}
	3000	0.023	93 { 9.52}	0.020	93 { 9.53}	0.017	94 { 9.54}	0.014	94 { 9.55}	0.009	94 { 9.57}	0.002	94 { 9.59}
	3600	0.021	93 { 9.53}	0.018	94 { 9.54}	0.015	94 { 9.55}	0.013	94 { 9.56}	0.008	94 { 9.57}	0.002	94 { 9.59}

Dimensional Drawings EWJM50T/EWJM50V

See previous page for reducers without motors

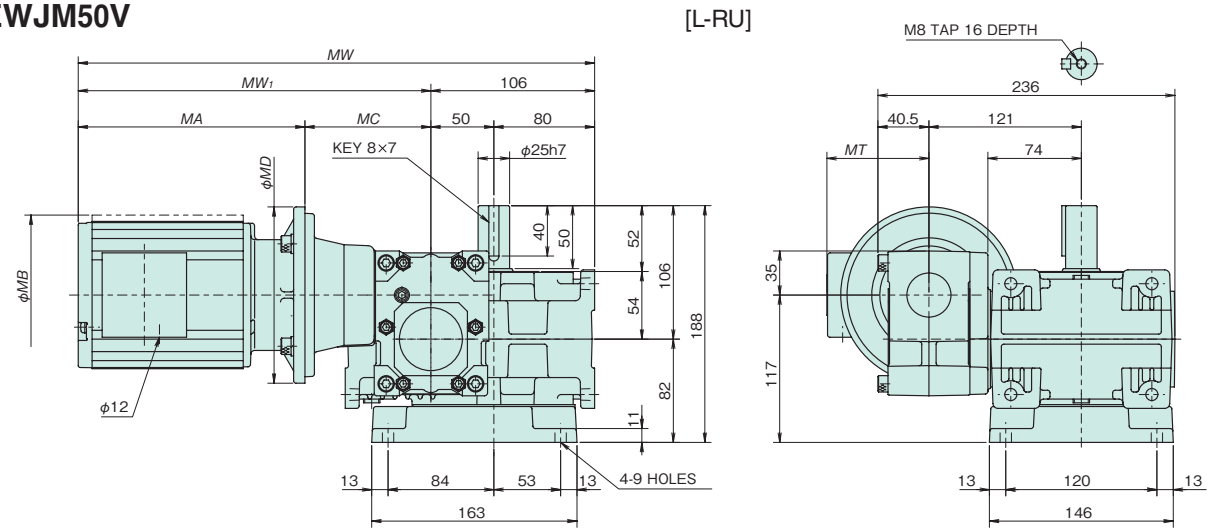
EWJM50T

[L-R]



EWJM50V

[L-RU]



* Refer to page 74 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation T type MW	Installation V type MW	MB	MD	MT	Installation T type Estimated mass kg	Installation V type Estimated mass kg
EWJM50	0.1	250	81.3 { 8.3}	96.0 { 9.8}	180 (218)	100 (100)	280 (318)	386 (424)	410 (448)	127 (140)	140 (140)	81 (104.5)	17 (19)	18 (20)
		300	94.1 { 9.6}	104 {10.6}										
		400	104 {10.6}	104 {10.7}										
		500	104 {10.7}	105 {10.7}										
		600	105 {10.7}	105 {10.7}										
	0.2	100	76.4 { 7.8}	76.4 { 9.3}	212 (229)	100 (100)	312 (329)	418 (435)	442 (459)	140 (140)	160 (160)	81 (104.5)	18 (20)	19 (21)
		150	100.0 {10.2}	100 {10.2}										
		200	101 {10.3}	101 {10.3}										

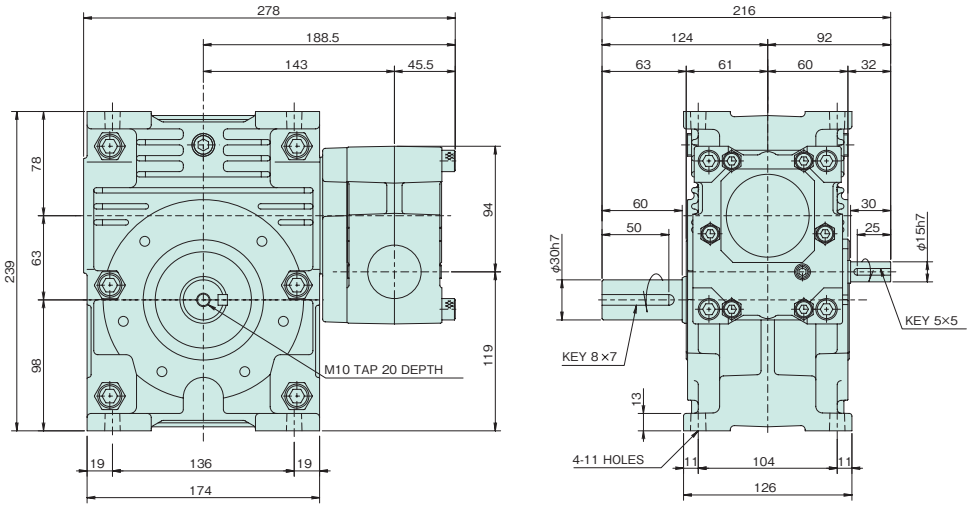
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.
- Drawing shows a 0.1 kW motor without brake. The 0.1 kW motor with brake and the 0.2 kW motor comes with a fan.

Dimensional Drawings EWJ63T/EWJ63V

See next page for reducers with motors

EWJ63T

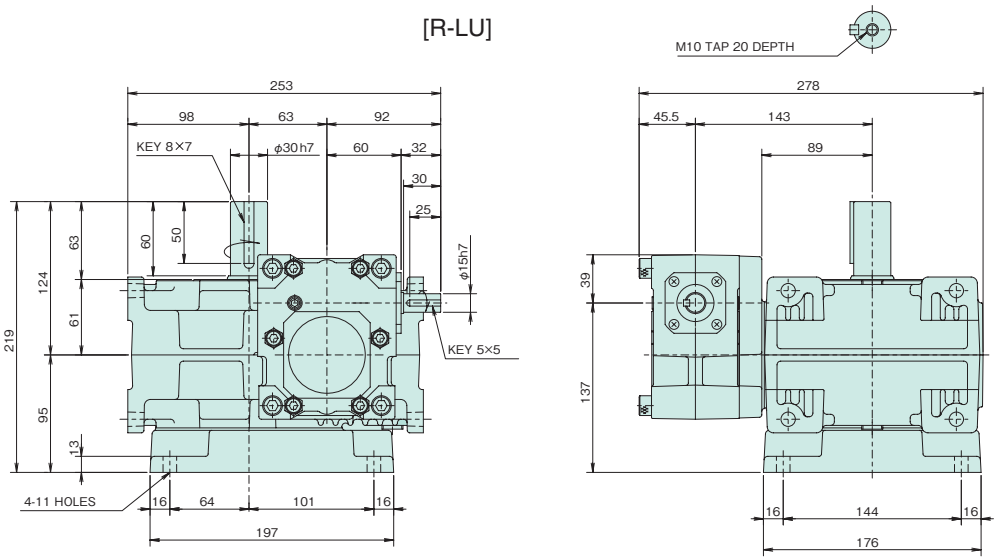
[R-L]



Estimated mass 16 kg

EWJ63V

[R-LU]



Estimated mass 17 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

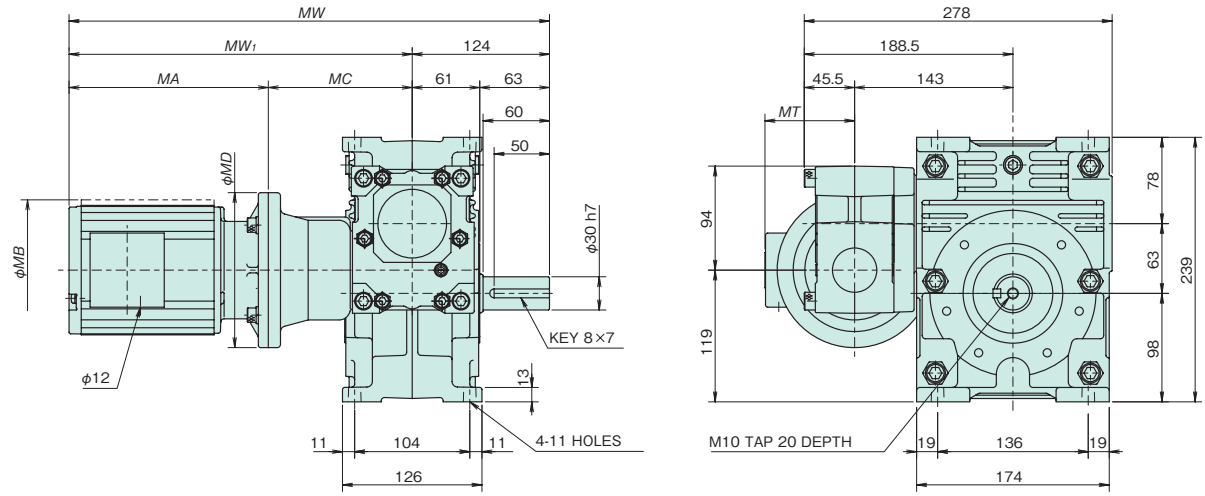
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ63	100	0.514	201 {20.51}	0.439	203 {20.72}	0.360	205 {20.93}	0.305	207 {21.07}	0.173	210 {21.40}	0.041	213 {21.69}
	150	0.375	205 {20.92}	0.320	206 {21.06}	0.262	208 {21.21}	0.223	209 {21.30}	0.127	211 {21.52}	0.030	213 {21.72}
	200	0.298	207 {21.13}	0.255	208 {21.24}	0.209	209 {21.35}	0.177	210 {21.42}	0.103	212 {21.58}	0.024	213 {21.73}
	250	0.251	208 {21.25}	0.214	209 {21.34}	0.176	210 {21.43}	0.150	211 {21.49}	0.087	212 {21.62}	0.021	213 {21.74}
	300	0.229	217 {22.12}	0.196	218 {22.26}	0.161	220 {22.40}	0.137	220 {22.49}	0.080	223 {22.71}	0.019	224 {22.89}
	400	0.183	219 {22.33}	0.156	220 {22.43}	0.129	221 {22.54}	0.110	222 {22.61}	0.064	223 {22.76}	0.016	224 {22.91}
	500	0.154	220 {22.45}	0.132	221 {22.53}	0.109	222 {22.62}	0.093	222 {22.67}	0.055	223 {22.80}	0.013	225 {22.91}
	600	0.140	221 {22.53}	0.120	221 {22.60}	0.100	222 {22.67}	0.086	223 {22.72}	0.051	224 {22.82}	0.013	225 {22.92}
	800	0.114	222 {22.63}	0.098	222 {22.69}	0.083	223 {22.74}	0.071	223 {22.77}	0.043	224 {22.85}	0.011	225 {22.92}
	1000	0.099	222 {22.69}	0.086	223 {22.74}	0.072	223 {22.78}	0.062	224 {22.81}	0.037	224 {22.87}	0.009	225 {22.93}
	1200	0.088	223 {22.74}	0.077	223 {22.77}	0.064	223 {22.81}	0.056	224 {22.83}	0.033	224 {22.88}	0.008	225 {22.93}
	1500	0.066	187 {19.10}	0.056	188 {19.16}	0.047	188 {19.22}	0.041	189 {19.26}	0.024	190 {19.35}	0.006	190 {19.44}
	1800	0.060	188 {19.16}	0.052	188 {19.21}	0.044	189 {19.26}	0.038	189 {19.29}	0.023	190 {19.37}	0.006	191 {19.44}
	2400	0.049	188 {19.23}	0.043	189 {19.27}	0.036	189 {19.31}	0.032	189 {19.34}	0.019	190 {19.39}	0.005	191 {19.45}
	3000	0.043	189 {19.28}	0.038	189 {19.31}	0.032	190 {19.34}	0.028	190 {19.36}	0.017	190 {19.41}	0.004	191 {19.45}
	3600	0.039	189 {19.31}	0.034	189 {19.33}	0.029	190 {19.36}	0.025	190 {19.38}	0.015	190 {19.42}	0.004	191 {19.45}

Dimensional Drawings EWJM63T/EWJM63V

See previous page for reducers without motors

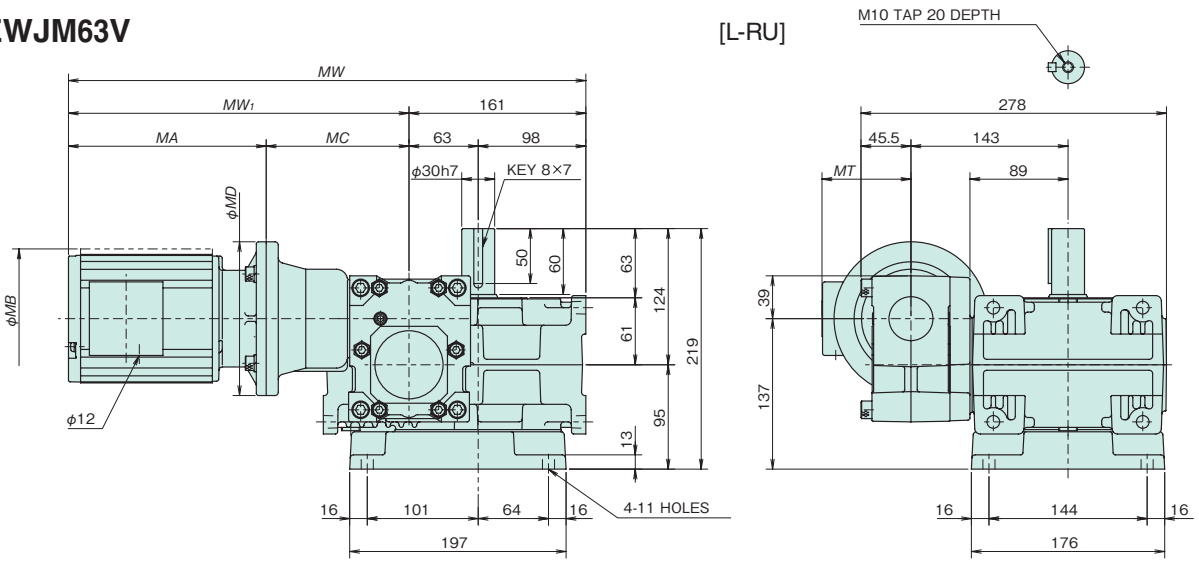
EWJM63T

[L-R]



EWJM63V

[L-RU]



* Refer to page 74 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

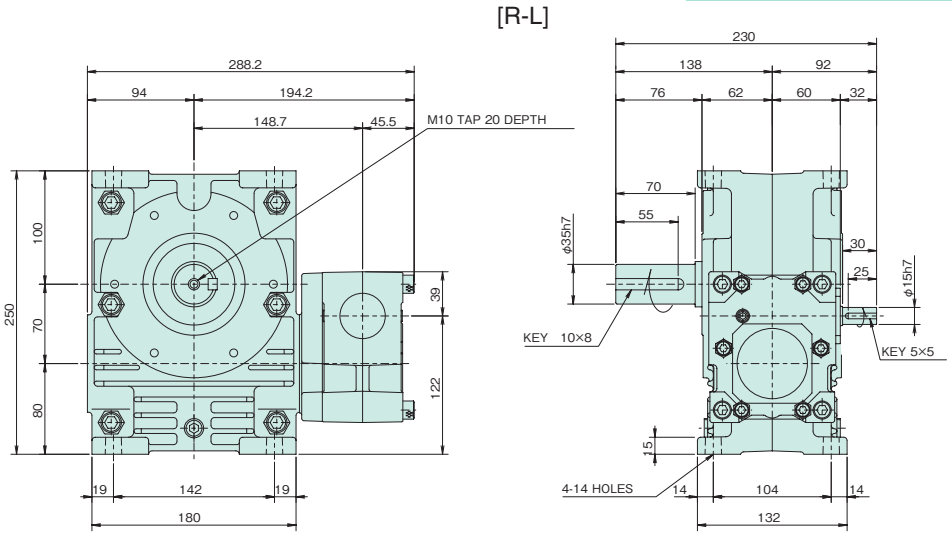
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation T type MW	Installation V type MW	MB	MD	MT	Installation T type Estimated mass kg	Installation V type Estimated mass kg
EWJM63	0.1	500	143 {14.6}	167 {17.1}	180 (218)	130 (130)	310 (348)	434 (472)	471 (509)	127 (140)	140 (140)	81 (104.5)	23 (25)	24 (26)
		600	158 {16.1}	185 {18.8}										
		800	194 {19.8}	222 {22.7}										
		1000	222 {22.7}	223 {22.7}										
		1200	223 {22.7}	223 {22.7}										
		1500	187 {19.1}	188 {19.2}										
		1800	188 {19.2}	188 {19.2}										
		2400	188 {19.2}	189 {19.3}										
		3000	189 {19.3}	189 {19.3}										
		3600	189 {19.3}	189 {19.3}										
	0.2	200	139 {14.2}	163 {16.7}	212 (229)	130 (130)	342 (359)	466 (483)	503 (520)	140 (140)	160 (160)	81 (104.5)	24 (26)	25 (27)
		250	166 {16.9}	195 {19.9}										
		300	189 {19.3}	218 {22.3}										
		400	219 {22.3}	220 {22.4}										
	0.4	100	156 {15.9}	185 {18.9}	224 (241)	130 (130)	354 (371)	478 (495)	515 (532)	140 (140)	160 (160)	81 (104.5)	25 (28)	26 (29)
		150	205 {20.9}	206 {21.1}										

- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing.
- Thermal rating factor is 1.0.
- 0.1 kW motors without brake do not come with a fan.

Dimensional Drawings EWJ70B/EWJ70V

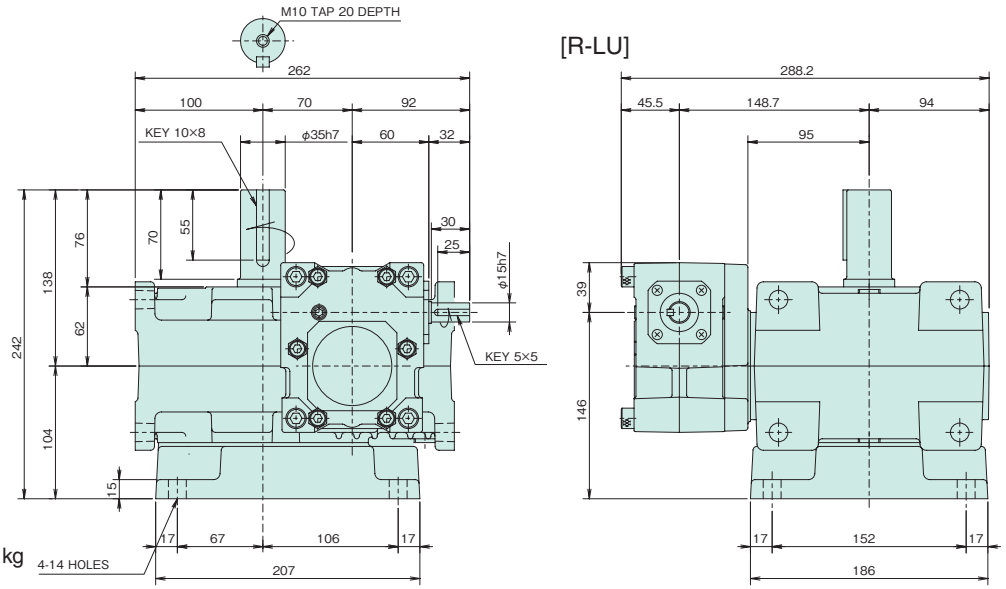
See next page for reducers with motors

EWJ70B



Estimated mass 18 kg

EWJ70V



Estimated mass 19 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

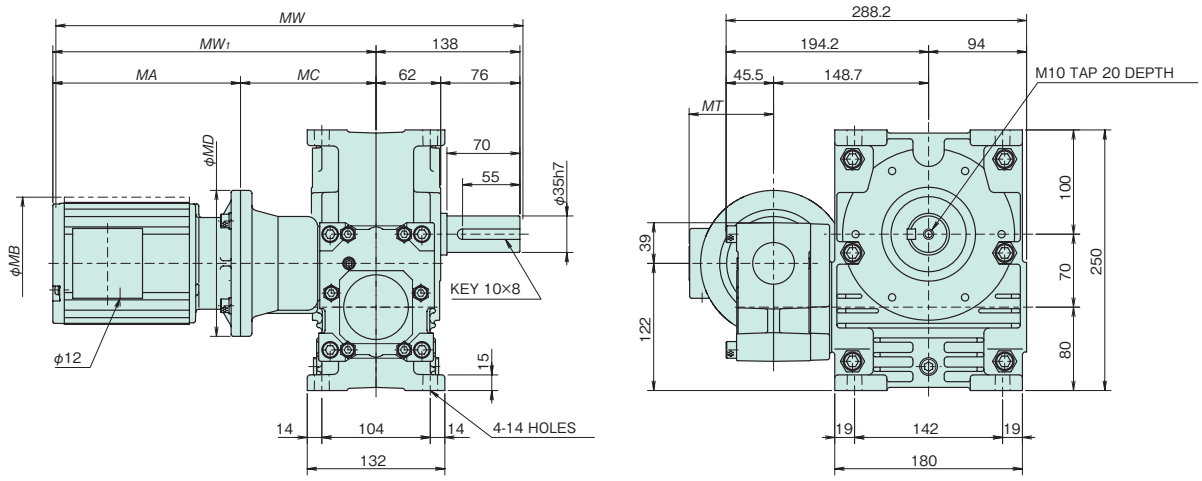
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EWJ70	100	0.719	281 {28.7}	0.614	285 {29.0}	0.504	288 {29.4}	0.428	290 {29.6}	0.244	295 {30.1}	0.057	300 {30.6}
	150	0.525	288 {29.4}	0.449	290 {29.6}	0.369	292 {29.8}	0.313	294 {30.0}	0.179	297 {30.3}	0.043	300 {30.6}
	200	0.419	291 {29.7}	0.358	293 {29.9}	0.294	294 {30.0}	0.250	295 {30.1}	0.145	298 {30.4}	0.035	300 {30.6}
	250	0.353	293 {29.9}	0.301	294 {30.0}	0.248	296 {30.2}	0.211	296 {30.3}	0.123	299 {30.5}	0.029	300 {30.6}
	300	0.314	300 {30.6}	0.268	302 {30.8}	0.221	304 {31.0}	0.188	305 {31.2}	0.109	309 {31.5}	0.027	311 {31.8}
	400	0.251	303 {30.9}	0.215	305 {31.1}	0.177	306 {31.2}	0.151	307 {31.3}	0.088	309 {31.6}	0.022	312 {31.8}
	500	0.212	305 {31.1}	0.182	306 {31.2}	0.150	307 {31.4}	0.128	308 {31.4}	0.075	310 {31.6}	0.018	312 {31.8}
	600	0.192	306 {31.2}	0.165	307 {31.3}	0.137	308 {31.4}	0.118	309 {31.5}	0.071	310 {31.7}	0.018	312 {31.8}
	800	0.157	308 {31.4}	0.135	308 {31.5}	0.113	309 {31.5}	0.098	310 {31.6}	0.059	311 {31.7}	0.015	312 {31.8}
	1000	0.135	308 {31.5}	0.118	309 {31.5}	0.099	310 {31.6}	0.085	310 {31.6}	0.051	311 {31.7}	0.013	312 {31.8}
	1200	0.121	309 {31.5}	0.105	310 {31.6}	0.088	310 {31.6}	0.076	310 {31.7}	0.046	311 {31.8}	0.012	312 {31.8}
	1500	0.092	262 {26.7}	0.079	263 {26.8}	0.065	264 {26.9}	0.056	264 {27.0}	0.034	266 {27.1}	0.009	267 {27.3}
	1800	0.083	263 {26.8}	0.072	264 {26.9}	0.060	264 {27.0}	0.053	265 {27.0}	0.032	266 {27.2}	0.008	267 {27.3}
	2400	0.069	264 {26.9}	0.060	265 {27.0}	0.051	265 {27.1}	0.044	266 {27.1}	0.027	266 {27.2}	0.007	267 {27.3}
	3000	0.060	265 {27.0}	0.053	265 {27.1}	0.044	266 {27.1}	0.039	266 {27.1}	0.023	267 {27.2}	0.006	267 {27.3}
	3600	0.054	265 {27.0}	0.047	265 {27.1}	0.040	266 {27.1}	0.035	266 {27.2}	0.021	267 {27.2}	0.005	267 {27.3}

Dimensional Drawings EWJM70B/EWJM70V

See previous page for reducers without motors

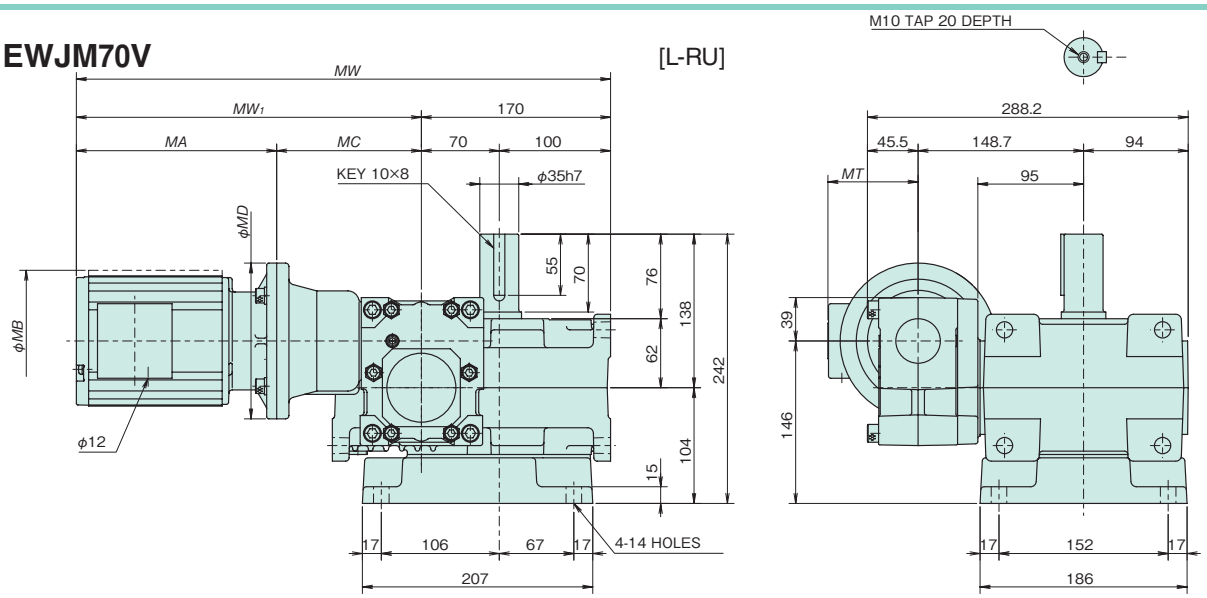
EWJM70B

[L-R]



EWJM70V

[L-RU]



* Refer to page 74 for shaft arrangements and relative direction of rotation.

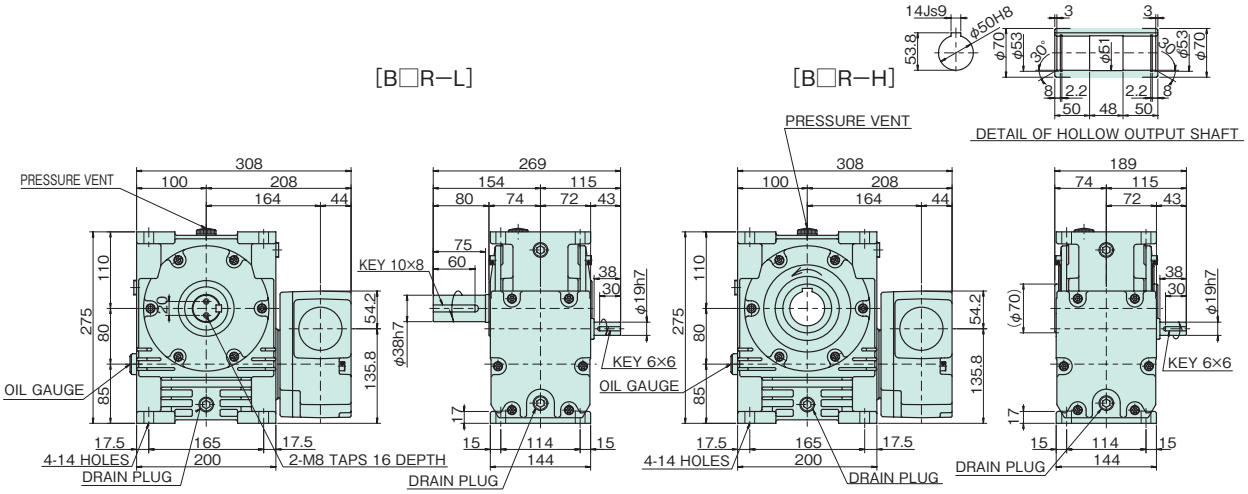
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation T type MW	Installation V type MW	MB	MD	MT	Installation T type Estimated mass kg	Installation V type Estimated mass kg
EWJM70	0.1	1000	228 {23.3}	262 {26.7}	180 (218)	130 (130)	310 (348)	448 (486)	480 (518)	127 (140)	140 (140)	81 (104.5)	25 (27)	26 (28)
		1200	255 {26.0}	295 {30.1}										
		1500	262 {26.7}	263 {26.8}										
		1800	263 {26.8}	264 {26.9}										
		2400	264 {26.9}	265 {27.0}										
		3000	265 {27.0}	265 {27.1}										
		3600	265 {27.0}	265 {27.1}										
	0.2	300	191 {19.5}	225 {23.0}	212 (229)	130 (130)	342 (359)	480 (497)	512 (529)	140 (140)	160 (160)	81 (104.5)	26 (28)	27 (29)
		400	241 {24.6}	283 {28.9}										
		500	305 {31.1}	306 {31.2}										
		600	306 {31.2}	307 {31.3}										
		800	308 {31.4}	308 {31.5}										
	0.4	100	157 {16.0}	185 {18.9}	224 (241)	130 (130)	354 (371)	492 (509)	524 (541)	140 (140)	160 (160)	81 (104.5)	27 (30)	28 (31)
		150	220 {22.4}	258 {26.4}										
		200	291 {29.7}	293 {29.9}										
		250	293 {29.9}	294 {30.0}										

- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.
- 0.1 kW motors without brake do not come with a fan.

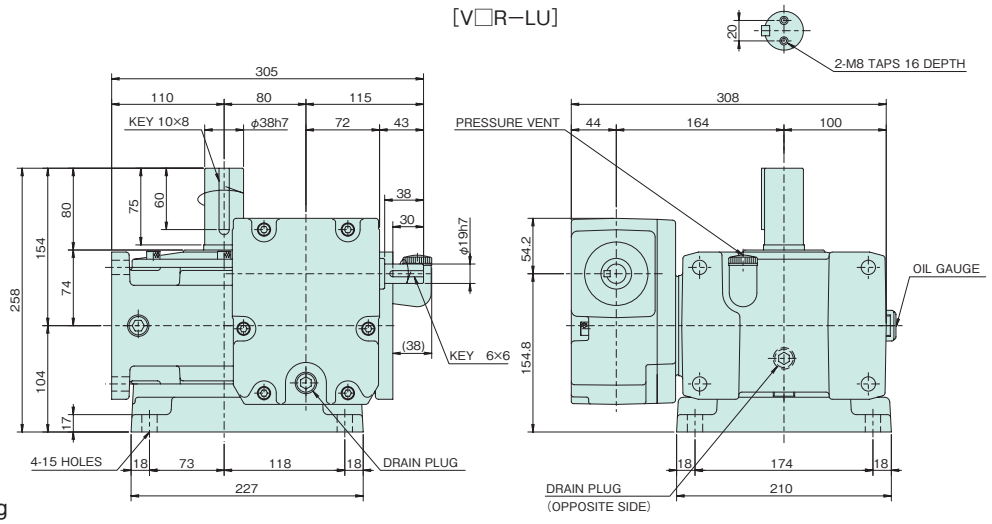
Dimensional Drawings EW80B/EW80V

EW80B



Estimated mass 39 kg

EW80V



Estimated mass 42 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

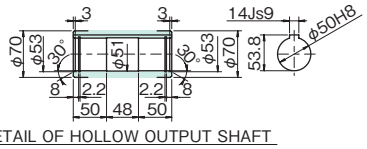
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW80	100	1.032	419 {42.8}	0.881	424 {43.3}	0.722	430 {43.9}	0.612	433 {44.2}	0.347	442 {45.1}	0.081	499 {45.8}
	150	0.747	430 {43.9}	0.637	433 {44.2}	0.522	437 {44.6}	0.442	439 {44.8}	0.251	445 {45.4}	0.059	450 {45.9}
	200	0.591	435 {44.4}	0.503	438 {44.7}	0.412	440 {44.9}	0.349	442 {45.1}	0.200	446 {45.5}	0.047	450 {45.9}
	250	0.496	438 {44.7}	0.423	440 {44.9}	0.347	442 {45.1}	0.294	444 {45.3}	0.170	447 {45.6}	0.040	450 {45.9}
	300	0.447	452 {46.1}	0.382	455 {46.4}	0.314	459 {46.8}	0.266	461 {47.0}	0.153	466 {47.5}	0.037	470 {48.0}
	400	0.355	457 {46.6}	0.303	459 {46.8}	0.249	462 {47.1}	0.211	464 {47.3}	0.123	467 {47.7}	0.029	470 {48.0}
	500	0.299	460 {46.9}	0.255	462 {47.1}	0.210	464 {47.3}	0.178	465 {47.4}	0.104	467 {47.7}	0.025	470 {48.0}
	600	0.267	462 {47.1}	0.229	464 {47.3}	0.189	465 {47.4}	0.161	466 {47.5}	0.096	468 {47.8}	0.024	470 {48.0}
	800	0.215	464 {47.3}	0.185	466 {47.5}	0.154	466 {47.6}	0.132	467 {47.7}	0.078	469 {47.9}	0.019	471 {48.1}
	1000	0.185	466 {47.5}	0.160	466 {47.6}	0.134	467 {47.7}	0.115	468 {47.8}	0.068	469 {47.9}	0.017	471 {48.1}
	1200	0.165	466 {47.6}	0.143	467 {47.7}	0.120	468 {47.8}	0.103	468 {47.8}	0.062	470 {48.0}	0.015	471 {48.1}
	1500	0.124	390 {39.8}	0.107	391 {39.9}	0.088	393 {40.1}	0.075	394 {40.2}	0.045	396 {40.4}	0.011	398 {40.6}
	1800	0.112	391 {39.9}	0.096	392 {40.0}	0.080	394 {40.2}	0.069	394 {40.2}	0.042	396 {40.4}	0.011	398 {40.6}
	2400	0.091	393 {40.1}	0.078	394 {40.2}	0.066	395 {40.3}	0.057	396 {40.4}	0.034	397 {40.5}	0.009	398 {40.6}
	3000	0.078	394 {40.2}	0.069	395 {40.3}	0.058	396 {40.4}	0.050	396 {40.4}	0.030	397 {40.5}	0.008	398 {40.6}
	3600	0.071	395 {40.3}	0.062	395 {40.3}	0.052	396 {40.4}	0.045	397 {40.5}	0.027	397 {40.5}	0.007	398 {40.6}

Dimensional Drawings SW80B/SW80V

See next page for reducers with motors

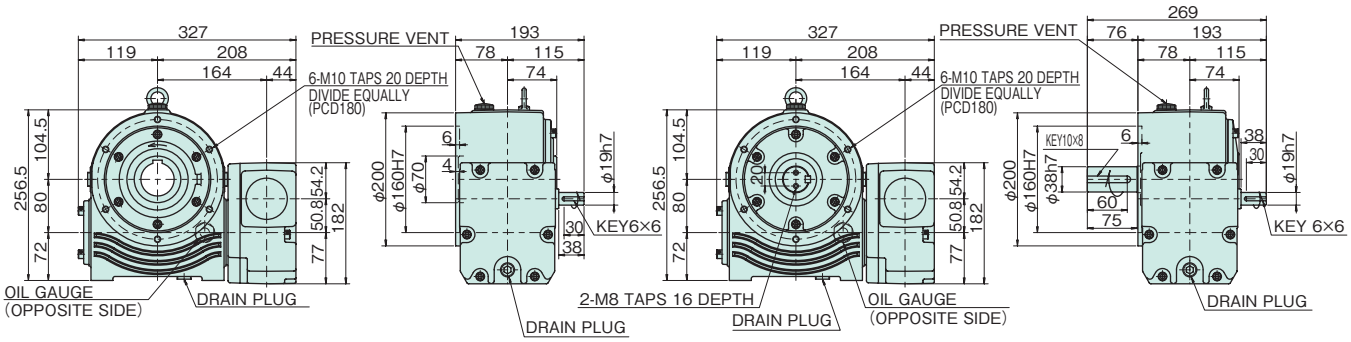
SW80B

[B□R−LF]



DETAIL OF HOLLOW OUTPUT SHAFT

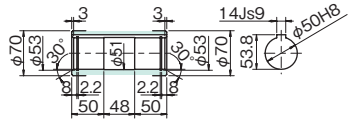
[B□R−SLF]



Estimated mass 38 kg

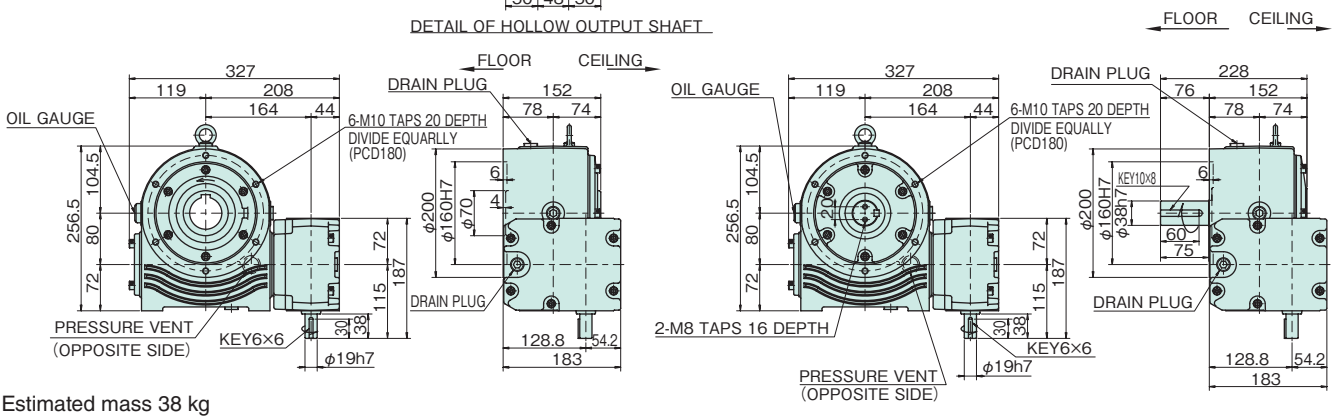
SW80V

[V□R−LF]



DETAIL OF HOLLOW OUTPUT SHAFT

[V□R−SLF]



Estimated mass 38 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

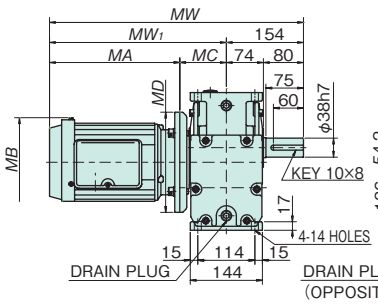
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW80	100	1.032	419 {42.8}	0.881	424 {43.3}	0.722	430 {43.9}	0.612	433 {44.2}	0.347	442 {45.1}	0.081	449 {45.8}
	150	0.747	430 {43.9}	0.637	433 {44.2}	0.552	437 {44.6}	0.442	439 {44.8}	0.251	445 {45.4}	0.059	450 {45.9}
	200	0.591	435 {44.4}	0.503	438 {44.7}	0.412	440 {44.9}	0.349	442 {45.1}	0.200	446 {45.5}	0.047	450 {45.9}
	250	0.496	438 {44.7}	0.423	440 {44.9}	0.347	442 {45.1}	0.294	444 {45.3}	0.170	447 {45.6}	0.040	450 {45.9}
	300	0.447	452 {46.1}	0.382	455 {46.4}	0.314	459 {46.8}	0.266	461 {47.0}	0.153	466 {47.5}	0.037	470 {48.0}
	400	0.355	457 {46.6}	0.303	459 {46.8}	0.249	462 {47.1}	0.211	464 {47.3}	0.123	467 {47.7}	0.029	470 {48.0}
	500	0.299	460 {46.9}	0.255	462 {47.1}	0.210	464 {47.3}	0.178	465 {47.4}	0.104	467 {47.7}	0.025	470 {48.0}
	600	0.267	462 {47.1}	0.229	464 {47.3}	0.189	465 {47.4}	0.161	466 {47.5}	0.096	468 {47.8}	0.024	470 {48.0}
	800	0.215	464 {47.3}	0.185	466 {47.5}	0.154	466 {47.6}	0.132	467 {47.7}	0.078	469 {47.9}	0.019	471 {48.1}
	1000	0.185	466 {47.5}	0.160	466 {47.6}	0.134	467 {47.7}	0.115	468 {47.8}	0.068	469 {47.9}	0.017	471 {48.1}
	1200	0.165	466 {47.6}	0.143	467 {47.7}	0.120	468 {47.8}	0.103	468 {47.8}	0.062	470 {48.0}	0.015	471 {48.1}
	1500	0.124	390 {39.8}	0.107	391 {39.9}	0.088	393 {40.1}	0.075	394 {402}	0.045	396 {40.4}	0.011	398 {40.6}
	1800	0.112	391 {39.9}	0.096	392 {40.0}	0.080	394 {40.2}	0.069	394 {40.2}	0.042	396 {40.4}	0.011	398 {40.6}
	2400	0.091	393 {40.1}	0.078	394 {40.2}	0.066	395 {40.3}	0.057	396 {40.4}	0.034	397 {40.5}	0.009	398 {40.6}
	3000	0.078	394 {40.2}	0.069	395 {40.3}	0.058	396 {40.4}	0.050	396 {40.4}	0.030	397 {40.5}	0.008	398 {40.6}
	3600	0.071	395 {40.3}	0.062	395 {40.3}	0.052	396 {40.4}	0.045	397 {40.5}	0.027	397 {40.5}	0.007	398 {40.6}

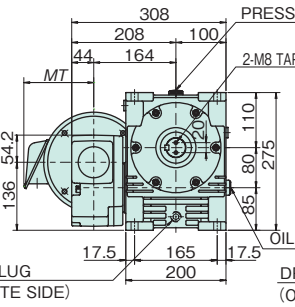
Dimensional Drawings EWM(R)80B/EWM(R)80V

See previous page for reducers without motors

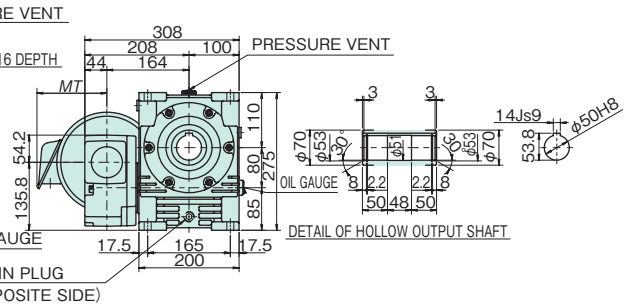
EWM(R)80B

[L—R]



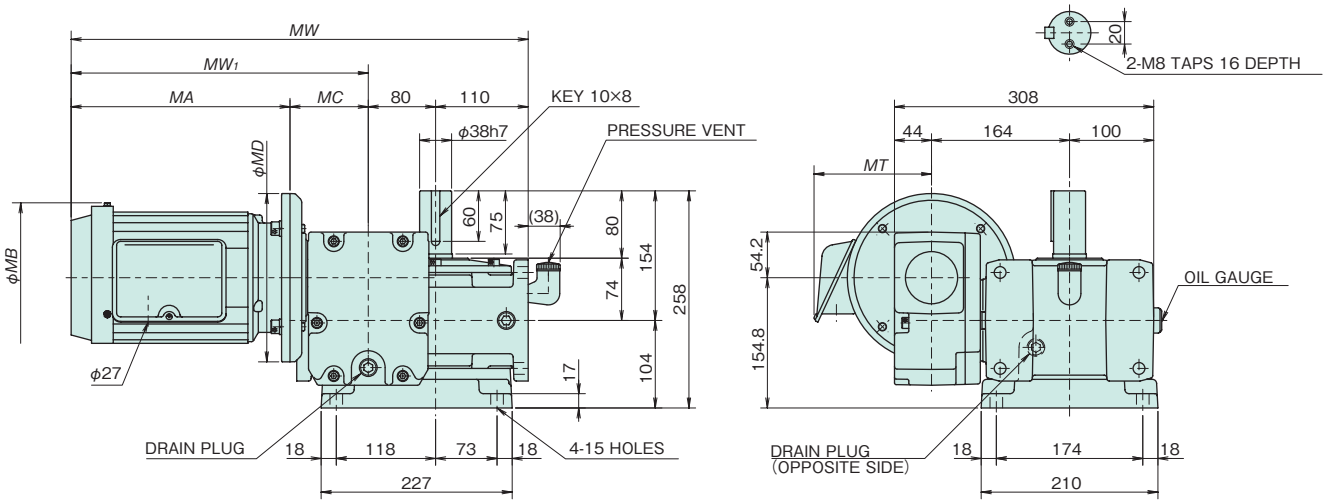


[L—H]



EWM(R)80V

[L—RU]



* Refer to page 74 for shaft arrangements and relative direction of rotation.

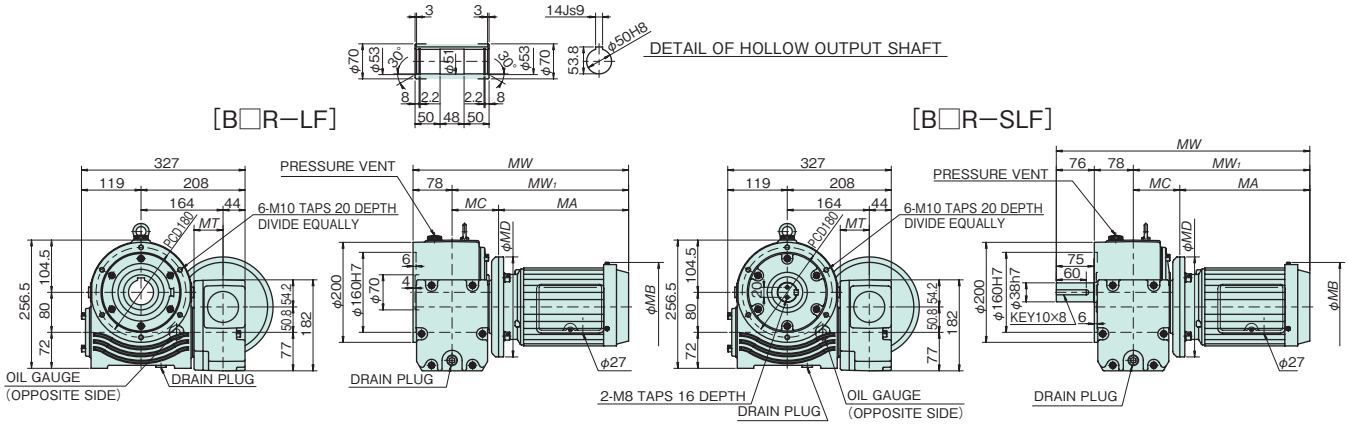
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM80	0.2	500	307 {31.4}	362 {36.9}	212 (229)	91 (91)	303 (320)	457 (474)	493 (510)	140 (140)	160 (160)	81 (104.5)	45 (47)	48 (50)
		600	346 {35.8}	405 {41.3}										
		800	431 {44.0}	466 {47.5}										
		1000	466 {47.5}	466 {47.6}										
		1200	466 {47.6}	467 {47.7}										
	0.4	200	295 {30.1}	348 {35.5}	224 (241)	91 (91)	315 (332)	469 (486)	505 (522)	140 (140)	160 (160)	81 (104.5)	48 (51)	51 (54)
		250	353 {36.0}	416 {42.5}										
		300	404 {41.2}	455 {46.4}										
		400	457 {46.6}	459 {46.8}										
EWMR80	0.75	100	305 {31.1}	362 {36.9}	260 (305)	93 (93)	353 (398)	507 (552)	543 (588)	178 (178)	200 (200)	140 (140.0)	61 (64)	64 (67)
		150	430 {43.9}	433 {44.2}										

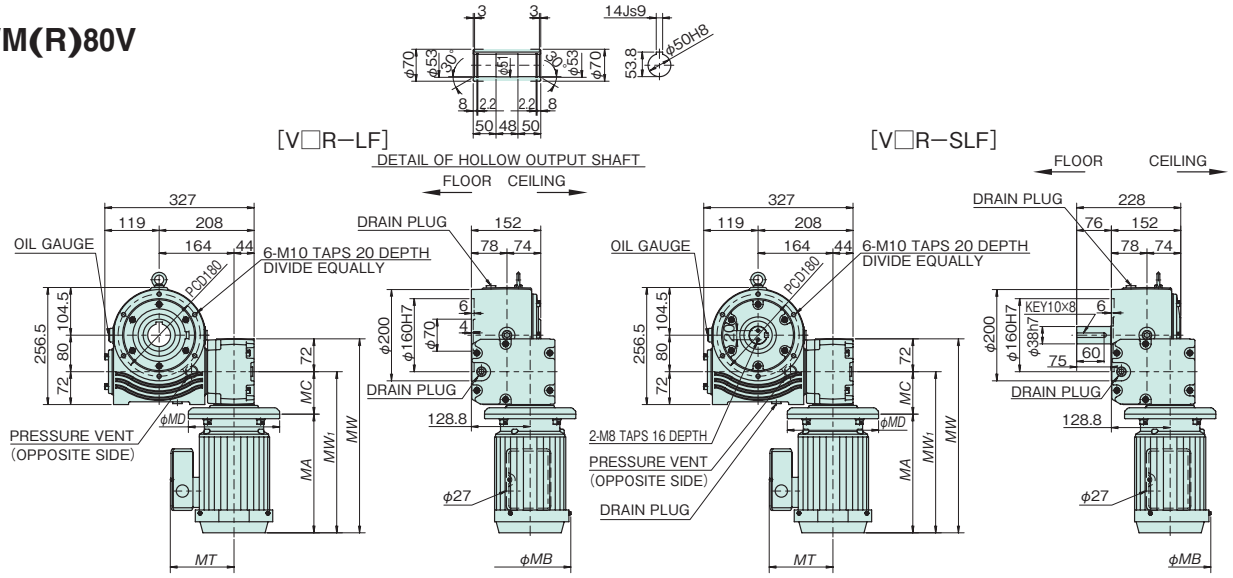
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing.
- Thermal rating factor is 1.0.

Dimensional Drawings SWM(R)80B/SWM(R)80V

SWM(R)80B



SWM(R)80V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

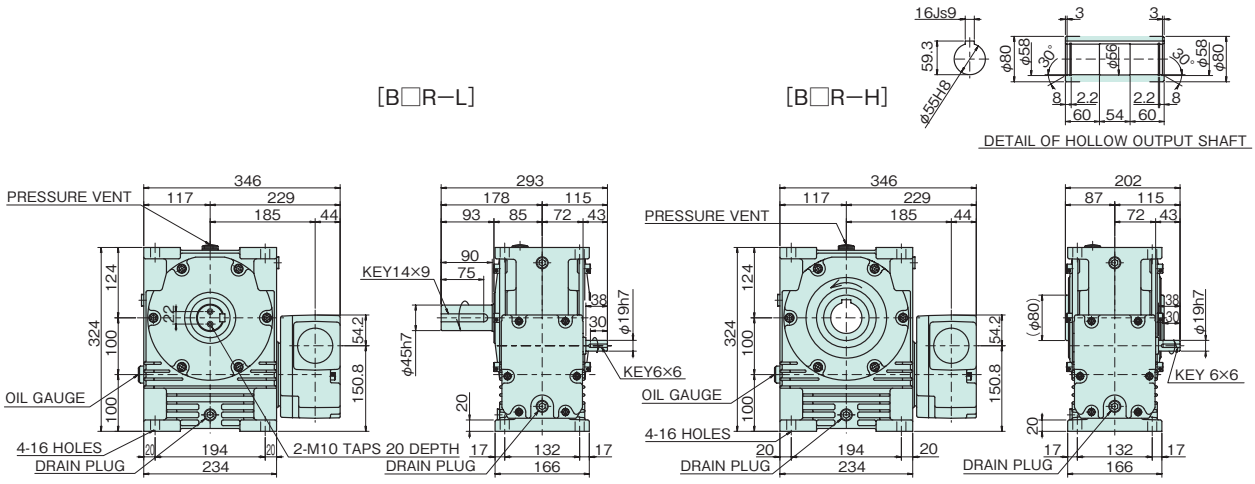
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Estimated mass kg
SWM80	0.2	500	307 {31.4}	362 {36.9}	212 (229)	91 (91)	303 (320)	381 (398)	375 (392)	140 (140)	160 (160)	81 (104.5)	44 (46)
		600	346 {35.8}	405 {41.3}									
		800	431 {44.0}	466 {47.5}									
		1000	466 {47.5}	466 {47.6}									
		1200	466 {47.6}	467 {47.7}									
	0.4	200	295 {30.1}	348 {35.5}	224 (241)	91 (91)	315 (332)	393 (410)	387 (404)	140 (140)	160 (160)	81 (104.5)	47 (50)
		250	353 {36.0}	416 {42.5}									
		300	404 {41.2}	455 {46.4}									
		400	457 {46.6}	459 {46.8}									
SWMR80	0.75	100	305 {31.1}	362 {36.9}	260 (305)	93 (93)	353 (398)	431 (476)	425 (470)	178 (178)	200 (200)	140 (140.0)	60 (63)
		150	430 {43.9}	433 {44.2}									

- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing.
- Thermal rating factor is 1.0.

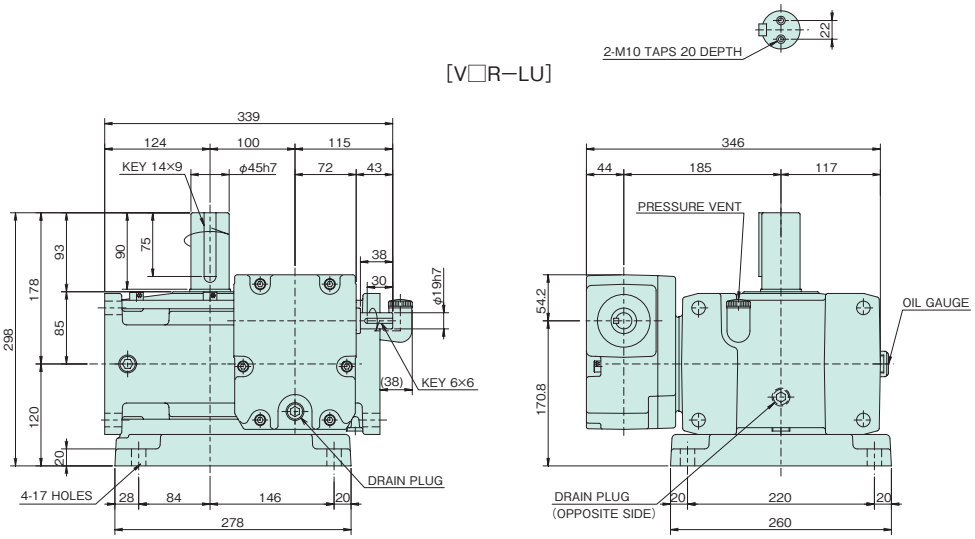
Dimensional Drawings EW100B/EW100V

EW100B



Estimated mass 53 kg

EW100V



Estimated mass 59 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

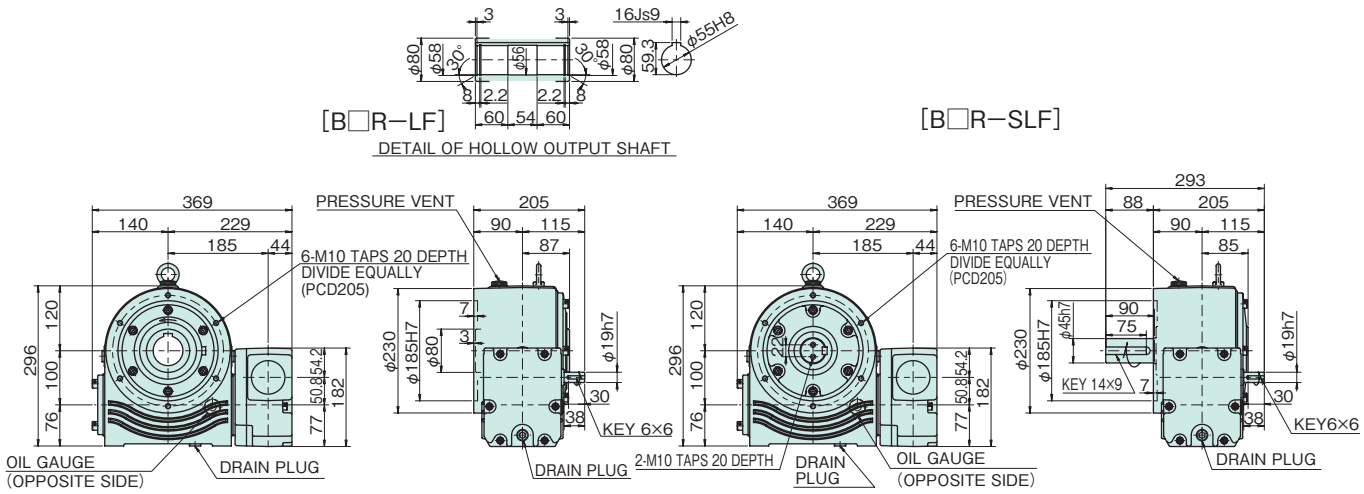
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW100	100	1.704	705 {71.9}	1.544	758 {77.3}	1.271	769 {78.5}	1.079	777 {79.3}	0.628	813 {83.0}	0.144	813 {83.0}
	150	1.275	746 {76.1}	1.122	777 {79.3}	0.921	784 {80.0}	0.786	795 {81.1}	0.456	820 {83.7}	0.106	820 {83.7}
	200	0.998	747 {76.2}	0.889	786 {80.2}	0.729	792 {80.8}	0.632	814 {83.1}	0.360	822 {83.9}	0.084	822 {83.9}
	250	0.826	741 {75.6}	0.744	788 {80.4}	0.628	815 {83.2}	0.532	817 {83.4}	0.307	824 {84.1}	0.072	824 {84.1}
	300	0.821	846 {86.3}	0.703	854 {87.1}	0.579	862 {88.0}	0.492	864 {88.2}	0.283	875 {89.3}	0.068	875 {89.3}
	400	0.653	856 {87.3}	0.559	862 {88.0}	0.462	870 {89.0}	0.391	872 {89.0}	0.225	878 {89.6}	0.054	878 {89.6}
	500	0.550	861 {87.9}	0.472	867 {88.5}	0.389	873 {89.1}	0.330	873 {89.1}	0.192	880 {89.8}	0.047	880 {89.8}
	600	0.492	864 {88.2}	0.423	870 {88.8}	0.350	876 {89.4}	0.298	876 {89.4}	0.176	880 {89.8}	0.044	880 {89.8}
	800	0.398	870 {88.8}	0.342	873 {89.1}	0.283	877 {89.5}	0.244	878 {89.6}	0.145	882 {90.0}	0.036	882 {90.0}
	1000	0.341	872 {89.0}	0.293	875 {89.3}	0.246	879 {89.7}	0.212	882 {90.0}	0.127	884 {90.2}	0.031	884 {90.2}
	1200	0.298	859 {87.7}	0.258	861 {87.9}	0.220	880 {89.8}	0.190	882 {90.0}	0.114	884 {90.2}	0.028	884 {90.2}
	1500	0.221	718 {73.3}	0.189	721 {73.6}	0.157	724 {73.9}	0.135	727 {74.2}	0.081	734 {74.9}	0.020	734 {74.9}
	1800	0.198	721 {73.6}	0.171	723 {73.8}	0.142	726 {74.1}	0.121	730 {74.5}	0.075	734 {74.9}	0.019	734 {74.9}
	2400	0.162	727 {74.2}	0.140	727 {74.2}	0.115	728 {74.3}	0.101	729 {74.4}	0.062	736 {75.1}	0.015	736 {75.1}
	3000	0.140	729 {74.4}	0.120	729 {74.4}	0.102	730 {74.5}	0.089	731 {74.6}	0.054	736 {75.1}	0.014	736 {75.1}
	3600	0.125	730 {74.5}	0.109	732 {74.7}	0.092	733 {74.8}	0.080	733 {74.8}	0.047	736 {75.1}	0.012	736 {75.1}

Dimensional Drawings SW100B/SW100V

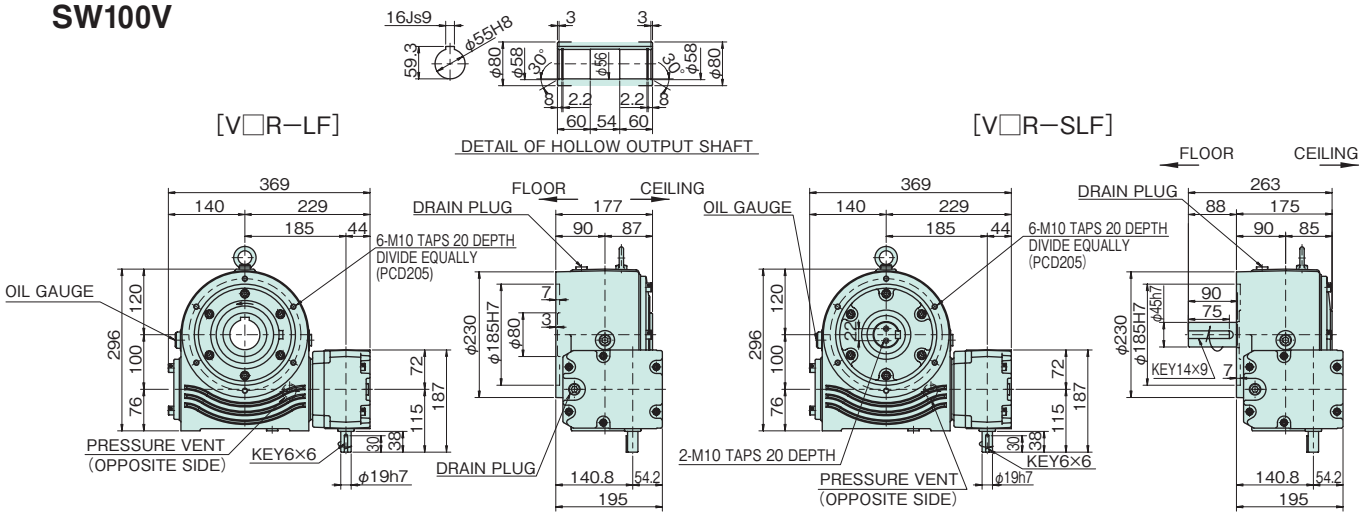
See next page for reducers with motors

SW100B



Estimated mass 50 kg

SW100V



Estimated mass 50 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

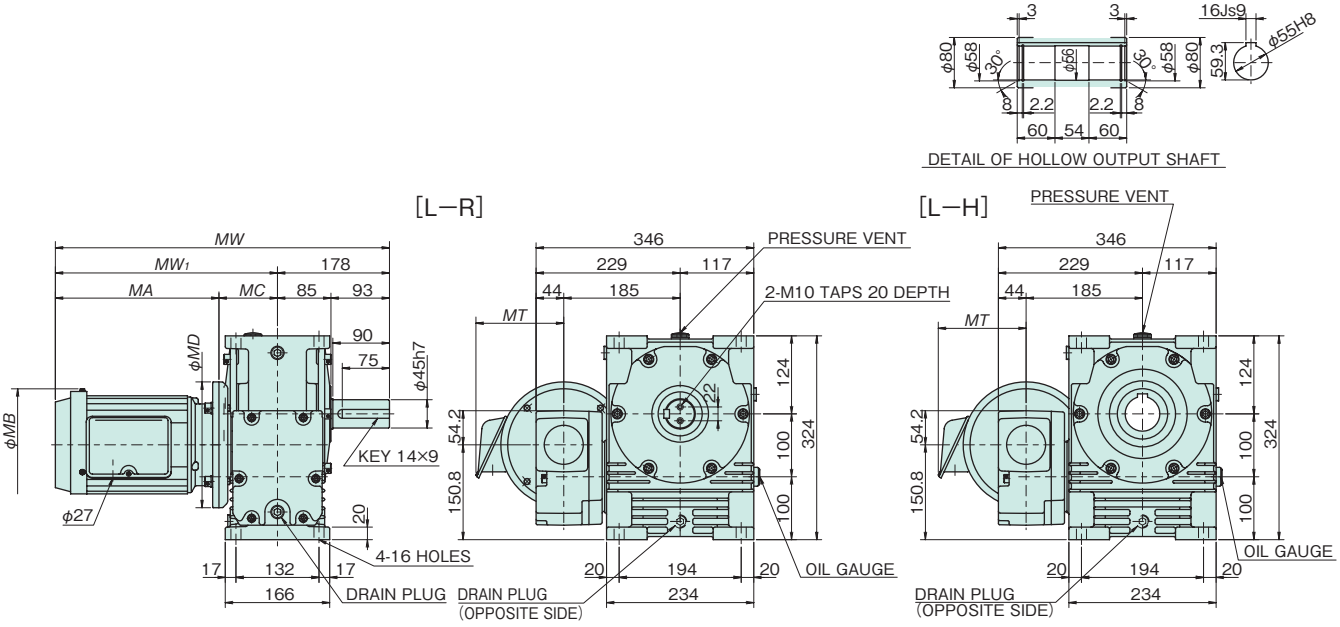
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW100	100	1.704	705 {71.9}	1.544	758 {77.3}	1.271	769 {78.5}	1.079	777 {79.3}	0.628	813 {83.0}	0.144	813 {83.0}
	150	1.275	746 {76.1}	1.122	777 {79.3}	0.921	784 {80.0}	0.786	795 {81.1}	0.456	820 {83.7}	0.106	820 {83.7}
	200	0.998	747 {76.2}	0.889	786 {80.2}	0.729	792 {80.8}	0.632	814 {83.1}	0.360	822 {83.9}	0.084	822 {83.9}
	250	0.826	741 {75.6}	0.744	788 {80.4}	0.628	815 {83.2}	0.532	817 {83.4}	0.307	824 {84.1}	0.072	824 {84.1}
	300	0.821	846 {86.3}	0.703	854 {87.1}	0.579	862 {88.0}	0.492	864 {88.2}	0.283	875 {89.3}	0.068	875 {89.3}
	400	0.653	856 {87.3}	0.559	862 {88.0}	0.462	870 {89.0}	0.391	872 {89.0}	0.225	878 {89.6}	0.054	878 {89.6}
	500	0.550	861 {87.9}	0.472	867 {88.5}	0.389	873 {89.1}	0.330	873 {89.1}	0.192	880 {89.8}	0.047	880 {89.8}
	600	0.492	864 {88.2}	0.423	870 {88.8}	0.350	876 {89.4}	0.298	876 {89.4}	0.176	880 {89.8}	0.044	880 {89.8}
	800	0.398	870 {88.8}	0.342	873 {89.1}	0.293	877 {89.5}	0.244	878 {89.6}	0.145	882 {90.0}	0.036	882 {90.0}
	1000	0.341	872 {89.0}	0.293	875 {89.3}	0.246	879 {89.7}	0.212	882 {90.0}	0.127	884 {90.2}	0.031	884 {90.2}
	1200	0.298	859 {87.7}	0.258	861 {87.9}	0.220	880 {89.8}	0.190	882 {90.0}	0.114	884 {90.2}	0.028	884 {90.2}
	1500	0.221	718 {73.3}	0.189	721 {73.6}	0.157	724 {73.9}	0.135	727 {74.2}	0.081	734 {74.9}	0.020	734 {74.9}
	1800	0.198	721 {73.6}	0.171	723 {73.8}	0.142	726 {74.1}	0.121	730 {74.5}	0.075	734 {74.9}	0.019	734 {74.9}
	2400	0.162	727 {74.2}	0.140	727 {74.2}	0.115	728 {74.3}	0.101	729 {74.4}	0.062	736 {75.1}	0.015	736 {75.1}
	3000	0.140	729 {74.4}	0.120	729 {74.4}	0.102	730 {74.5}	0.089	731 {74.6}	0.054	736 {75.1}	0.014	736 {75.1}
	3600	0.125	730 {74.5}	0.109	732 {74.7}	0.092	733 {74.8}	0.080	733 {74.8}	0.047	736 {75.1}	0.012	736 {75.1}

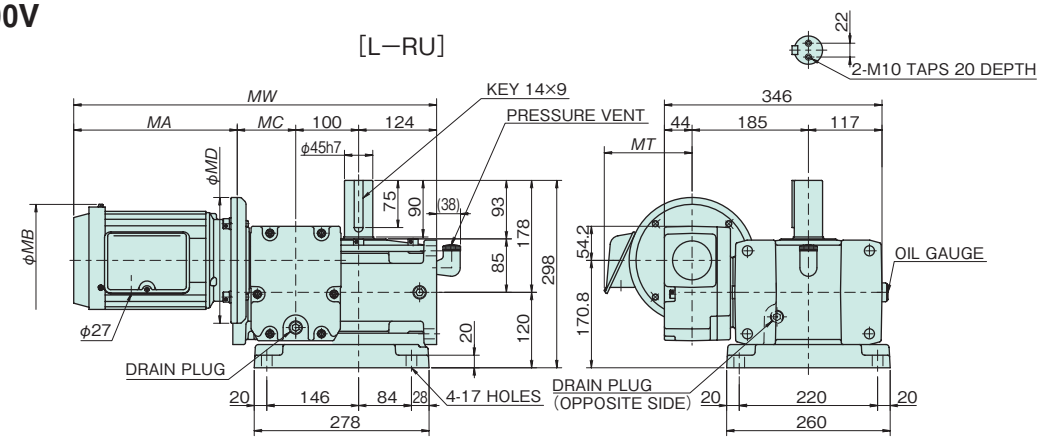
Dimensional Drawings EWM(R)100B/EWM(R)100V

See previous page for reducers without motors

EWM(R)100B



EWM(R)100V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

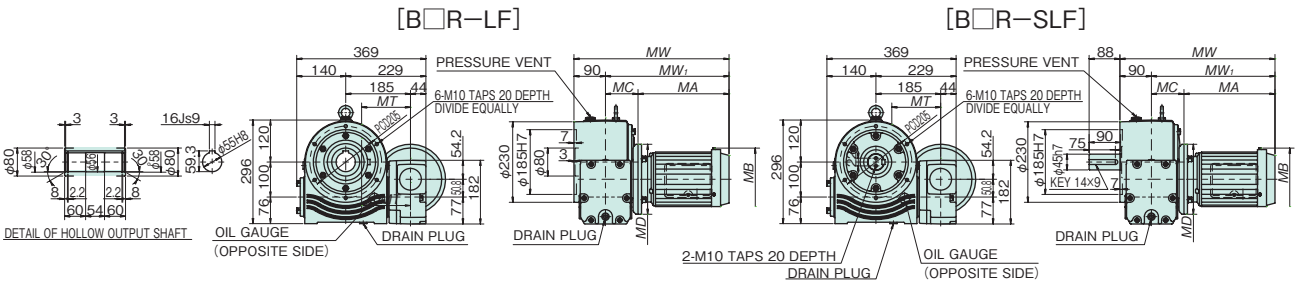
Transfer Capacity Table

Size	Standard combination: Motor kW	Standard combination: Reduction ratio	1750 r/min: Output torque N·m {kgf·m}	1450 r/min: Output torque N·m {kgf·m}	Values in ( ) for the motor indicates dimensions for a motor with a brake. MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM100	0.2	1500	652 {66.5}	721 {73.6}	212 (229)	91 (91)	303 (320)	481 (498)	527 (544)	140 (140)	160 (160)	81 (104.5)	59 (61)	65 (67)
		1800	721 {73.6}	723 {73.8}										
		2400	727 {74.2}	727 {74.2}										
	0.4	500	625 {63.8}	736 {75.1}	224 (241)	91 (91)	315 (332)	493 (510)	539 (556)	140 (140)	160 (160)	81 (104.5)	62 (65)	68 (71)
		600	703 {71.7}	823 {84.0}										
		800	870 {88.8}	873 {89.1}										
		1000	872 {89.0}	875 {89.3}										
		1200	859 {87.7}	861 {87.9}										
EWMR100	0.75	200	561 {57.2}	664 {67.7}	260 (305)	93 (93)	353 (398)	531 (576)	577 (622)	178 (178)	200 (200)	140 (140.0)	75 (78)	81 (84)
		250	673 {68.7}	788 {80.4}										
		300	772 {78.8}	854 {87.1}										
		400	856 {87.3}	862 {88.0}										

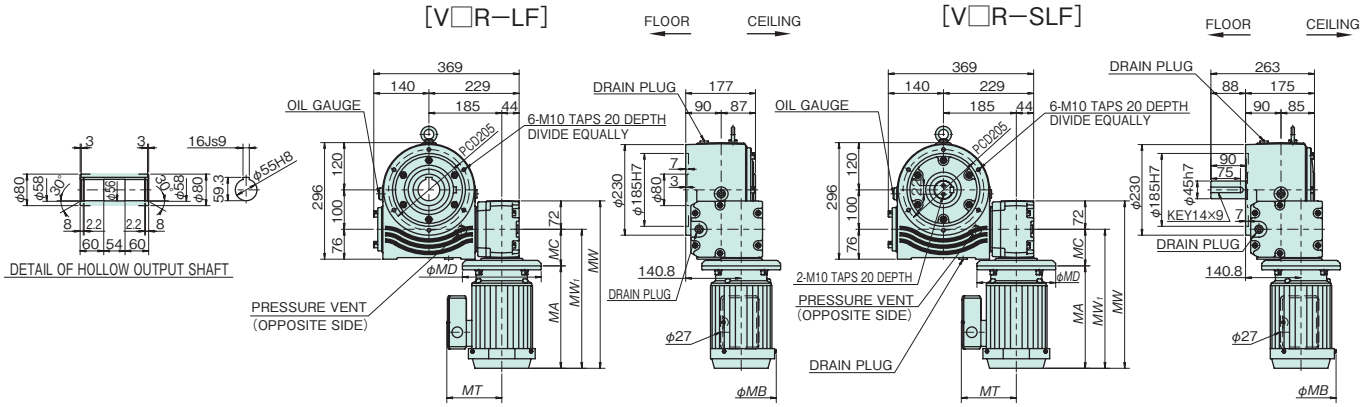
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing.
- Thermal rating factor is 1.0.

Dimensional Drawings SWM(R)100B/SWM(R)100V

SWM(R)100B



SWM(R)100V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

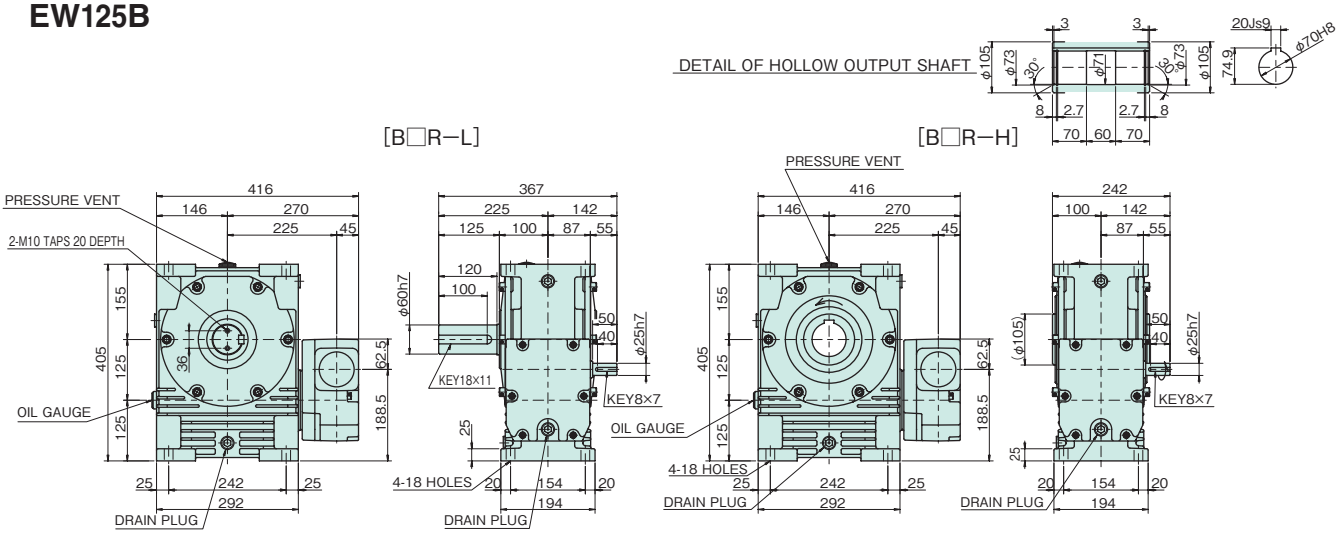
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	Installation B type *MW*	Installation V type *MW*	*MB*	*MD*	*MT*	Estimated mass kg
SWM100	0.2	1500	652 {66.5}	721 {73.6}	212 (229)	91 (91)	303 (320)	393 (410)	375 (392)	140 (140)	160 (160)	81 (104.5)	56 (58)
		1800	721 {73.6}	723 {73.8}									
		2400	727 {74.2}	727 {74.2}									
	0.4	500	625 {63.8}	736 {75.1}	224 (241)	91 (91)	315 (332)	405 (422)	387 (404)	140 (140)	160 (160)	81 (104.5)	59 (62)
		600	703 {71.7}	823 {84.0}									
		800	870 {88.8}	873 {89.1}									
		1000	872 {89.0}	875 {89.3}									
		1200	859 {87.7}	861 {87.9}									
SWMR100	0.75	200	561 {57.2}	664 {67.7}	260 (305)	93 (93)	353 (398)	443 (488)	425 (470)	178 (178)	200 (200)	140 (140.0)	72 (75)
		250	673 {68.7}	788 {80.4}									
		300	772 {78.8}	854 {87.1}									
		400	856 {87.3}	862 {88.0}									

- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing.
- Thermal rating factor is 1.0.

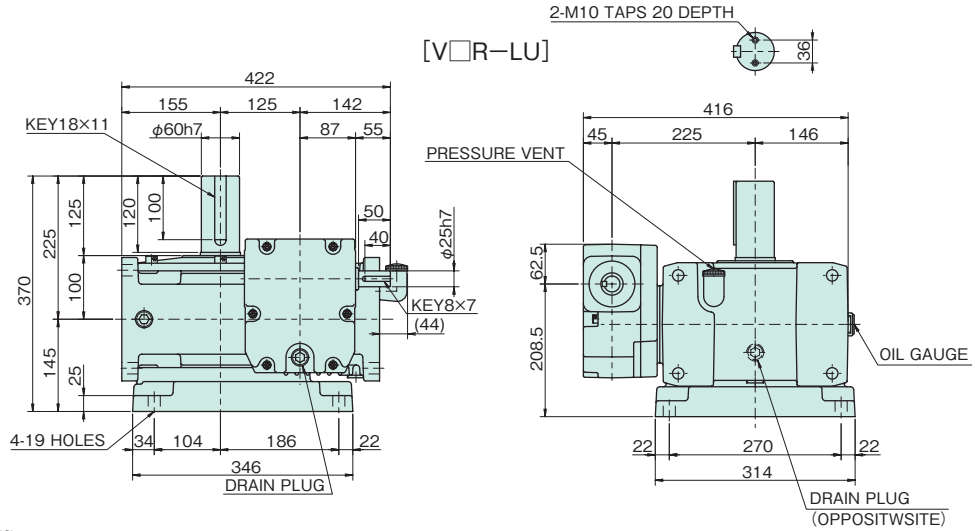
Dimensional Drawings EW125B/EW125V

EW125B



Estimated mass 96 kg

EW125V



Estimated mass 106 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

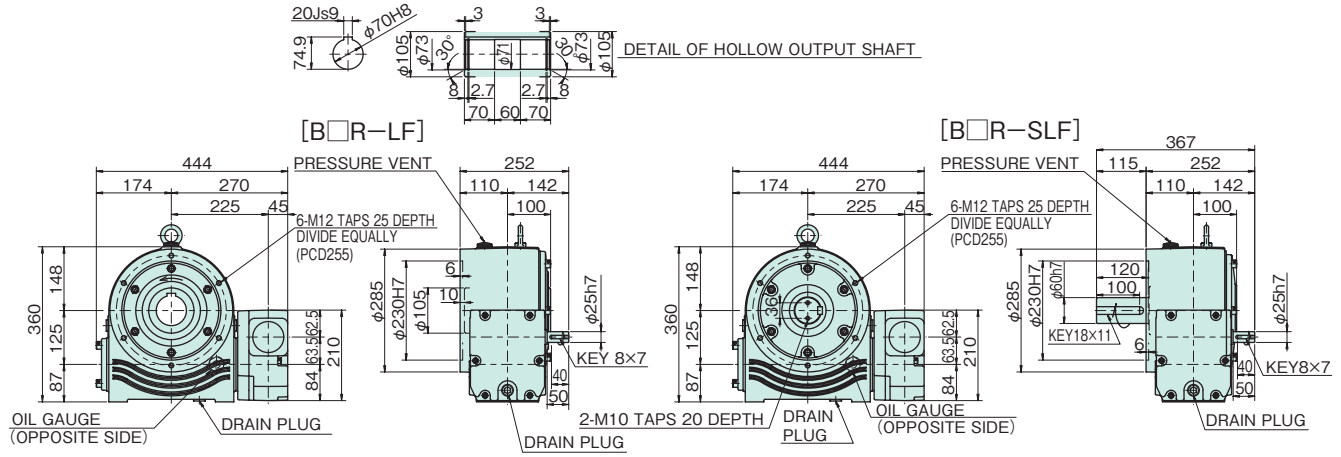
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW125	100	3.08	1294 {132}	2.82	1401 {143}	2.32	1431 {146}	1.98	1450 {148}	1.14	1490 {152}	0.27	1529 {156}
	150	2.31	1372 {140}	2.05	1450 {148}	1.69	1470 {150}	1.46	1499 {153}	0.87	1597 {163}	0.20	1597 {163}
	200	1.93	1470 {150}	1.66	1490 {152}	1.38	1519 {155}	1.18	1539 {157}	0.70	1607 {164}	0.17	1607 {164}
	250	1.61	1480 {151}	1.38	1499 {153}	1.14	1519 {155}	0.97	1529 {156}	0.58	1607 {164}	0.14	1607 {164}
	300	1.49	1548 {158}	1.28	1568 {160}	1.06	1588 {162}	0.90	1597 {163}	0.52	1627 {166}	0.13	1656 {169}
	400	1.20	1578 {161}	1.03	1588 {162}	0.85	1607 {164}	0.72	1617 {165}	0.42	1637 {167}	0.104	1656 {169}
	500	1.01	1588 {162}	0.86	1607 {164}	0.71	1617 {165}	0.61	1627 {166}	0.35	1637 {167}	0.088	1656 {169}
	600	0.90	1607 {164}	0.77	1617 {165}	0.64	1627 {166}	0.55	1627 {166}	0.33	1646 {168}	0.083	1656 {169}
	800	0.68	1568 {160}	0.59	1578 {161}	0.49	1588 {162}	0.42	1588 {162}	0.25	1597 {163}	0.064	1597 {163}
	1000	0.58	1548 {158}	0.50	1558 {159}	0.42	1588 {162}	0.36	1597 {163}	0.22	1597 {163}	0.055	1597 {163}
	1200	0.51	1558 {159}	0.44	1558 {159}	0.37	1588 {162}	0.32	1597 {163}	0.19	1607 {164}	0.049	1607 {164}
	1500	0.41	1362 {139}	0.35	1372 {140}	0.29	1382 {141}	0.25	1382 {141}	0.15	1392 {142}	0.038	1392 {142}
	1800	0.37	1372 {140}	0.32	1372 {140}	0.27	1382 {141}	0.23	1392 {142}	0.14	1392 {142}	0.036	1392 {142}
	2400	0.30	1382 {141}	0.26	1382 {141}	0.22	1392 {142}	0.19	1392 {142}	0.12	1392 {142}	0.030	1392 {142}
	3000	0.26	1382 {141}	0.22	1382 {141}	0.19	1392 {142}	0.16	1401 {143}	0.100	1401 {143}	0.026	1401 {143}
	3600	0.23	1392 {142}	0.20	1392 {142}	0.17	1392 {142}	0.15	1401 {143}	0.090	1401 {143}	0.023	1401 {143}

Dimensional Drawings SW125B/SW125V

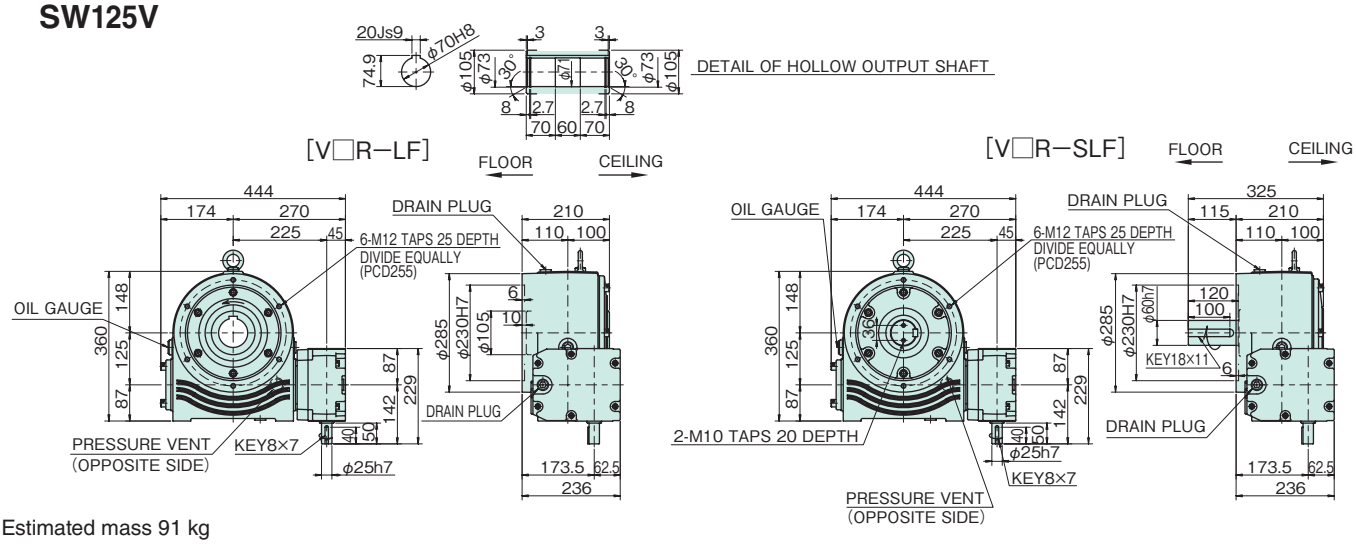
See next page for reducers with motors

SW125B



Estimated mass 91 kg

SW125V



Estimated mass 91 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

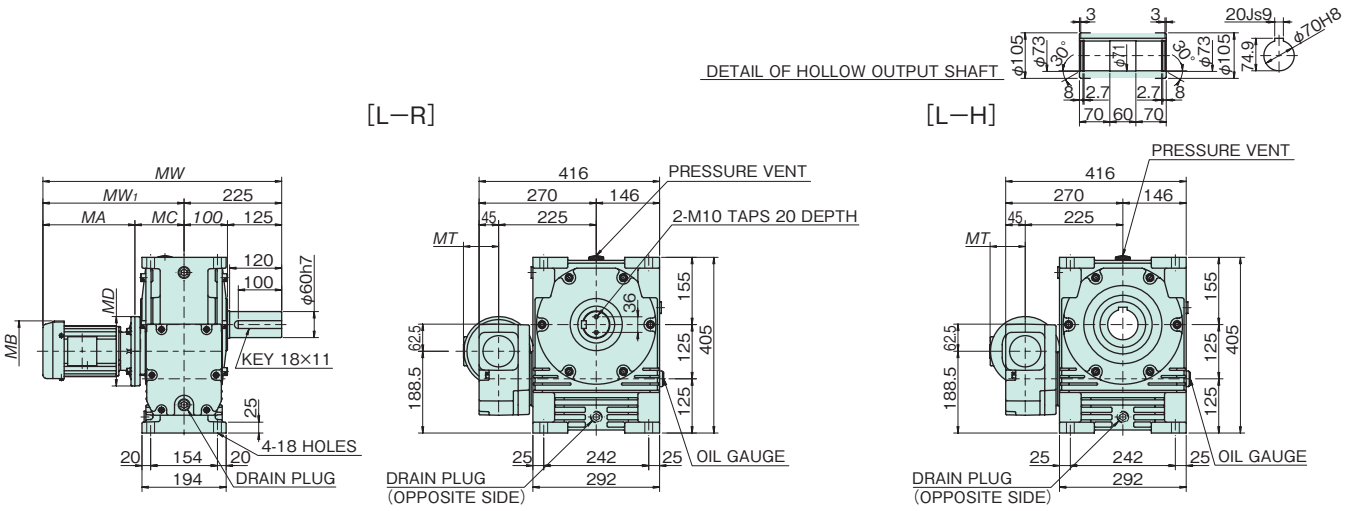
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW125	100	3.080	1294 {132.0}	2.820	1401 {143.0}	2.320	1431 {146.0}	1.980	1450 {148.0}	1.140	1490 {152.0}	0.270	1529 {156.0}
	150	2.310	1372 {140.0}	2.050	1450 {148.0}	1.690	1470 {150.0}	1.460	1499 {153.0}	0.870	1597 {163.0}	0.200	1597 {163.0}
	200	1.930	1470 {150.0}	1.660	1490 {152.0}	1.380	1519 {155.0}	1.180	1539 {157.0}	0.700	1607 {164.0}	0.170	1607 {164.0}
	250	1.610	1480 {151.0}	1.380	1499 {153.0}	1.140	1519 {155.0}	0.970	1529 {156.0}	0.580	1607 {164.0}	0.140	1607 {164.0}
	300	1.490	1548 {158.0}	1.280	1568 {160.0}	1.060	1588 {162.0}	0.900	1597 {163.0}	0.520	1627 {166.0}	0.130	1656 {169.0}
	400	1.200	1578 {161.0}	1.030	1588 {162.0}	0.850	1607 {164.0}	0.720	1617 {165.0}	0.420	1637 {167.0}	0.104	1656 {169.0}
	500	1.010	1588 {162.0}	0.860	1607 {164.0}	0.710	1617 {165.0}	0.610	1627 {166.0}	0.350	1637 {167.0}	0.088	1656 {169.0}
	600	0.900	1607 {164.0}	0.770	1617 {165.0}	0.640	1627 {166.0}	0.550	1627 {166.0}	0.330	1646 {168.0}	0.083	1656 {169.0}
	800	0.680	1568 {160.0}	0.590	1578 {161.0}	0.490	1588 {162.0}	0.420	1588 {162.0}	0.250	1597 {163.0}	0.064	1597 {163.0}
	1000	0.580	1548 {158.0}	0.500	1558 {159.0}	0.420	1588 {162.0}	0.360	1597 {163.0}	0.220	1597 {163.0}	0.055	1597 {163.0}
	1200	0.510	1558 {159.0}	0.440	1558 {159.0}	0.370	1588 {162.0}	0.320	1597 {163.0}	0.190	1607 {164.0}	0.049	1607 {164.0}
	1500	0.410	1362 {139.0}	0.350	1372 {140.0}	0.290	1382 {141.0}	0.250	1382 {141.0}	0.150	1392 {142.0}	0.038	1392 {142.0}
	1800	0.370	1372 {140.0}	0.320	1372 {140.0}	0.270	1382 {141.0}	0.230	1392 {142.0}	0.140	1392 {142.0}	0.036	1392 {142.0}
	2400	0.300	1382 {141.0}	0.260	1382 {141.0}	0.220	1392 {142.0}	0.190	1392 {142.0}	0.120	1392 {142.0}	0.030	1392 {142.0}
	3000	0.260	1382 {1410}	0.220	1382 {141.0}	0.190	1392 {142.0}	0.160	1401 {143.0}	0.100	1401 {143.0}	0.026	1401 {143.0}
	3600	0.230	1392 {142.0}	0.200	1392 {142.0	0.170	1392 {142.0}	0.150	1401 {143.0}	0.090	1401 {143.0	0.023	1401 {143.0}

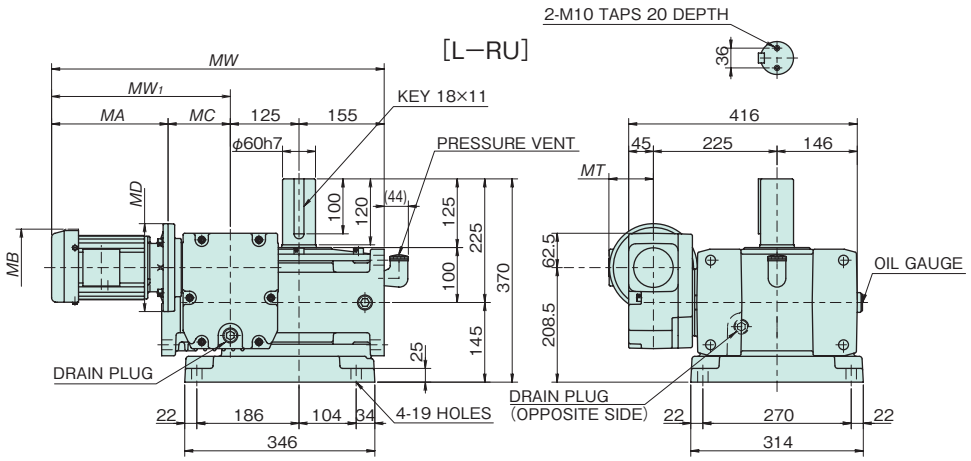
Dimensional Drawings EWM(R)125B/EWM(R)125V

See previous page for reducers without motors

EWM(R)125B



EWM(R)125V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

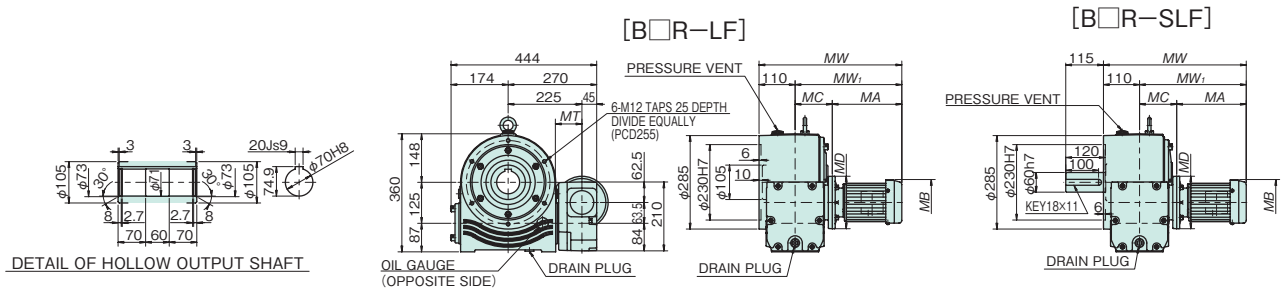
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*1	Installation B type *MW*	Installation V type *MW*	*MB*	*MD*	*MT*	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM125	0.2	3000	1068 {109}	1245 {127}	212 (229)	113 (113)	325 (342)	550 (567)	605 (622)	140 (140)	160 (160)	81 (104.5)	102 (104)	112 (114)
		3600	1215 {124}	1392 {142}										
	0.4	1500	1352 {138}	1372 {140}	224 (241)	113 (113)	337 (354)	562 (579)	617 (634)	140 (140)	160 (160)	81 (104.5)	105 (108)	115 (118)
		1800	1372 {140}	1372 {140}										
		2400	1382 {141}	1382 {141}										
EWMR125	0.75	500	1186 {121}	1392 {142}	260 (305)	108 (108)	368 (413)	593 (638)	648 (693)	178 (178)	200 (200)	140 (140.0)	118 (121)	128 (131)
		600	1333 {136}	1558 {159}										
		800	1568 {160}	1578 {161}										
		1000	1548 {158}	1558 {159}										
	1.5	100	631 {64.4}	749 {76.4}	296 (360)	108 (108)	404 (468)	629 (693)	684 (748)	204 (202)	200 (200)	158 (155.0)	126 (131)	136 (141)
		150	894 {91.2}	1058 {108}										
		200	1137 {116}	1343 {137}										
		250	1382 {141}	1499 {153}										
		300	1548 {158}	1568 {160}										
		400	1578 {161}	1588 {162}										

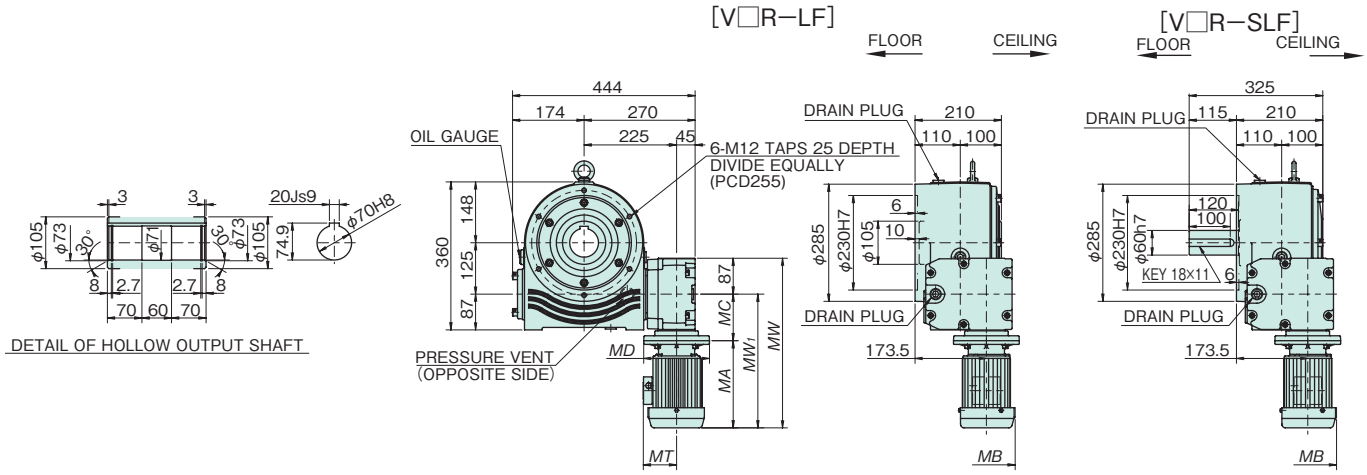
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing.
- Thermal rating factor is 1.0.

Dimensional Drawings SWM(R)125B/SWM(R)125V

SWM(R)125B



SWM(R)125V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

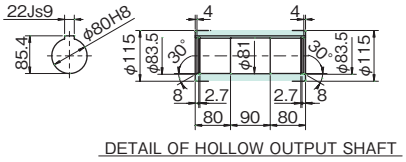
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	Installation B type *MW*	Installation V type *MW*	*MB*	*MD*	*MT*	Estimated mass kg
SWM125	0.2	3000	1068 {109}	1245 {127}	212 (229)	113 (113)	325 (342)	435 (452)	412 (429)	140 (140)	160 (160)	81 (104.5)	97 (99)
		3600	1215 {124}	1392 {142}									
	0.4	1500	1352 {138}	1372 {140}	224 (241)	113 (113)	337 (354)	447 (464)	424 (441)	140 (140)	160 (160)	81 (104.5)	100 (103)
		1800	1372 {140}	1372 {140}									
		2400	1382 {141}	1382 {141}									
SWMR125	0.75	500	1186 {121}	1392 {142}	260 (305)	108 (108)	368 (413)	478 (523)	455 (500)	178 (178)	200 (200)	140 (140.0)	113 (116)
		600	1333 {136}	1558 {159}									
		800	1568 {160}	1578 {161}									
		1000	1548 {158}	1558 {159}									
	1.5	100	631 {64.4}	749 {76.4}	296 (360)	108 (108)	404 (468)	514 (578)	491 (555)	204 (202)	200 (200)	158 (155.0)	120 (125)
		150	894 {91.2}	1058 {108}									
		200	1137 {116}	1343 {137}									
		250	1382 {141}	1499 {153}									
		300	1548 {158}	1568 {160}									
		400	1578 {161}	1588 {162}									

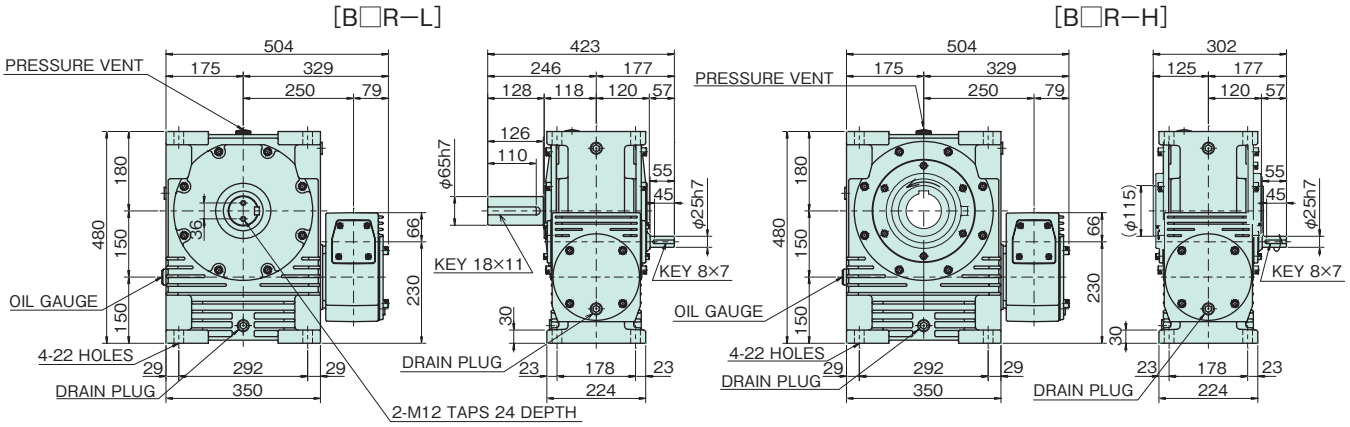
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.

Dimensional Drawings EW150B/EW150V

EW150B

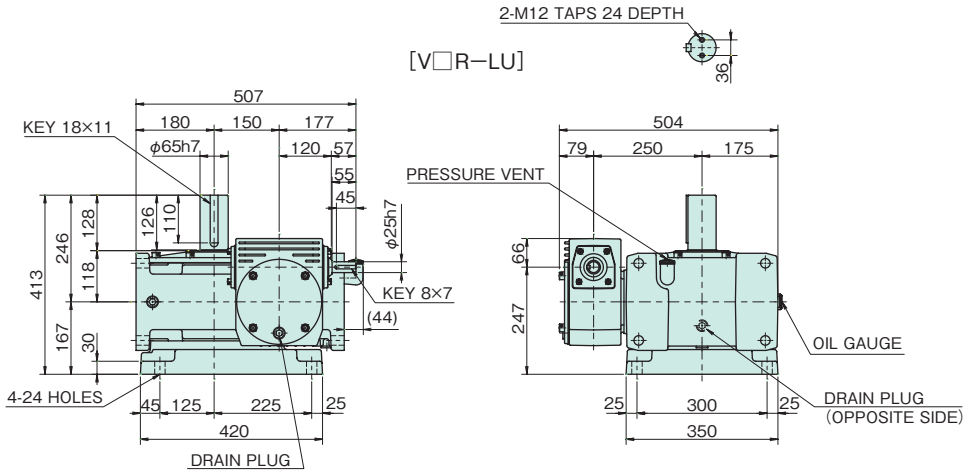


DETAIL OF HOLLOW OUTPUT SHAFT



Estimated mass 142 kg

EW150V



Estimated mass 167 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

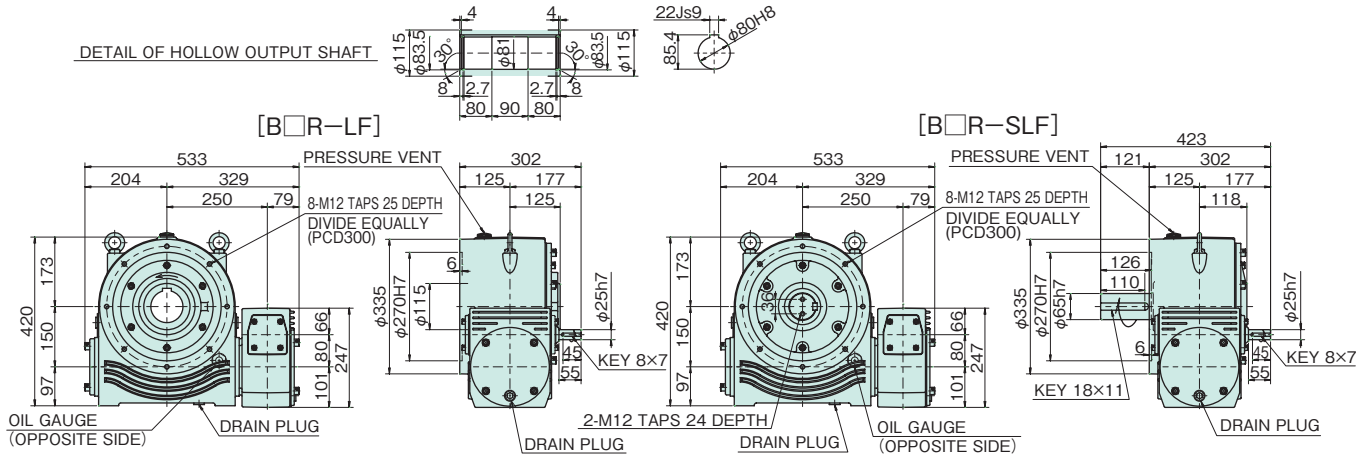
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW150	100	5.24	2244 {229}	4.51	2293 {234}	3.73	2352 {240}	3.18	2381 {243}	1.84	2470 {252}	0.43	2538 {259}
	150	3.84	2342 {239}	3.29	2381 {234}	2.71	2421 {247}	2.31	2440 {249}	1.33	2499 {255}	0.32	2548 {260}
	200	3.06	2401 {245}	2.62	2421 {247}	2.16	2450 {250}	1.83	2470 {252}	1.05	2509 {256}	0.25	2548 {260}
	250	2.57	2430 {248}	2.19	2450 {250}	1.80	2470 {252}	1.53	2489 {254}	0.88	2519 {257}	0.21	2548 {260}
	300	2.37	2548 {260}	2.04	2577 {263}	1.69	2617 {267}	1.45	2646 {270}	0.84	2695 {275}	0.21	2754 {281}
	400	1.91	2597 {265}	1.64	2626 {268}	1.35	2656 {271}	1.16	2675 {273}	0.67	2715 {277}	0.17	2754 {281}
	500	1.60	2626 {268}	1.38	2656 {271}	1.14	2675 {273}	0.97	2695 {275}	0.57	2724 {278}	0.14	2754 {281}
	600	1.43	2656 {271}	1.23	2666 {272}	1.02	2685 {274}	0.87	2705 {276}	0.51	2734 {279}	0.13	2754 {281}
	800	1.09	2587 {264}	0.93	2597 {265}	0.77	2617 {267}	0.66	2617 {267}	0.40	2636 {269}	0.101	2656 {271}
	1000	0.92	2597 {265}	0.79	2617 {267}	0.66	2626 {268}	0.57	2626 {268}	0.34	2646 {270}	0.088	2656 {271}
	1200	0.81	2607 {266}	0.70	2617 {267}	0.58	2626 {268}	0.50	2636 {269}	0.30	2646 {270}	0.077	2656 {271}
	1500	0.63	2607 {266}	0.54	2234 {228}	0.45	2244 {229}	0.39	2254 {230}	0.23	2274 {232}	0.058	2274 {232}
	1800	0.56	2225 {227}	0.49	2244 {229}	0.40	2254 {230}	0.35	2264 {231}	0.21	2274 {232}	0.055	2274 {232}
	2400	0.46	2244 {229}	0.40	2254 {230}	0.33	2264 {231}	0.28	2264 {231}	0.17	2283 {233}	0.045	2283 {233}
	3000	0.39	2254 {230}	0.34	2264 {231}	0.28	2274 {232}	0.25	2274 {232}	0.15	2283 {233}	0.039	2283 {233}
	3600	0.34	2264 {231}	0.30	2264 {231}	0.25	2274 {232}	0.22	2274 {232}	0.13	2283 {233}	0.035	2283 {233}

Dimensional Drawings SW150B/SW150V

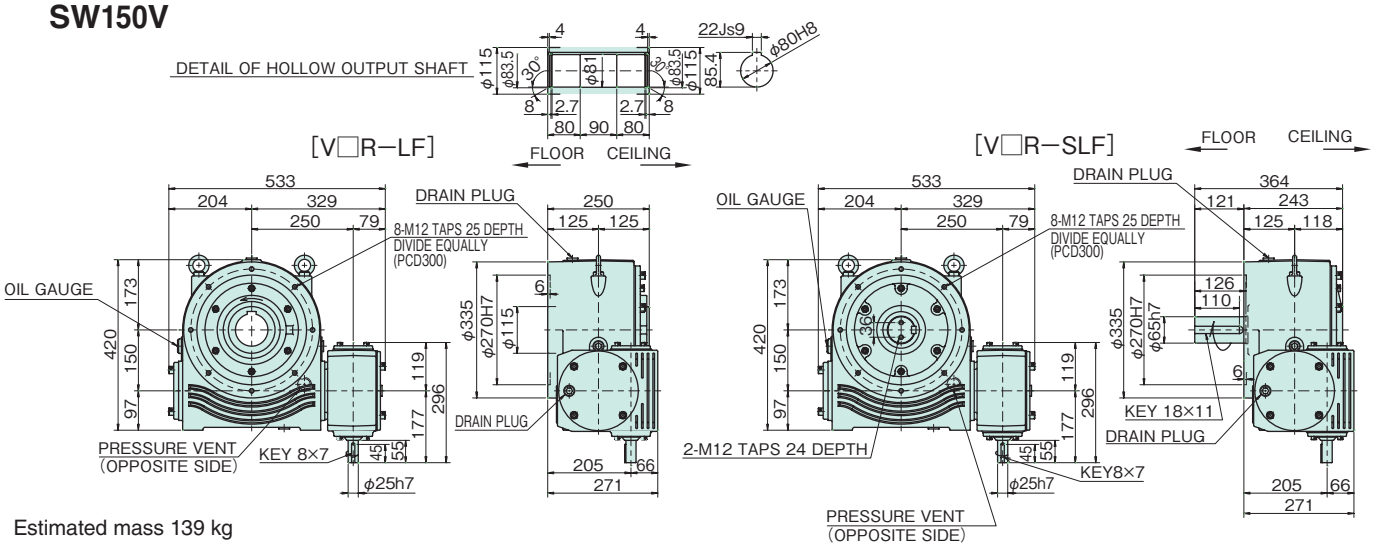
See next page for reducers with motors

SW150B



Estimated mass 139 kg

SW150V



Estimated mass 139 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

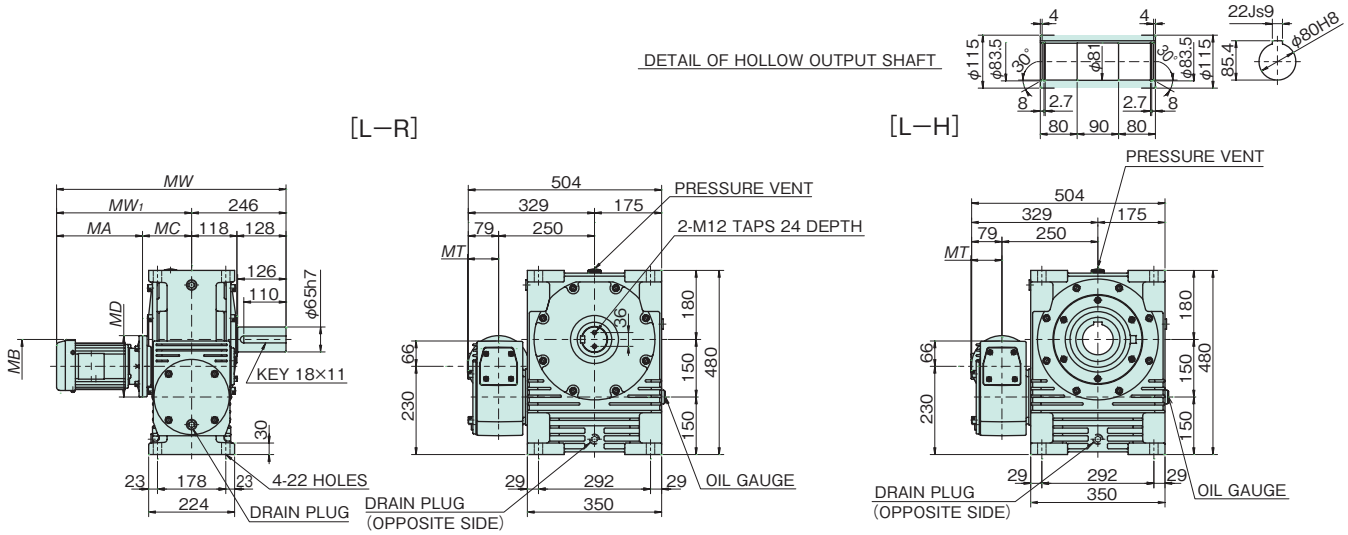
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW150	100	5.240	2244 {229}	4.510	2293 {234}	3.730	2352 {240}	3.180	2381 {243}	1.840	2470 {252}	0.430	2538 {259}
	150	3.840	2342 {239}	3.290	2381 {243}	2.710	2421 {247}	2.310	2440 {249}	1.330	2499 {255}	0.320	2548 {260}
	200	3.060	2401 {245}	2.620	2421 {247}	2.160	2450 {250}	1.830	2470 {252}	1.050	2509 {256}	0.250	2548 {260}
	250	2.570	2430 {248}	2.190	2450 {250}	1.800	2470 {252}	1.530	2489 {254}	0.880	2519 {257}	0.210	2548 {260}
	300	2.370	2548 {260}	2.040	2577 {263}	1.690	2617 {267}	1.450	2646 {270}	0.840	2695 {275}	0.210	2754 {281}
	400	1.910	2597 {265}	1.640	2626 {268}	1.350	2656 {271}	1.160	2675 {273}	0.670	2715 {277}	0.170	2754 {281}
	500	1.600	2626 {268}	1.380	2656 {271}	1.140	2675 {273}	0.970	2695 {275}	0.570	2724 {278}	0.140	2754 {281}
	600	1.430	2656 {271}	1.230	2666 {272}	1.020	2685 {274}	0.870	2705 {276}	0.510	2734 {279}	0.130	2754 {281}
	800	1.090	2587 {264}	0.930	2597 {265}	0.770	2617 {267}	0.660	2617 {267}	0.400	2636 {268}	0.101	2656 {271}
	1000	0.920	2597 {265}	0.790	2617 {267}	0.660	2626 {268}	0.570	2626 {268}	0.340	2646 {270}	0.088	2656 {271}
	1200	0.810	2607 {266}	0.700	2617 {267}	0.580	2626 {268}	0.500	2636 {269}	0.300	2646 {270}	0.077	2656 {271}
	1500	0.630	2607 {266}	0.540	2234 {228}	0.450	2244 {229}	0.390	2254 {230}	0.230	2274 {232}	0.058	2274 {232}
	1800	0.560	2225 {227}	0.490	2244 {229}	0.400	2254 {230}	0.350	2264 {231}	0.210	2274 {232}	0.055	2274 {232}
	2400	0.460	2244 {229}	0.400	2254 {230}	0.330	2264 {261}	0.280	2264 {231}	0.170	2283 {233}	0.045	2283 {233}
	3000	0.390	2254 {230}	0.340	2264 {231}	0.280	2274 {232}	0.250	2274 {232}	0.150	2283 {233}	0.039	2283 {233}
	3600	0.340	2264 {231	0.300	2264 {231}	0.250	2274 {232}	0.220	2274 {232}	0.130	2283 {233}	0.035	2283 {233}

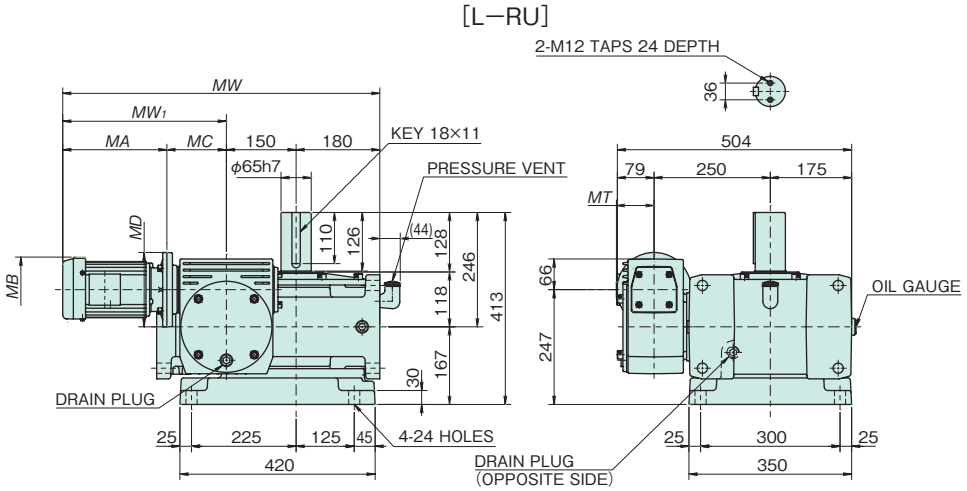
Dimensional Drawings EWM(R)150B/EWM(R)150V

See previous page for reducers without motors

EWM(R)150B



EWM(R)150V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

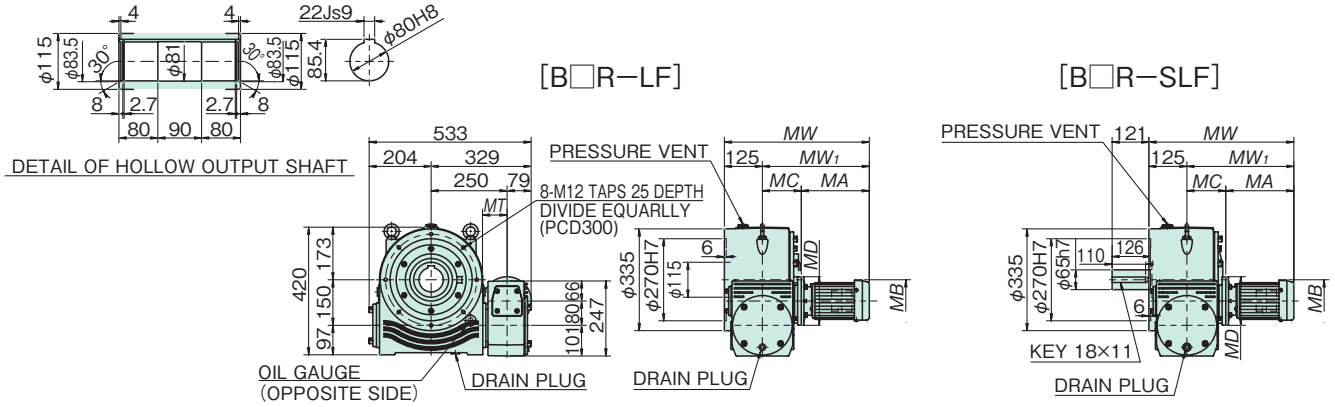
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM150	0.4	3000	2254 {230}	2264 {231}	224 (241)	128 (128)	352 (369)	598 (615)	682 (699)	140 (140)	160 (160)	81 (104.5)	153 (156)	178 (181)
		3600	2264 {231}	2264 {231}										
EWMR150	0.75	1200	2421 {247}	2617 {267}	260 (305)	128 (128)	388 (433)	634 (679)	718 (763)	178 (178)	200 (200)	140 (140.0)	166 (169)	191 (194)
		1500	2179 {222}	2234 {228}										
	1.5	500	2460 {251}	2656 {271}	296 (360)	128 (128)	424 (488)	670 (734)	754 (818)	204 (202)	200 (200)	158 (155.0)	174 (179)	199 (204)
		600	2656 {271}	2666 {272}										
	2.2	100	944 {96.3}	1117 {114}	318 (374)	128 (128)	446 (502)	692 (748)	776 (832)	218 (226)	250 (250)	169 (166.0)	189 (194)	214 (219)
		150	1343 {137}	1597 {163}										
		200	1725 {176}	2038 {208}										
		250	2078 {212}	2450 {250}										
		300	2362 {241}	2577 {263}										
		400	2597 {265}	2626 {268}										
	3.7	100	1588 {162}	1882 {192}	343 (424)	128 (128)	471 (552)	717 (798)	801 (882)	237 (235)	250 (250)	181 (178.0)	194 (204)	219 (229)
		150	2264 {231}	2381 {243}										

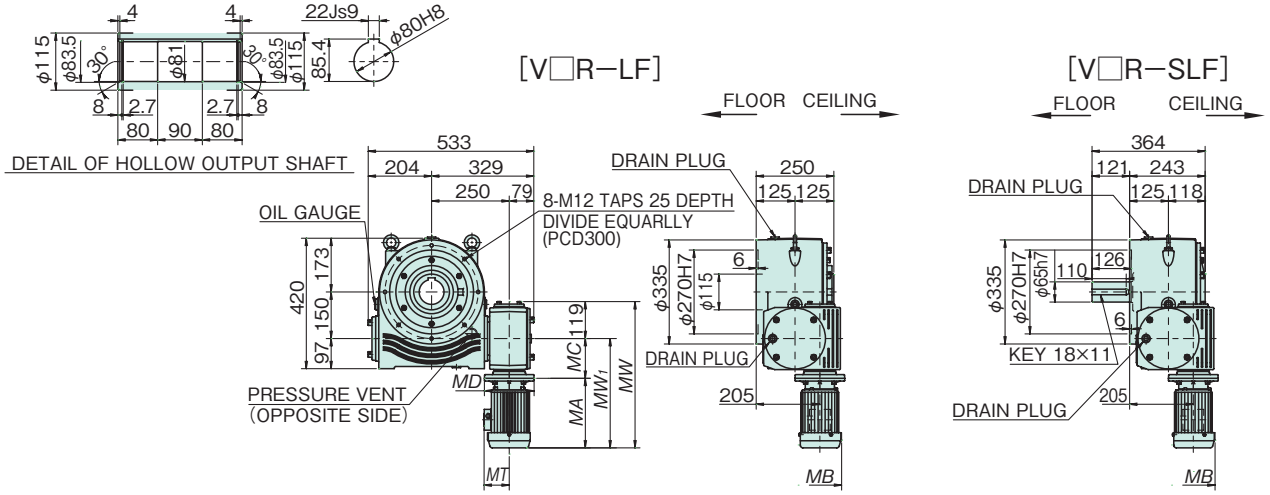
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing.
- Thermal rating factor is 1.0.

Dimensional Drawings SWM(R)150B/SWM(R)150V

SWM(R)150B



SWM(R)150V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

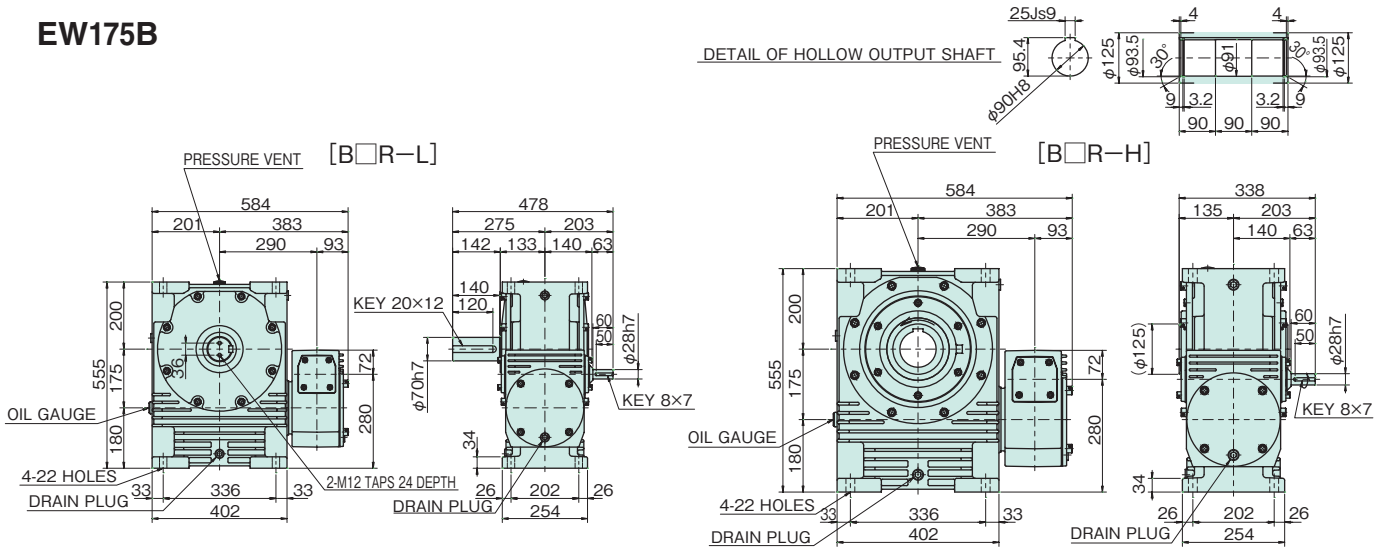
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	Installation B type *MW*	Installation V type *MW*	*MB*	*MD*	*MT*	Estimated mass kg
SWM150	0.4	3000	2254 {230}	2264 {231}	224 (241)	128 (128)	352 (369)	477 (494)	471 (488)	140 (140)	160 (160)	81 (104.5)	150 (153)
		3600	2264 {231}	2264 {231}									
SWMR150	0.75	1200	2421 {247}	2617 {267}	260 (305)	128 (128)	388 (433)	513 (558)	507 (552)	178 (178)	200 (200)	140 (140.0)	163 (166)
		1500	2179 {222}	2234 {228}									
	1.5	500	2460 {251}	2656 {271}	296 (360)	128 (128)	424 (488)	549 (613)	543 (607)	204 (202)	200 (200)	158 (155.0)	170 (175)
		600	2656 {271}	2666 {272}									
	2.2	100	944 {96.3}	1117 {114}	318 (374)	128 (128)	446 (502)	571 (627)	565 (621)	218 (226)	250 (250)	169 (166.0)	186 (191)
		150	1343 {137}	1597 {163}									
		200	1725 {176}	2038 {208}									
		250	2078 {212}	2450 {250}									
		300	2362 {241}	2577 {263}									
		400	2597 {265}	2626 {268}									
	3.7	100	1588 {162}	1882 {192}	343 (424)	128 (128)	471 (552)	596 (677)	590 (671)	237 (235)	250 (250)	181 (178.0)	191 (201)
		150	2264 {231}	2381 {243}									

- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.

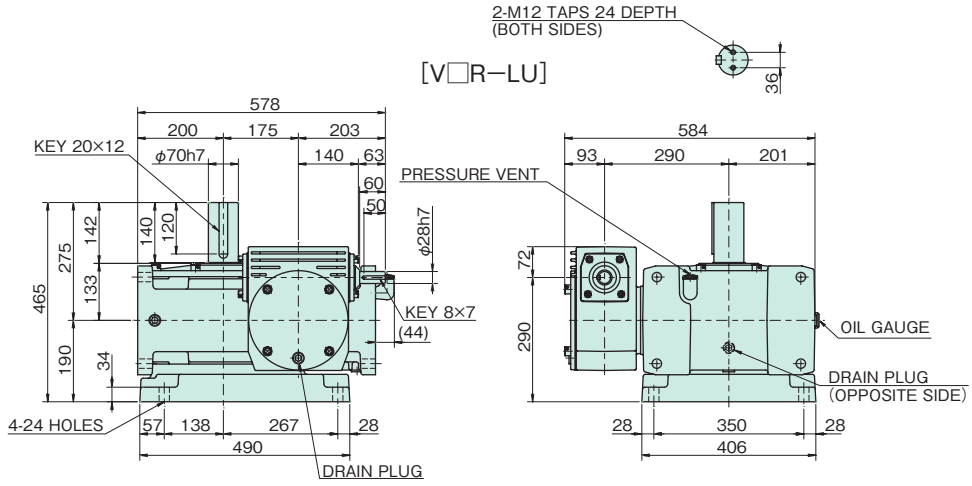
Dimensional Drawings EW175B/EW175V

EW175B



Estimated mass 215 kg

EW175V



Estimated mass 242 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

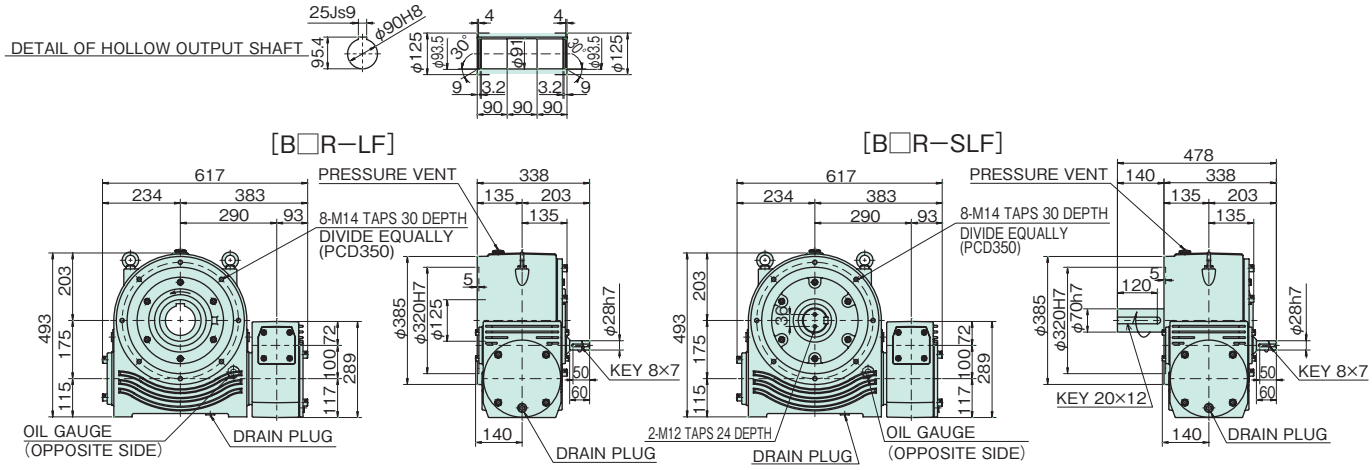
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW175	100	7.68	3361 {343}	6.63	3450 {352}	5.38	3459 {353}	4.52	3459 {353}	2.52	3459 {353}	0.58	3459 {353}
	150	5.53	3459 {353}	4.66	3459 {353}	3.78	3459 {353}	3.18	3459 {353}	1.78	3459 {353}	0.42	3459 {353}
	200	4.31	3459 {353}	3.64	3459 {353}	2.96	3459 {353}	2.50	3459 {353}	1.41	3459 {353}	0.34	3459 {353}
	250	3.55	3459 {353}	3.01	3459 {353}	2.45	3459 {353}	2.07	3459 {353}	1.17	3459 {353}	0.28	3459 {353}
	300	3.13	3459 {353}	2.65	3459 {353}	2.17	3459 {353}	1.83	3459 {353}	1.04	3459 {353}	0.25	3459 {353}
	400	2.46	3459 {353}	2.09	3459 {353}	1.71	3459 {353}	1.45	3459 {353}	0.83	3459 {353}	0.20	3459 {353}
	500	2.04	3459 {353}	1.73	3459 {353}	1.42	3459 {353}	1.20	3459 {353}	0.69	3459 {353}	0.17	3459 {353}
	600	1.79	3459 {353}	1.52	3459 {353}	1.25	3459 {353}	1.06	3459 {353}	0.62	3459 {353}	0.16	3459 {353}
	800	1.40	3459 {353}	1.19	3459 {353}	0.98	3459 {353}	0.84	3459 {353}	0.50	3459 {353}	0.13	3459 {353}
	1000	1.17	3459 {353}	1.00	3459 {353}	0.83	3459 {353}	0.71	3459 {353}	0.42	3459 {353}	0.108	3459 {353}
	1200	1.02	3459 {353}	0.87	3459 {353}	0.72	3459 {353}	0.62	3459 {353}	0.37	3459 {353}	0.096	3459 {353}
	1500	0.91	3352 {342}	0.78	3371 {344}	0.65	3401 {347}	0.56	3420 {349}	0.33	3459 {353}	0.085	3459 {353}
	1800	0.81	3361 {343}	0.69	3381 {345}	0.58	3410 {348}	0.50	3430 {350}	0.30	3459 {353}	0.078	3459 {353}
	2400	0.66	3410 {348}	0.57	3420 {349}	0.48	3440 {351}	0.41	3450 {352}	0.25	3459 {353}	0.066	3459 {353}
	3000	0.56	3430 {350}	0.48	3430 {350}	0.40	3440 {351}	0.35	3450 {352}	0.21	3459 {353}	0.057	3459 {353}
	3600	0.49	3440 {351}	0.43	3440 {351}	0.35	3450 {352}	0.31	3459 {353}	0.19	3459 {353}	0.050	3459 {353}

Dimensional Drawings SW175B/SW175V

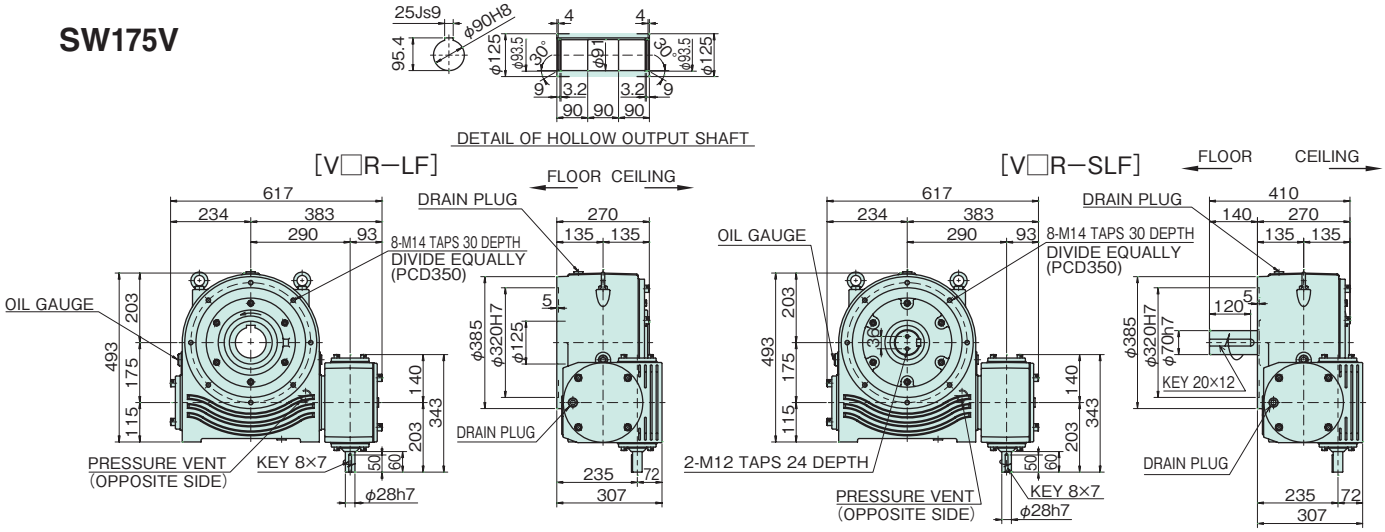
See next page for reducers with motors

SW175B



Estimated mass 206 kg

SW175V



Estimated mass 206 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

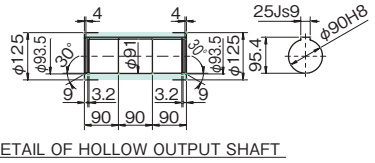
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW175	100	7.680	3361 {343}	6.630	3450 {352}	5.380	3459 {353}	4.520	3459 {353}	2.520	3459 {353}	0.580	3459 {353}
	150	5.530	3459 {353}	4.660	3459 {353}	3.780	3459 {353}	3.180	3459 {353}	1.780	3459 {353}	0.420	3459 {353}
	200	4.310	3459 {353}	3.640	3459 {353}	2.960	3459 {353}	2.500	3459 {353}	1.410	3459 {353}	0.340	3459 {353}
	250	3.550	3459 {353}	3.010	3459 {353}	2.450	3459 {353}	2.070	3459 {353}	1.170	3459 {353}	0.280	3459 {353}
	300	3.130	3459 {353}	2.650	3459 {353}	2.170	3459 {353}	1.830	3459 {353}	1.040	3459 {353}	0.250	3459 {353}
	400	2.460	3459 {353}	2.090	3459 {353}	1.710	3459 {353}	1.450	3459 {353}	0.830	3459 {353}	0.200	3459 {353}
	500	2.040	3459 {353}	1.730	3459 {353}	1.420	3459 {353}	1.200	3459 {353}	0.690	3459 {353}	0.170	3459 {353}
	600	1.790	3459 {353}	1.520	3459 {353}	1.250	3459 {353}	1.060	3459 {353}	0.620	3459 {353}	0.160	3459 {353}
	800	1.400	3459 {353}	1.190	3459 {353}	0.980	3459 {353}	0.840	3459 {353}	0.500	3459 {353}	0.130	3459 {353}
	1000	1.170	3459 {353}	1.000	3459 {353}	0.830	3459 {353}	0.710	3459 {353}	0.420	3459 {353}	0.108	3459 {353}
	1200	1.020	3459 {353}	0.870	3459 {353}	0.720	3459 {353}	0.620	3459 {353}	0.370	3459 {353}	0.096	3459 {353}
	1500	0.910	3352 {342}	0.780	3371 {344}	0.650	3401 {347}	0.560	3420 {349}	0.330	3459 {353}	0.085	3459 {353}
	1800	0.810	3361 {343}	0.690	3381 {345}	0.580	3410 {348}	0.500	3430 {350}	0.300	3459 {353}	0.078	3459 {353}
	2400	0.660	3410 {348}	0.570	3420 {349}	0.480	3440 {351}	0.410	3450 {352}	0.250	3459 {353}	0.066	3459 {353}
	3000	0.560	3430 {350}	0.480	3430 {350}	0.400	3440 {351}	0.350	3450 {352}	0.210	3459 {353}	0.057	3459 {353}
	3600	0.490	3440 {351}	0.430	3440 {351}	0.350	3450 {352}	0.310	3459 {353}	0.190	3459 {353}	0.050	3459 {353}

Dimensional Drawings EWMR175B/EWMR175V

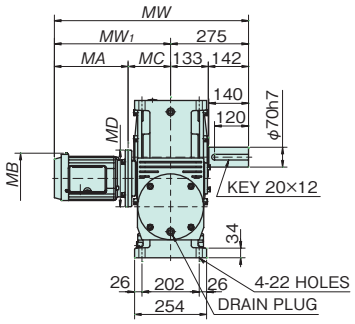
See previous page for reducers without motors

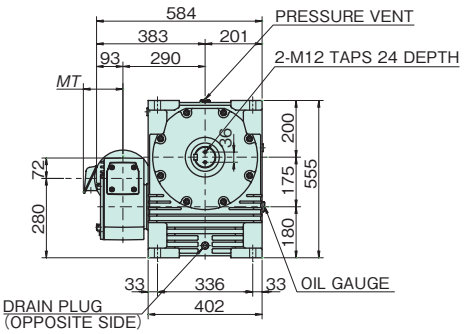
EWMR175B



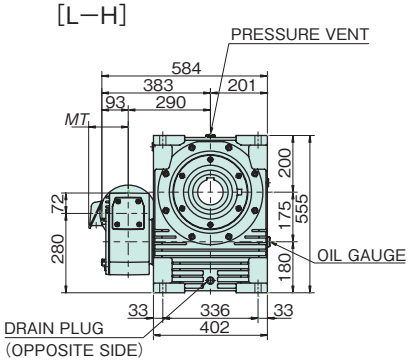
DETAIL OF HOLLOW OUTPUT SHAFT

[L—R]



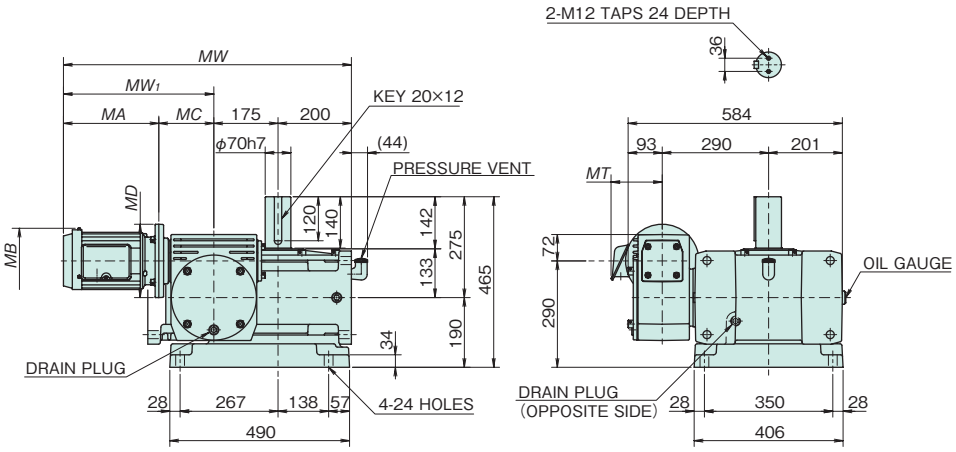


[L—H]



EWMR175V

[L—RU]



Transfer Capacity Table

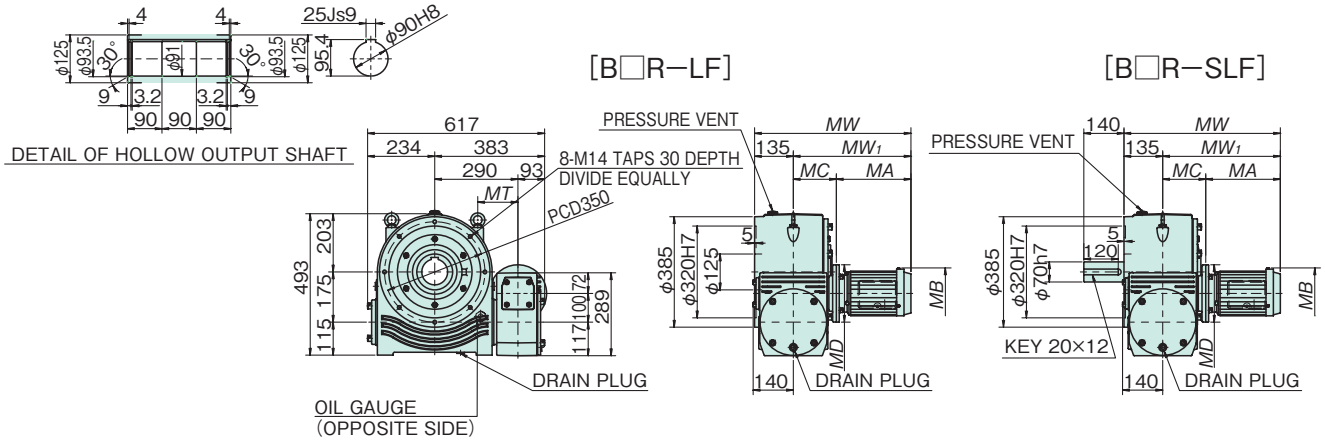
* Refer to page 74 for shaft arrangements and relative direction of rotation.

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWMR175	0.75	1800	3136 {320}	3381 {345}	260 (305)	150 (150)	410 (455)	685 (730)	785 (830)	178 (178)	200 (200)	140 (140.0)	241 (244)	268 (271)
		2400	3410 {348}	3420 {349}										
	1.5	800	3459 {353}	3459 {353}	296 (360)	150 (150)	446 (510)	721 (785)	821 (885)	204 (202)	200 (200)	158 (155.0)	249 (254)	276 (281)
		1000	3459 {353}	3459 {353}										
	2.2	500	3459 {353}	3459 {353}	318 (374)	150 (150)	468 (524)	743 (799)	843 (899)	218 (226)	250 (250)	169 (166.0)	264 (269)	291 (296)
		600	3459 {353}	3459 {353}										
	3.7	200	2969 {303}	3459 {353}	343 (424)	150 (150)	493 (574)	768 (849)	868 (949)	237 (235)	250 (250)	181 (178.0)	269 (279)	296 (306)
		250	3459 {353}	3459 {353}										
		300	3459 {353}	3459 {353}										
	5.5	100	2407 {246}	2862 {292}	402 (475)	157 (157)	559 (632)	834 (907)	934 (1007)	277 (275)	300 (300)	197 (200.0)	285 (297)	312 (324)
		150	3441 {351}	3459 {353}										

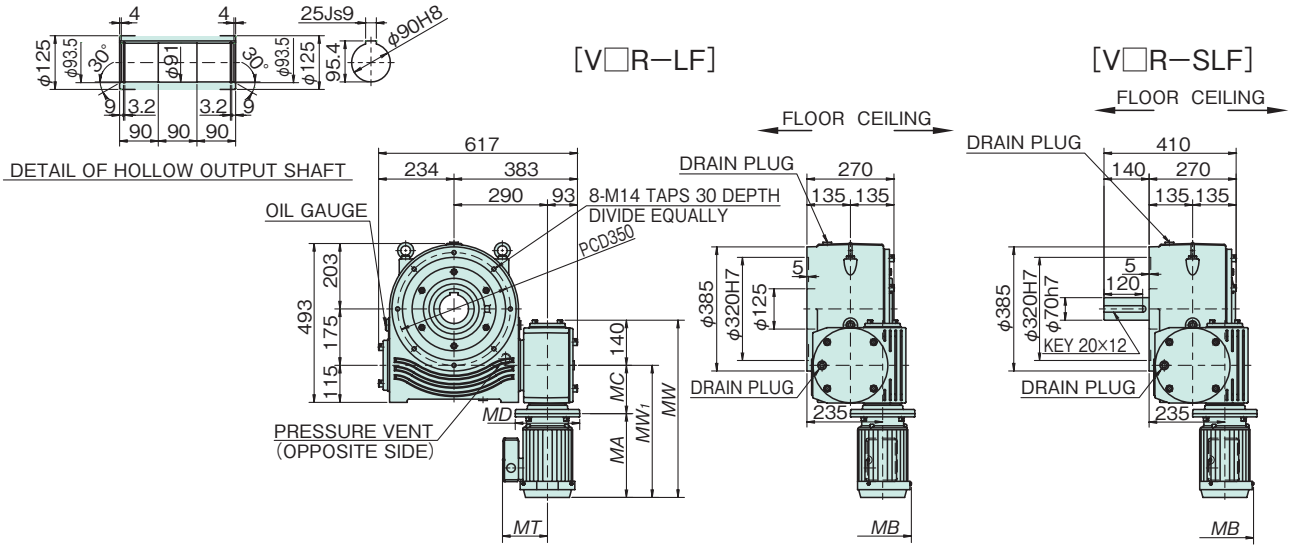
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.

Dimensional Drawings SWMR175B/SWMR175V

SWMR175B



SWMR175V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

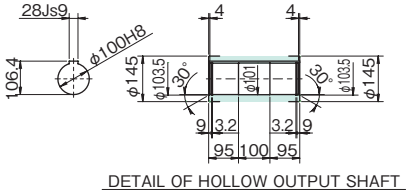
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Estimated mass kg
SWMR175	0.75	1800	3136 {320}	3381 {345}	260 (305)	150 (150)	410 (455)	545 (590)	550 (595)	178 (178)	200 (200)	140 (140.0)	232 (235)
		2400	3410 {348}	3420 {349}									
	1.5	800	3459 {353}	3459 {353}	296 (360)	150 (150)	446 (510)	581 (645)	586 (650)	204 (202)	200 (200)	158 (155.0)	239 (244)
		1000	3459 {353}	3459 {353}									
	2.2	500	3459 {353}	3459 {353}	318 (374)	150 (150)	468 (524)	603 (659)	608 (664)	218 (226)	250 (250)	169 (166.0)	255 (260)
		600	3459 {353}	3459 {353}									
	3.7	200	2969 {303}	3459 {353}	343 (424)	150 (150)	493 (574)	628 (709)	633 (714)	237 (235)	250 (250)	181 (178.0)	260 (270)
		250	3459 {353}	3459 {353}									
		300	3459 {353}	3459 {353}									

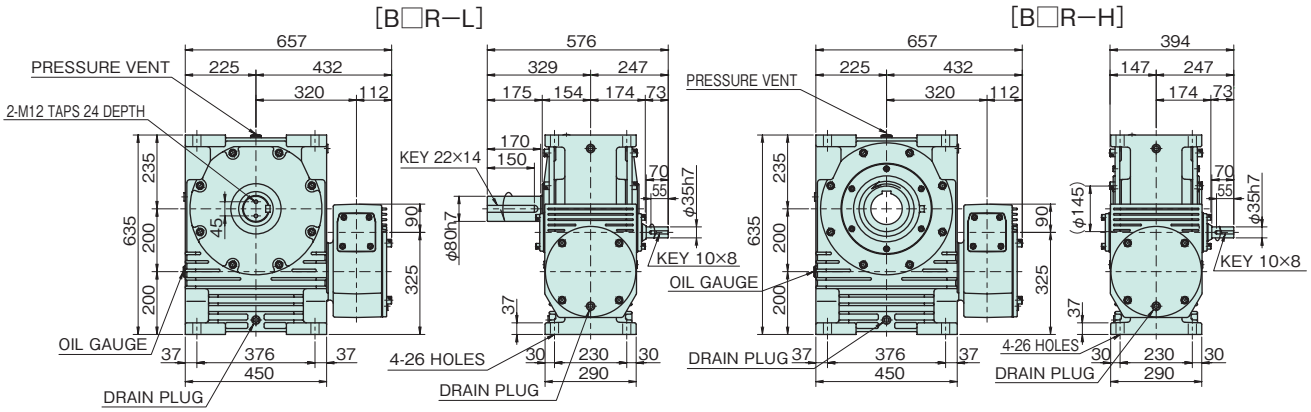
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.

Dimensional Drawings EW200B/EW200V

EW200B

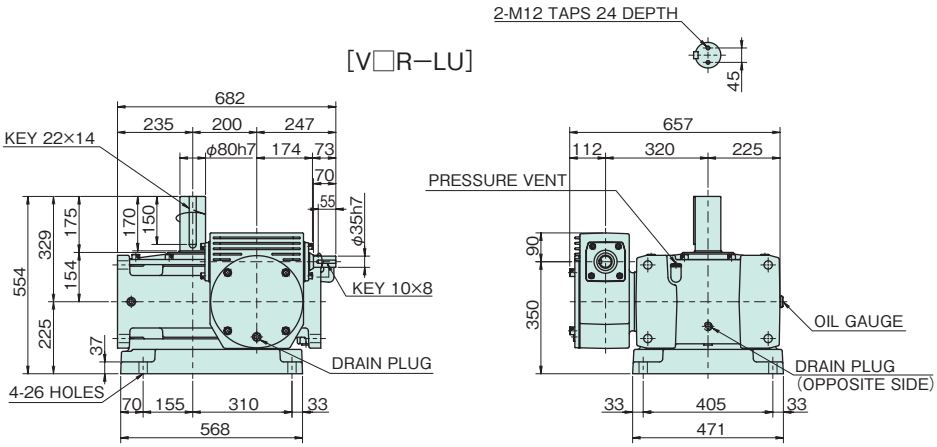


DETAIL OF HOLLOW OUTPUT SHAFT



Estimated mass 364 kg

EW200V



Estimated mass 414 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

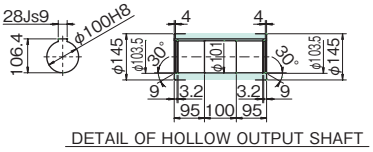
Transfer Capacity Table

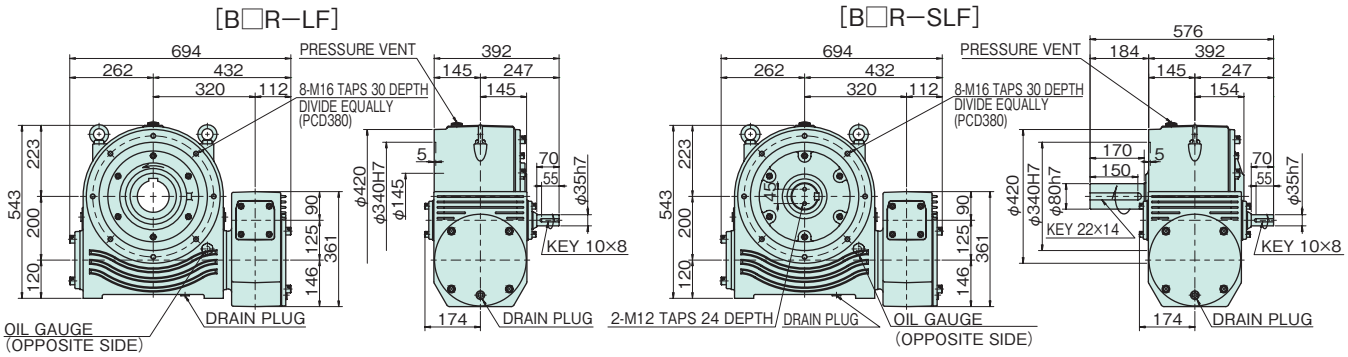
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
EW200	100	11.156	4911 {501}	9.704	5077 {518}	8.099	5238 {534}	6.947	5348 {546}	4.059	5605 {572}	0.949	5704 {582}
	150	8.040	5069 {517}	7.093	5304 {541}	5.912	5451 {556}	5.047	5528 {564}	2.925	5703 {582}	0.688	5704 {582}
	200	6.403	5203 {531}	5.664	5450 {556}	4.695	5562 {568}	4.000	5620 {573}	2.291	5704 {582}	0.546	5704 {582}
	250	5.334	5240 {535}	4.723	5486 {560}	3.945	5629 {574}	3.360	5676 {579}	1.917	5704 {582}	0.464	5704 {582}
	300	4.899	5535 {565}	4.228	5640 {576}	3.487	5704 {582}	2.948	5704 {582}	1.677	5704 {582}	0.406	5704 {582}
	400	3.934	5689 {580}	3.345	5704 {582}	2.731	5704 {582}	2.312	5704 {582}	1.319	5704 {582}	0.323	5704 {582}
	500	3.279	5704 {582}	2.784	5704 {582}	2.277	5704 {582}	1.930	5704 {582}	1.108	5704 {582}	0.275	5704 {582}
	600	2.865	5704 {582}	2.438	5704 {582}	2.001	5704 {582}	1.701	5704 {582}	0.986	5704 {582}	0.253	5704 {582}
	800	2.272	5704 {582}	1.938	5704 {582}	1.594	5704 {582}	1.358	5704 {582}	0.794	5704 {582}	0.206	5704 {582}
	1000	1.921	5704 {582}	1.642	5704 {582}	1.355	5704 {582}	1.158	5704 {582}	0.691	5704 {582}	0.181	5704 {582}
	1200	1.674	5704 {582}	1.434	5704 {582}	1.186	5704 {582}	1.016	5704 {582}	0.613	5704 {582}	0.162	5704 {582}
	1500	1.423	5063 {517}	1.233	5116 {522}	1.030	5169 {527}	0.887	5204 {531}	0.530	5286 {539}	0.142	5359 {547}
	1800	1.268	5114 {522}	1.098	5158 {526}	0.919	5203 {531}	0.792	5233 {534}	0.476	5301 {541}	0.131	5362 {547}
	2400	1.032	5179 {528}	0.894	5212 {532}	0.747	5246 {535}	0.644	5269 {538}	0.393	5320 {543}	0.107	5366 {548}
	3000	0.888	5218 {532}	0.769	5245 {535}	0.643	5272 {538}	0.555	5290 {540}	0.344	5331 {544}	0.095	5368 {548}
	3600	0.784	5244 {535}	0.679	5267 {537}	0.569	5290 {540}	0.491	5305 {541}	0.308	5339 {545}	0.085	5370 {548}

Dimensional Drawings SW200B/SW200V

See next page for reducers with motors

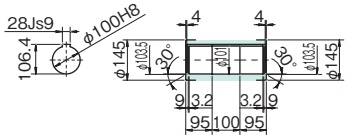
SW200B

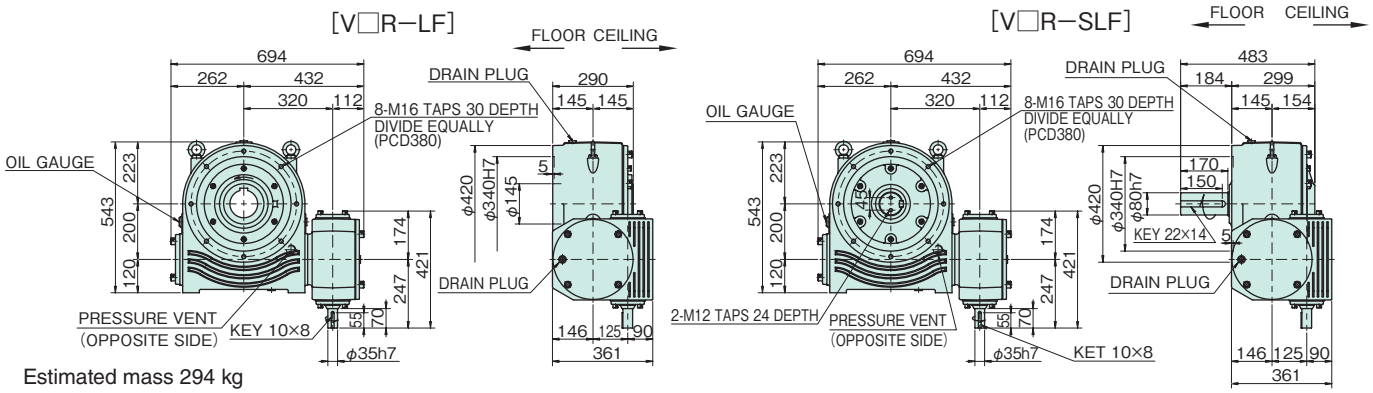




Estimated mass 294 kg

SW200V





Estimated mass 294 kg

* Refer to page 74 for shaft arrangements and relative direction of rotation.

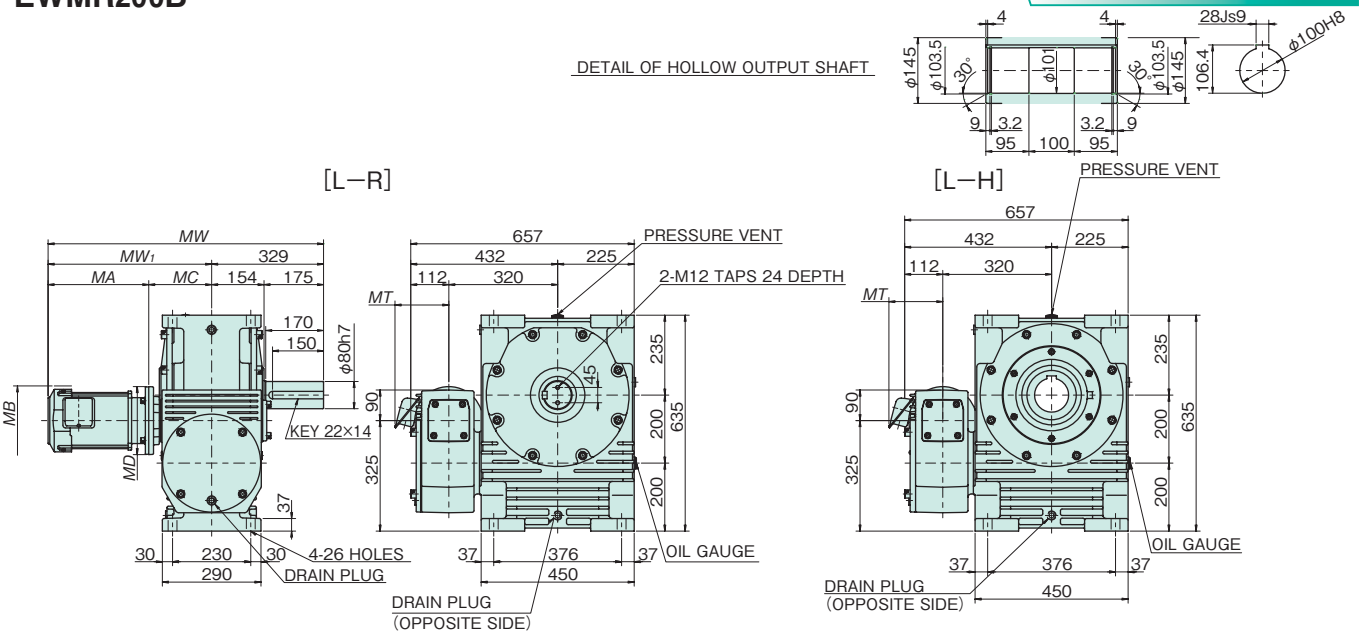
Transfer Capacity Table

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
SW200	100	11.156	4911 {501}	9.704	5077 {518}	8.099	5238 {534}	6.947	5348 {546}	4.059	5605 {572}	0.949	5704 {582}
	150	8.040	5069 {517}	7.093	5304 {541}	5.912	5451 {556}	5.047	5528 {564}	2.925	5703 {582}	0.688	5704 {582}
	200	6.403	5203 {531}	5.664	5450 {556}	4.695	5562 {568}	4.000	5620 {573}	2.291	5704 {582}	0.546	5704 {582}
	250	5.334	5240 {535}	4.723	5486 {560}	3.945	5629 {574}	3.360	5676 {579}	1.917	5704 {582}	0.464	5704 {582}
	300	4.899	5535 {565}	4.228	5640 {576}	3.487	5704 {582}	2.948	5704 {582}	1.677	5704 {582}	0.406	5704 {582}
	400	3.934	5689 {580}	3.345	5704 {582}	2.731	5704 {582}	2.312	5704 {582}	1.319	5704 {582}	0.323	5704 {582}
	500	3.279	5704 {582}	2.784	5704 {582}	2.277	5704 {582}	1.930	5704 {582}	1.108	5704 {582}	0.275	5704 {582}
	600	2.865	5704 {582}	2.438	5704 {582}	2.001	5704 {582}	1.701	5704 {582}	0.986	5704 {582}	0.253	5704 {582}
	800	2.272	5704 {582}	1.938	5704 {582}	1.594	5704 {582}	1.358	5704 {582}	0.794	5704 {582}	0.206	5704 {582}
	1000	1.921	5704 {582}	1.642	5704 {582}	1.355	5704 {582}	1.158	5704 {582}	0.691	5704 {582}	0.181	5704 {582}
	1200	1.674	5704 {582}	1.434	5704 {582}	1.186	5704 {582}	1.016	5704 {582}	0.613	5704 {582}	0.162	5704 {582}
	1500	1.423	5063 {517}	1.233	5116 {522}	1.030	5169 {527}	0.887	5204 {531}	0.580	5286 {539}	0.142	5359 {547}
	1800	1.268	5114 {522}	1.098	5158 {526}	0.919	5203 {531}	0.792	5233 {534}	0.476	5301 {541}	0.131	5362 {547}
	2400	1.032	5179 {528}	0.894	5212 {532}	0.747	5246 {535}	0.664	5269 {538}	0.393	5320 {543}	0.107	5366 {548}
	3000	0.888	5218 {532}	0.769	5245 {535}	0.643	5272 {538}	0.555	5290 {540}	0.344	5331 {544}	0.095	5366 {548}
	3600	0.784	5244 {535}	0.679	5267 {537}	0.569	5290 {540}	0.491	5305 {541}	0.388	5339 {545}	0.085	5370 {548}

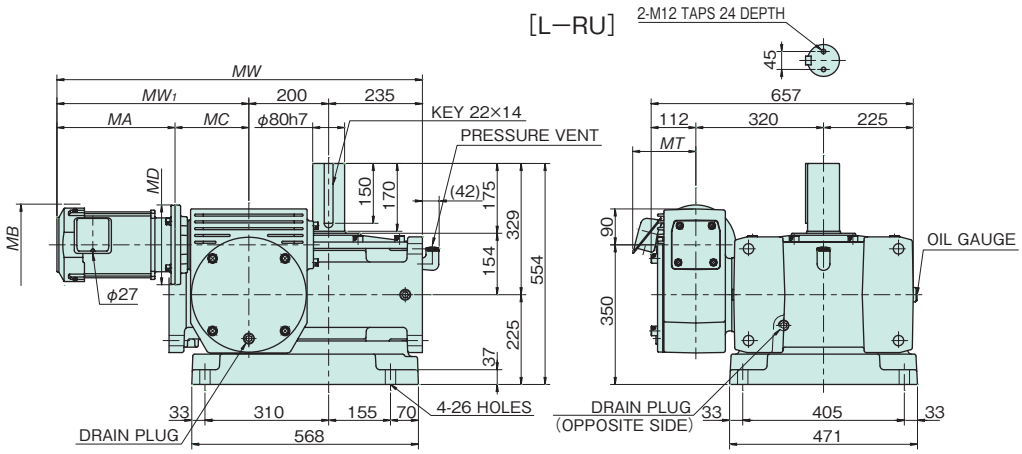
Dimensional Drawings EWMR200B/EWMR200V

See previous page for reducers without motors

EWMR200B



EWMR200V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

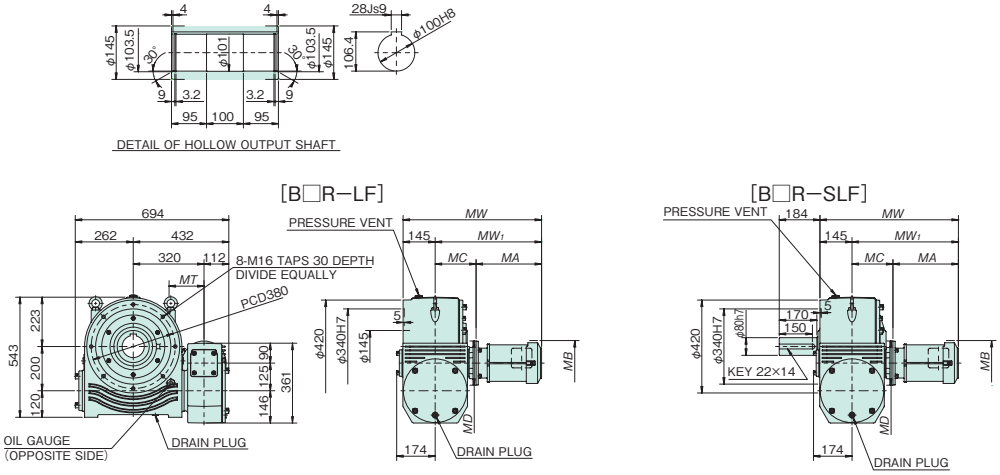
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWMR200	1.5	1200	5116 {522}	5704 {582}	296 (360)	185 (185)	481 (545)	810 (874)	916 (980)	204 (202)	200 (200)	158 (155.0)	394 (399)	444 (449)
		1500	5063 {517}	5116 {522}										
	2.2	800	5527 {564}	5704 {582}	318 (374)	185 (185)	503 (559)	832 (888)	938 (994)	218 (226)	250 (250)	169 (166.0)	407 (412)	458 (463)
		1000	5704 {582}	5704 {582}										
	3.7	400	5351 {546}	5704 {582}	343 (424)	185 (185)	528 (609)	857 (938)	963 (1044)	237 (235)	250 (250)	181 (178.0)	415 (425)	465 (475)
		500	5704 {582}	5704 {582}										
		600	5704 {582}	5704 {582}										
	5.5	200	4469 {456}	5292 {540}	402 (475)	185 (185)	587 (660)	916 (989)	1022 (1095)	277 (275)	300 (300)	197 (200.0)	436 (448)	487 (499)
		250	5240 {535}	5486 {560}										
		300	5535 {565}	5640 {576}										

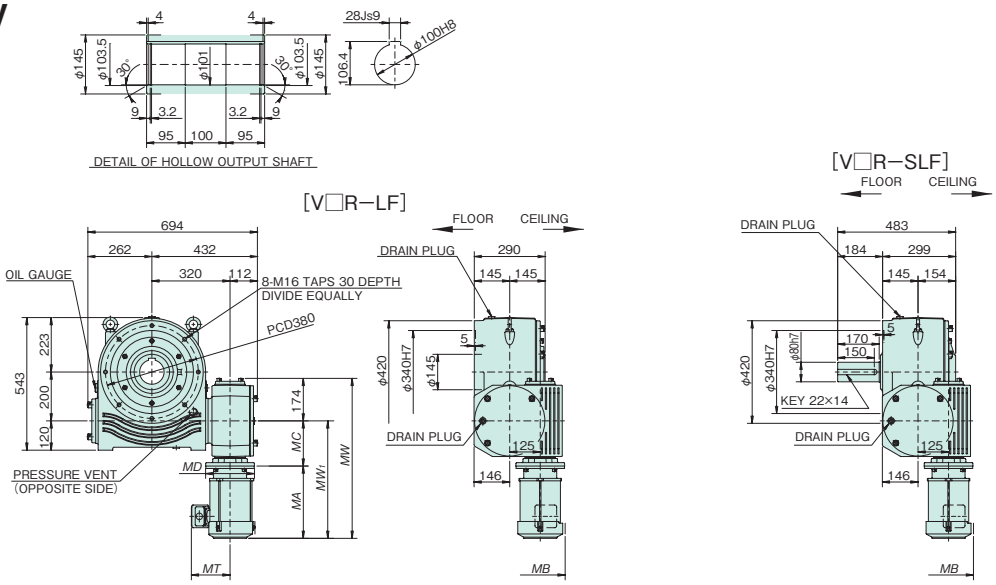
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.

Dimensional Drawings SWMR200B/SWMR200V

SWMR200B



SWMR200V



* Refer to page 74 for shaft arrangements and relative direction of rotation.

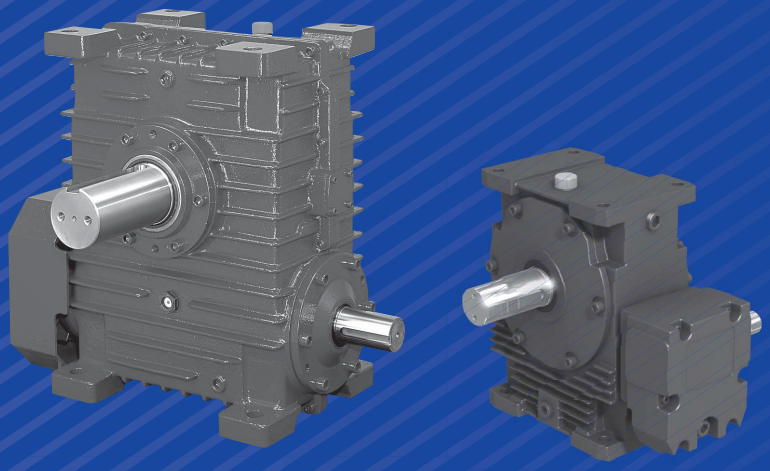
Transfer Capacity Table

Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	*MA*	*MC*	*MW*$_1$	Installation B type *MW*	Installation V type *MW*	*MB*	*MD*	*MT*	Estimated mass kg
SWMR200	1.5	1200	5116 {522}	5704 {582}	296 (360)	185 (185)	481 (545)	626 (690)	655 (719)	204 (202)	200 (200)	158 (155.0)	324 (329)
		1500	5063 {517}	5116 {522}									
	2.2	800	5527 {564}	5704 {582}	318 (374)	185 (185)	503 (559)	648 (704)	677 (733)	218 (226)	250 (250)	169 (166.0)	337 (342)
		1000	5704 {582}	5704 {582}									
	3.7	400	5351 {546}	5704 {582}	343 (424)	185 (185)	528 (609)	673 (754)	702 (783)	237 (235)	250 (250)	181 (178.0)	345 (355)
		500	5704 {582}	5704 {582}									
		600	5704 {582}	5704 {582}									
	5.5	200	4469 {456}	5292 {540}	402 (475)	185 (185)	587 (660)	732 (805)	761 (834)	277 (275)	300 (300)	197 (200.0)	366 (378)
		250	5240 {535}	5486 {560}									
		300	5535 {565}	5640 {576}									

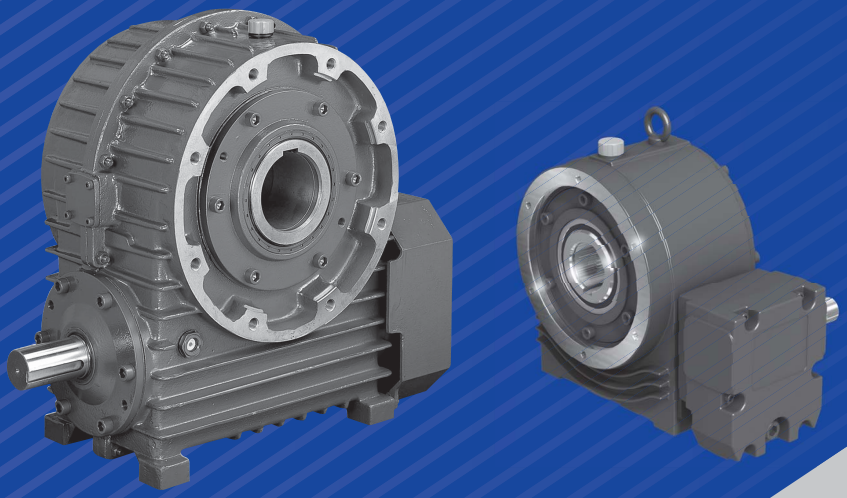
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
- Refer to page 17 for sizing. • Thermal rating factor is 1.0.

Memo

TroiDrive
High Performance Troidal Worm Gear



TD Series



▶Model 121
▶Shaft Arrangement 122
▶Structure 123
▶Single Reduction (1/10 to 1/60) ..... 124 - 144
▶Double Reduction (1/100 to 1/3600) ..... 146 - 168

Model

Series		Size	Output shaft style	Nominal reduction ratio	Installation direction	Shaft arrangement		Option
TD Series	Single Reduction Output Solid shaft **TD**	**280**	**S**	**30**	**B**	**R**		
	Output Hollow shaft **TD**	**250**	**H**	**60**	**T**	**DF**	**-**	**K**
	Double Reduction Output Solid shaft **TD**	**250**	**S**	**100**	**B**	**L-R**		
	Output Hollow shaft **TD**	**250**	**H**	**300**	**B**	**R-LF**	**-**	**K**
		125 150 175 200 225 250 280 315	S: Solid shaft H: Hollow shaft	(Single reduction) 10: 1/10 to 60: 1/60 (Double reduction) 100: 1/100 to 3600: 1/3600	T: T type B: B type V: V type * Double reduction models are limited to B and V types.	(Single reduction) **— Solid output shaft —** Single output shaft: L, R, LU, RU, LD, RD Double output shaft: LR, LUD, RUD **— Hollow output shaft —** LF, RF, DF See table on page 122 (Double reduction) **— Solid output shaft —** Single output shaft: L-R, R-L, L-RU, R-LU, L-RD, R-LD Double output shaft: L-LR, R-LR, R-LUD, L-RUD **— Hollow output shaft —** L-RF, R-LF, L-DF, R-DF See table on page 122		Refer to pages 229 to 241

Models

Size \ Nominal reduction ratio	Single reduction (1/10 to 1/60)					Double reduction (1/100 to 1/3600)				
Output shaft	Solid shaft (S type)			Hollow shaft (H type)		Solid shaft (S type)			Hollow shaft (H type)	
Shaft arrangement	Standard shaft arrangement									
	BL, BR, TL, TR	VLU, VLD, VRU, VRD	Double output shaft	Hollow shaft	Power-Lock specification: K	BL-R, BR-L	VL-RU, VL-RD, VR-LD, R-LD	Double output shaft	Hollow shaft	Power-Lock specification: K
TD125	○	○	△	○	△	○	○	△	○	△
TD150	○	○	△	○	△	○	○	△	○	△
TD175	○	○	△	○	△	○	○	△	○	△
TD200	○	○	△	○	△	○	○	△	○	△
TD225	○	○	△	○	△	○	○	△	○	△
TD250	○	○	△	○	△	○	○	△	○	△
TD280	○	○	△	○	△	○	○	△	○	△
TD315	○	○	△	○	△	○	○	△	○	△

○: Standard product △: Option

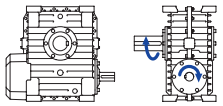
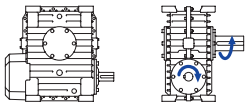
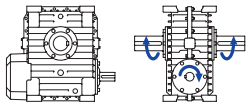
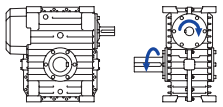
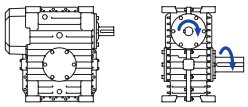
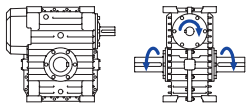
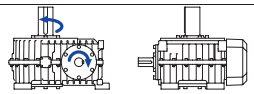
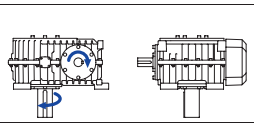
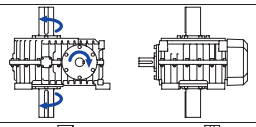
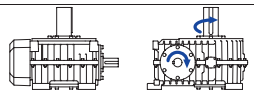
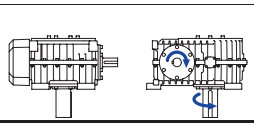
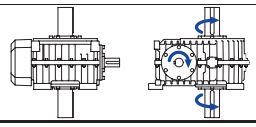
*1) Applicable models correspond to all standard reduction ratios. 2) Contact Tsubaki representatives for double input shafts.

Shaft Arrangement (Relative Direction of Rotation)

Single Reduction

■ Solid Output Shaft (S Type) — Common for all sizes —

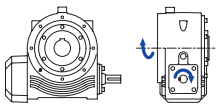
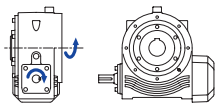
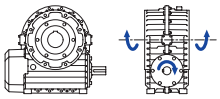
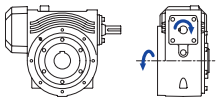
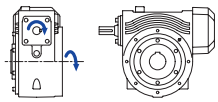
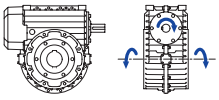
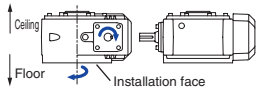
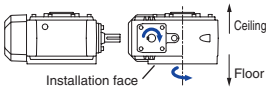
Arrows indicate direction of rotation.

B type	BL 	BR 	BLR 
T type	TL 	TR 	TLR 
V type	VLU 	VLD 	VLUD 
	VRU 	VRD 	VRUD 

Note) Keyway positions do not match one another on double output shafts. Please contact Tsubaki representative when required.

■ Hollow Output Shaft (H Type)

Arrows indicate direction of rotation.

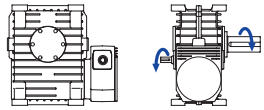
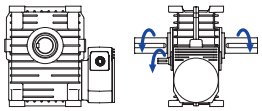
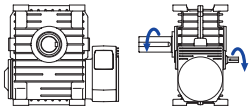
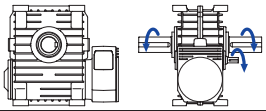
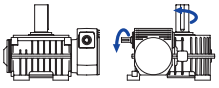
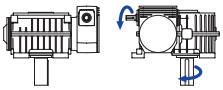
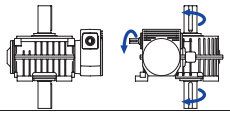
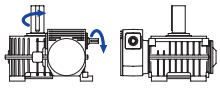
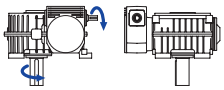
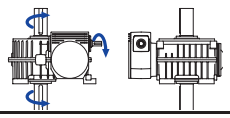
B type	BLF (TD125 to TD200) 	BRF (TD125 to TD200) 	BDF (TD225 to TD315) 
T type	TLF (TD125 to TD200) 	TRF (TD125 to TD200) 	TDF (TD225 to TD315) 
V type	VLF (TD125 to TD315) 	VRF (TD125 to TD315) 	

Note) V: The installation face is designed to be facing the ground side. Please contact Tsubaki representative when mounting to the ceiling side.

Double Reduction

■ Solid Output Shaft (S Type) — Common for all sizes —

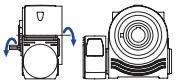
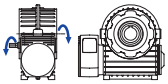
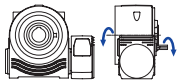
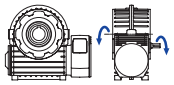
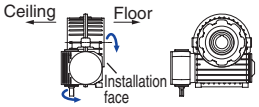
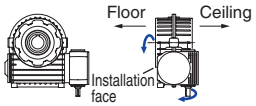
Arrows indicate direction of rotation.

B type	B L-R 	B L-LR 	
	B R-L 	B R-LR 	
V type	V L-RU 	V L-RD 	V L-RUD 
	V R-LU 	V R-LD 	V R-LUD 

Note) Keyway positions do not match one another on double output shafts. Please contact Tsubaki representative when required.

■ Hollow Output Shaft (H Type)

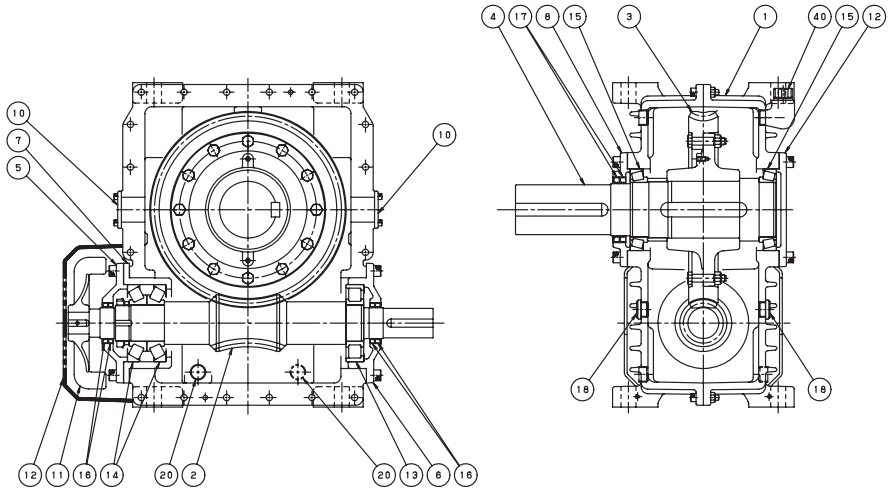
Arrows indicate direction of rotation.

B type	B L-RF (TD125 to TD200) 	B L-DF (TD225 to TD315) 	B R-LF (TD125 to TD200) 	B R-DF (TD225 to TD315) 
V type	V L-RF (TD125 to TD315) 		V R-LF (TD125 to TD315) 	

Note) V: The installation face is designed to be facing the ground side. Please contact Tsubaki representative when mounting to the ceiling side.

Structure

Single Reduction

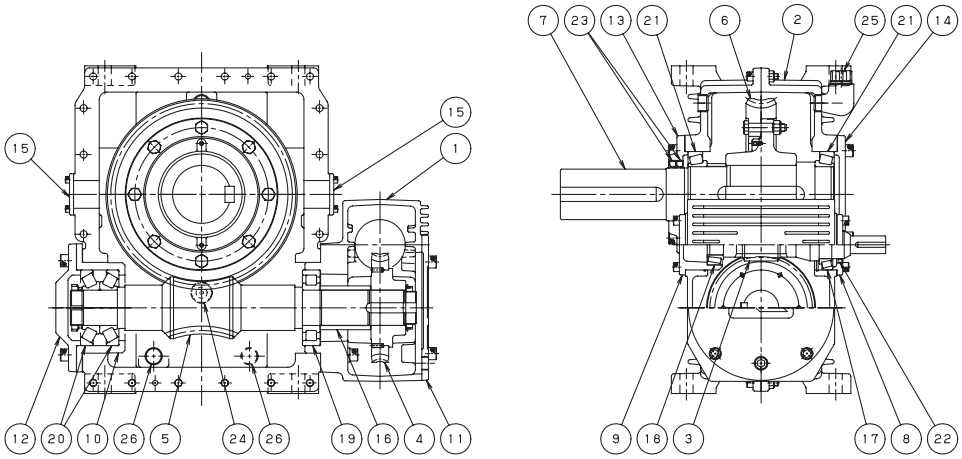


Drawing for reference, and it may differ by model and size.

■ Part list

No.	Part	No.	Part	No.	Part	No.	Part
1	Case	6	Input bearing support I	11	Fan	16	Input shaft oil seal
2	Worm shaft	7	Input bearing support III	12	Fan cover	17	Output shaft oil seal
3	Worm wheel	8	Output seal support	13	Input shaft bearing	18	Oil gauge
4	Output shaft	9	Output cap	14	Input shaft bearing	19	Pressure vent
5	Input seal support	10	Inspection cap	15	Output shaft bearing	20	Drain oil port

Double Reduction

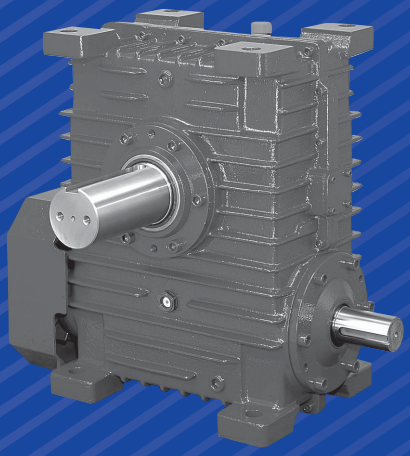


Drawing for reference, and it may differ by model and size.

■ Part list

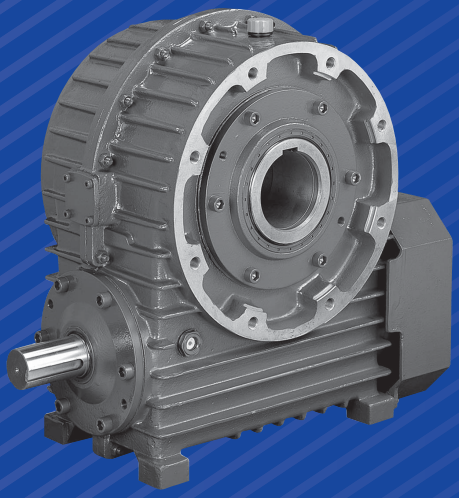
No.	Part	No.	Part	No.	Part	No.	Part
1	Input housing	8	Input seal support	15	Inspection cap	22	Input shaft oil seal
2	Case	9	Input bearing support II	16	Intermediate collar	23	Output shaft oil seal
3	I Worm	10	Intermediate bearing support III	17	Input shaft bearing	24	Oil gauge
4	I Wheel	11	Intermediate cap	18	Input shaft bearing	25	Pressure vent
5	II Worm	12	Intermediate seal support	19	Intermediate shaft bearing	26	Drain oil port
6	III Wheel	13	Output seal support	20	Intermediate shaft bearing		
7	Output shaft	14	Output cap	21	Output shaft bearing		

TroiDrive
High Performance Troidal Worm Gear



TD Series

Single Reduction (Nominal reduction ratio 1/10 to 1/60)



▶Transfer Capacity Table ..... 125 - 126

▶Technical Data ..... 127 - 128

- Allowable Loads on Shafts
- Actual Reduction Ratio
- Moment of Inertia on Input Shaft

▶Dimensional Drawings ..... 129 - 144

Transfer Capacity Table

Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD125	10	21.0	1112 {113}	20.1	1285 {131}	19.0	1532 {156}	20.3	1766 {180}	13.0	2382 {243}	3.0	2671 { 273}
	20	15.1	1515 {155}	14.5	1748 {178}	13.7	2076 {212}	12.5	2290 {234}	8.1	2783 {284}	1.8	2948 { 301}
	30	10.9	1631 {166}	10.4	1880 {192}	9.6	2189 {223}	8.5	2318 {237}	5.5	2809 {287}	1.6	3889 { 397}
	40	9.7	1812 {185}	9.3	2083 {213}	7.9	2232 {228}	7.0	2364 {241}	4.5	2865 {292}	1.1	3146 { 321}
	50	8.3	1861 {190}	7.7	2086 {213}	6.6	2236 {228}	5.8	2368 {242}	3.8	2870 {293}	1.1	3870 { 395}
	60	7.0	1877 {192}	6.4	2067 {211}	5.5	2217 {226}	4.9	2348 {240}	3.2	2846 {290}	1.0	3889 { 397}
TD150	10	32.3	1717 {175}	31.0	1989 {203}	29.4	2377 {243}	28.1	2745 {280}	22.6	4157 {424}	5.4	4861 { 496}
	20	23.5	2426 {248}	22.5	2803 {286}	21.3	3337 {341}	19.9	3761 {384}	11.2	3995 {408}	2.4	3995 { 408}
	30	16.6	2505 {256}	15.9	2895 {295}	15.1	3448 {352}	13.7	3771 {385}	8.9	4570 {466}	2.5	6002 { 612}
	40	15.1	2917 {298}	14.5	3365 {343}	12.6	3665 {374}	11.0	3881 {396}	6.5	4290 {438}	1.4	4290 { 438}
	50	13.7	3151 {322}	12.5	3448 {352}	10.6	3696 {377}	9.4	3914 {399}	5.7	4397 {449}	1.2	4397 { 449}
	60	10.7	2889 {295}	10.3	3336 {340}	8.9	3610 {368}	7.8	3823 {390}	5.1	4634 {473}	1.5	6166 { 629}
TD175	10	44.9	2392 {244}	43.3	2776 {283}	41.1	3325 {339}	39.4	3847 {393}	31.2	5769 {589}	8.6	7764 { 792}
	20	34.2	3556 {363}	32.8	4113 {420}	31.1	4905 {501}	26.9	5127 {523}	14.3	5127 {523}	3.0	5127 { 523}
	30	24.5	3863 {394}	23.5	4467 {456}	21.2	5048 {515}	18.6	5346 {546}	12.0	6478 {661}	3.1	7903 { 806}
	40	22.1	4323 {441}	20.4	4802 {490}	17.4	5148 {525}	15.3	5451 {556}	8.4	5588 {570}	1.8	5588 { 570}
	50	18.4	4194 {428}	17.3	4755 {485}	14.8	5097 {520}	13.0	5398 {551}	8.5	6542 {668}	2.2	7903 { 806}
	60	15.2	4271 {436}	14.2	4785 {488}	12.1	5129 {523}	10.6	5432 {554}	7.0	6584 {672}	1.9	7903 { 806}
TD200	10	59.6	3174 {324}	57.5	3689 {376}	54.8	4428 {452}	52.5	5135 {524}	44.9	8286 {846}	11.5	10314 {1052}
	20	43.2	4347 {444}	41.5	5043 {515}	39.5	6037 {616}	37.8	6981 {712}	26.6	9236 {942}	6.7	11138 {1137}
	30	31.2	4717 {481}	29.7	5417 {553}	28.6	6547 {668}	27.3	7569 {772}	18.0	9352 {954}	4.6	11138 {1137}
	40	27.8	5220 {533}	26.7	6050 {617}	25.4	7232 {738}	22.9	7858 {802}	14.8	9525 {972}	3.7	11138 {1137}
	50	23.4	5344 {545}	22.5	6193 {632}	21.4	7404 {756}	18.8	7841 {800}	12.2	9505 {970}	3.1	11138 {1137}
	60	20.1	5445 {556}	19.3	6311 {644}	18.0	7390 {754}	15.9	7826 {799}	10.4	9486 {968}	2.7	11138 {1137}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD225	10	78.0	4156 { 424}	75.3	4836 { 493}	71.8	5813 { 593}	68.9	6749 { 689}	54.4	10066 {1027}	15.0	13588 {1387}
	20	56.0	5793 { 591}	53.9	6727 { 686}	51.4	8063 { 823}	47.1	8928 { 911}	30.2	10795 {1102}	8.8	15179 {1549}
	30	43.6	6584 { 672}	42.0	7640 { 780}	37.5	8584 { 876}	32.8	9085 { 927}	21.2	10990 {1121}	6.7	16363 {1670}
	40	36.6	6924 { 707}	35.3	8033 { 820}	30.1	8617 { 879}	26.4	9121 { 931}	17.0	11036 {1126}	5.2	15762 {1608}
	50	31.5	7191 { 734}	29.3	8044 { 821}	25.0	8618 { 879}	21.9	9122 { 931}	14.2	11039 {1126}	4.7	16789 {1713}
	60	27.8	7380 { 753}	25.2	8032 { 820}	21.5	8606 { 878}	18.9	9109 { 929}	12.3	11024 {1125}	4.3	17542 {1790}
TD250	10	101.6	5421 { 553}	98.1	6312 { 644}	93.7	7596 { 775}	90.0	8827 { 901}	72.0	13352 {1362}	19.4	17560 {1792}
	20	73.5	7641 { 780}	70.8	8879 { 906}	67.5	10654 {1087}	62.5	11925 {1217}	40.0	14417 {1471}	9.7	16828 {1717}
	30	55.0	8297 { 847}	53.0	9641 { 984}	49.6	11351 {1158}	43.5	12014 {1226}	28.0	14534 {1483}	8.8	21558 {2200}
	40	48.7	9274 { 946}	46.9	10768 {1099}	40.0	11546 {1178}	35.1	12220 {1247}	22.6	14785 {1509}	6.1	18630 {1901}
	50	41.1	9434 { 963}	38.8	10737 {1096}	33.1	11503 {1174}	29.0	12175 {1242}	18.8	14733 {1503}	6.1	22147 {2260}
	60	35.3	9638 { 983}	32.6	10711 {1093}	27.8	11475 {1171}	24.4	12147 {1239}	15.8	14700 {1500}	5.4	22646 {2311}
TD280	10	-	-	125.7	8083 { 825}	120.3	9742 { 994}	115.7	11339 {1157}	98.1	18195 {1857}	27.4	24854 {2536}
	20	95.7	9932 {1013}	92.4	11556 {1179}	88.2	13890 {1417}	84.6	16124 {1645}	54.9	19714 {2012}	15.3	26445 {2698}
	30	73.0	10886 {1111}	70.5	12663 {1292}	67.3	15216 {1553}	60.3	16466 {1680}	38.7	19920 {2033}	11.7	28664 {2925}
	40	61.7	12006 {1225}	59.6	13958 {1424}	53.5	15759 {1608}	46.9	16679 {1702}	30.2	20181 {2059}	9.1	28392 {2897}
	50	54.3	12535 {1279}	52.5	14571 {1487}	45.2	15806 {1613}	39.6	16729 {1707}	25.6	20244 {2066}	8.1	29634 {3024}
	60	46.9	12687 {1295}	45.0	14685 {1498}	38.4	15734 {1606}	33.7	16654 {1699}	21.8	20155 {2057}	7.1	30110 {3072}
TD315	10	-	-	-	-	169.1	13723 {1400}	162.9	15989 {1632}	136.8	25438 {2596}	33.2	30270 {3089}
	20	-	-	129.6	16242 {1657}	123.8	19548 {1995}	119.0	22720 {2318}	79.6	28704 {2929}	20.1	35090 {3581}
	30	-	-	96.2	17551 {1791}	92.0	21123 {2155}	86.5	24015 {2451}	55.6	29053 {2965}	17.8	44420 {4533}
	40	-	-	85.0	19552 {1995}	79.6	23076 {2355}	69.8	24423 {2492}	44.9	29549 {3015}	11.8	36685 {3743}
	50	-	-	71.7	19898 {2030}	65.9	22993 {2346}	57.7	24337 {2483}	37.3	29450 {3005}	12.1	44546 {4546}
	60	-	-	61.7	20404 {2082}	55.2	22938 {2341}	48.4	24280 {2478}	31.3	29384 {2998}	10.8	46790 {4774}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

Technical Data

Allowable Loads on Shafts

■ Allowable Radial Load on Output Shaft

Solid Output Shaft (S Type)

N {kgf}

Output shaft speed \ Size	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
59 r/min or less	15700 {1602}	21600 {2204}	25500 {2602}	32400 {3306}	37000 {3776}	44000 {4490}	49000 {5000}	60800 {6204}
60 to 175 r/min	15700 {1602}	21600 {2204}	25500 {2602}	32400 {3306}	25000 {2551}	25000 {2551}	36000 {3673}	36500 {3724}

Hollow Output Shaft (H Type)

N {kgf}

Output shaft speed \ Size	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
59 r/min or less	29537 {3014}	25904 {2643}	32614 {3328}	38803 {3960}	45821 {4676}	64558 {6588}	65415 {6675}	127424 {13002}
60 to 175 r/min	20300 {2071}	17813 {1818}	24452 {2495}	26678 {2722}	31404 {3205}	44247 {4515}	65415 {6675}	87346 {8913}

■ Allowable Axial Load on Output Shaft

Solid Output Shaft (S Type)

N {kgf}

Output shaft speed \ Size	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
59 r/min or less	19241 {1963}	16607 {1695}	21034 {2146}	27161 {2772}	24373 {2487}	21906 {2235}	26492 {2703}	30202 {3082}
60 to 175 r/min	13274 {1354}	11477 {1171}	14520 {1482}	18737 {1912}	16686 {1703}	14957 {1526}	18085 {1845}	20567 {2099}

Hollow Output Shaft (H Type)

N {kgf}

Output shaft speed \ Size	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
59 r/min or less	29725 {3033}	26617 {2716}	34255 {3495}	37715 {3848}	40643 {4147}	57163 {5833}	100123 {10217}	108760 {11098}
60 to 175 r/min	20472 {2089}	18360 {1873}	23599 {2408}	25985 {2652}	27878 {2845}	39198 {4000}	68680 {7008}	77559 {7914}

Actual Reduction Ratio

Nominal reduction ratio \ Size	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
10	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25
20	20.00	20.50	20.50	20.00	20.50	20.50	20.50	20.50
30	31.50	31.50	32.50	31.50	31.00	31.00	30.50	31.00
40	40.00	41.00	41.00	40.00	40.00	40.00	41.00	40.00
50	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
60	63.00	63.00	65.00	63.00	60.00	62.00	61.00	62.00

Moment of Inertia on Input Shaft

Solid Output Shaft (S Type)

Moment of inertia on input shaft {GD^2} : kg·m^2 {kgf·m^2}

Size / Nominal reduction ratio	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
10	0.0049 {0.0197}	0.0094 {0.0377}	0.0171 {0.0683}	0.0322 {0.1287}	0.0528 {0.2113}	0.0945 {0.3780}	0.1669 {0.6676}	0.3173 {1.2692}
20	0.0044 {0.0175}	0.0081 {0.0323}	0.0138 {0.0553}	0.0267 {0.1070}	0.0448 {0.1792}	0.0805 {0.3220}	0.1413 {0.5651}	0.2738 {1.0952}
30	0.0043 {0.0172}	0.0080 {0.0322}	0.0133 {0.0534}	0.0258 {0.1033}	0.0417 {0.1667}	0.0782 {0.3129}	0.1353 {0.5413}	0.2673 {1.0694}
40	0.0043 {0.0171}	0.0078 {0.0312}	0.0132 {0.0530}	0.0256 {0.1025}	0.4320 {0.1728}	0.0777 {0.3107}	0.1364 {0.5457}	0.2657 {1.0626}
50	0.0043 {0.0170}	0.0076 {0.0304}	0.0135 {0.0540}	0.0255 {0.1019}	0.0423 {0.1693}	0.0773 {0.3093}	0.1337 {0.5348}	0.2645 {1.0582}
60	0.0042 {0.0170}	0.0079 {0.0318}	0.0131 {0.0525}	0.0254 {0.1016}	0.0423 {0.1692}	0.0771 {0.3085}	0.1332 {0.5328}	0.2639 {1.0556}

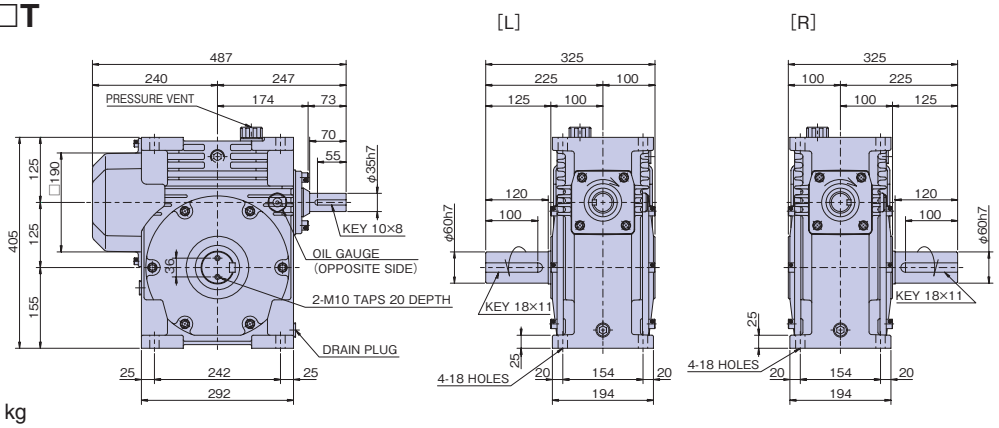
Hollow Output Shaft (H Type)

Moment of inertia on input shaft {GD^2} : kg·m^2 {kgf·m^2}

Size / Nominal reduction ratio	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
10	0.0052 {0.0208}	0.0098 {0.0391}	0.0177 {0.0706}	0.0332 {0.1327}	0.0534 {0.2136}	0.0953 {0.3812}	0.1723 {0.6893}	0.3251 {1.3003}
20	0.0045 {0.0178}	0.0082 {0.0327}	0.0140 {0.0559}	0.0270 {0.1081}	0.0450 {0.1798}	0.0807 {0.3230}	0.1427 {0.5708}	0.2758 {1.1034}
30	0.0043 {0.0173}	0.0081 {0.0323}	0.0134 {0.0536}	0.0259 {0.1038}	0.0417 {0.1670}	0.0783 {0.3133}	0.1360 {0.5439}	0.2682 {1.0730}
40	0.0043 {0.0172}	0.0078 {0.0313}	0.0133 {0.0531}	0.0257 {0.1028}	0.0433 {0.1730}	0.0777 {0.3110}	0.1368 {0.5471}	0.2662 {1.0648}
50	0.0043 {0.0171}	0.0076 {0.0305}	0.0135 {0.0541}	0.0255 {0.1021}	0.0424 {0.1694}	0.0774 {0.3095}	0.1339 {0.5358}	0.2649 {1.0596}
60	0.0043 {0.0170}	0.0080 {0.0318}	0.0131 {0.0526}	0.0254 {0.1017}	0.0423 {0.1692}	0.0771 {0.3086}	0.1334 {0.5335}	0.2641 {1.0565}

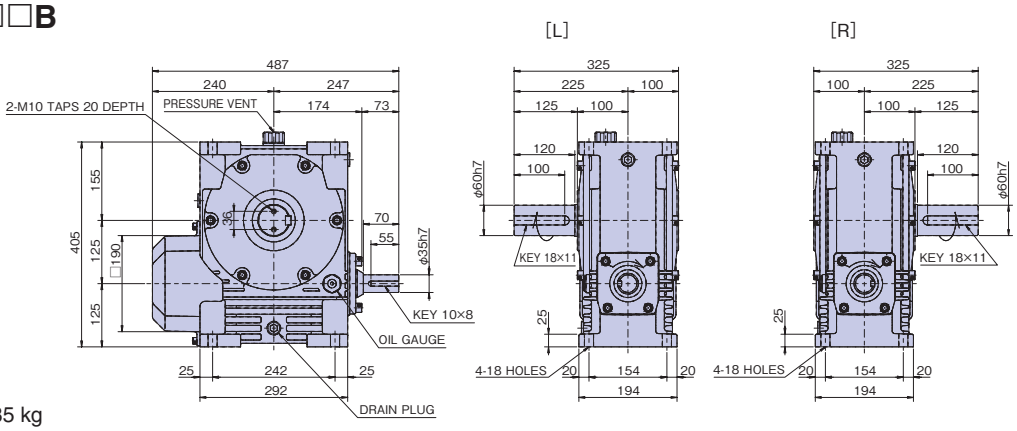
Dimensional Drawings TD125S

TD125S□□T



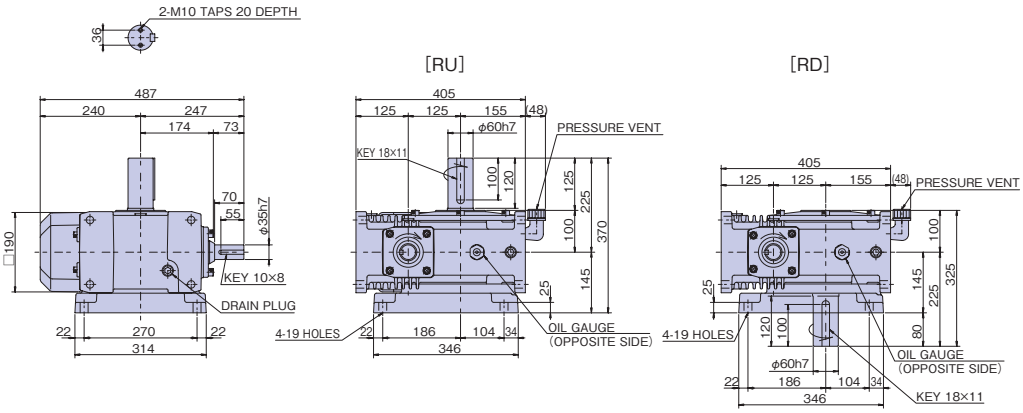
Estimated mass 89 kg

TD125S□□B



Estimated mass 85 kg

TD125S□□V



Estimated mass 97 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

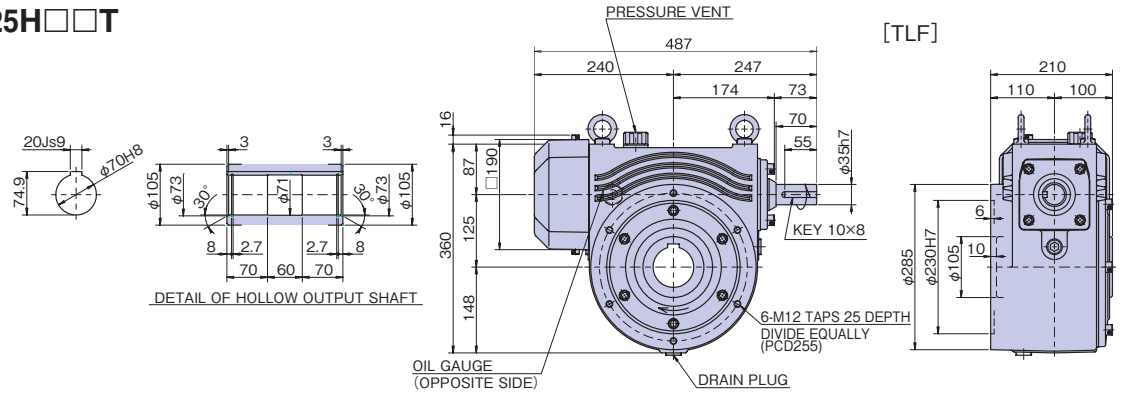
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD125S	10	21.0	1112 {113}	20.1	1285 {131}	19.0	1532 {156}	20.3	1766 {180}	13.0	2382 {243}	3.0	2671 { 273}
	20	15.1	1515 {155}	14.5	1748 {178}	13.7	2076 {212}	12.5	2290 {234}	8.1	2783 {284}	1.8	2948 { 301}
	30	10.9	1631 {166}	10.4	1880 {192}	9.6	2189 {223}	8.5	2318 {237}	5.5	2809 {287}	1.6	3889 { 397}
	40	9.7	1812 {185}	9.3	2083 {213}	7.9	2232 {228}	7.0	2364 {241}	4.5	2865 {292}	1.1	3146 { 321}
	50	8.3	1861 {190}	7.7	2086 {213}	6.6	2236 {228}	5.8	2368 {242}	3.8	2870 {293}	1.1	3870 { 395}
	60	7.0	1877 {192}	6.4	2067 {211}	5.5	2217 {226}	4.9	2348 {240}	3.2	2846 {290}	1.0	3889 { 397}

Models in ▭ are limited by the thermal rating. Consult us if your application runs for short periods.

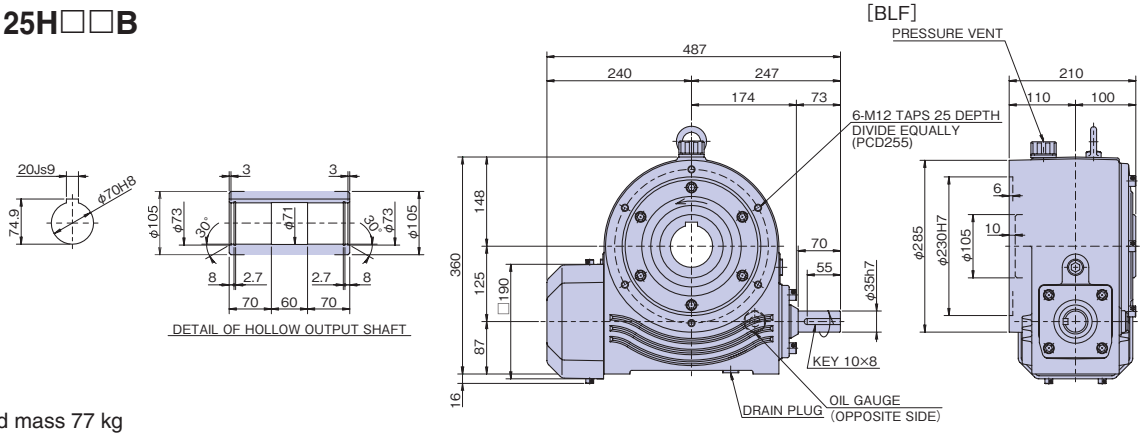
Dimensional Drawings TD125H

TD125H□□T



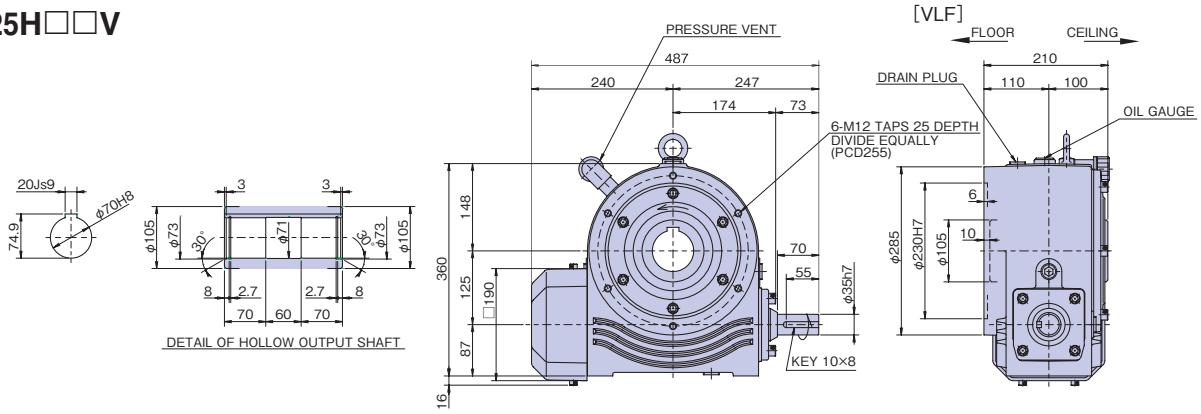
Estimated mass 80 kg

TD125H□□B



Estimated mass 77 kg

TD125H□□V



Estimated mass 78 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

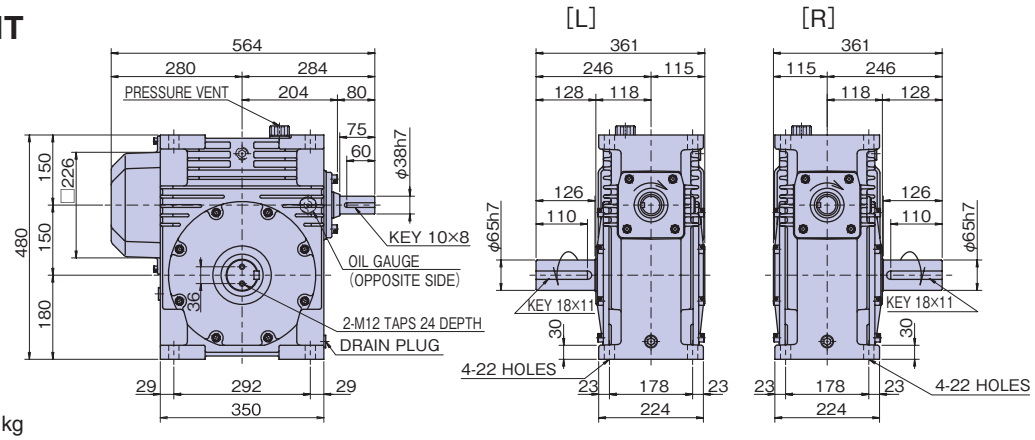
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD125H	10	21.0	1112 {113}	20.1	1285 {131}	19.0	1532 {156}	20.3	1766 {180}	13.0	2382 {243}	3.0	2671 { 273}
	20	15.1	1515 {155}	14.5	1748 {178}	13.7	2076 {212}	12.5	2290 {234}	8.1	2783 {284}	1.8	2948 { 301}
	30	10.9	1631 {166}	10.4	1880 {192}	9.6	2189 {223}	8.5	2318 {237}	5.5	2809 {287}	1.6	3889 { 397}
	40	9.7	1812 {185}	9.3	2083 {213}	7.9	2232 {228}	7.0	2364 {241}	4.5	2865 {292}	1.1	3146 { 321}
	50	8.3	1861 {190}	7.7	2086 {213}	6.6	2236 {228}	5.8	2368 {242}	3.8	2870 {293}	1.1	3870 { 395}
	60	7.0	1877 {192}	6.4	2067 {211}	5.5	2217 {226}	4.9	2348 {240}	3.2	2846 {290}	1.0	3889 { 397}

Models in ■ are limited by their thermal rating. Consult us if your application runs for short periods.

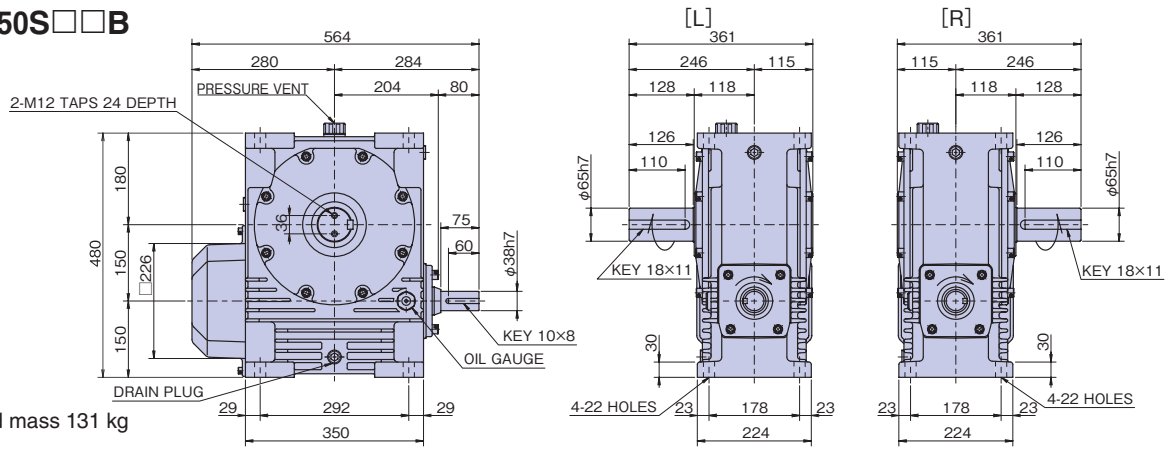
Dimensional Drawings TD150S

TD150S□□T



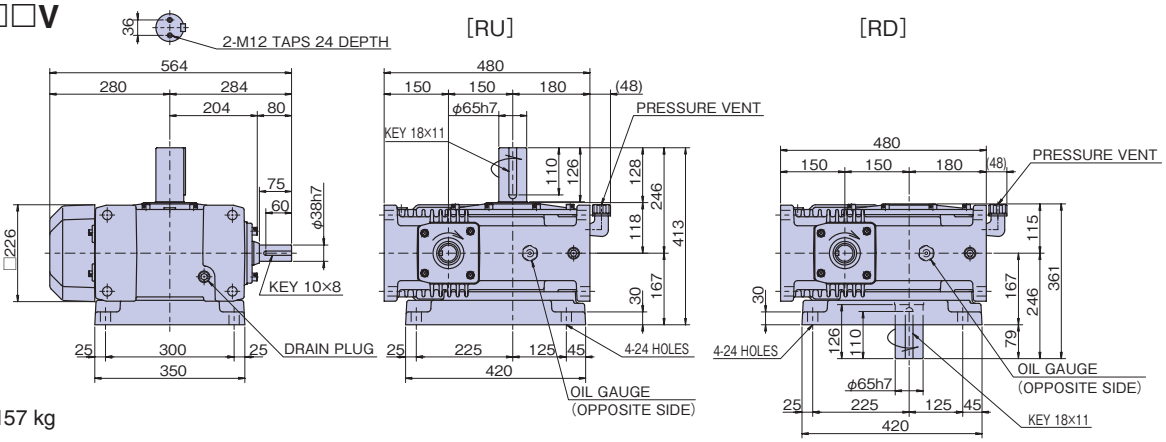
Estimated mass 137 kg

TD150S□□B



Estimated mass 131 kg

TD150S□□V



Estimated mass 157 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

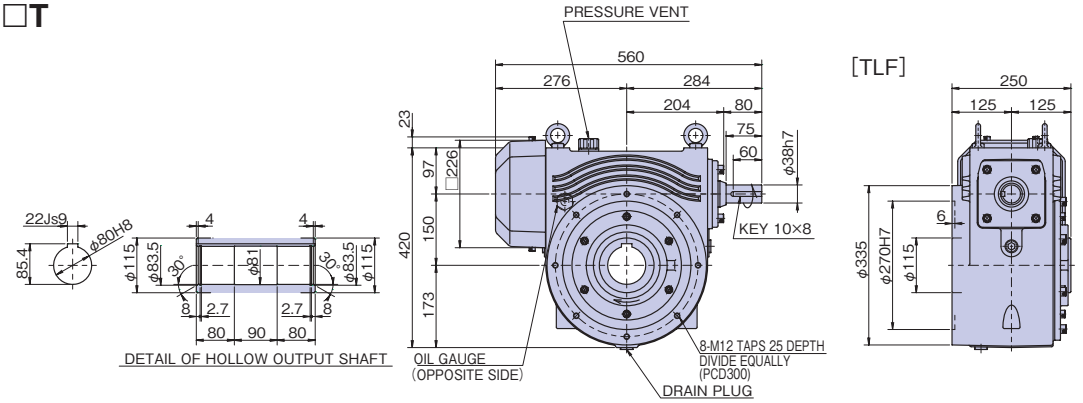
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD150S	10	32.3	1717 {175}	31.0	1989 {203}	29.4	2377 {243}	28.1	2745 {280}	22.6	4157 {424}	5.4	4861 { 496}
	20	23.5	2426 {248}	22.5	2803 {286}	21.3	3337 {341}	19.9	3761 {384}	11.2	3995 {408}	2.4	3995 { 408}
	30	16.6	2505 {256}	15.9	2895 {295}	15.1	3448 {352}	13.7	3771 {385}	8.9	4570 {466}	2.5	6002 { 612}
	40	15.1	2917 {298}	14.5	3365 {343}	12.6	3665 {374}	11.0	3881 {396}	6.5	4290 {438}	1.4	4290 { 438}
	50	13.7	3151 {322}	12.5	3448 {352}	10.6	3696 {377}	9.4	3914 {399}	5.7	4397 {449}	1.2	4397 { 449}
	60	10.7	2889 {295}	10.3	3336 {340}	8.9	3610 {368}	7.8	3823 {390}	5.1	4634 {473}	1.5	6166 { 629}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

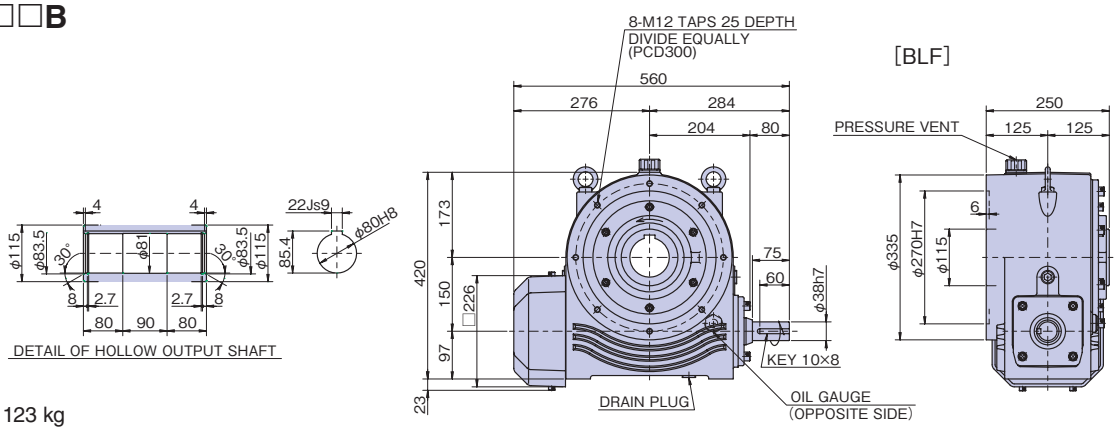
Dimensional Drawings TD150H

TD150H□□T



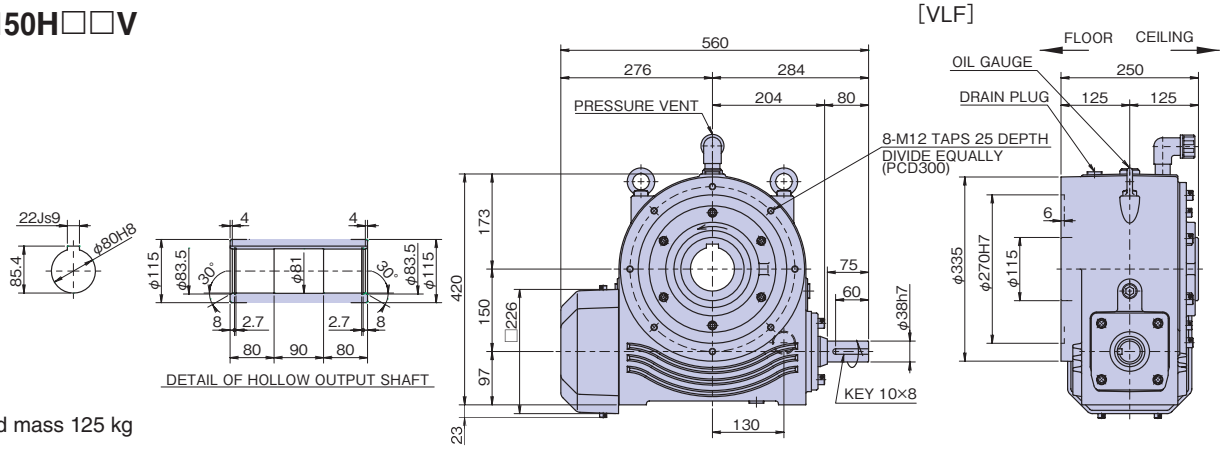
Estimated mass 127 kg

TD150H□□B



Estimated mass 123 kg

TD150H□□V



Estimated mass 125 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

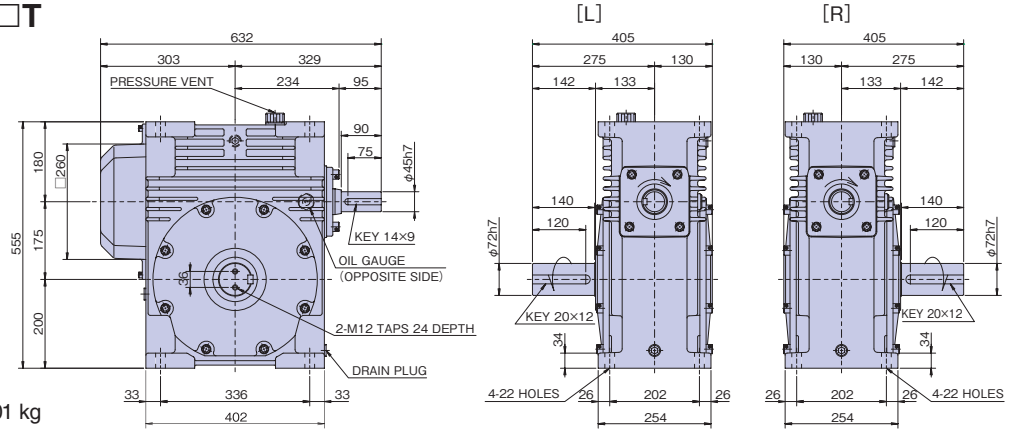
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD150H	10	32.3	1717 {175}	31.0	1989 {203}	29.4	2377 {243}	28.1	2745 {280}	22.6	4157 {424}	5.4	4861 { 496}
	20	23.5	2426 {248}	22.5	2803 {286}	21.3	3337 {341}	19.9	3761 {384}	11.2	3995 {408}	2.4	3995 { 408}
	30	16.6	2505 {256}	15.9	2895 {295}	15.1	3448 {352}	13.7	3771 {385}	8.9	4570 {466}	2.5	6002 { 612}
	40	15.1	2917 {298}	14.5	3365 {343}	12.6	3665 {374}	11.0	3881 {396}	6.5	4290 {438}	1.4	4290 { 438}
	50	13.7	3151 {322}	12.5	3448 {352}	10.6	3696 {377}	9.4	3914 {399}	5.7	4397 {449}	1.2	4397 { 449}
	60	10.7	2889 {295}	10.3	3336 {340}	8.9	3610 {368}	7.8	3823 {390}	5.1	4634 {473}	1.5	6166 { 629}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

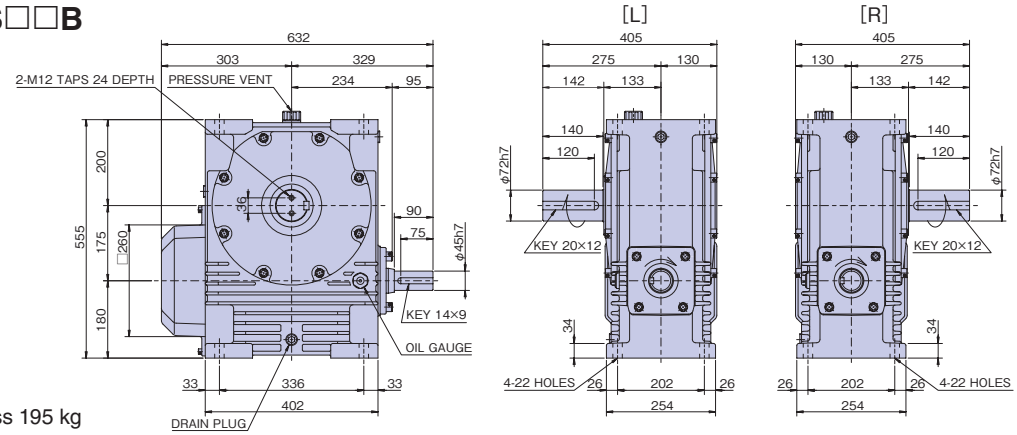
Dimensional Drawings TD175S

TD175S□□T



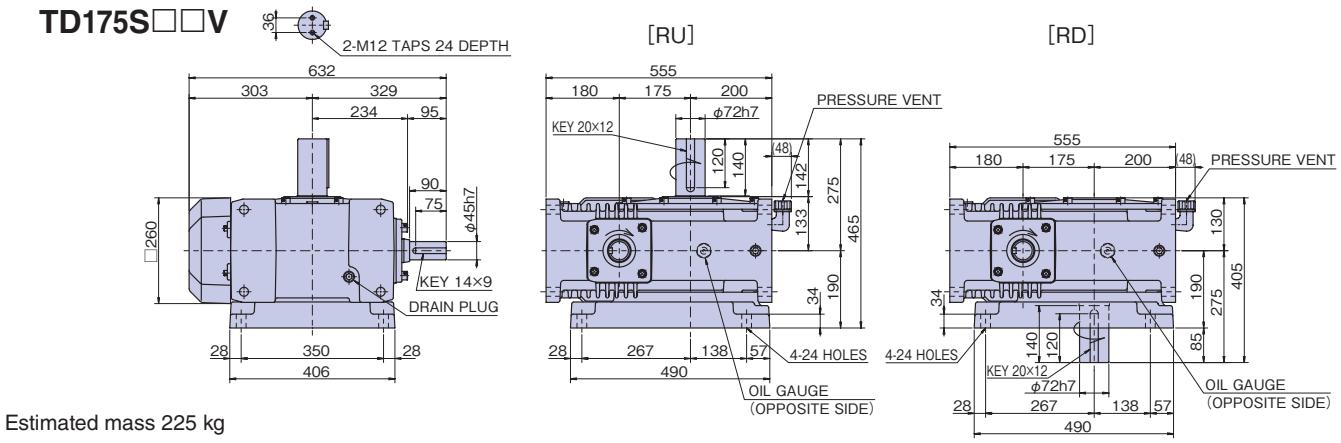
Estimated mass 201 kg

TD175S□□B



Estimated mass 195 kg

TD175S□□V



Estimated mass 225 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

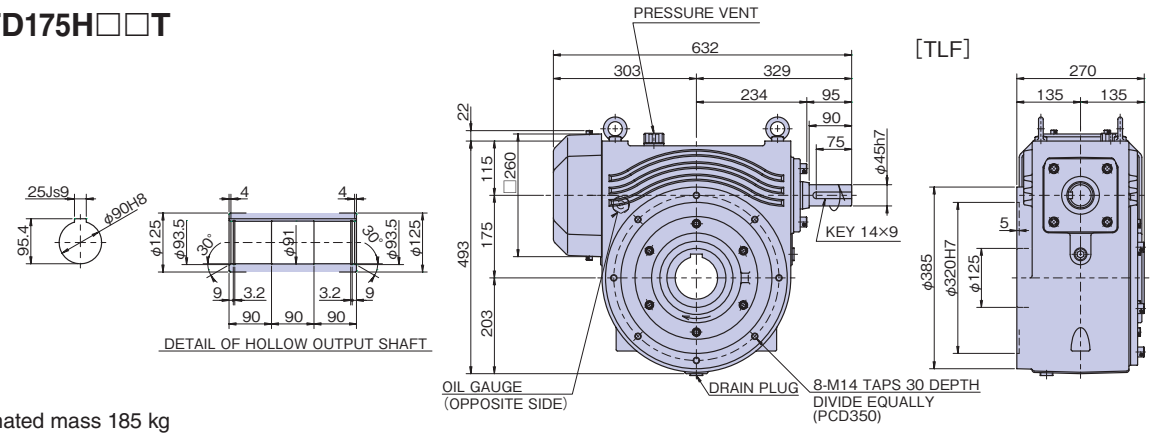
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD175S	10	44.9	2392 {244}	43.3	2776 {283}	41.1	3325 {339}	39.4	3847 {393}	31.2	5769 {589}	8.6	7764 { 792}
	20	34.2	3556 {363}	32.8	4113 {420}	31.1	4905 {501}	26.9	5127 {523}	14.3	5127 {523}	3.0	5127 { 523}
	30	24.5	3863 {394}	23.5	4467 {456}	21.2	5048 {515}	18.6	5346 {546}	12.0	6478 {661}	3.1	7903 { 806}
	40	22.1	4323 {441}	20.4	4802 {490}	17.4	5148 {525}	15.3	5451 {556}	8.4	5588 {570}	1.8	5588 { 570}
	50	18.4	4194 {428}	17.3	4755 {485}	14.8	5097 {520}	13.0	5398 {551}	8.5	6542 {668}	2.2	7903 { 806}
	60	15.2	4271 {436}	14.2	4785 {488}	12.1	5129 {523}	10.6	5432 {554}	7.0	6584 {672}	1.9	7903 { 806}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

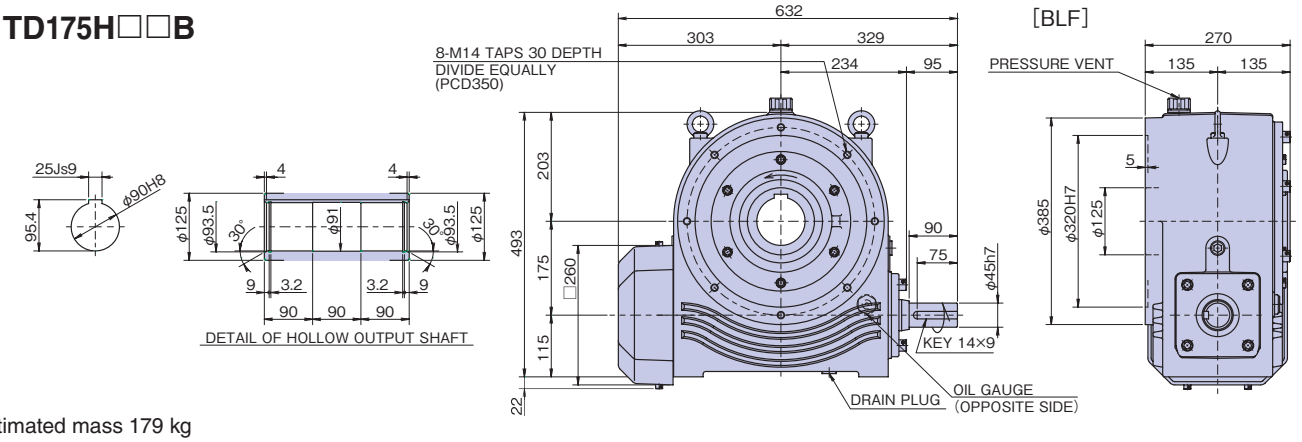
Dimensional Drawings TD175H

TD175H□□T



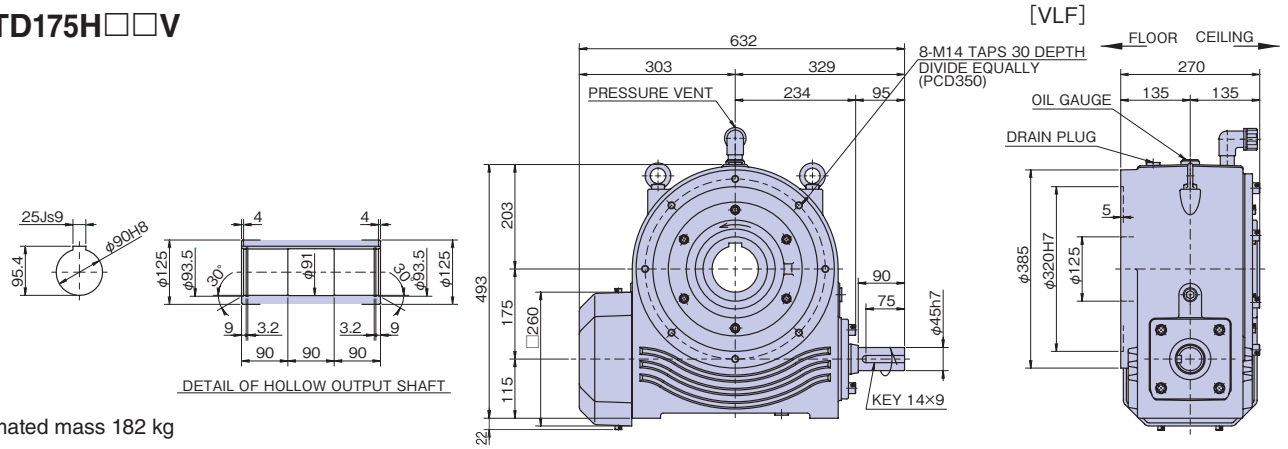
Estimated mass 185 kg

TD175H□□B



Estimated mass 179 kg

TD175H□□V



Estimated mass 182 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

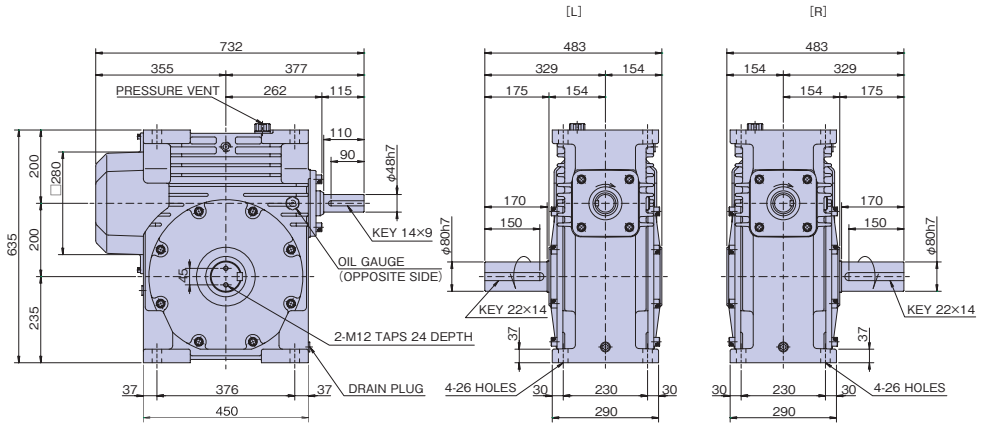
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD175H	10	44.9	2392 {244}	43.3	2776 {283}	41.1	3325 {339}	39.4	3847 {393}	31.2	5769 {589}	8.6	7764 { 792}
	20	34.2	3556 {363}	32.8	4113 {420}	31.1	4905 {501}	26.9	5127 {523}	14.3	5127 {523}	3.0	5127 { 523}
	30	24.5	3863 {394}	23.5	4467 {456}	21.2	5048 {515}	18.6	5346 {546}	12.0	6478 {661}	3.1	7903 { 806}
	40	22.1	4323 {441}	20.4	4802 {490}	17.4	5148 {525}	15.3	5451 {556}	8.4	5588 {570}	1.8	5588 { 570}
	50	18.4	4194 {428}	17.3	4755 {485}	14.8	5097 {520}	13.0	5398 {551}	8.5	6542 {668}	2.2	7903 { 806}
	60	15.2	4271 {436}	14.2	4785 {488}	12.1	5129 {523}	10.6	5432 {554}	7.0	6584 {672}	1.9	7903 { 806}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

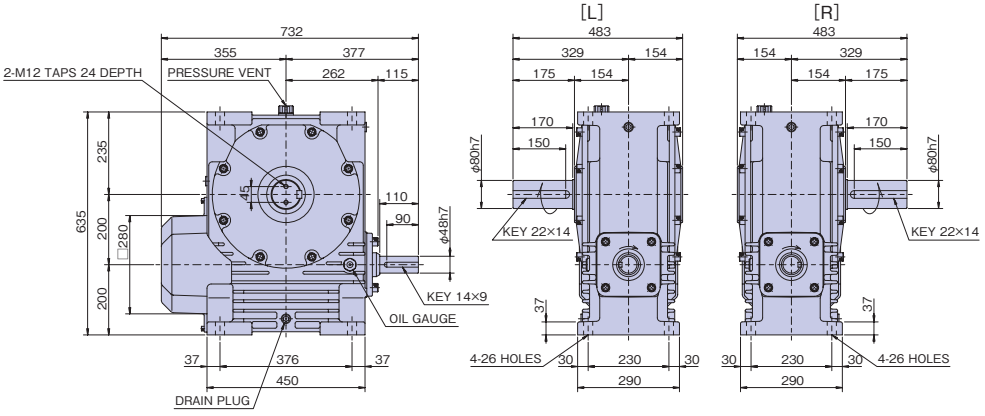
Dimensional Drawings TD200S

TD200S□□T



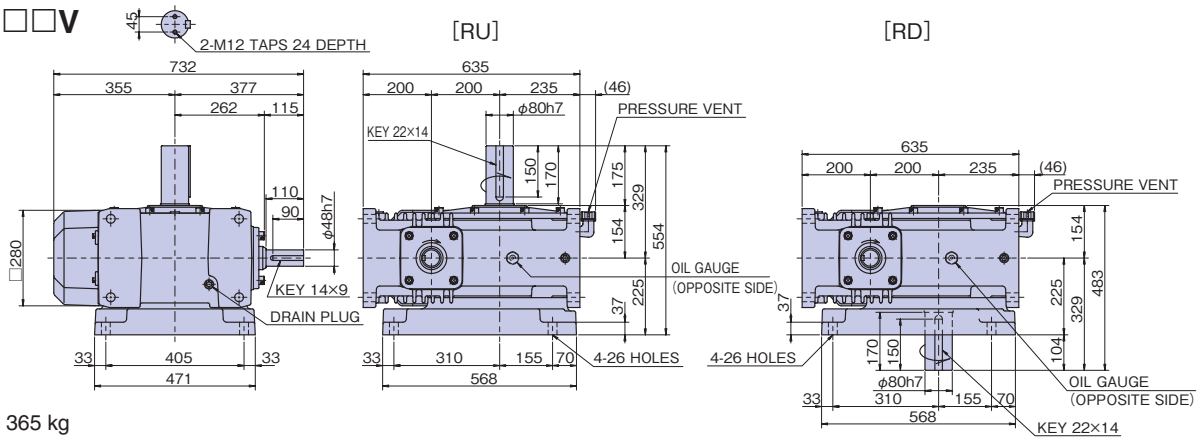
Estimated mass 321 kg

TD200S□□B



Estimated mass 309 kg

TD200S□□V



Estimated mass 365 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

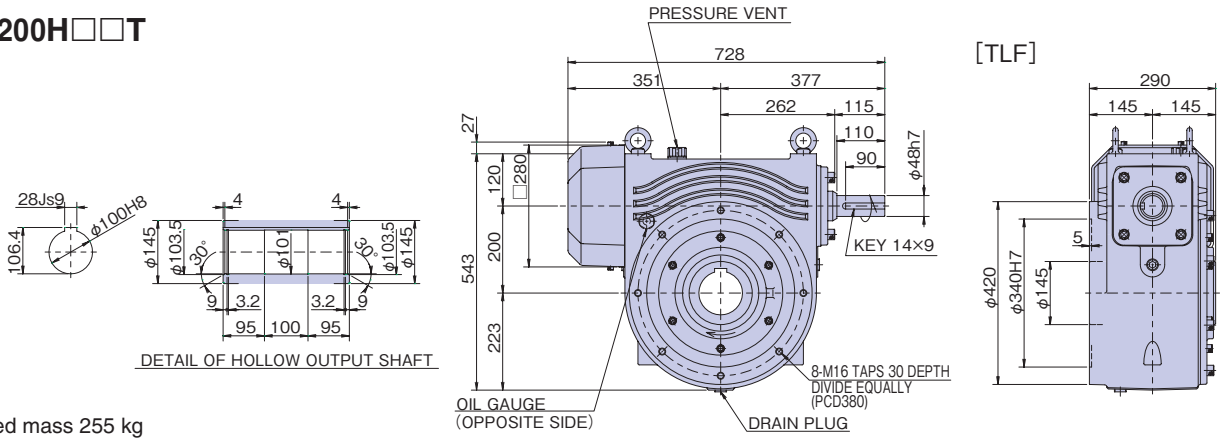
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD200S	10	59.6	3174 {324}	57.5	3689 {376}	54.8	4428 {452}	52.5	5135 {524}	44.9	8286 {846}	11.5	10314 {1052}
	20	43.2	4347 {444}	41.5	5043 {515}	39.5	6037 {616}	37.8	6981 {712}	26.6	9236 {942}	6.7	11138 {1137}
	30	31.2	4717 {481}	29.7	5417 {553}	28.6	6547 {668}	27.3	7569 {772}	18.0	9352 {954}	4.6	11138 {1137}
	40	27.8	5220 {533}	26.7	6050 {617}	25.4	7232 {738}	22.9	7858 {802}	14.8	9525 {972}	3.7	11138 {1137}
	50	23.4	5344 {545}	22.5	6193 {632}	21.4	7404 {756}	18.8	7841 {800}	12.2	9505 {970}	3.1	11138 {1137}
	60	20.1	5445 {556}	19.3	6311 {644}	18.0	7390 {754}	15.9	7826 {799}	10.4	9486 {968}	2.7	11138 {1137}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

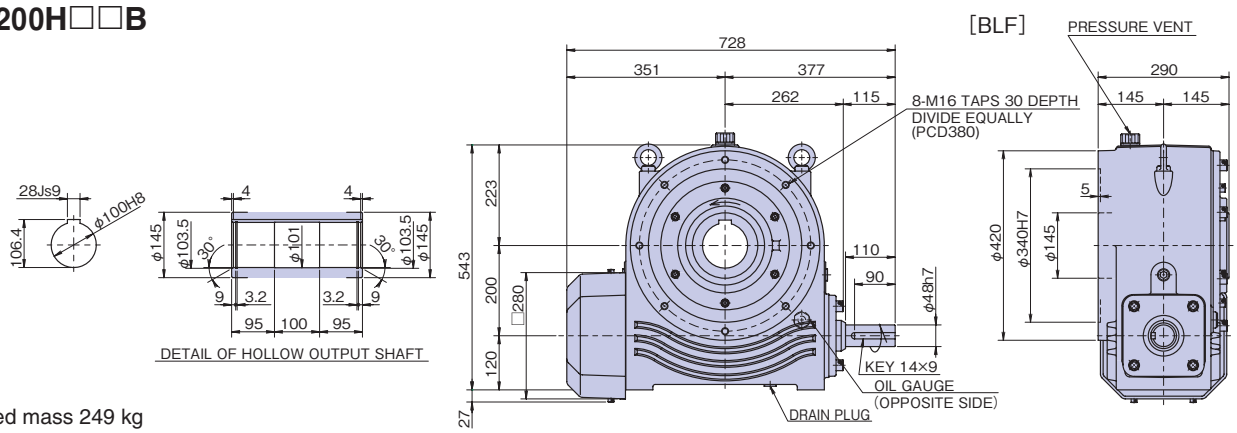
Dimensional Drawings TD200H

TD200H□□T



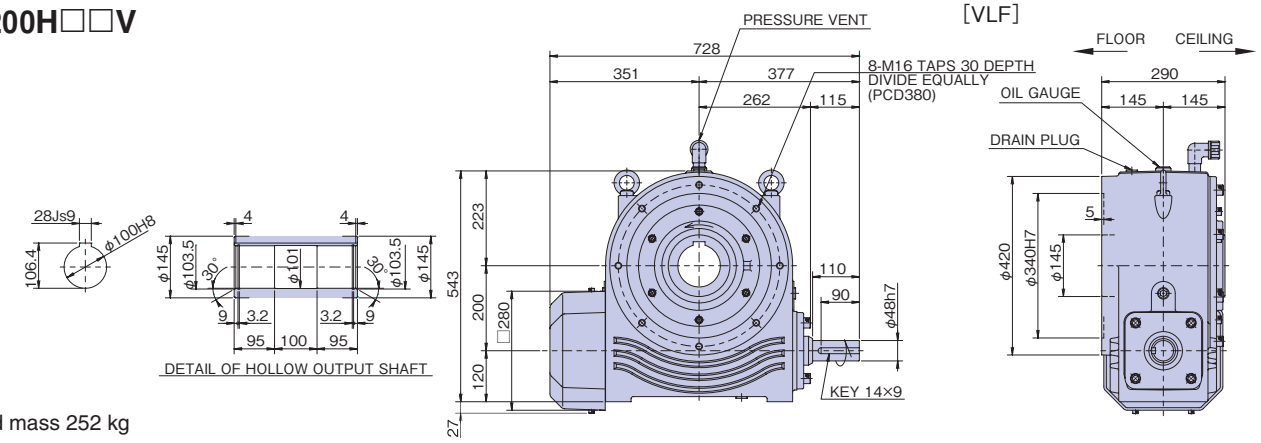
Estimated mass 255 kg

TD200H□□B



Estimated mass 249 kg

TD200H□□V



Estimated mass 252 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

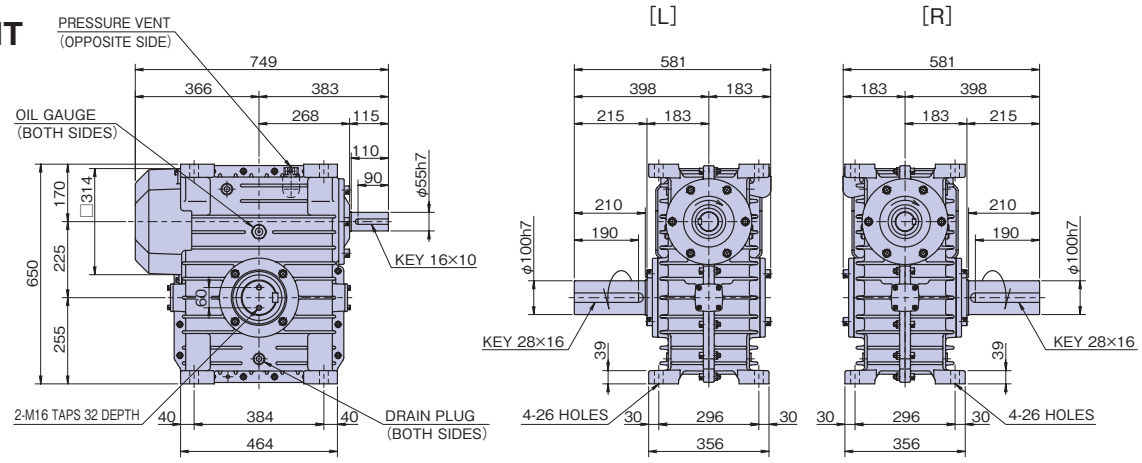
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD200H	10	59.6	3174 {324}	57.5	3689 {376}	54.8	4428 {452}	52.5	5135 {524}	44.9	8286 {846}	11.5	10314 {1052}
	20	43.2	4347 {444}	41.5	5043 {515}	39.5	6037 {616}	37.8	6981 {712}	26.6	9236 {942}	6.7	11138 {1137}
	30	31.2	4717 {481}	29.7	5417 {553}	28.6	6547 {668}	27.3	7569 {772}	18.0	9352 {954}	4.6	11138 {1137}
	40	27.8	5220 {533}	26.7	6050 {617}	25.4	7232 {738}	22.9	7858 {802}	14.8	9525 {972}	3.7	11138 {1137}
	50	23.4	5344 {545}	22.5	6193 {632}	21.4	7404 {756}	18.8	7841 {800}	12.2	9505 {970}	3.1	11138 {1137}
	60	20.1	5445 {556}	19.3	6311 {644}	18.0	7390 {754}	15.9	7826 {799}	10.4	9486 {968}	2.7	11138 {1137}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

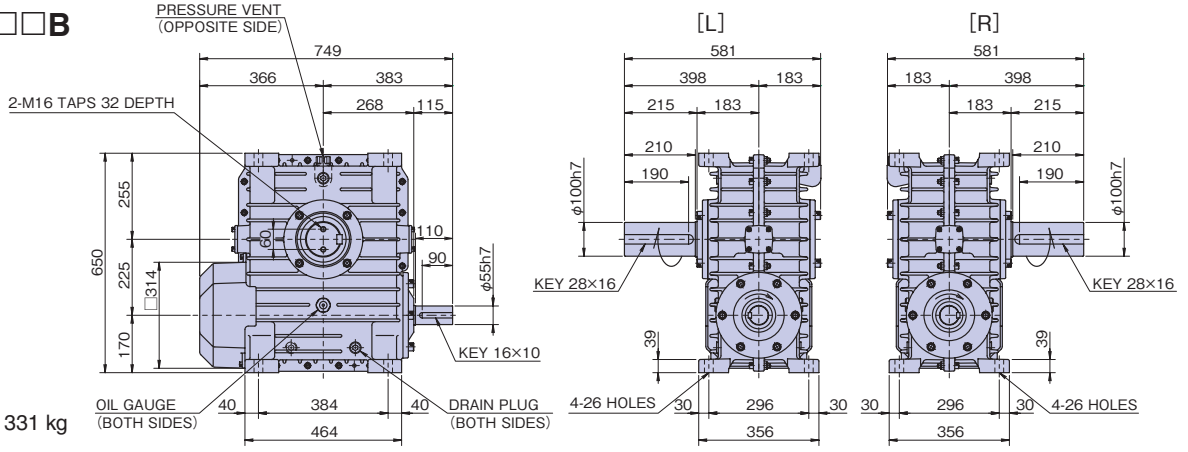
Dimensional Drawings TD225S

TD225S□□T



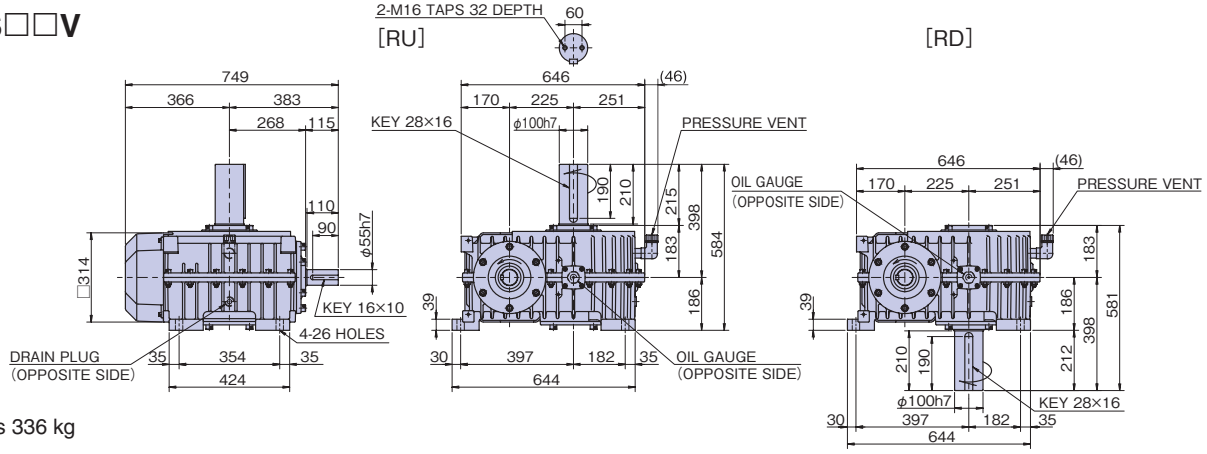
Estimated mass
346 kg

TD225S□□B



Estimated mass 331 kg

TD225S□□V



Estimated mass 336 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

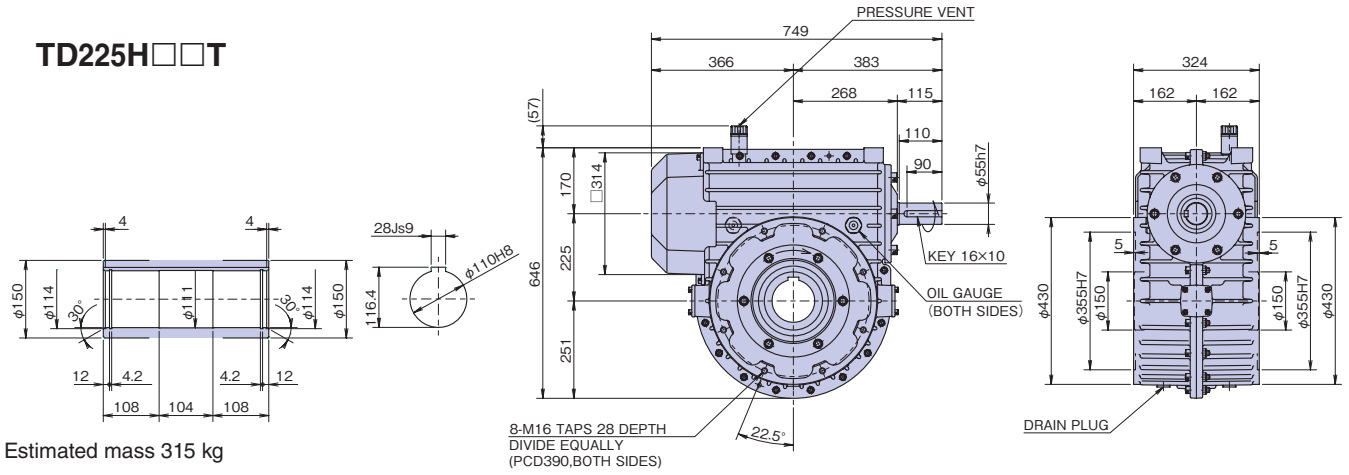
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD225S	10	78.0	4156 { 424}	75.3	4836 { 493}	71.8	5813 { 593}	68.9	6749 { 689}	54.4	10066 {1027}	15.0	13588 {1387}
	20	56.0	5793 { 591}	53.9	6727 { 686}	51.4	8063 { 823}	47.1	8928 { 911}	30.2	10795 {1102}	8.8	15179 {1549}
	30	43.6	6584 { 672}	42.0	7640 { 780}	37.5	8584 { 876}	32.8	9085 { 927}	21.2	10990 {1121}	6.7	16363 {1670}
	40	36.6	6924 { 707}	35.3	8033 { 820}	30.1	8617 { 879}	26.4	9121 { 931}	17.0	11036 {1126}	5.2	15762 {1608}
	50	31.5	7191 { 734}	29.3	8044 { 821}	25.0	8618 { 879}	21.9	9122 { 931}	14.2	11039 {1126}	4.7	16789 {1713}
	60	27.8	7380 { 753}	25.2	8032 { 820}	21.5	8606 { 878}	18.9	9109 { 929}	12.3	11024 {1125}	4.3	17542 {1790}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

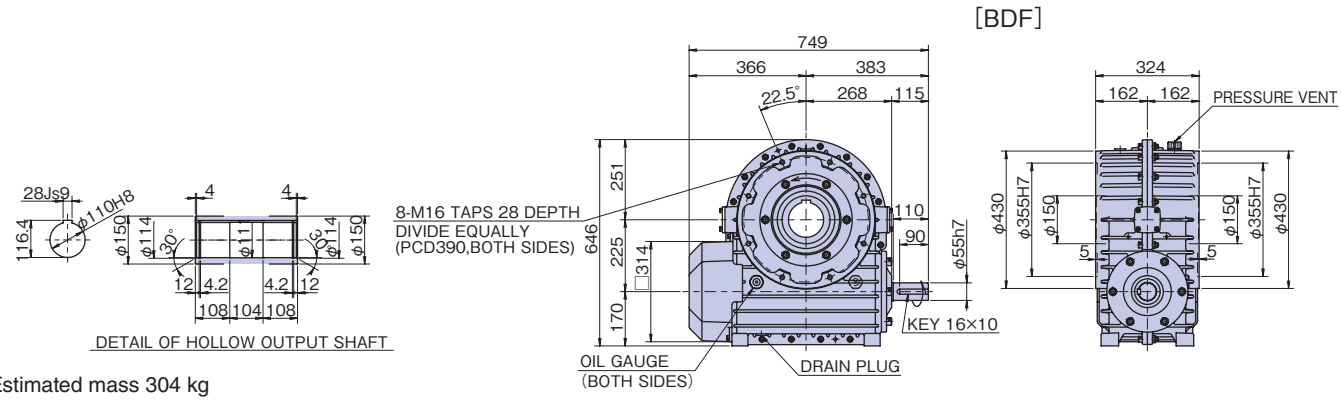
Dimensional Drawings TD225H

TD225H□□T



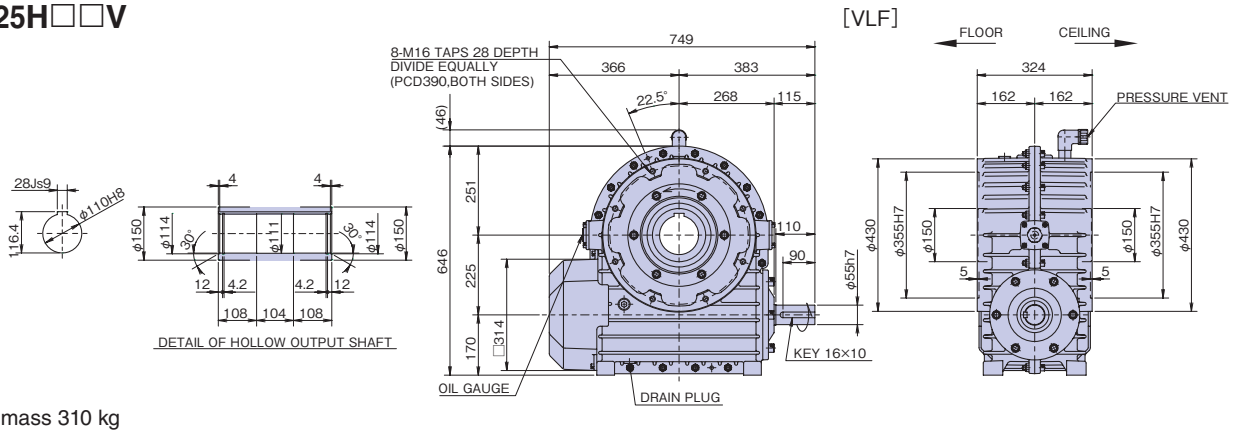
Estimated mass 315 kg

TD225H□□B



Estimated mass 304 kg

TD225H□□V



Estimated mass 310 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

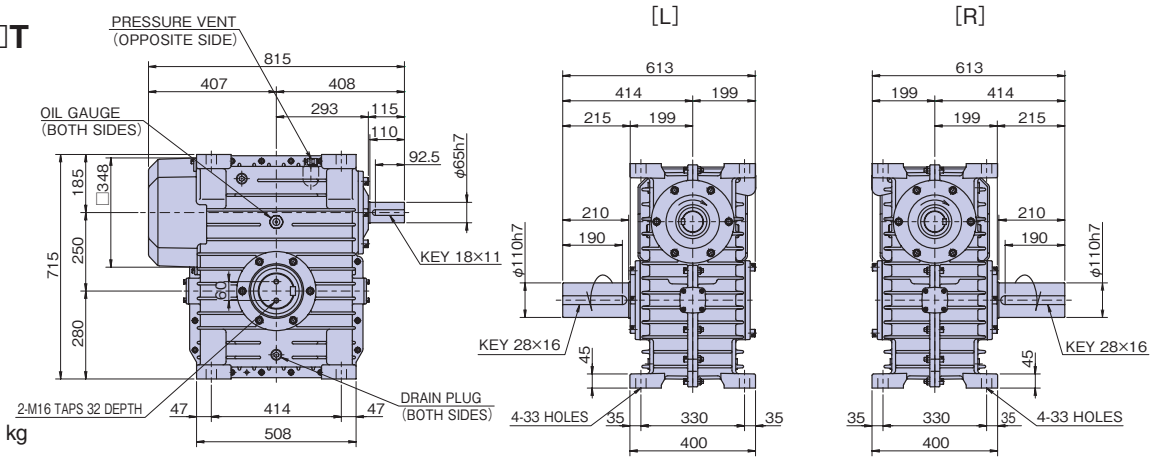
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD225H	10	78.0	4156 { 424}	75.3	4836 { 493}	71.8	5813 { 593}	68.9	6749 { 689}	54.4	10066 {1027}	15.0	13588 {1387}
	20	56.0	5793 { 591}	53.9	6727 { 686}	51.4	8063 { 823}	47.1	8928 { 911}	30.2	10795 {1102}	8.8	15179 {1549}
	30	43.6	6584 { 672}	42.0	7640 { 780}	37.5	8584 { 876}	32.8	9085 { 927}	21.2	10990 {1121}	6.7	16363 {1670}
	40	36.6	6924 { 707}	35.3	8033 { 820}	30.1	8617 { 879}	26.4	9121 { 931}	17.0	11036 {1126}	5.2	15762 {1608}
	50	31.5	7191 { 734}	29.3	8044 { 821}	25.0	8618 { 879}	21.9	9122 { 931}	14.2	11039 {1126}	4.7	16789 {1713}
	60	27.8	7380 { 753}	25.2	8032 { 820}	21.5	8606 { 878}	18.9	9109 { 929}	12.3	11024 {1125}	4.3	17542 {1790}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

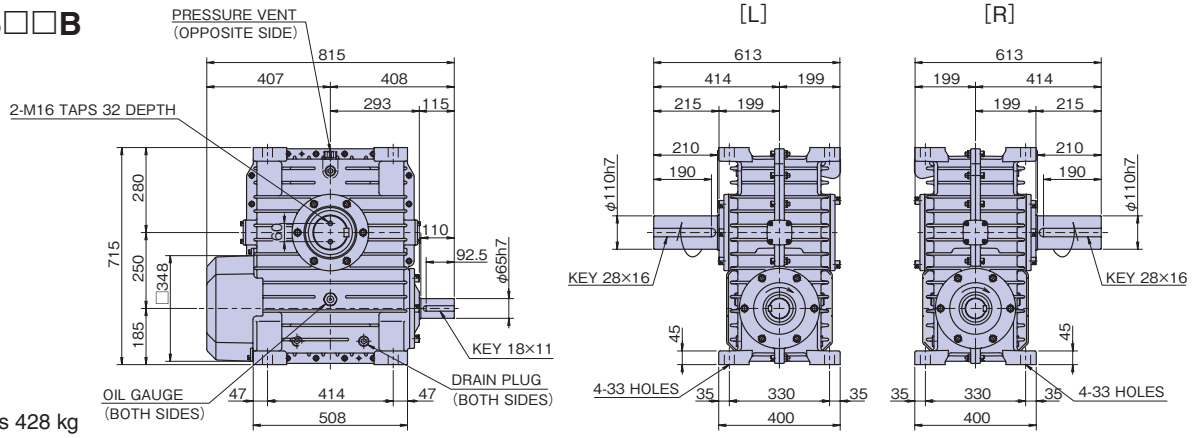
Dimensional Drawings TD250S

TD250S□□T



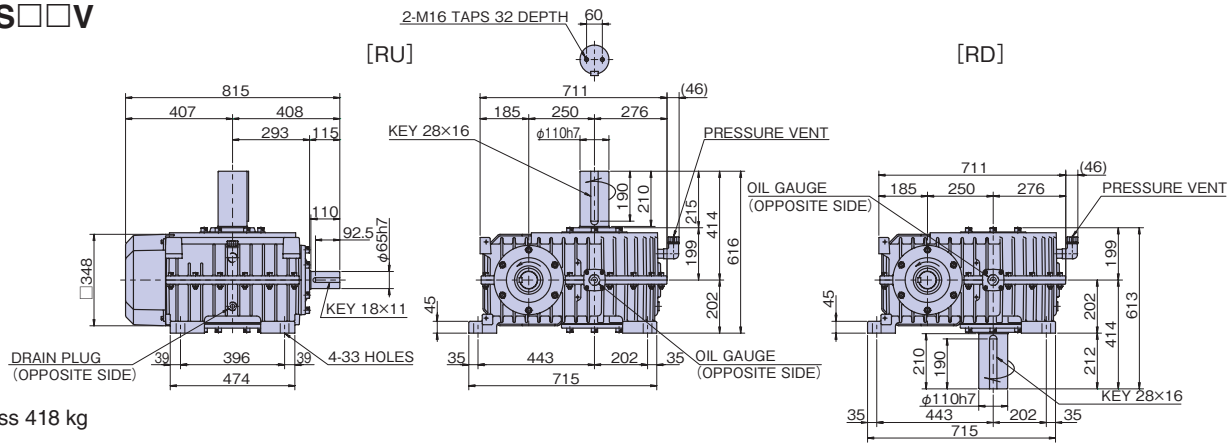
Estimated mass 450 kg

TD250S□□B



Estimated mass 428 kg

TD250S□□V



Estimated mass 418 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

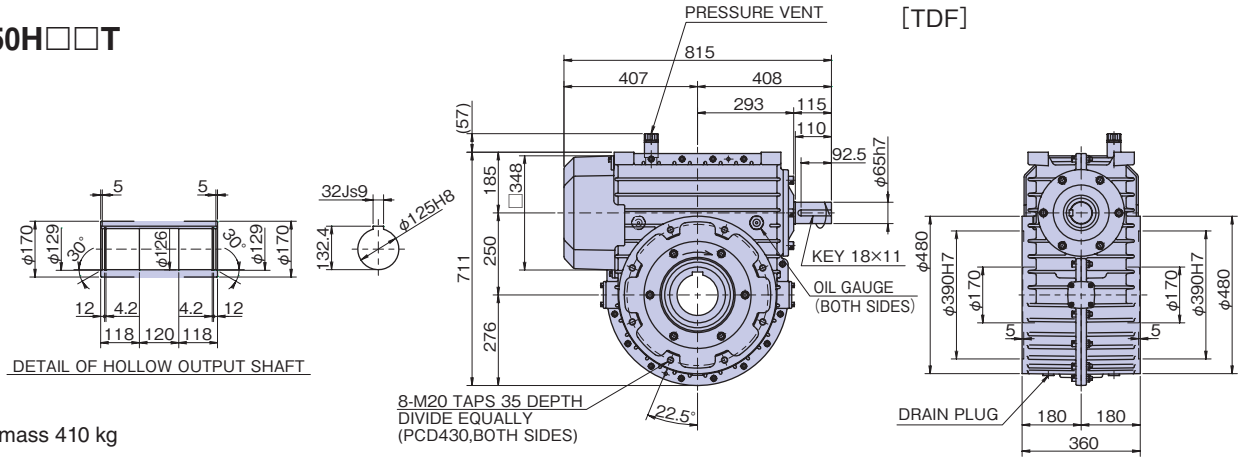
Refer to page 127 for actual reduction ratios.

Size	Input / Reduction ratio	1750 r/min Input kW	1750 r/min Output torque N·m {kgf·m}	1450 r/min Input kW	1450 r/min Output torque N·m {kgf·m}	1150 r/min Input kW	1150 r/min Output torque N·m {kgf·m}	950 r/min Input kW	950 r/min Output torque N·m {kgf·m}	500 r/min Input kW	500 r/min Output torque N·m {kgf·m}	100 r/min Input kW	100 r/min Output torque N·m {kgf·m}
TD250S	10	101.6	5421 { 553}	98.1	6312 { 644}	93.7	7596 { 775}	90.0	8827 { 901}	72.0	13352 {1362}	19.4	17560 {1792}
	20	73.5	7641 { 780}	70.8	8879 { 906}	67.5	10654 {1087}	62.5	11925 {1217}	40.0	14417 {1471}	9.7	16828 {1717}
	30	55.0	8297 { 847}	53.0	9641 { 984}	49.6	11351 {1158}	43.5	12014 {1226}	28.0	14534 {1483}	8.8	21558 {2200}
	40	48.7	9274 { 946}	46.9	10768 {1099}	40.0	11546 {1178}	35.1	12220 {1247}	22.6	14785 {1509}	6.1	18630 {1901}
	50	41.1	9434 { 963}	38.8	10737 {1096}	33.1	11503 {1174}	29.0	12175 {1242}	18.8	14733 {1503}	6.1	22147 {2260}
	60	35.3	9638 { 983}	32.6	10711 {1093}	27.8	11475 {1171}	24.4	12147 {1239}	15.8	14700 {1500}	5.4	22646 {2311}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

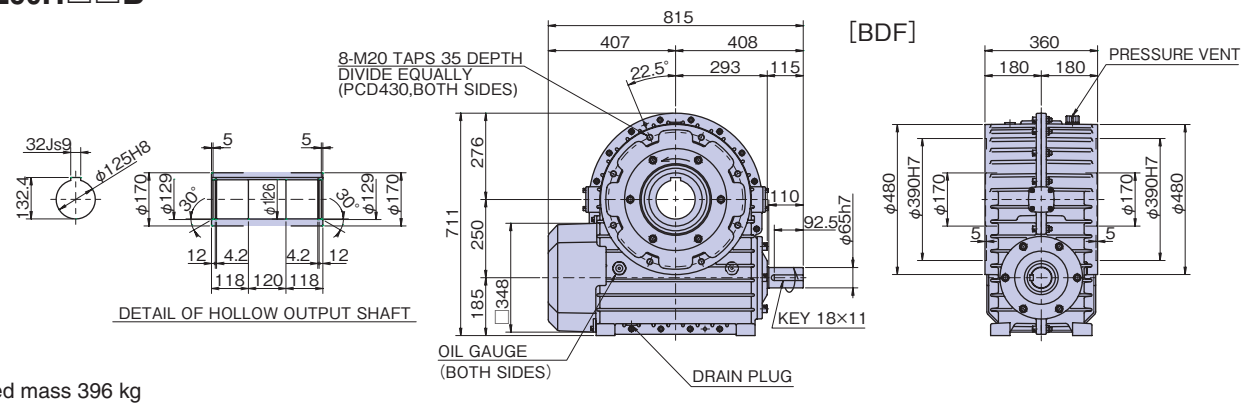
Dimensional Drawings TD250H

TD250H□□T



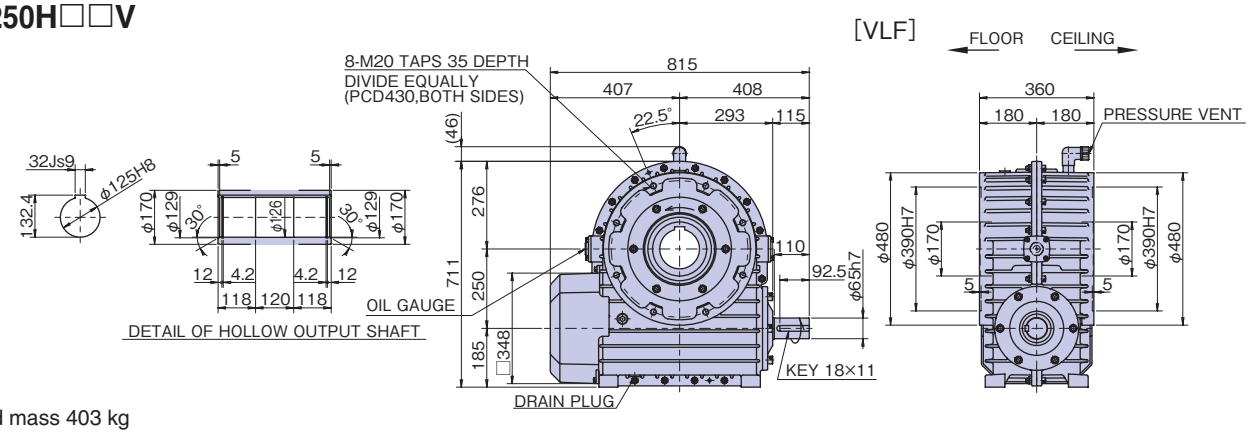
Estimated mass 410 kg

TD250H□□B



Estimated mass 396 kg

TD250H□□V



Estimated mass 403 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

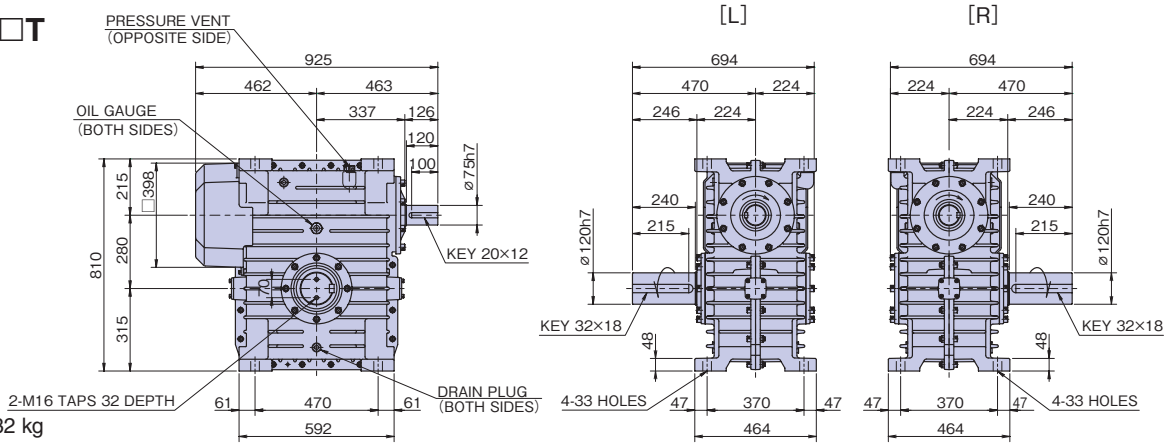
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD250H	10	101.6	5421 { 553}	98.1	6312 { 644}	93.7	7596 { 775}	90.0	8827 { 901}	72.0	13352 {1362}	19.4	17560 {1792}
	20	73.5	7641 { 780}	70.8	8879 { 906}	67.5	10654 {1087}	62.5	11925 {1217}	40.0	14417 {1471}	9.7	16828 {1717}
	30	55.0	8297 { 847}	53.0	9641 { 984}	49.6	11351 {1158}	43.5	12014 {1226}	28.0	14534 {1483}	8.8	21558 {2200}
	40	48.7	9274 { 946}	46.9	10768 {1099}	40.0	11546 {1178}	35.1	12220 {1247}	22.6	14785 {1509}	6.1	18630 {1901}
	50	41.1	9434 { 963}	38.8	10737 {1096}	33.1	11503 {1174}	29.0	12175 {1242}	18.8	14733 {1503}	6.1	22147 {2260}
	60	35.3	9638 { 983}	32.6	10711 {1093}	27.8	11475 {1171}	24.4	12147 {1239}	15.8	14700 {1500}	5.4	22646 {2311}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

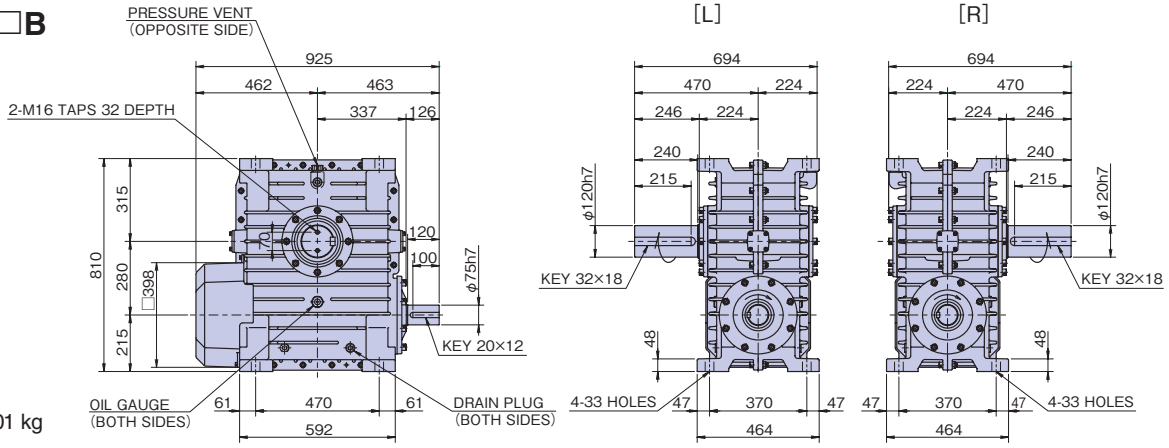
Dimensional Drawings TD280S

TD280S□□T



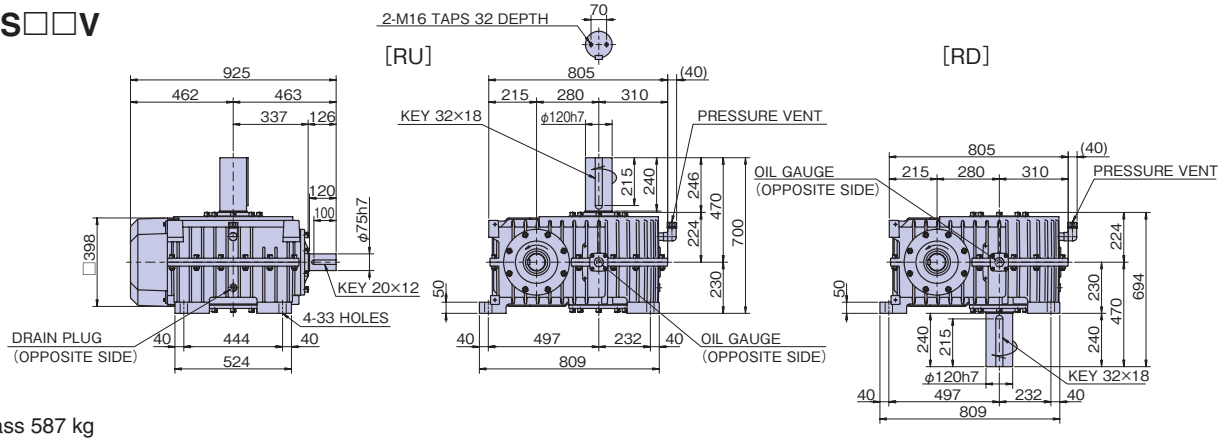
Estimated mass 632 kg

TD280S□□B



Estimated mass 601 kg

TD280S□□V



Estimated mass 587 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

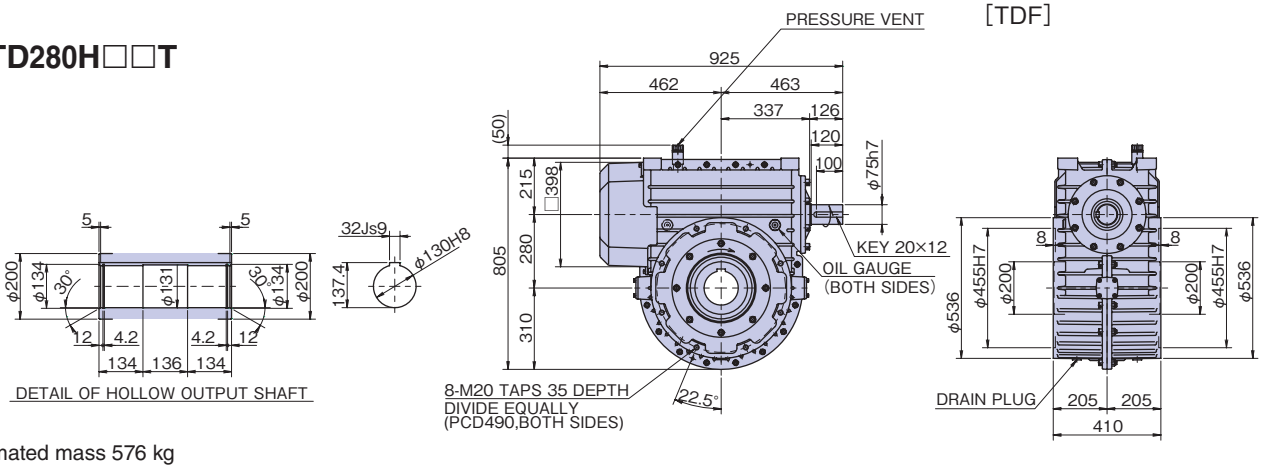
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD280S	10	-	-	125.7	8083 { 825}	120.3	9742 { 994}	115.7	11339 {1157}	98.1	18195 {1857}	27.4	24854 {2536}
	20	95.7	9932 {1013}	92.4	11556 {1179}	88.2	13890 {1417}	84.6	16124 {1645}	54.9	19714 {2012}	15.3	26445 {2698}
	30	73.0	10886 {1111}	70.5	12663 {1292}	67.3	15216 {1553}	60.3	16466 {1680}	38.7	19920 {2033}	11.7	28664 {2925}
	40	61.7	12006 {1225}	59.6	13958 {1424}	53.5	15759 {1608}	46.9	16679 {1702}	30.2	20181 {2059}	9.1	28392 {2897}
	50	54.3	12535 {1279}	52.5	14571 {1487}	45.2	15806 {1613}	39.6	16729 {1707}	25.6	20244 {2066}	8.1	29634 {3024}
	60	46.9	12687 {1295}	45.0	14685 {1498}	38.4	15734 {1606}	33.7	16654 {1699}	21.8	20155 {2057}	7.1	30110 {3072}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

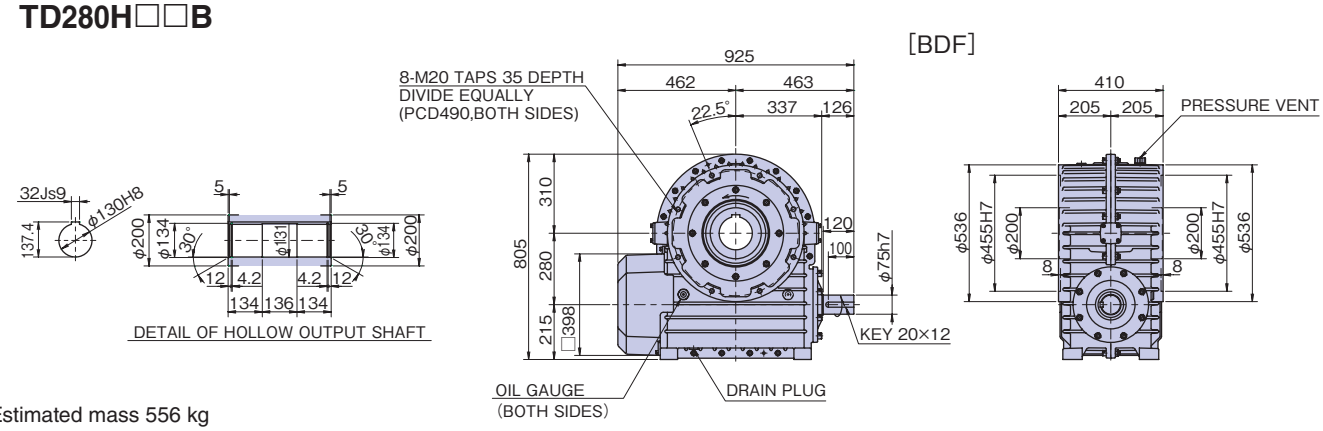
Dimensional Drawings TD280H

TD280H□□T



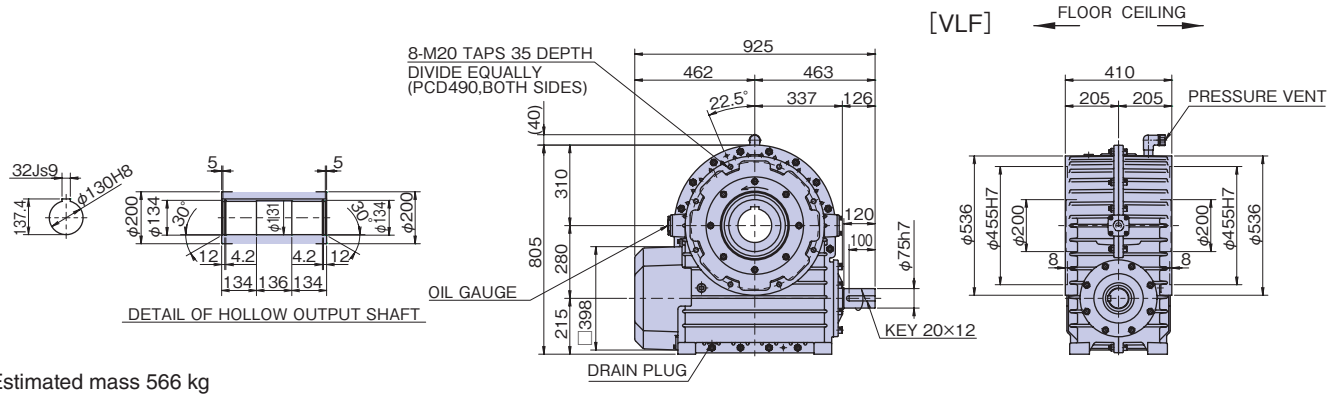
Estimated mass 576 kg

TD280H□□B



Estimated mass 556 kg

TD280H□□V



Estimated mass 566 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

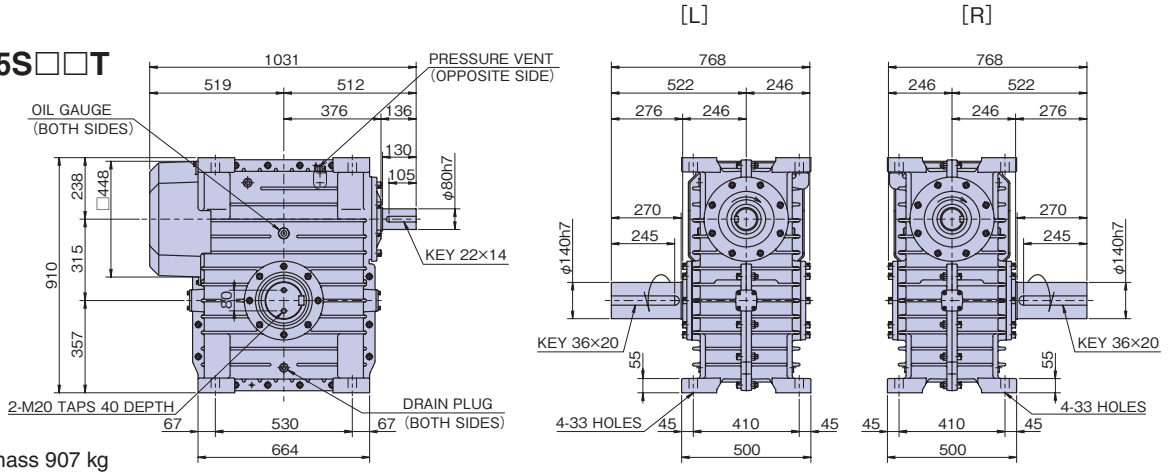
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD280H	10	-	-	125.7	8083 { 825}	120.3	9742 { 994}	115.7	11339 {1157}	98.1	18195 {1857}	27.4	24854 {2536}
	20	95.7	9932 {1013}	92.4	11556 {1179}	88.2	13890 {1417}	84.6	16124 {1645}	54.9	19714 {2012}	15.3	26445 {2698}
	30	73.0	10886 {1111}	70.5	12663 {1292}	67.3	15216 {1553}	60.3	16466 {1680}	38.7	19920 {2033}	11.7	28664 {2925}
	40	61.7	12006 {1225}	59.6	13958 {1424}	53.5	15759 {1608}	46.9	16679 {1702}	30.2	20181 {2059}	9.1	28392 {2897}
	50	54.3	12535 {1279}	52.5	14571 {1487}	45.2	15806 {1613}	39.6	16729 {1707}	25.6	20244 {2066}	8.1	29634 {3024}
	60	46.9	12687 {1295}	45.0	14685 {1498}	38.4	15734 {1606}	33.7	16654 {1699}	21.8	20155 {2057}	7.1	30110 {3072}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

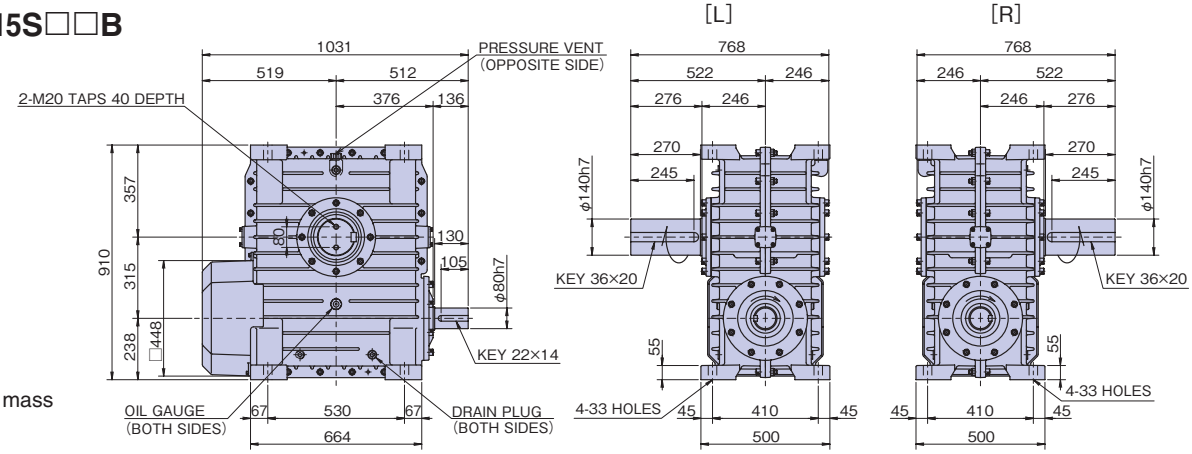
Dimensional Drawings TD315S

TD315S□□T



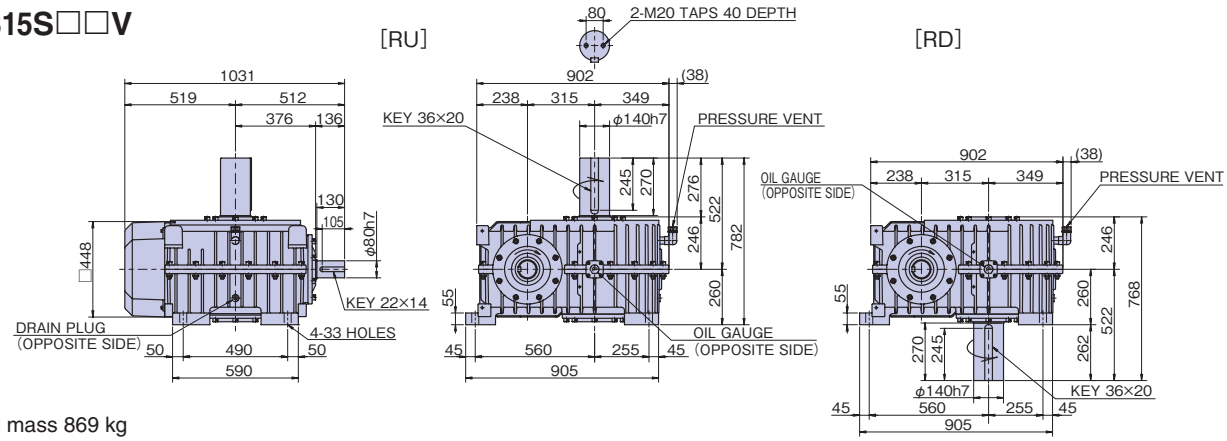
Estimated mass 907 kg

TD315S□□B



Estimated mass 861 kg

TD315S□□V



Estimated mass 869 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

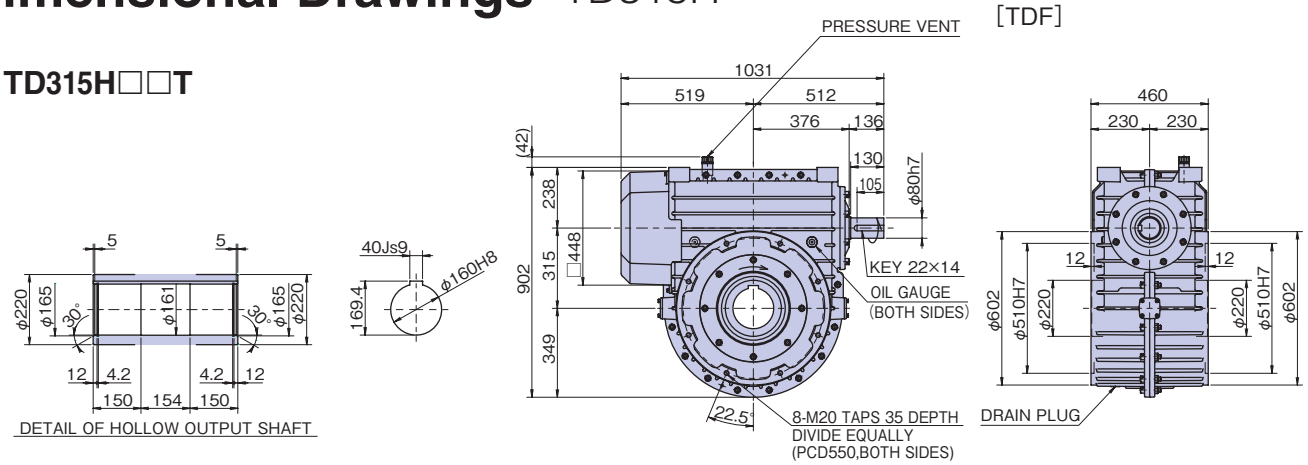
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD315S	10	-	-	-	-	169.1	13723 {1400}	162.9	15989 {1632}	136.8	25438 {2596}	33.2	30270 {3089}
	20	-	-	129.6	16242 {1657}	123.8	19548 {1995}	119.0	22720 {2318}	79.6	28704 {2929}	20.1	35090 {3581}
	30	-	-	96.2	17551 {1791}	92.0	21123 {2155}	86.5	24015 {2451}	55.6	29053 {2965}	17.8	44420 {4533}
	40	-	-	85.0	19552 {1995}	79.6	23076 {2355}	69.8	24423 {2492}	44.9	29549 {3015}	11.8	36685 {3743}
	50	-	-	71.7	19898 {2030}	65.9	22993 {2346}	57.7	24337 {2483}	37.3	29450 {3005}	12.1	44546 {4546}
	60	-	-	61.7	20404 {2082}	55.2	22938 {2341}	48.4	24280 {2478}	31.3	29384 {2998}	10.8	46790 {4774}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

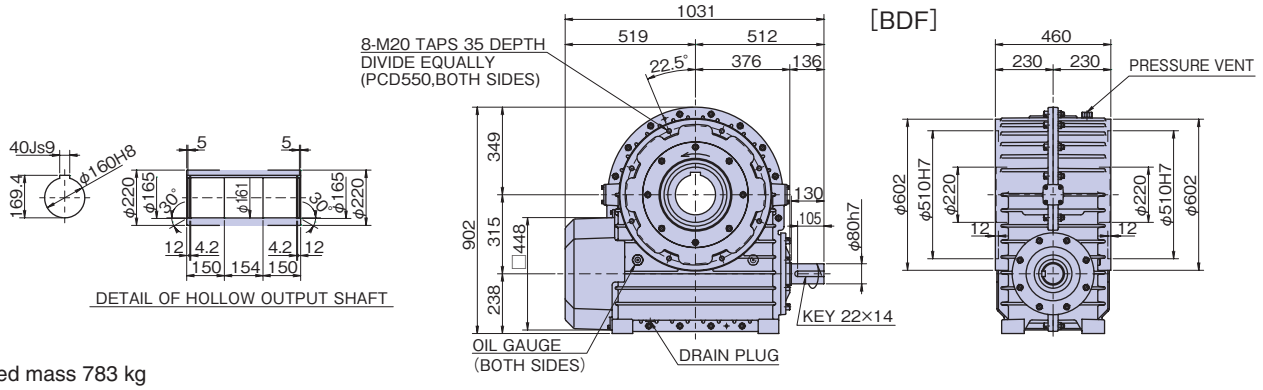
Dimensional Drawings TD315H

TD315H□□T



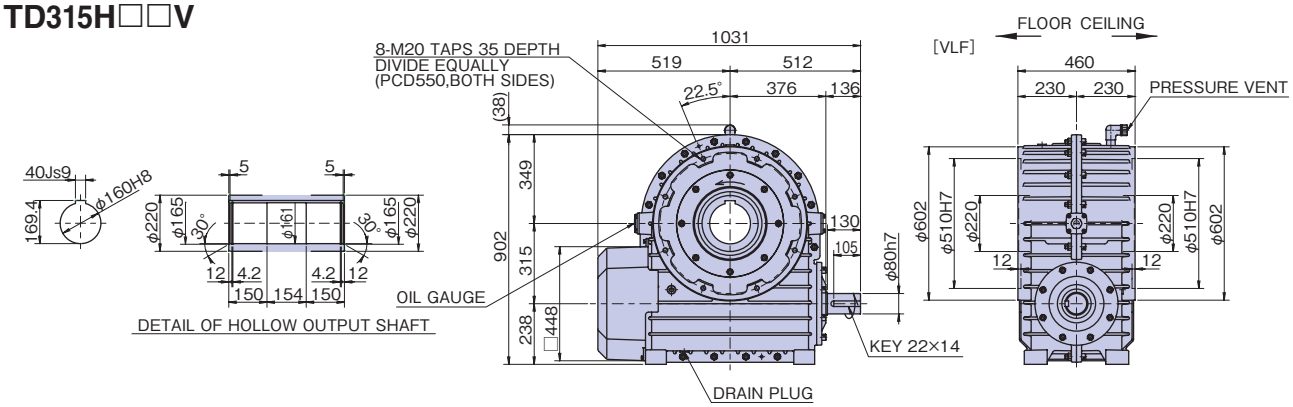
Estimated mass 812 kg

TD315H□□B



Estimated mass 783 kg

TD315H□□V



Estimated mass 798 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

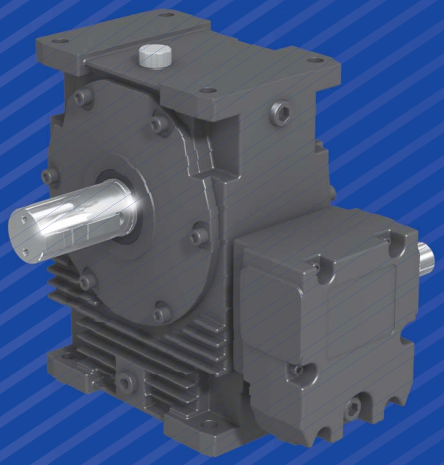
Refer to page 127 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD315H	10	-	-	-	-	169.1	13723 {1400}	162.9	15989 {1632}	136.8	25438 {2596}	33.2	30270 {3089}
	20	-	-	129.6	16242 {1657}	123.8	19548 {1995}	119.0	22720 {2318}	79.6	28704 {2929}	20.1	35090 {3581}
	30	-	-	96.2	17551 {1791}	92.0	21123 {2155}	86.5	24015 {2451}	55.6	29053 {2965}	17.8	44420 {4533}
	40	-	-	85.0	19552 {1995}	79.6	23076 {2355}	69.8	24423 {2492}	44.9	29549 {3015}	11.8	36685 {3743}
	50	-	-	71.7	19898 {2030}	65.9	22993 {2346}	57.7	24337 {2483}	37.3	29450 {3005}	12.1	44546 {4546}
	60	-	-	61.7	20404 {2082}	55.2	22938 {2341}	48.4	24280 {2478}	31.3	29384 {2998}	10.8	46790 {4774}

Models in ▭ are limited by their thermal rating. Consult us if your application runs for short periods.

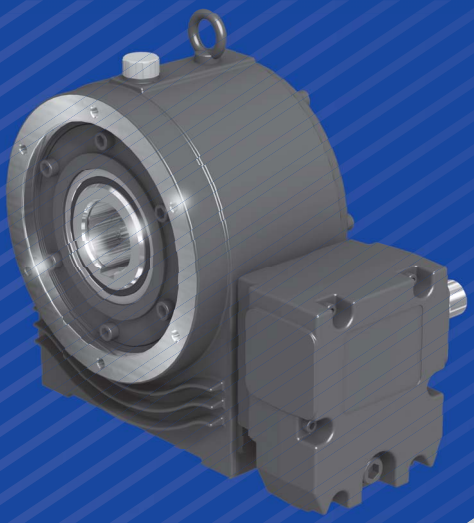
Memo

TroiDrive
High Performance Troidal Worm Gear



TD Series

Double Reduction (Nominal reduction ratio 1/100 to 1/3600)



▶Transfer Capacity Table ..... 147 - 150

▶Technical Data ..... 151 - 152

- Allowable Loads on Shafts
- Actual Reduction Ratio
- Moment of Inertia on Input Shaft

▶Dimensional Drawings ..... 153 - 168

Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Nominal Reduction ratio	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD125	100	4.04	1900 {194}	3.76	2107 {215}	3.39	2354 {240}	3.06	2537 {259}	1.77	2644 {270}	0.38	2511 {256}
	150	3.02	2034 {208}	2.81	2244 {229}	2.54	2511 {256}	2.28	2671 {273}	1.28	2671 {273}	0.29	2644 {270}
	200	2.41	2083 {213}	2.24	2297 {234}	1.99	2511 {256}	1.78	2671 {273}	1.01	2671 {273}	0.23	2564 {262}
	250	1.99	2083 {213}	1.83	2270 {232}	1.63	2484 {253}	1.47	2644 {270}	0.83	2618 {267}	0.19	2484 {253}
	300	2.88	3668 {374}	2.49	3759 {384}	2.09	3875 {395}	1.76	3889 {397}	1.00	3889 {397}	0.24	3889 {397}
	450	2.15	3866 {394}	1.83	3889 {397}	1.49	3889 {397}	1.27	3889 {397}	0.73	3889 {397}	0.18	3889 {397}
	600	1.69	3889 {397}	1.44	3889 {397}	1.18	3889 {397}	1.00	3889 {397}	0.58	3889 {397}	0.14	3889 {397}
	750	1.41	3889 {397}	1.20	3889 {397}	0.99	3889 {397}	0.84	3889 {397}	0.49	3889 {397}	0.12	3889 {397}
	900	1.26	3889 {397}	1.07	3889 {397}	0.89	3889 {397}	0.76	3889 {397}	0.45	3889 {397}	0.12	3889 {397}
	1200	1.01	3889 {397}	0.87	3889 {397}	0.72	3889 {397}	0.62	3889 {397}	0.37	3889 {397}	0.10	3889 {397}
	1500	0.86	3889 {397}	0.74	3889 {397}	0.61	3889 {397}	0.52	3889 {397}	0.31	3889 {397}	0.08	3889 {397}
	1800	0.77	3889 {397}	0.67	3889 {397}	0.56	3889 {397}	0.48	3889 {397}	0.29	3889 {397}	0.08	3889 {397}
	2400	0.63	3889 {397}	0.54	3889 {397}	0.45	3889 {397}	0.39	3889 {397}	0.24	3889 {397}	0.07	3889 {397}
	3000	0.54	3889 {397}	0.47	3889 {397}	0.39	3889 {397}	0.34	3889 {397}	0.21	3889 {397}	0.06	3889 {397}
	3600	0.48	3889 {397}	0.41	3889 {397}	0.35	3889 {397}	0.30	3889 {397}	0.19	3889 {397}	0.05	3889 {397}
TD150	100	5.63	2688 {274}	5.29	3014 {308}	4.76	3362 {343}	4.15	3500 {357}	2.61	3986 {407}	0.56	3792 {387}
	150	4.26	2926 {299}	3.87	3160 {322}	3.42	3451 {352}	2.99	3597 {367}	1.94	4180 {427}	0.43	3986 {407}
	200	3.41	3014 {308}	3.11	3257 {332}	2.71	3500 {357}	2.41	3694 {377}	1.50	4083 {417}	0.34	3937 {402}
	250	2.81	3014 {308}	2.60	3305 {337}	2.27	3549 {362}	2.02	3743 {382}	1.20	3937 {402}	0.27	3792 {387}
	300	4.31	5601 {572}	3.72	5733 {585}	3.10	5899 {602}	2.66	6002 {612}	1.50	6002 {612}	0.36	6002 {612}
	450	3.18	5887 {601}	2.75	6002 {612}	2.24	6002 {612}	1.89	6002 {612}	1.08	6002 {612}	0.26	6002 {612}
	600	2.54	6002 {612}	2.16	6002 {612}	1.77	6002 {612}	1.50	6002 {612}	0.86	6002 {612}	0.21	6002 {612}
	750	2.11	6002 {612}	1.80	6002 {612}	1.47	6002 {612}	1.25	6002 {612}	0.72	6002 {612}	0.18	6002 {612}
	900	1.86	6002 {612}	1.59	6002 {612}	1.31	6002 {612}	1.12	6002 {612}	0.66	6002 {612}	0.17	6002 {612}
	1200	1.50	6002 {612}	1.28	6002 {612}	1.06	6002 {612}	0.91	6002 {612}	0.54	6002 {612}	0.14	6002 {612}
	1500	1.32	6166 {629}	1.13	6166 {629}	0.93	6166 {629}	0.80	6166 {629}	0.47	6166 {629}	0.12	6166 {629}
	1800	1.17	6166 {629}	1.01	6166 {629}	0.84	6166 {629}	0.72	6166 {629}	0.43	6166 {629}	0.12	6166 {629}
	2400	0.95	6166 {629}	0.82	6166 {629}	0.68	6166 {629}	0.59	6166 {629}	0.36	6166 {629}	0.10	6166 {629}
	3000	0.81	6166 {629}	0.70	6166 {629}	0.59	6166 {629}	0.51	6166 {629}	0.31	6166 {629}	0.09	6166 {629}
	3600	0.71	6166 {629}	0.62	6166 {629}	0.52	6166 {629}	0.45	6166 {629}	0.28	6166 {629}	0.08	6166 {629}

Refer to page 151 for actual reduction ratios.

Size	Nominal Reduction ratio	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD175	100	9.36	4524 { 462}	8.52	4917 { 502}	7.88	5657 { 577}	6.96	5978 { 610}	4.58	7143 { 729}	0.99	6832 { 697}
	150	6.99	4883 { 498}	6.44	5357 { 547}	5.72	5901 { 602}	4.99	6134 { 626}	3.34	7376 { 753}	0.75	7221 { 737}
	200	5.51	4969 { 507}	5.08	5435 { 555}	4.53	5978 { 610}	4.00	6289 { 642}	2.66	7453 { 761}	0.61	7221 { 737}
	250	4.45	4891 { 499}	4.23	5512 { 562}	3.78	6056 { 618}	3.35	6366 { 650}	2.12	7143 { 729}	0.48	6832 { 697}
	300	5.91	7903 { 806}	4.97	7903 { 806}	4.02	7903 { 806}	3.38	7903 { 806}	1.90	7903 { 806}	0.45	7903 { 806}
	450	4.00	7903 { 806}	3.38	7903 { 806}	2.74	7903 { 806}	2.32	7903 { 806}	1.31	7903 { 806}	0.32	7903 { 806}
	600	3.13	7903 { 806}	2.65	7903 { 806}	2.16	7903 { 806}	1.83	7903 { 806}	1.05	7903 { 806}	0.26	7903 { 806}
	750	2.58	7903 { 806}	2.19	7903 { 806}	1.79	7903 { 806}	1.52	7903 { 806}	0.87	7903 { 806}	0.22	7903 { 806}
	900	2.26	7903 { 806}	1.92	7903 { 806}	1.58	7903 { 806}	1.34	7903 { 806}	0.78	7903 { 806}	0.20	7903 { 806}
	1200	1.81	7903 { 806}	1.55	7903 { 806}	1.28	7903 { 806}	1.09	7903 { 806}	0.65	7903 { 806}	0.17	7903 { 806}
	1500	1.54	7903 { 806}	1.32	7903 { 806}	1.09	7903 { 806}	0.93	7903 { 806}	0.55	7903 { 806}	0.14	7903 { 806}
	1800	1.36	7903 { 806}	1.16	7903 { 806}	0.96	7903 { 806}	0.82	7903 { 806}	0.49	7903 { 806}	0.13	7903 { 806}
	2400	1.10	7903 { 806}	0.95	7903 { 806}	0.79	7903 { 806}	0.68	7903 { 806}	0.41	7903 { 806}	0.11	7903 { 806}
	3000	0.93	7903 { 806}	0.80	7903 { 806}	0.67	7903 { 806}	0.58	7903 { 806}	0.35	7903 { 806}	0.10	7903 { 806}
	3600	0.82	7903 { 806}	0.71	7903 { 806}	0.59	7903 { 806}	0.51	7903 { 806}	0.31	7903 { 806}	0.09	7903 { 806}
TD200	100	15.33	7462 { 761}	14.23	8285 { 845}	12.79	9271 { 946}	11.90	10314 {1052}	6.54	10314 {1052}	1.48	10314 {1052}
	150	11.38	8036 { 820}	10.66	8973 { 916}	9.58	10005 {1021}	8.28	10314 {1052}	4.60	10314 {1052}	1.07	10314 {1052}
	200	9.00	8251 { 842}	8.32	9076 { 926}	7.57	10211 {1042}	6.42	10314 {1052}	3.59	10314 {1052}	0.84	10314 {1052}
	250	7.41	8251 { 842}	6.70	8870 { 905}	6.32	10314 {1052}	5.32	10314 {1052}	3.00	10314 {1052}	0.72	10314 {1052}
	300	8.31	11138 {1137}	6.98	11138 {1137}	5.66	11138 {1137}	4.75	11138 {1137}	2.67	11138 {1137}	0.64	11138 {1137}
	450	5.80	11138 {1137}	4.89	11138 {1137}	3.97	11138 {1137}	3.35	11138 {1137}	1.90	11138 {1137}	0.47	11138 {1137}
	600	4.50	11138 {1137}	3.81	11138 {1137}	3.01	11138 {1137}	2.62	11138 {1137}	1.50	11138 {1137}	0.37	11138 {1137}
	750	3.73	11138 {1137}	3.16	11138 {1137}	2.59	11138 {1137}	2.19	11138 {1137}	1.26	11138 {1137}	0.32	11138 {1137}
	900	3.25	11138 {1137}	2.77	11138 {1137}	2.27	11138 {1137}	1.93	11138 {1137}	1.13	11138 {1137}	0.29	11138 {1137}
	1200	2.58	11138 {1137}	2.20	11138 {1137}	1.81	11138 {1137}	1.55	11138 {1137}	0.91	11138 {1137}	0.24	11138 {1137}
	1500	2.24	11138 {1137}	1.91	11138 {1137}	1.58	11138 {1137}	1.35	11138 {1137}	0.79	11138 {1137}	0.21	11138 {1137}
	1800	1.97	11138 {1137}	1.68	11138 {1137}	1.39	11138 {1137}	1.19	11138 {1137}	0.71	11138 {1137}	0.19	11138 {1137}
	2400	1.57	11138 {1137}	1.35	11138 {1137}	1.12	11138 {1137}	0.97	11138 {1137}	0.58	11138 {1137}	0.16	11138 {1137}
	3000	1.34	11138 {1137}	1.16	11138 {1137}	0.97	11138 {1137}	0.83	11138 {1137}	0.51	11138 {1137}	0.14	11138 {1137}
	3600	1.18	11138 {1137}	1.02	11138 {1137}	0.85	11138 {1137}	0.74	11138 {1137}	0.45	11138 {1137}	0.13	11138 {1137}

Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Nominal Reduction ratio	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD225	100	15.39	7520 { 767}	14.19	8289 { 846}	12.71	9240 { 943}	12.02	10463 {1068}	8.15	12909 {1317}	1.84	12909 {1317}
	150	11.50	8153 { 832}	10.61	8968 { 915}	9.59	10055 {1026}	8.80	11006 {1123}	5.92	13316 {1359}	1.38	13452 {1373}
	200	9.00	8289 { 846}	8.31	9104 { 929}	7.62	10327 {1054}	7.07	11414 {1165}	4.71	13588 {1387}	1.06	13044 {1331}
	250	7.41	8289 { 846}	6.64	8832 { 901}	6.30	10327 {1054}	5.86	11414 {1165}	3.93	13588 {1387}	0.89	12909 {1317}
	300	10.97	14993 {1530}	9.73	15849 {1617}	8.04	16204 {1653}	6.82	16363 {1670}	3.81	16363 {1670}	0.90	16363 {1670}
	450	8.37	16185 {1652}	7.13	16363 {1670}	5.78	16363 {1670}	4.87	16363 {1670}	2.76	16363 {1670}	0.67	16363 {1670}
	600	6.56	16363 {1670}	5.54	16363 {1670}	4.51	16363 {1670}	3.81	16363 {1670}	2.17	16363 {1670}	0.53	16363 {1670}
	750	5.43	16363 {1670}	4.59	16363 {1670}	3.75	16363 {1670}	3.18	16363 {1670}	1.83	16363 {1670}	0.46	16363 {1670}
	900	4.73	16363 {1670}	4.02	16363 {1670}	3.29	16363 {1670}	2.80	16363 {1670}	1.63	16363 {1670}	0.42	16363 {1670}
	1200	3.74	16363 {1670}	3.19	16363 {1670}	2.62	16363 {1670}	2.24	16363 {1670}	1.32	16363 {1670}	0.34	16363 {1670}
	1500	3.55	17542 {1790}	3.02	17542 {1790}	2.49	17542 {1790}	2.12	17542 {1790}	1.25	17542 {1790}	0.33	17542 {1790}
	1800	3.10	17542 {1790}	2.66	17542 {1790}	2.20	17542 {1790}	1.88	17542 {1790}	1.12	17542 {1790}	0.30	17542 {1790}
	2400	2.48	17542 {1790}	2.13	17542 {1790}	1.77	17542 {1790}	1.52	17542 {1790}	0.91	17542 {1790}	0.25	17542 {1790}
	3000	2.11	17542 {1790}	1.82	17542 {1790}	1.51	17542 {1790}	1.31	17542 {1790}	0.79	17542 {1790}	0.22	17542 {1790}
	3600	1.86	17542 {1790}	1.60	17542 {1790}	1.34	17542 {1790}	1.16	17542 {1790}	0.71	17542 {1790}	0.20	17542 {1790}
TD250	100	22.82	11238 {1147}	21.46	12643 {1290}	19.35	14224 {1451}	17.75	15628 {1595}	10.95	17560 {1792}	2.47	17560 {1792}
	150	17.15	12292 {1254}	15.82	13521 {1380}	14.54	15453 {1577}	13.30	16858 {1720}	7.68	17560 {1792}	1.77	17560 {1792}
	200	13.38	12468 {1272}	12.50	13872 {1416}	10.99	15102 {1541}	10.51	17209 {1756}	5.99	17560 {1792}	1.41	17560 {1792}
	250	10.91	12468 {1272}	10.08	13697 {1398}	9.20	15453 {1577}	8.61	17209 {1756}	4.94	17560 {1792}	1.17	17560 {1792}
	300	14.41	19831 {2024}	12.78	20964 {2139}	10.50	21354 {2179}	8.89	21558 {2200}	4.97	21558 {2200}	1.18	21558 {2200}
	450	10.93	21329 {2176}	9.30	21558 {2200}	7.53	21558 {2200}	6.35	21558 {2200}	3.59	21558 {2200}	0.87	21558 {2200}
	600	8.57	21558 {2200}	7.22	21558 {2200}	5.87	21558 {2200}	4.95	21558 {2200}	2.83	21558 {2200}	0.70	21558 {2200}
	750	7.02	21558 {2200}	5.94	21558 {2200}	4.84	21558 {2200}	4.09	21558 {2200}	2.34	21558 {2200}	0.58	21558 {2200}
	900	6.14	21558 {2200}	5.21	21558 {2200}	4.26	21558 {2200}	3.62	21558 {2200}	2.11	21558 {2200}	0.54	21558 {2200}
	1200	4.85	21558 {2200}	4.13	21558 {2200}	3.39	21558 {2200}	2.89	21558 {2200}	1.70	21558 {2200}	0.45	21558 {2200}
	1500	4.34	22646 {2311}	3.70	22646 {2311}	3.03	22646 {2311}	2.59	22646 {2311}	1.52	22646 {2311}	0.40	22646 {2311}
	1800	3.82	22646 {2311}	3.26	22646 {2311}	2.69	22646 {2311}	2.30	22646 {2311}	1.37	22646 {2311}	0.37	22646 {2311}
	2400	3.05	22646 {2311}	2.61	22646 {2311}	2.16	22646 {2311}	1.86	22646 {2311}	1.12	22646 {2311}	0.31	22646 {2311}
	3000	2.55	22646 {2311}	2.20	22646 {2311}	1.83	22646 {2311}	1.57	22646 {2311}	0.95	22646 {2311}	0.26	22646 {2311}
	3600	2.25	22646 {2311}	1.94	22646 {2311}	1.62	22646 {2311}	1.39	22646 {2311}	0.85	22646 {2311}	0.24	22646 {2311}

Refer to page 151 for actual reduction ratios.

Size	Nominal Reduction ratio	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD280	100	32.11	15895 {1622}	29.72	17623 {1798}	26.54	19613 {2001}	23.28	20629 {2105}	15.36	24854 {2536}	3.46	24854 {2536}
	150	23.75	17137 {1749}	21.35	18392 {1877}	18.78	20132 {2054}	16.50	21126 {2156}	10.73	24854 {2536}	2.48	24854 {2536}
	200	18.79	17646 {1801}	17.07	19138 {1953}	14.86	20629 {2105}	13.05	21623 {2206}	8.37	24854 {2536}	1.96	24854 {2536}
	250	14.72	16901 {1725}	13.65	18641 {1902}	12.36	20877 {2130}	10.87	21872 {2232}	6.94	24854 {2536}	1.65	24854 {2536}
	300	18.59	25900 {2643}	16.12	26798 {2734}	13.56	27947 {2852}	11.65	28664 {2925}	6.49	28664 {2925}	1.53	28664 {2925}
	450	14.28	27860 {2843}	12.37	28664 {2925}	10.01	28664 {2925}	8.41	28664 {2925}	4.73	28664 {2925}	1.15	28664 {2925}
	600	11.38	28664 {2925}	9.58	28664 {2925}	7.78	28664 {2925}	6.55	28664 {2925}	3.73	28664 {2925}	0.91	28664 {2925}
	750	9.35	28664 {2925}	7.91	28664 {2925}	6.43	28664 {2925}	5.43	28664 {2925}	3.11	28664 {2925}	0.77	28664 {2925}
	900	8.12	28664 {2925}	6.87	28664 {2925}	5.61	28664 {2925}	4.76	28664 {2925}	2.75	28664 {2925}	0.71	28664 {2925}
	1200	6.39	28664 {2925}	5.43	28664 {2925}	4.45	28664 {2925}	3.79	28664 {2925}	2.22	28664 {2925}	0.58	28664 {2925}
	1500	5.74	30110 {3072}	4.88	30110 {3072}	4.00	30110 {3072}	3.40	30110 {3072}	1.99	30110 {3072}	0.52	30110 {3072}
	1800	5.01	30110 {3072}	4.27	30110 {3072}	3.52	30110 {3072}	3.00	30110 {3072}	1.78	30110 {3072}	0.48	30110 {3072}
	2400	3.99	30110 {3072}	3.41	30110 {3072}	2.82	30110 {3072}	2.41	30110 {3072}	1.45	30110 {3072}	0.40	30110 {3072}
	3000	3.36	30110 {3072}	2.89	30110 {3072}	2.39	30110 {3072}	2.05	30110 {3072}	1.25	30110 {3072}	0.35	30110 {3072}
	3600	2.92	30110 {3072}	2.51	30110 {3072}	2.09	30110 {3072}	1.80	30110 {3072}	1.10	30110 {3072}	0.31	30110 {3072}
TD315	100	32.13	15957 {1628}	29.82	17738 {1810}	26.51	19679 {2008}	23.16	20584 {2100}	15.27	24821 {2533}	4.19	30270 {3089}
	150	23.82	17261 {1761}	21.35	18465 {1884}	18.84	20281 {2069}	16.48	21189 {2162}	10.93	25427 {2595}	3.00	30270 {3089}
	200	18.61	17557 {1791}	16.96	19070 {1946}	14.76	20584 {2100}	13.10	21794 {2224}	8.73	26032 {2656}	2.37	30270 {3089}
	250	14.70	16951 {1730}	13.68	18767 {1915}	12.31	20886 {2131}	10.93	22097 {2255}	7.31	26335 {2687}	2.00	30270 {3089}
	300	28.16	39325 {4013}	24.69	41146 {4199}	20.89	43159 {4404}	18.00	44420 {4533}	10.03	44420 {4533}	2.37	44420 {4533}
	450	21.64	43006 {4388}	18.82	44420 {4533}	15.20	44420 {4533}	12.79	44420 {4533}	7.20	44420 {4533}	1.74	44420 {4533}
	600	17.28	44420 {4533}	14.57	44420 {4533}	11.83	44420 {4533}	9.97	44420 {4533}	5.66	44420 {4533}	1.39	44420 {4533}
	750	14.23	44420 {4533}	12.03	44420 {4533}	9.78	44420 {4533}	8.25	44420 {4533}	4.72	44420 {4533}	1.18	44420 {4533}
	900	12.33	44420 {4533}	10.45	44420 {4533}	8.53	44420 {4533}	7.23	44420 {4533}	4.19	44420 {4533}	1.08	44420 {4533}
	1200	9.71	44420 {4533}	8.25	44420 {4533}	6.77	44420 {4533}	5.76	44420 {4533}	3.38	44420 {4533}	0.89	44420 {4533}
	1500	8.75	46790 {4774}	7.43	46790 {4774}	6.10	46790 {4774}	5.18	46790 {4774}	3.03	46790 {4774}	0.80	46790 {4774}
	1800	7.63	46790 {4774}	6.50	46790 {4774}	5.35	46790 {4774}	4.57	46790 {4774}	2.71	46790 {4774}	0.74	46790 {4774}
	2400	6.07	46790 {4774}	5.19	46790 {4774}	4.29	46790 {4774}	3.68	46790 {4774}	2.20	46790 {4774}	0.61	46790 {4774}
	3000	5.12	46790 {4774}	4.40	46790 {4774}	3.65	46790 {4774}	3.13	46790 {4774}	1.90	46790 {4774}	0.54	46790 {4774}
	3600	4.45	46790 {4774}	3.83	46790 {4774}	3.18	46790 {4774}	2.74	46790 {4774}	1.64	46790 {4774}	0.47	46790 {4774}

Technical Data

Allowable Loads on Shafts

■ Allowable Radial Load on Output Shaft

Solid Output Shaft (S Type)

N {kgf}

Size	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
Allowable radial load	15700 {1602}	21600 {2204}	25500 {2602}	32400 {3306}	37000 {3776}	44000 {4490}	49000 {5000}	60800 {6204}

Hollow Output Shaft (H Type)

N {kgf}

Size	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
Allowable radial load	29537 {3014}	25904 {2643}	32614 {3328}	38803 {3960}	45821 {4676}	64558 {6588}	65415 {6675}	127424 {13002}

■ Allowable Axial Load on Output Shaft

Solid Output Shaft (S Type)

N {kgf}

Size	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
Allowable axial load	19241 {1963}	16607 {1695}	21034 {2146}	27161 {2772}	24373 {2487}	21906 {2235}	26492 {2703}	30202 {3082}

Hollow Output Shaft (H Type)

N {kgf}

Size	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
Allowable axial load	29725 {3033}	26617 {2716}	34255 {3495}	37715 {3848}	40643 {4147}	57163 {5833}	100123 {10217}	108760 {11098}

Actual Reduction Ratio

Size / Nominal reduction ratio	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
100	102.50	102.50	102.50	102.50	102.50	102.50	102.50	102.50
150	153.75	153.75	153.75	153.75	153.75	153.75	153.75	153.75
200	205.00	205.00	205.00	205.00	205.00	205.00	205.00	205.00
250	256.25	256.25	256.25	256.25	256.25	256.25	256.25	256.25
300	315.00	315.00	325.00	315.00	310.00	310.00	305.00	310.00
450	472.50	472.50	487.50	472.50	465.00	465.00	457.50	465.00
600	630.00	630.00	650.00	630.00	620.00	620.00	610.00	620.00
750	787.50	787.50	812.50	787.50	775.00	775.00	762.50	775.00
900	945.00	945.00	975.00	945.00	930.00	930.00	915.00	930.00
1200	1260.00	1260.00	1300.00	1260.00	1240.00	1240.00	1220.00	1240.00
1500	1575.00	1575.00	1625.00	1575.00	1500.00	1550.00	1525.00	1550.00
1800	1890.00	1890.00	1950.00	1890.00	1800.00	1860.00	1830.00	1860.00
2400	2520.00	2520.00	2600.00	2520.00	2400.00	2480.00	2440.00	2480.00
3000	3150.00	3150.00	3250.00	3150.00	3000.00	3100.00	3050.00	3100.00
3600	3780.00	3780.00	3900.00	3780.00	3600.00	3720.00	3660.00	3720.00

* Refer to page 217 for reduction ratio combinations for double reduction models.

Moment of Inertia on Input Shaft

Solid Output Shaft (S Type)

Moment of inertia on input shaft {GD²} : kg·m² {kgf·m²}

Size / Nominal reduction ratio	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
100	0.0006 {0.0027}	0.0009 {0.0036}	0.0022 {0.0087}	0.0047 {0.0188}	0.0049 {0.0196}	0.0097 {0.0391}	0.0176 {0.0703}	0.0191 {0.0763}
150	0.0006 {0.0026}	0.0008 {0.0033}	0.0020 {0.0078}	0.0041 {0.0165}	0.0042 {0.0168}	0.0084 {0.0335}	0.0147 {0.0591}	0.0154 {0.0617}
200	0.0006 {0.0023}	0.0007 {0.0029}	0.0018 {0.0072}	0.0036 {0.0141}	0.0036 {0.0143}	0.0069 {0.0275}	0.0117 {0.0470}	0.0121 {0.0485}
250	0.0006 {0.0022}	0.0007 {0.0028}	0.0017 {0.0067}	0.0034 {0.0132}	0.0034 {0.0133}	0.0061 {0.0243}	0.0104 {0.0414}	0.0106 {0.0423}
300	0.0006 {0.0027}	0.0009 {0.0035}	0.0021 {0.0085}	0.0047 {0.0185}	0.0048 {0.0192}	0.0096 {0.0384}	0.0173 {0.0690}	0.0186 {0.0743}
450	0.0006 {0.0026}	0.0008 {0.0032}	0.0020 {0.0077}	0.0041 {0.0164}	0.0042 {0.0166}	0.0083 {0.0332}	0.0146 {0.0585}	0.0152 {0.0609}
600	0.0006 {0.0023}	0.0007 {0.0029}	0.0018 {0.0071}	0.0036 {0.0141}	0.0036 {0.0142}	0.0069 {0.0274}	0.0116 {0.0467}	0.0120 {0.0480}
750	0.0006 {0.0022}	0.0007 {0.0028}	0.0017 {0.0067}	0.0033 {0.0132}	0.0034 {0.0133}	0.0060 {0.0242}	0.0103 {0.0412}	0.0105 {0.0420}
900	0.0006 {0.0024}	0.0008 {0.0030}	0.0018 {0.0073}	0.0038 {0.0151}	0.0038 {0.0152}	0.0075 {0.0299}	0.0131 {0.0521}	0.0132 {0.0527}
1200	0.0006 {0.0023}	0.0007 {0.0028}	0.0017 {0.0068}	0.0033 {0.0134}	0.0033 {0.0134}	0.0064 {0.0256}	0.0108 {0.0431}	0.0109 {0.0435}
1500	0.0006 {0.0022}	0.0007 {0.0028}	0.0017 {0.0067}	0.0033 {0.0132}	0.0034 {0.0133}	0.0060 {0.0242}	0.0103 {0.0412}	0.0105 {0.0420}
1800	0.0006 {0.0024}	0.0008 {0.0030}	0.0018 {0.0073}	0.0038 {0.0151}	0.0038 {0.0152}	0.0075 {0.0299}	0.0130 {0.0521}	0.0132 {0.0527}
2400	0.0006 {0.0023}	0.0007 {0.0028}	0.0017 {0.0068}	0.0034 {0.0134}	0.0034 {0.0134}	0.0066 {0.0256}	0.0110 {0.0431}	0.0114 {0.0435}
3000	0.0006 {0.0022}	0.0007 {0.0027}	0.0016 {0.0065}	0.0032 {0.0127}	0.0032 {0.0128}	0.0057 {0.0230}	0.0098 {0.0391}	0.0098 {0.0393}
3600	0.0006 {0.0022}	0.0006 {0.0025}	0.0016 {0.0062}	0.0031 {0.0123}	0.0031 {0.0123}	0.0056 {0.0223}	0.0091 {0.0365}	0.0092 {0.0367}

Hollow Output Shaft (H Type)

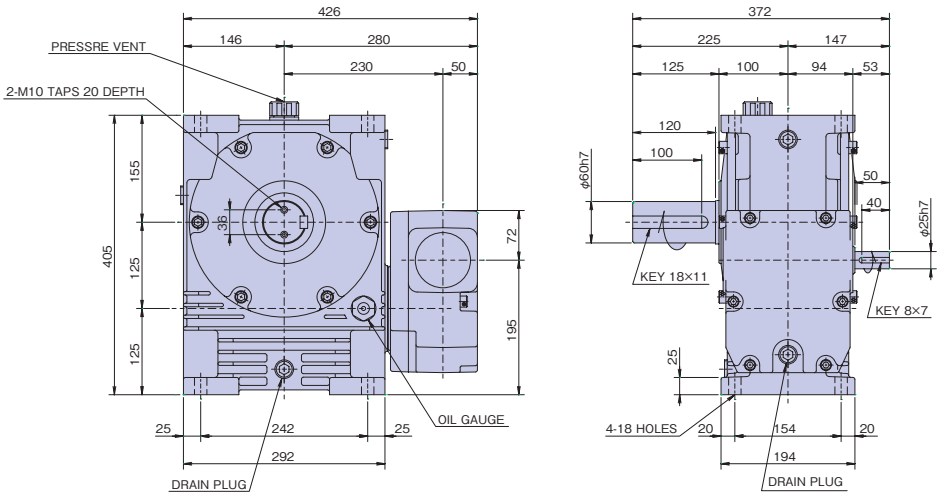
Moment of inertia on input shaft {GD²} : kg·m² {kgf·m²}

Size / Nominal reduction ratio	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
100	0.0007 {0.0027}	0.0009 {0.0036}	0.0022 {0.0087}	0.0047 {0.0188}	0.0049 {0.0196}	0.0098 {0.0391}	0.0176 {0.0705}	0.0192 {0.0766}
150	0.0006 {0.0026}	0.0008 {0.0033}	0.0020 {0.0078}	0.0041 {0.0165}	0.0042 {0.0168}	0.0084 {0.0335}	0.0148 {0.0592}	0.0154 {0.0619}
200	0.0006 {0.0024}	0.0007 {0.0029}	0.0018 {0.0072}	0.0036 {0.0141}	0.0036 {0.0143}	0.0069 {0.0276}	0.0117 {0.0470}	0.0121 {0.0486}
250	0.0006 {0.0022}	0.0007 {0.0028}	0.0017 {0.0067}	0.0034 {0.0132}	0.0034 {0.0133}	0.0061 {0.0243}	0.0104 {0.0414}	0.0106 {0.0424}
300	0.0006 {0.0027}	0.0009 {0.0035}	0.0021 {0.0085}	0.0047 {0.0185}	0.0048 {0.0192}	0.0096 {0.0384}	0.0173 {0.0690}	0.0186 {0.0743}
450	0.0006 {0.0026}	0.0008 {0.0032}	0.0020 {0.0077}	0.0041 {0.0164}	0.0042 {0.0166}	0.0083 {0.0332}	0.0146 {0.0585}	0.0152 {0.0609}
600	0.0006 {0.0023}	0.0007 {0.0029}	0.0018 {0.0071}	0.0036 {0.0141}	0.0036 {0.0142}	0.0069 {0.0274}	0.0116 {0.0467}	0.0120 {0.0480}
750	0.0006 {0.0022}	0.0007 {0.0028}	0.0017 {0.0067}	0.0033 {0.0132}	0.0034 {0.0133}	0.0060 {0.0242}	0.0103 {0.0412}	0.0105 {0.0420}
900	0.0006 {0.0024}	0.0008 {0.0030}	0.0018 {0.0073}	0.0038 {0.0151}	0.0038 {0.0152}	0.0075 {0.0299}	0.0131 {0.0521}	0.0132 {0.0527}
1200	0.0006 {0.0023}	0.0007 {0.0028}	0.0017 {0.0068}	0.0033 {0.0134}	0.0033 {0.0134}	0.0064 {0.0256}	0.0108 {0.0431}	0.0109 {0.0435}
1500	0.0006 {0.0022}	0.0007 {0.0028}	0.0017 {0.0067}	0.0033 {0.0132}	0.0034 {0.0133}	0.0060 {0.0242}	0.0103 {0.0412}	0.0105 {0.0420}
1800	0.0006 {0.0024}	0.0008 {0.0030}	0.0018 {0.0073}	0.0038 {0.0151}	0.0038 {0.0152}	0.0075 {0.0299}	0.0130 {0.0521}	0.0132 {0.0527}
2400	0.0006 {0.0023}	0.0007 {0.0028}	0.0017 {0.0068}	0.0034 {0.0134}	0.0034 {0.0134}	0.0066 {0.0256}	0.0110 {0.0431}	0.0114 {0.0435}
3000	0.0006 {0.0022}	0.0007 {0.0027}	0.0016 {0.0065}	0.0032 {0.0127}	0.0032 {0.0128}	0.0057 {0.0230}	0.0098 {0.0391}	0.0098 {0.0393}
3600	0.0006 {0.0022}	0.0006 {0.0025}	0.0016 {0.0062}	0.0031 {0.0123}	0.0031 {0.0123}	0.0056 {0.0223}	0.0091 {0.0365}	0.0092 {0.0367}

Dimensional Drawings TD125S

TD125S□□B

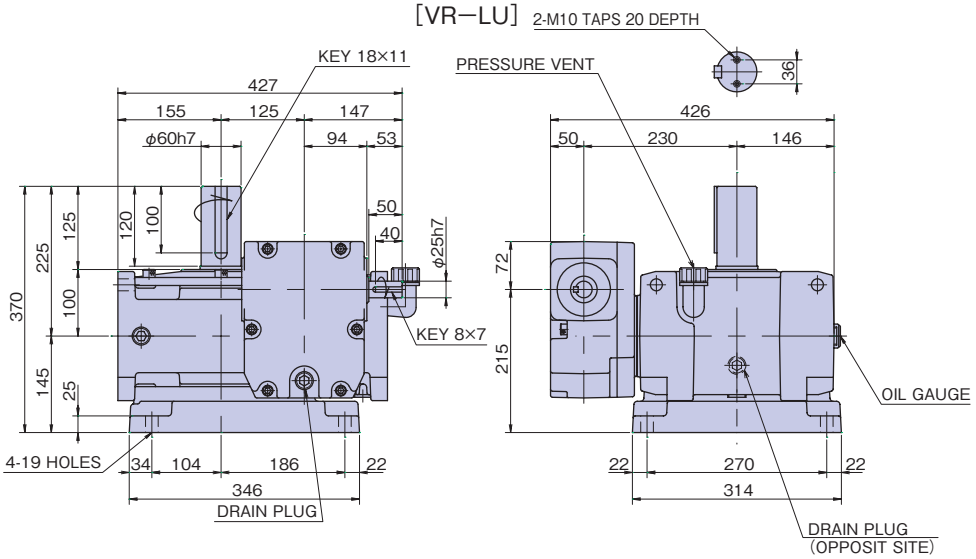
[BR–L]



Estimated mass 98 kg

TD125S□□V

[VR–LU]



Estimated mass 109 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

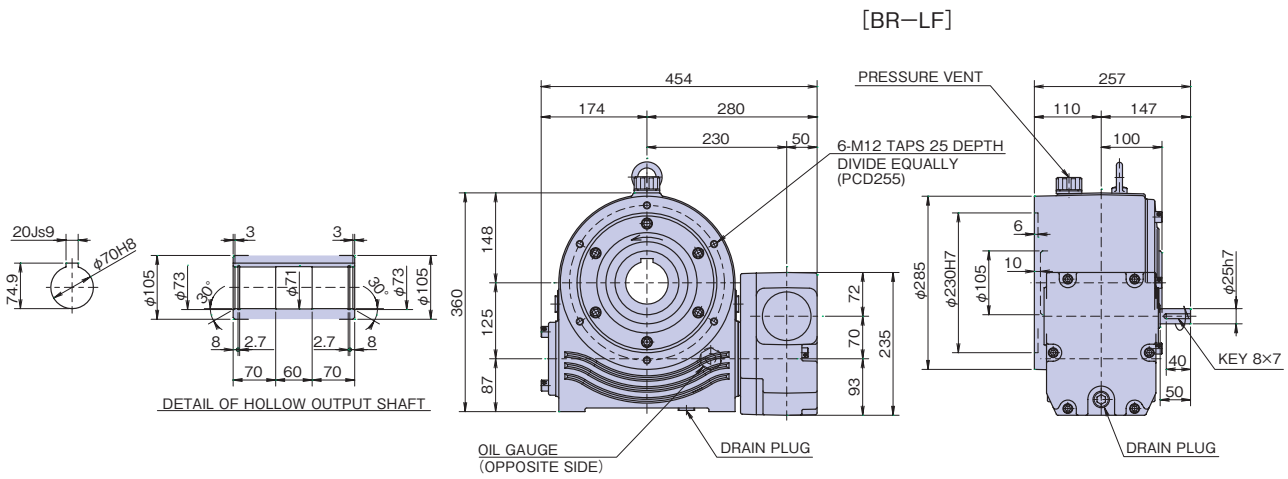
Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD125S	100	4.04	1900 {194}	3.76	2107 {215}	3.39	2354 {240}	3.06	2537 {259}	1.77	2644 {270}	0.38	2511 {256}
	150	3.02	2034 {208}	2.81	2244 {229}	2.54	2511 {256}	2.28	2671 {273}	1.28	2671 {273}	0.29	2644 {270}
	200	2.41	2083 {213}	2.24	2297 {234}	1.99	2511 {256}	1.78	2671 {273}	1.01	2671 {273}	0.23	2564 {262}
	250	1.99	2083 {213}	1.83	2270 {232}	1.63	2484 {253}	1.47	2644 {270}	0.83	2618 {267}	0.19	2484 {253}
	300	2.88	3668 {374}	2.49	3759 {384}	2.09	3875 {395}	1.76	3889 {397}	1.00	3889 {397}	0.24	3889 {397}
	450	2.15	3866 {394}	1.83	3889 {397}	1.49	3889 {397}	1.27	3889 {397}	0.73	3889 {397}	0.18	3889 {397}
	600	1.69	3889 {397}	1.44	3889 {397}	1.18	3889 {397}	1.00	3889 {397}	0.58	3889 {397}	0.14	3889 {397}
	750	1.41	3889 {397}	1.20	3889 {397}	0.99	3889 {397}	0.84	3889 {397}	0.49	3889 {397}	0.12	3889 {397}
	900	1.26	3889 {397}	1.07	3889 {397}	0.89	3889 {397}	0.76	3889 {397}	0.45	3889 {397}	0.12	3889 {397}
	1200	1.01	3889 {397}	0.87	3889 {397}	0.72	3889 {397}	0.62	3889 {397}	0.37	3889 {397}	0.10	3889 {397}
	1500	0.86	3889 {397}	0.74	3889 {397}	0.61	3889 {397}	0.52	3889 {397}	0.31	3889 {397}	0.08	3889 {397}
	1800	0.77	3889 {397}	0.67	3889 {397}	0.56	3889 {397}	0.48	3889 {397}	0.29	3889 {397}	0.08	3889 {397}
	2400	0.63	3889 {397}	0.54	3889 {397}	0.45	3889 {397}	0.39	3889 {397}	0.24	3889 {397}	0.07	3889 {397}
	3000	0.54	3889 {397}	0.47	3889 {397}	0.39	3889 {397}	0.34	3889 {397}	0.21	3889 {397}	0.06	3889 {397}
	3600	0.48	3889 {397}	0.41	3889 {397}	0.35	3889 {397}	0.30	3889 {397}	0.19	3889 {397}	0.05	3889 {397}

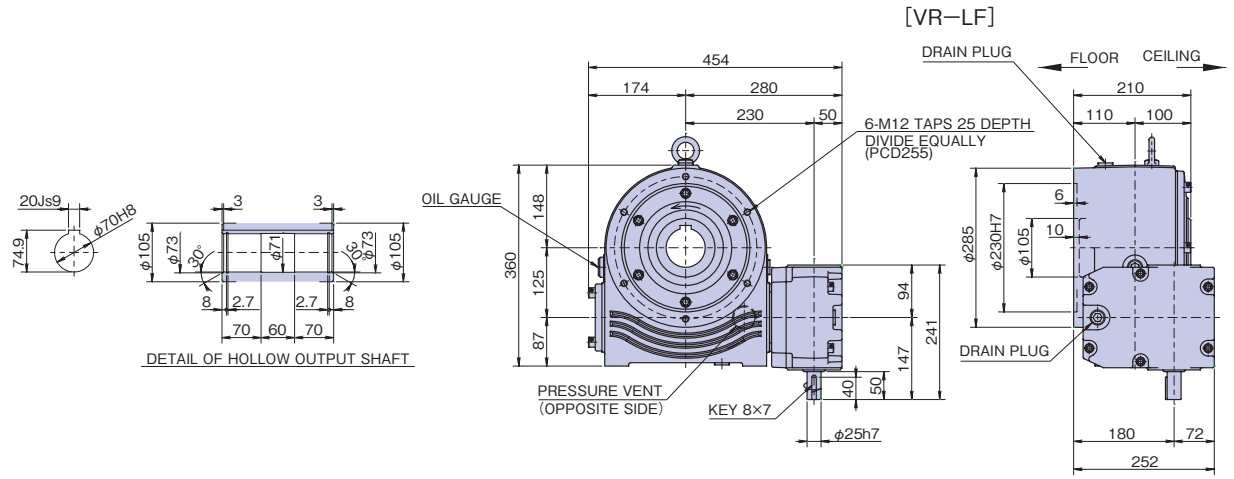
Dimensional Drawings TD125H

TD125H□□B



Estimated mass 89 kg

TD125H□□V



Estimated mass 90 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

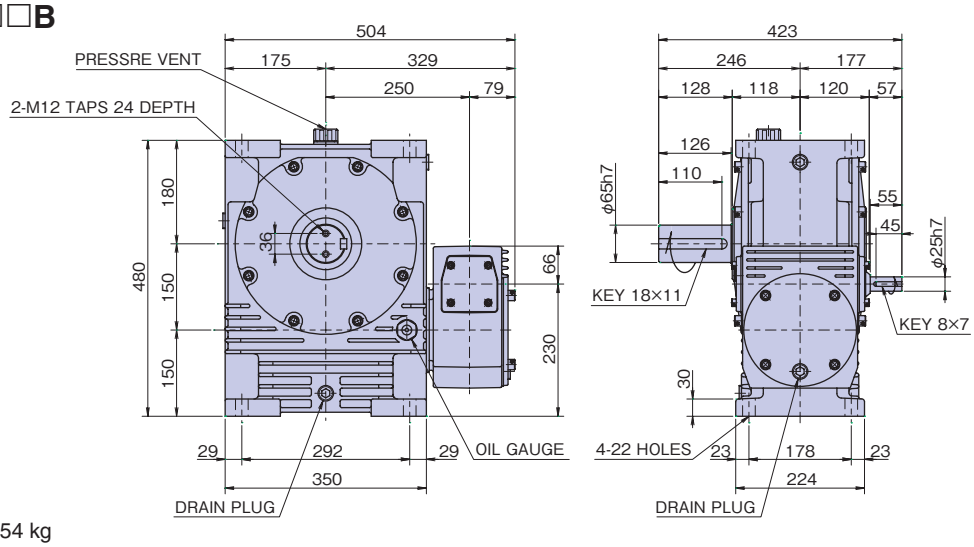
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD125H	100	4.04	1900 {194}	3.76	2107 {215}	3.39	2354 {240}	3.06	2537 {259}	1.77	2644 {270}	0.38	2511 {256}
	150	3.02	2034 {208}	2.81	2244 {229}	2.54	2511 {256}	2.28	2671 {273}	1.28	2671 {273}	0.29	2644 {270}
	200	2.41	2083 {213}	2.24	2297 {234}	1.99	2511 {256}	1.78	2671 {273}	1.01	2671 {273}	0.23	2564 {262}
	250	1.99	2083 {213}	1.83	2270 {232}	1.63	2484 {253}	1.47	2644 {270}	0.83	2618 {267}	0.19	2484 {253}
	300	2.88	3668 {374}	2.49	3759 {384}	2.09	3875 {395}	1.76	3889 {397}	1.00	3889 {397}	0.24	3889 {397}
	450	2.15	3866 {394}	1.83	3889 {397}	1.49	3889 {397}	1.27	3889 {397}	0.73	3889 {397}	0.18	3889 {397}
	600	1.69	3889 {397}	1.44	3889 {397}	1.18	3889 {397}	1.00	3889 {397}	0.58	3889 {397}	0.14	3889 {397}
	750	1.41	3889 {397}	1.20	3889 {397}	0.99	3889 {397}	0.84	3889 {397}	0.49	3889 {397}	0.12	3889 {397}
	900	1.26	3889 {397}	1.07	3889 {397}	0.89	3889 {397}	0.76	3889 {397}	0.45	3889 {397}	0.12	3889 {397}
	1200	1.01	3889 {397}	0.87	3889 {397}	0.72	3889 {397}	0.62	3889 {397}	0.37	3889 {397}	0.10	3889 {397}
	1500	0.86	3889 {397}	0.74	3889 {397}	0.61	3889 {397}	0.52	3889 {397}	0.31	3889 {397}	0.08	3889 {397}
	1800	0.77	3889 {397}	0.67	3889 {397}	0.56	3889 {397}	0.48	3889 {397}	0.29	3889 {397}	0.08	3889 {397}
	2400	0.63	3889 {397}	0.54	3889 {397}	0.45	3889 {397}	0.39	3889 {397}	0.24	3889 {397}	0.07	3889 {397}
	3000	0.54	3889 {397}	0.47	3889 {397}	0.39	3889 {397}	0.34	3889 {397}	0.21	3889 {397}	0.06	3889 {397}
	3600	0.48	3889 {397}	0.41	3889 {397}	0.35	3889 {397}	0.30	3889 {397}	0.19	3889 {397}	0.05	3889 {397}

Dimensional Drawings TD150S

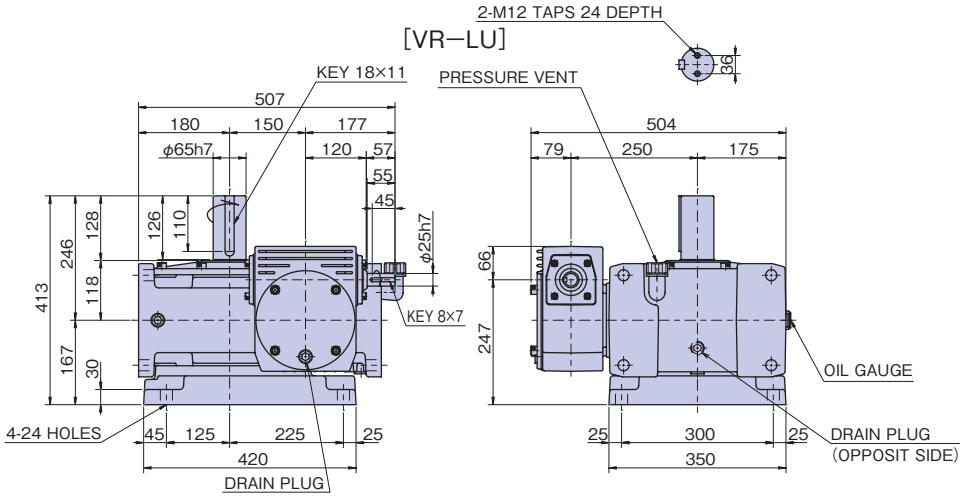
[BR—L]

TD150S□□B



Estimated mass 154 kg

TD150S□□V



Estimated mass 182 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

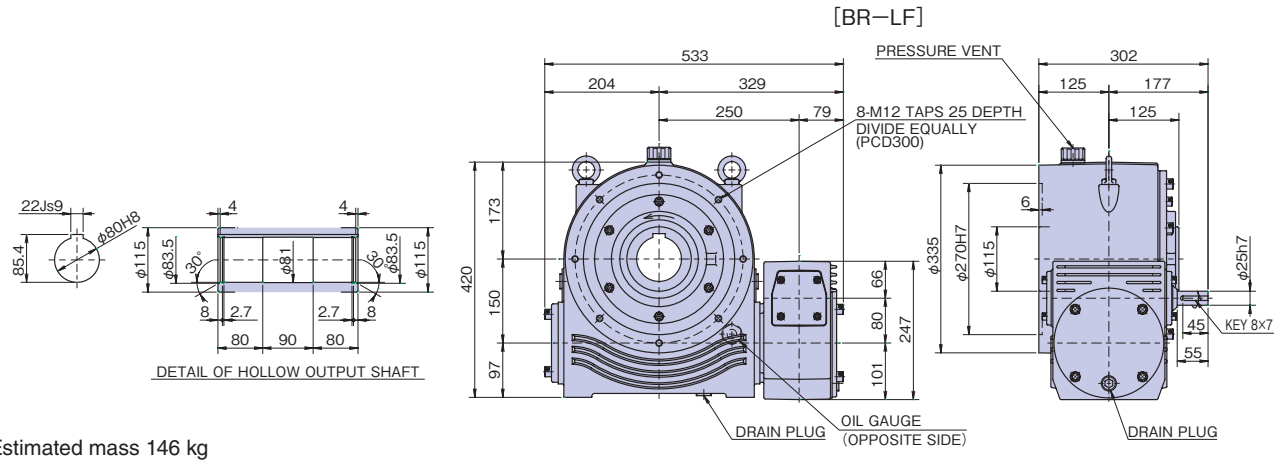
Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD150S	100	5.63	2688 {274}	5.29	3014 {308}	4.76	3362 {343}	4.15	3500 {357}	2.61	3986 {407}	0.56	3792 {387}
	150	4.26	2926 {299}	3.87	3160 {322}	3.42	3451 {352}	2.99	3597 {367}	1.94	4180 {427}	0.43	3986 {407}
	200	3.41	3014 {308}	3.11	3257 {332}	2.71	3500 {357}	2.41	3694 {377}	1.50	4083 {417}	0.34	3937 {402}
	250	2.81	3014 {308}	2.60	3305 {337}	2.27	3549 {362}	2.02	3743 {382}	1.20	3937 {402}	0.27	3792 {387}
	300	4.31	5601 {572}	3.72	5733 {585}	3.10	5899 {602}	2.66	6002 {612}	1.50	6002 {612}	0.36	6002 {612}
	450	3.18	5887 {601}	2.75	6002 {612}	2.24	6002 {612}	1.89	6002 {612}	1.08	6002 {612}	0.26	6002 {612}
	600	2.54	6002 {612}	2.16	6002 {612}	1.77	6002 {612}	1.50	6002 {612}	0.86	6002 {612}	0.21	6002 {612}
	750	2.11	6002 {612}	1.80	6002 {612}	1.47	6002 {612}	1.25	6002 {612}	0.72	6002 {612}	0.18	6002 {612}
	900	1.86	6002 {612}	1.59	6002 {612}	1.31	6002 {612}	1.12	6002 {612}	0.66	6002 {612}	0.17	6002 {612}
	1200	1.50	6002 {612}	1.28	6002 {612}	1.06	6002 {612}	0.91	6002 {612}	0.54	6002 {612}	0.14	6002 {612}
	1500	1.32	6166 {629}	1.13	6166 {629}	0.93	6166 {629}	0.80	6166 {629}	0.47	6166 {629}	0.12	6166 {629}
	1800	1.17	6166 {629}	1.01	6166 {629}	0.84	6166 {629}	0.72	6166 {629}	0.43	6166 {629}	0.12	6166 {629}
	2400	0.95	6166 {629}	0.82	6166 {629}	0.68	6166 {629}	0.59	6166 {629}	0.36	6166 {629}	0.10	6166 {629}
	3000	0.81	6166 {629}	0.70	6166 {629}	0.59	6166 {629}	0.51	6166 {629}	0.31	6166 {629}	0.09	6166 {629}
	3600	0.71	6166 {629}	0.62	6166 {629}	0.52	6166 {629}	0.45	6166 {629}	0.28	6166 {629}	0.08	6166 {629}

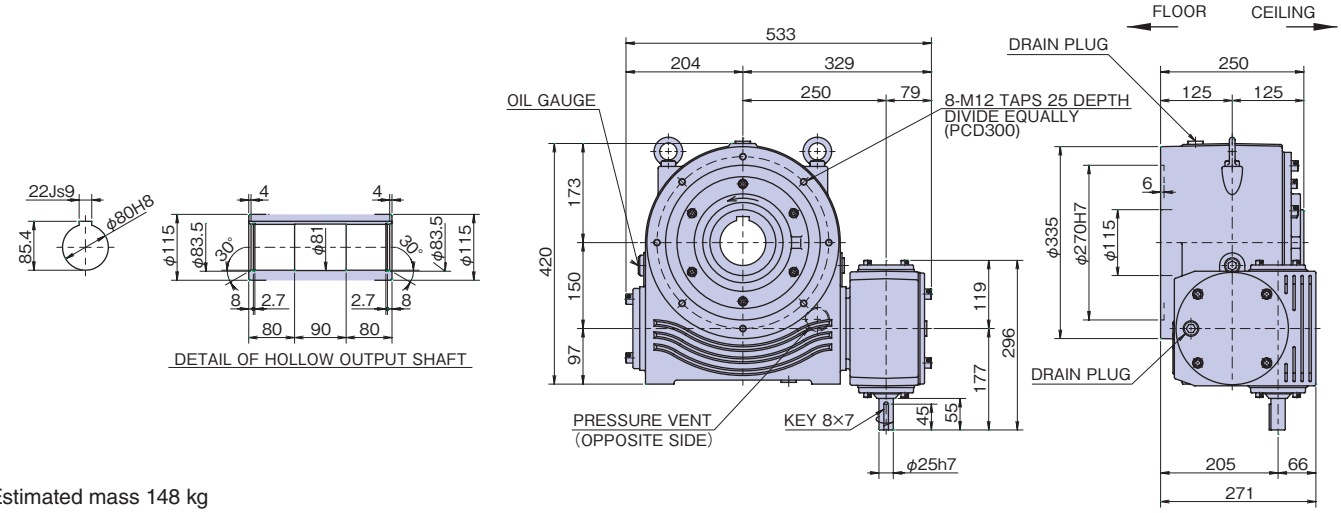
Dimensional Drawings TD150H

TD150H□□B



Estimated mass 146 kg

TD150H□□V



Estimated mass 148 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

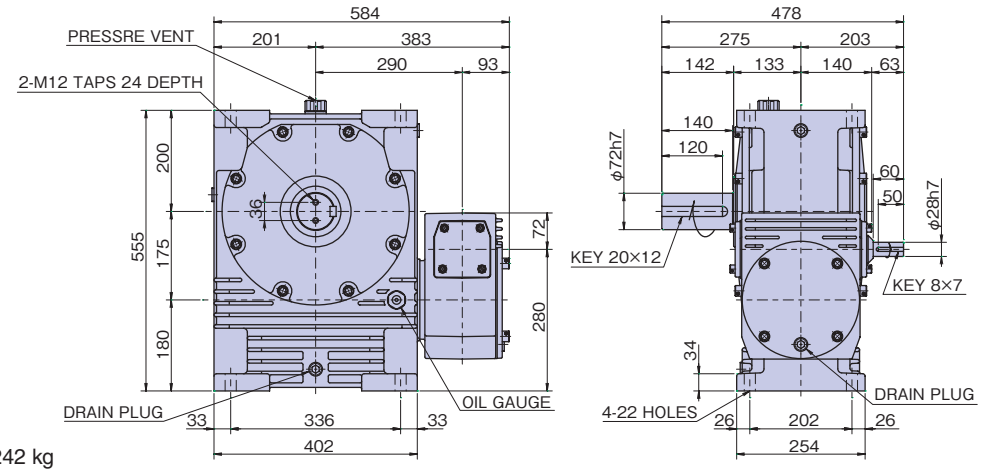
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD150H	100	5.63	2688 {274}	5.29	3014 {308}	4.76	3362 {343}	4.15	3500 {357}	2.61	3986 {407}	0.56	3792 {387}
	150	4.26	2926 {299}	3.87	3160 {322}	3.42	3451 {352}	2.99	3597 {367}	1.94	4180 {427}	0.43	3986 {407}
	200	3.41	3014 {308}	3.11	3257 {332}	2.71	3500 {357}	2.41	3694 {377}	1.50	4083 {417}	0.34	3937 {402}
	250	2.81	3014 {308}	2.60	3305 {337}	2.27	3549 {362}	2.02	3743 {382}	1.20	3937 {402}	0.27	3792 {387}
	300	4.31	5601 {572}	3.72	5733 {585}	3.10	5899 {602}	2.66	6002 {612}	1.50	6002 {612}	0.36	6002 {612}
	450	3.18	5887 {601}	2.75	6002 {612}	2.24	6002 {612}	1.89	6002 {612}	1.08	6002 {612}	0.26	6002 {612}
	600	2.54	6002 {612}	2.16	6002 {612}	1.77	6002 {612}	1.50	6002 {612}	0.86	6002 {612}	0.21	6002 {612}
	750	2.11	6002 {612}	1.80	6002 {612}	1.47	6002 {612}	1.25	6002 {612}	0.72	6002 {612}	0.18	6002 {612}
	900	1.86	6002 {612}	1.59	6002 {612}	1.31	6002 {612}	1.12	6002 {612}	0.66	6002 {612}	0.17	6002 {612}
	1200	1.50	6002 {612}	1.28	6002 {612}	1.06	6002 {612}	0.91	6002 {612}	0.54	6002 {612}	0.14	6002 {612}
	1500	1.32	6166 {629}	1.13	6166 {629}	0.93	6166 {629}	0.80	6166 {629}	0.47	6166 {629}	0.12	6166 {629}
	1800	1.17	6166 {629}	1.01	6166 {629}	0.84	6166 {629}	0.72	6166 {629}	0.43	6166 {629}	0.12	6166 {629}
	2400	0.95	6166 {629}	0.82	6166 {629}	0.68	6166 {629}	0.59	6166 {629}	0.36	6166 {629}	0.10	6166 {629}
	3000	0.81	6166 {629}	0.70	6166 {629}	0.59	6166 {629}	0.51	6166 {629}	0.31	6166 {629}	0.09	6166 {629}
	3600	0.71	6166 {629}	0.62	6166 {629}	0.52	6166 {629}	0.45	6166 {629}	0.28	6166 {629}	0.08	6166 {629}

Dimensional Drawings TD175S

TD175S□□B

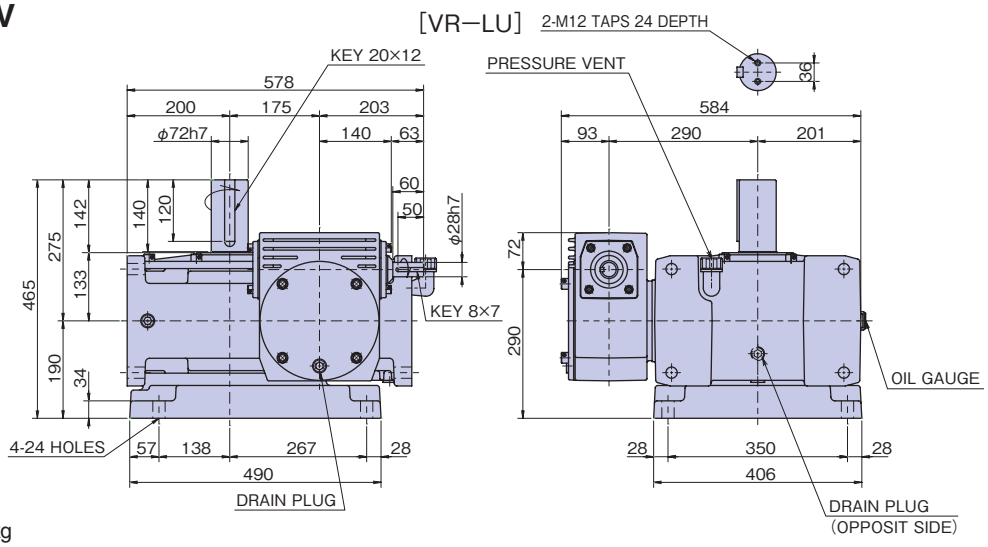
[BR—L]



Estimated mass 242 kg

TD175S□□V

[VR—LU]



Estimated mass 264 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

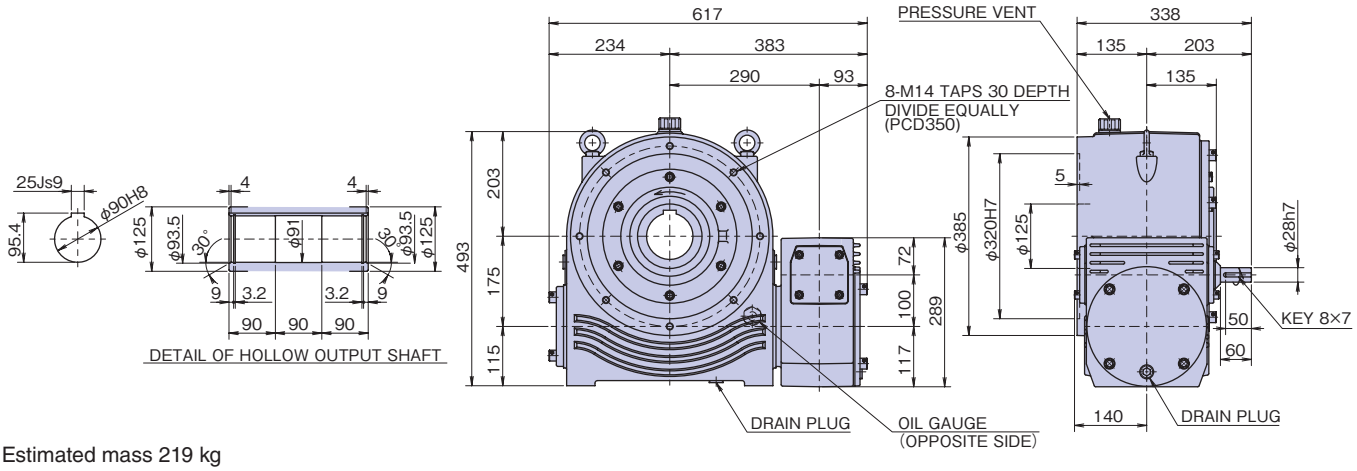
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD175S	100	9.36	4524 { 462}	8.52	4917 { 502}	7.88	5657 { 577}	6.96	5978 { 610}	4.58	7143 { 729}	0.99	6832 { 697}
	150	6.99	4883 { 498}	6.44	5357 { 547}	5.72	5901 { 602}	4.99	6134 { 626}	3.34	7376 { 753}	0.75	7221 { 737}
	200	5.51	4969 { 507}	5.08	5435 { 555}	4.53	5978 { 610}	4.00	6289 { 642}	2.66	7453 { 761}	0.61	7221 { 737}
	250	4.45	4891 { 499}	4.23	5512 { 562}	3.78	6056 { 618}	3.35	6366 { 650}	2.12	7143 { 729}	0.48	6832 { 697}
	300	5.91	7903 { 806}	4.97	7903 { 806}	4.02	7903 { 806}	3.38	7903 { 806}	1.90	7903 { 806}	0.45	7903 { 806}
	450	4.00	7903 { 806}	3.38	7903 { 806}	2.74	7903 { 806}	2.32	7903 { 806}	1.31	7903 { 806}	0.32	7903 { 806}
	600	3.13	7903 { 806}	2.65	7903 { 806}	2.16	7903 { 806}	1.83	7903 { 806}	1.05	7903 { 806}	0.26	7903 { 806}
	750	2.58	7903 { 806}	2.19	7903 { 806}	1.79	7903 { 806}	1.52	7903 { 806}	0.87	7903 { 806}	0.22	7903 { 806}
	900	2.26	7903 { 806}	1.92	7903 { 806}	1.58	7903 { 806}	1.34	7903 { 806}	0.78	7903 { 806}	0.20	7903 { 806}
	1200	1.81	7903 { 806}	1.55	7903 { 806}	1.28	7903 { 806}	1.09	7903 { 806}	0.65	7903 { 806}	0.17	7903 { 806}
	1500	1.54	7903 { 806}	1.32	7903 { 806}	1.09	7903 { 806}	0.93	7903 { 806}	0.55	7903 { 806}	0.14	7903 { 806}
	1800	1.36	7903 { 806}	1.16	7903 { 806}	0.96	7903 { 806}	0.82	7903 { 806}	0.49	7903 { 806}	0.13	7903 { 806}
	2400	1.10	7903 { 806}	0.95	7903 { 806}	0.79	7903 { 806}	0.68	7903 { 806}	0.41	7903 { 806}	0.11	7903 { 806}
	3000	0.93	7903 { 806}	0.80	7903 { 806}	0.67	7903 { 806}	0.58	7903 { 806}	0.35	7903 { 806}	0.10	7903 { 806}
	3600	0.82	7903 { 806}	0.71	7903 { 806}	0.59	7903 { 806}	0.51	7903 { 806}	0.31	7903 { 806}	0.09	7903 { 806}

Dimensional Drawings TD175H

TD175H□□B

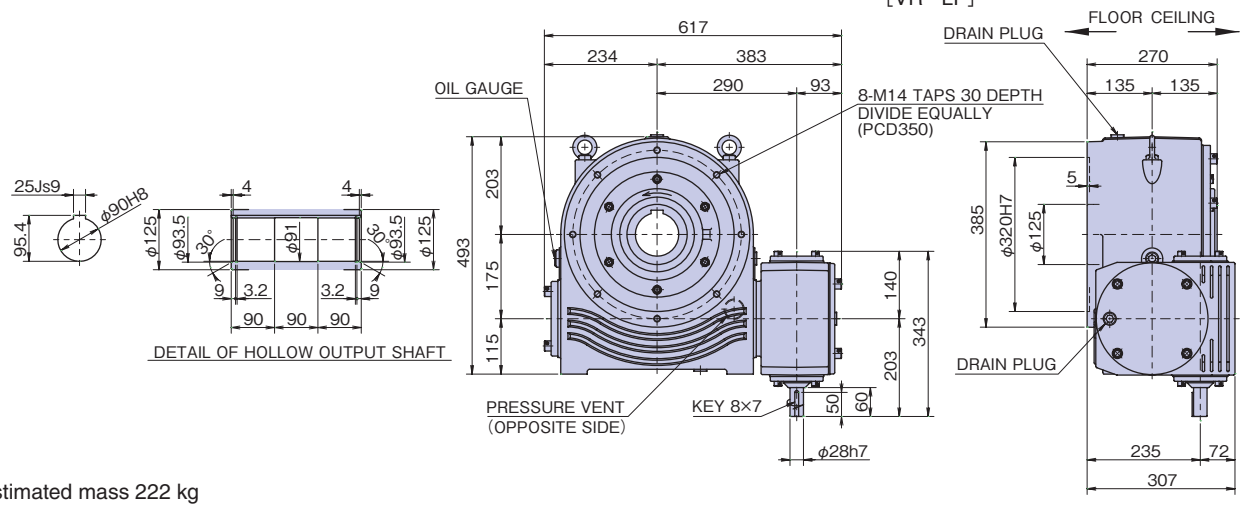
[BR—LF]



Estimated mass 219 kg

TD175H□□V

[VR—LF]



Estimated mass 222 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

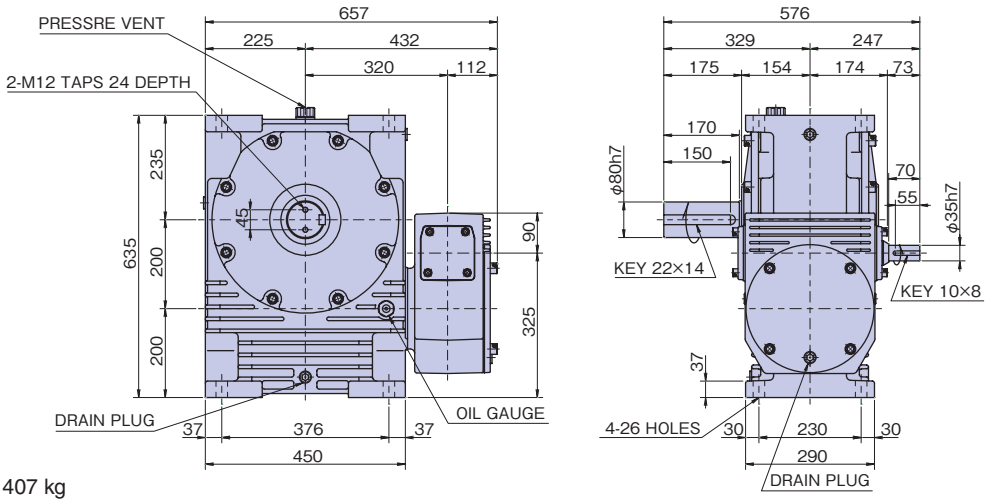
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD175H	100	9.36	4524 { 462}	8.52	4917 { 502}	7.88	5657 { 577}	6.96	5978 { 610}	4.58	7143 { 729}	0.99	6832 { 697}
	150	6.99	4883 { 498}	6.44	5357 { 547}	5.72	5901 { 602}	4.99	6134 { 626}	3.34	7376 { 753}	0.75	7221 { 737}
	200	5.51	4969 { 507}	5.08	5435 { 555}	4.53	5978 { 610}	4.00	6289 { 642}	2.66	7453 { 761}	0.61	7221 { 737}
	250	4.45	4891 { 499}	4.23	5512 { 562}	3.78	6056 { 618}	3.35	6366 { 650}	2.12	7143 { 729}	0.48	6832 { 697}
	300	5.91	7903 { 806}	4.97	7903 { 806}	4.02	7903 { 806}	3.38	7903 { 806}	1.90	7903 { 806}	0.45	7903 { 806}
	450	4.00	7903 { 806}	3.38	7903 { 806}	2.74	7903 { 806}	2.32	7903 { 806}	1.31	7903 { 806}	0.32	7903 { 806}
	600	3.13	7903 { 806}	2.65	7903 { 806}	2.16	7903 { 806}	1.83	7903 { 806}	1.05	7903 { 806}	0.26	7903 { 806}
	750	2.58	7903 { 806}	2.19	7903 { 806}	1.79	7903 { 806}	1.52	7903 { 806}	0.87	7903 { 806}	0.22	7903 { 806}
	900	2.26	7903 { 806}	1.92	7903 { 806}	1.58	7903 { 806}	1.34	7903 { 806}	0.78	7903 { 806}	0.20	7903 { 806}
	1200	1.81	7903 { 806}	1.55	7903 { 806}	1.28	7903 { 806}	1.09	7903 { 806}	0.65	7903 { 806}	0.17	7903 { 806}
	1500	1.54	7903 { 806}	1.32	7903 { 806}	1.09	7903 { 806}	0.93	7903 { 806}	0.55	7903 { 806}	0.14	7903 { 806}
	1800	1.36	7903 { 806}	1.16	7903 { 806}	0.96	7903 { 806}	0.82	7903 { 806}	0.49	7903 { 806}	0.13	7903 { 806}
	2400	1.10	7903 { 806}	0.95	7903 { 806}	0.79	7903 { 806}	0.68	7903 { 806}	0.41	7903 { 806}	0.11	7903 { 806}
	3000	0.93	7903 { 806}	0.80	7903 { 806}	0.67	7903 { 806}	0.58	7903 { 806}	0.35	7903 { 806}	0.10	7903 { 806}
	3600	0.82	7903 { 806}	0.71	7903 { 806}	0.59	7903 { 806}	0.51	7903 { 806}	0.31	7903 { 806}	0.09	7903 { 806}

Dimensional Drawings TD200S

TD200S□□B

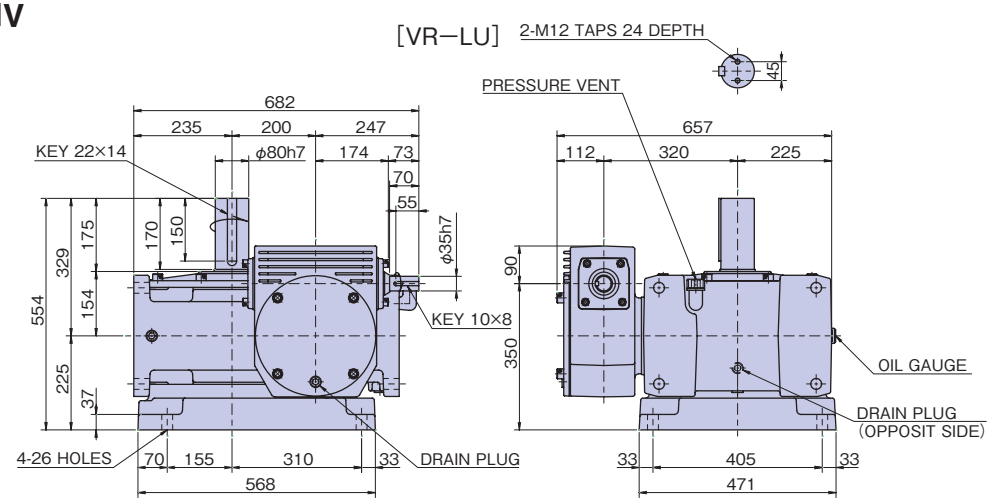
[BR—L]



Estimated mass 407 kg

TD200S□□V

[VR—LU]



Estimated mass 462 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

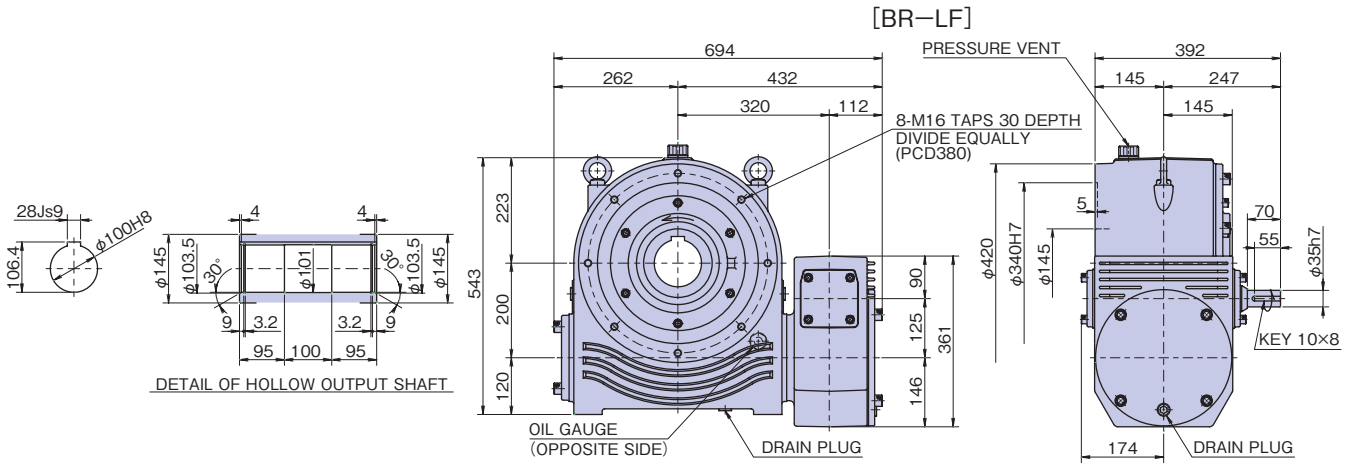
Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD200S	100	15.33	7462 { 761}	14.23	8285 { 845}	12.79	9271 { 946}	11.90	10314 {1052}	6.54	10314 {1052}	1.48	10314 {1052}
	150	11.38	8036 { 820}	10.66	8973 { 916}	9.58	10005 {1021}	8.28	10314 {1052}	4.60	10314 {1052}	1.07	10314 {1052}
	200	9.00	8251 { 842}	8.32	9076 { 926}	7.57	10211 {1042}	6.42	10314 {1052}	3.59	10314 {1052}	0.84	10314 {1052}
	250	7.41	8251 { 842}	6.70	8870 { 905}	6.32	10314 {1052}	5.32	10314 {1052}	3.00	10314 {1052}	0.72	10314 {1052}
	300	8.31	11138 {1137}	6.98	11138 {1137}	5.66	11138 {1137}	4.75	11138 {1137}	2.67	11138 {1137}	0.64	11138 {1137}
	450	5.80	11138 {1137}	4.89	11138 {1137}	3.97	11138 {1137}	3.35	11138 {1137}	1.90	11138 {1137}	0.47	11138 {1137}
	600	4.50	11138 {1137}	3.81	11138 {1137}	3.01	11138 {1137}	2.62	11138 {1137}	1.50	11138 {1137}	0.37	11138 {1137}
	750	3.73	11138 {1137}	3.16	11138 {1137}	2.59	11138 {1137}	2.19	11138 {1137}	1.26	11138 {1137}	0.32	11138 {1137}
	900	3.25	11138 {1137}	2.77	11138 {1137}	2.27	11138 {1137}	1.93	11138 {1137}	1.13	11138 {1137}	0.29	11138 {1137}
	1200	2.58	11138 {1137}	2.20	11138 {1137}	1.81	11138 {1137}	1.55	11138 {1137}	0.91	11138 {1137}	0.24	11138 {1137}
	1500	2.24	11138 {1137}	1.91	11138 {1137}	1.58	11138 {1137}	1.35	11138 {1137}	0.79	11138 {1137}	0.21	11138 {1137}
	1800	1.97	11138 {1137}	1.68	11138 {1137}	1.39	11138 {1137}	1.19	11138 {1137}	0.71	11138 {1137}	0.19	11138 {1137}
	2400	1.57	11138 {1137}	1.35	11138 {1137}	1.12	11138 {1137}	0.97	11138 {1137}	0.58	11138 {1137}	0.16	11138 {1137}
	3000	1.34	11138 {1137}	1.16	11138 {1137}	0.97	11138 {1137}	0.83	11138 {1137}	0.51	11138 {1137}	0.14	11138 {1137}
	3600	1.18	11138 {1137}	1.02	11138 {1137}	0.85	11138 {1137}	0.74	11138 {1137}	0.45	11138 {1137}	0.13	11138 {1137}

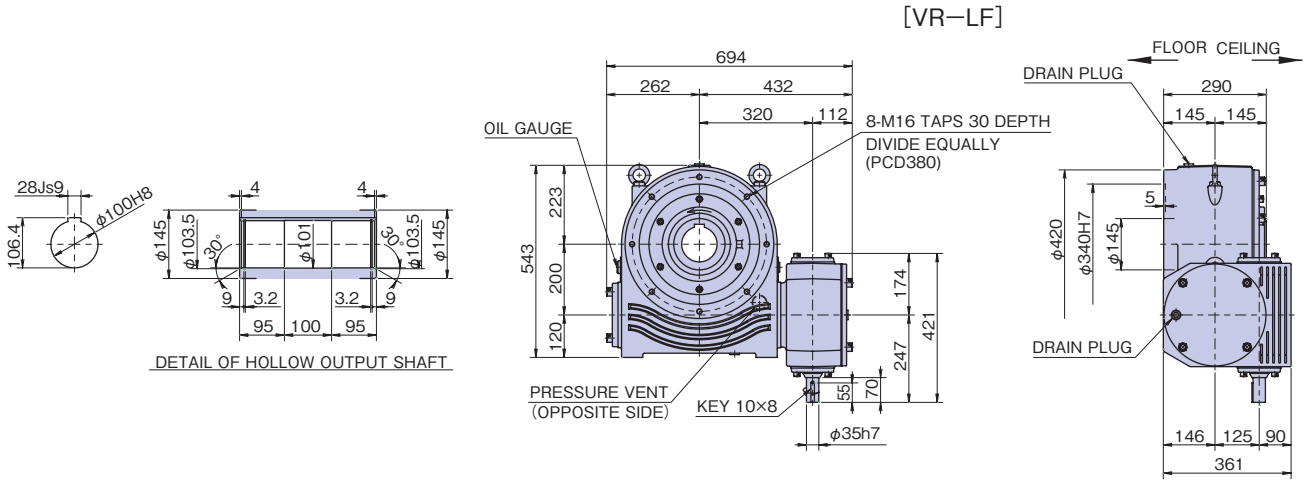
Dimensional Drawings TD200H

TD200H□□B



Estimated mass 327 kg

TD200H□□V



Estimated mass 330 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

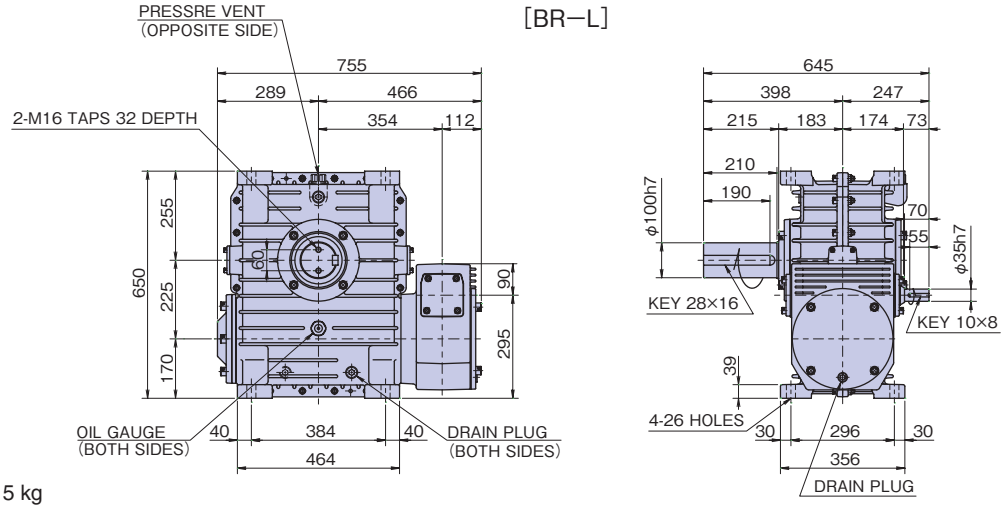
Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD200H	100	15.33	7462 { 761}	14.23	8285 { 845}	12.79	9271 { 946}	11.90	10314 {1052}	6.54	10314 {1052}	1.48	10314 {1052}
	150	11.38	8036 { 820}	10.66	8973 { 916}	9.58	10005 {1021}	8.28	10314 {1052}	4.60	10314 {1052}	1.07	10314 {1052}
	200	9.00	8251 { 842}	8.32	9076 { 926}	7.57	10211 {1042}	6.42	10314 {1052}	3.59	10314 {1052}	0.84	10314 {1052}
	250	7.41	8251 { 842}	6.70	8870 { 905}	6.32	10314 {1052}	5.32	10314 {1052}	3.00	10314 {1052}	0.72	10314 {1052}
	300	8.31	11138 {1137}	6.98	11138 {1137}	5.66	11138 {1137}	4.75	11138 {1137}	2.67	11138 {1137}	0.64	11138 {1137}
	450	5.80	11138 {1137}	4.89	11138 {1137}	3.97	11138 {1137}	3.35	11138 {1137}	1.90	11138 {1137}	0.47	11138 {1137}
	600	4.50	11138 {1137}	3.81	11138 {1137}	3.01	11138 {1137}	2.62	11138 {1137}	1.50	11138 {1137}	0.37	11138 {1137}
	750	3.73	11138 {1137}	3.16	11138 {1137}	2.59	11138 {1137}	2.19	11138 {1137}	1.26	11138 {1137}	0.32	11138 {1137}
	900	3.25	11138 {1137}	2.77	11138 {1137}	2.27	11138 {1137}	1.93	11138 {1137}	1.13	11138 {1137}	0.29	11138 {1137}
	1200	2.58	11138 {1137}	2.20	11138 {1137}	1.81	11138 {1137}	1.55	11138 {1137}	0.91	11138 {1137}	0.24	11138 {1137}
	1500	2.24	11138 {1137}	1.91	11138 {1137}	1.58	11138 {1137}	1.35	11138 {1137}	0.79	11138 {1137}	0.21	11138 {1137}
	1800	1.97	11138 {1137}	1.68	11138 {1137}	1.39	11138 {1137}	1.19	11138 {1137}	0.71	11138 {1137}	0.19	11138 {1137}
	2400	1.57	11138 {1137}	1.35	11138 {1137}	1.12	11138 {1137}	0.97	11138 {1137}	0.58	11138 {1137}	0.16	11138 {1137}
	3000	1.34	11138 {1137}	1.16	11138 {1137}	0.97	11138 {1137}	0.83	11138 {1137}	0.51	11138 {1137}	0.14	11138 {1137}
	3600	1.18	11138 {1137}	1.02	11138 {1137}	0.85	11138 {1137}	0.74	11138 {1137}	0.45	11138 {1137}	0.13	11138 {1137}

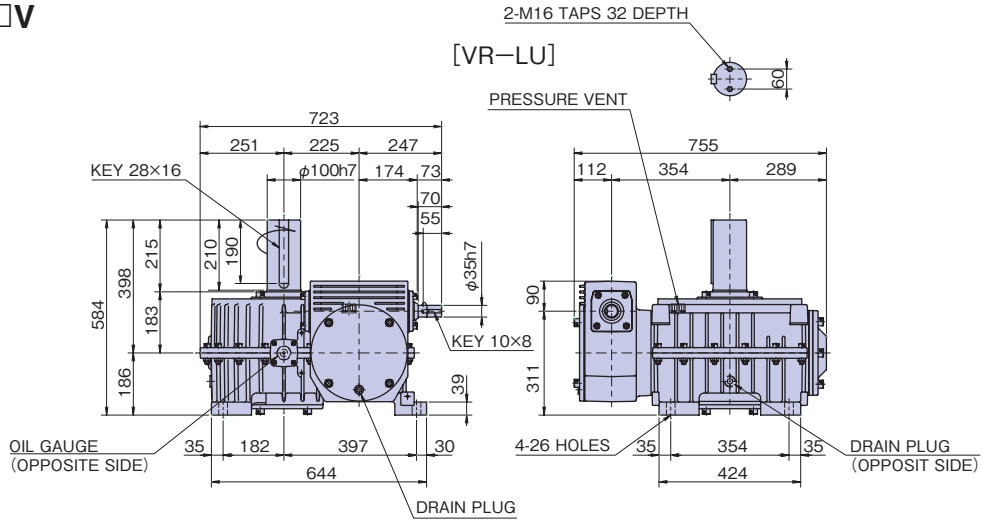
Dimensional Drawings TD225S

TD225S□□B



Estimated mass 415 kg

TD225S□□V



Estimated mass 420 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

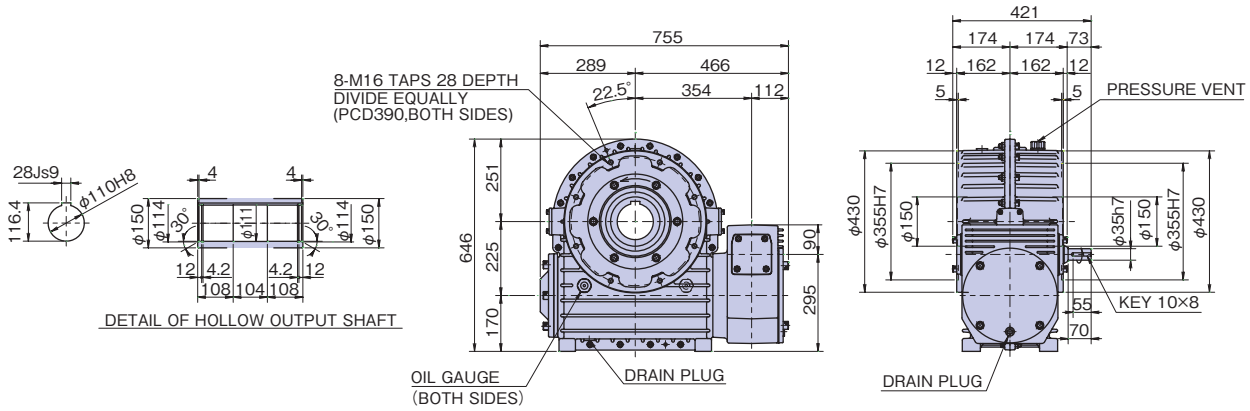
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD225S	100	15.39	7520 { 767}	14.19	8289 { 846}	12.71	9240 { 943}	12.02	10463 {1068}	8.15	12909 {1317}	1.84	12909 {1317}
	150	11.50	8153 { 832}	10.61	8968 { 915}	9.59	10055 {1026}	8.80	11006 {1123}	5.92	13316 {1359}	1.38	13452 {1373}
	200	9.00	8289 { 846}	8.31	9104 { 929}	7.62	10327 {1054}	7.07	11414 {1165}	4.71	13588 {1387}	1.06	13044 {1331}
	250	7.41	8289 { 846}	6.64	8832 { 901}	6.30	10327 {1054}	5.86	11414 {1165}	3.93	13588 {1387}	0.89	12909 {1317}
	300	10.97	14993 {1530}	9.73	15849 {1617}	8.04	16204 {1653}	6.82	16363 {1670}	3.81	16363 {1670}	0.90	16363 {1670}
	450	8.37	16185 {1652}	7.13	16363 {1670}	5.78	16363 {1670}	4.87	16363 {1670}	2.76	16363 {1670}	0.67	16363 {1670}
	600	6.56	16363 {1670}	5.54	16363 {1670}	4.51	16363 {1670}	3.81	16363 {1670}	2.17	16363 {1670}	0.53	16363 {1670}
	750	5.43	16363 {1670}	4.59	16363 {1670}	3.75	16363 {1670}	3.18	16363 {1670}	1.83	16363 {1670}	0.46	16363 {1670}
	900	4.73	16363 {1670}	4.02	16363 {1670}	3.29	16363 {1670}	2.80	16363 {1670}	1.63	16363 {1670}	0.42	16363 {1670}
	1200	3.74	16363 {1670}	3.19	16363 {1670}	2.62	16363 {1670}	2.24	16363 {1670}	1.32	16363 {1670}	0.34	16363 {1670}
	1500	3.55	17542 {1790}	3.02	17542 {1790}	2.49	17542 {1790}	2.12	17542 {1790}	1.25	17542 {1790}	0.33	17542 {1790}
	1800	3.10	17542 {1790}	2.66	17542 {1790}	2.20	17542 {1790}	1.88	17542 {1790}	1.12	17542 {1790}	0.30	17542 {1790}
	2400	2.48	17542 {1790}	2.13	17542 {1790}	1.77	17542 {1790}	1.52	17542 {1790}	0.91	17542 {1790}	0.25	17542 {1790}
	3000	2.11	17542 {1790}	1.82	17542 {1790}	1.51	17542 {1790}	1.31	17542 {1790}	0.79	17542 {1790}	0.22	17542 {1790}
	3600	1.86	17542 {1790}	1.60	17542 {1790}	1.34	17542 {1790}	1.16	17542 {1790}	0.71	17542 {1790}	0.20	17542 {1790}

Dimensional Drawings TD225H

TD225H□□B

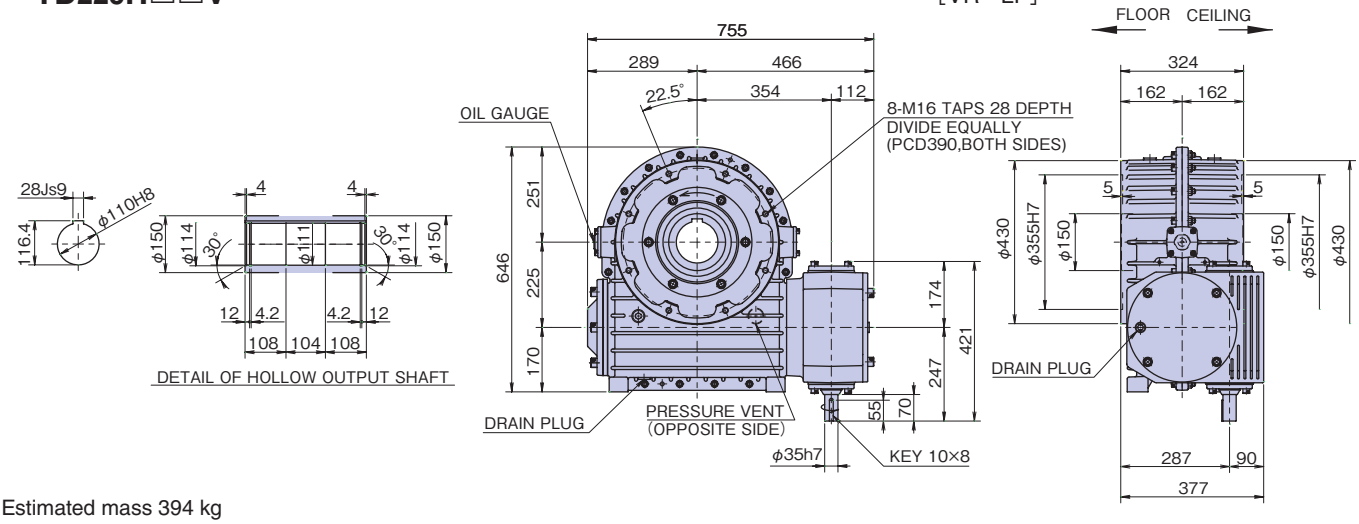
[BR—DF]



Estimated mass 388 kg

TD225H□□V

[VR—LF]



Estimated mass 394 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

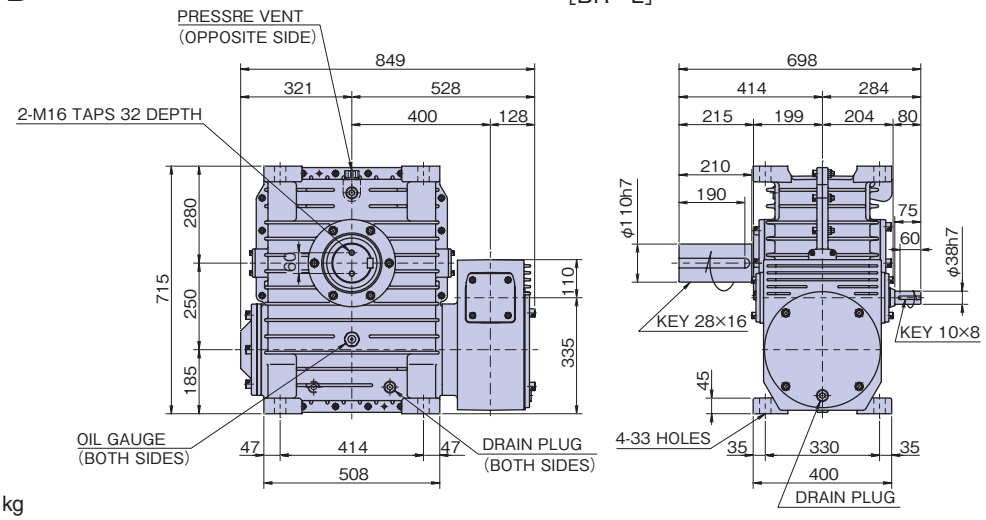
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD225H	100	15.39	7520 { 767}	14.19	8289 { 846}	12.71	9240 { 943}	12.02	10463 {1068}	8.15	12909 {1317}	1.84	12909 {1317}
	150	11.50	8153 { 832}	10.61	8968 { 915}	9.59	10055 {1026}	8.80	11006 {1123}	5.92	13316 {1359}	1.38	13452 {1373}
	200	9.00	8289 { 846}	8.31	9104 { 929}	7.62	10327 {1054}	7.07	11414 {1165}	4.71	13588 {1387}	1.06	13044 {1331}
	250	7.41	8289 { 846}	6.64	8832 { 901}	6.30	10327 {1054}	5.86	11414 {1165}	3.93	13588 {1387}	0.89	12909 {1317}
	300	10.97	14993 {1530}	9.73	15849 {1617}	8.04	16204 {1653}	6.82	16363 {1670}	3.81	16363 {1670}	0.90	16363 {1670}
	450	8.37	16185 {1652}	7.13	16363 {1670}	5.78	16363 {1670}	4.87	16363 {1670}	2.76	16363 {1670}	0.67	16363 {1670}
	600	6.56	16363 {1670}	5.54	16363 {1670}	4.51	16363 {1670}	3.81	16363 {1670}	2.17	16363 {1670}	0.53	16363 {1670}
	750	5.43	16363 {1670}	4.59	16363 {1670}	3.75	16363 {1670}	3.18	16363 {1670}	1.83	16363 {1670}	0.46	16363 {1670}
	900	4.73	16363 {1670}	4.02	16363 {1670}	3.29	16363 {1670}	2.80	16363 {1670}	1.63	16363 {1670}	0.42	16363 {1670}
	1200	3.74	16363 {1670}	3.19	16363 {1670}	2.62	16363 {1670}	2.24	16363 {1670}	1.32	16363 {1670}	0.34	16363 {1670}
	1500	3.55	17542 {1790}	3.02	17542 {1790}	2.49	17542 {1790}	2.12	17542 {1790}	1.25	17542 {1790}	0.33	17542 {1790}
	1800	3.10	17542 {1790}	2.66	17542 {1790}	2.20	17542 {1790}	1.88	17542 {1790}	1.12	17542 {1790}	0.30	17542 {1790}
	2400	2.48	17542 {1790}	2.13	17542 {1790}	1.77	17542 {1790}	1.52	17542 {1790}	0.91	17542 {1790}	0.25	17542 {1790}
	3000	2.11	17542 {1790}	1.82	17542 {1790}	1.51	17542 {1790}	1.31	17542 {1790}	0.79	17542 {1790}	0.22	17542 {1790}
	3600	1.86	17542 {1790}	1.60	17542 {1790}	1.34	17542 {1790}	1.16	17542 {1790}	0.71	17542 {1790}	0.20	17542 {1790}

Dimensional Drawings TD250S

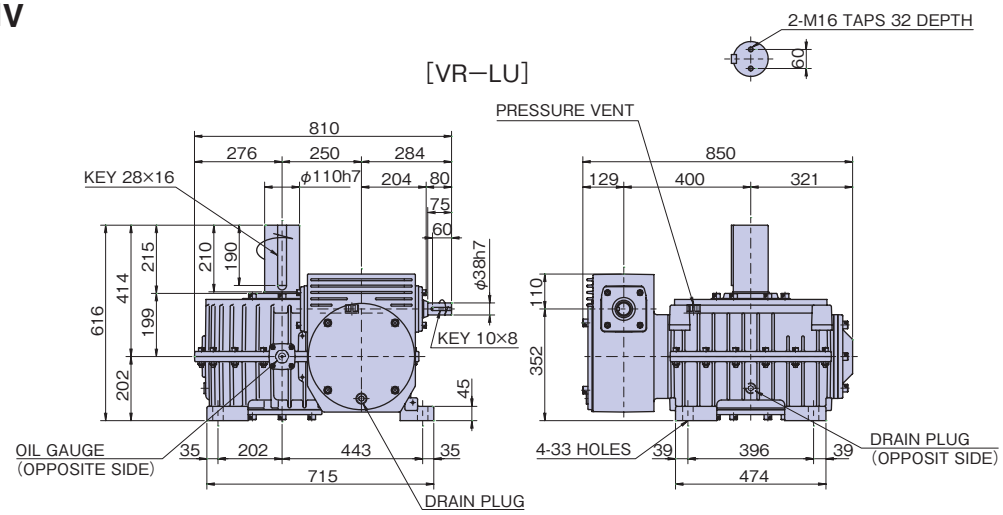
TD250S□□B

[BR—L]



Estimated mass 554 kg

TD250S□□V



Estimated mass 544 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

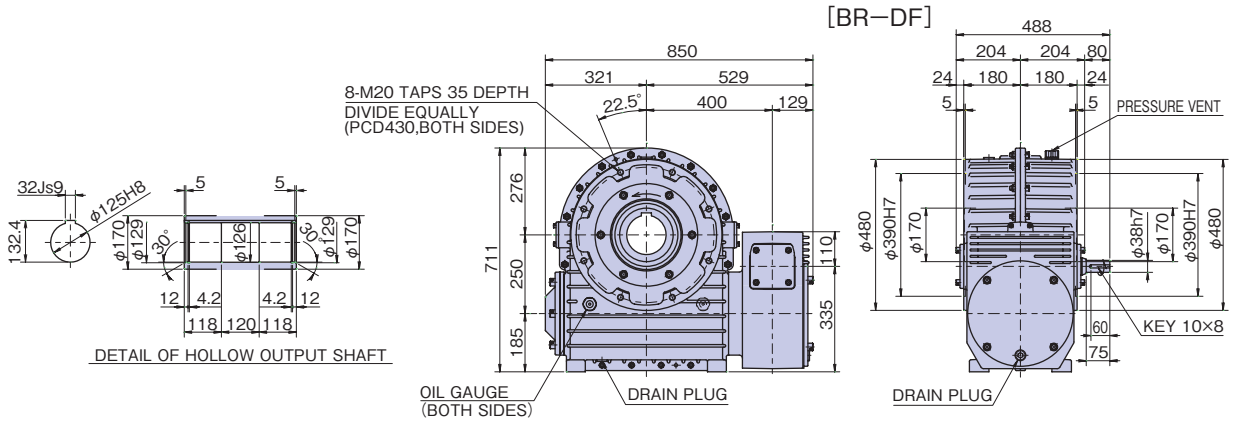
Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD250S	100	22.82	11238 {1147}	21.46	12643 {1290}	19.35	14224 {1451}	17.75	15628 {1595}	10.95	17560 {1792}	2.47	17560 {1792}
	150	17.15	12292 {1254}	15.82	13521 {1380}	14.54	15453 {1577}	13.30	16858 {1720}	7.68	17560 {1792}	1.77	17560 {1792}
	200	13.38	12468 {1272}	12.50	13872 {1416}	10.99	15102 {1541}	10.51	17209 {1756}	5.99	17560 {1792}	1.41	17560 {1792}
	250	10.91	12468 {1272}	10.08	13697 {1398}	9.20	15453 {1577}	8.61	17209 {1756}	4.94	17560 {1792}	1.17	17560 {1792}
	300	14.41	19831 {2024}	12.78	20964 {2139}	10.50	21354 {2179}	8.89	21558 {2200}	4.97	21558 {2200}	1.18	21558 {2200}
	450	10.93	21329 {2176}	9.30	21558 {2200}	7.53	21558 {2200}	6.35	21558 {2200}	3.59	21558 {2200}	0.87	21558 {2200}
	600	8.57	21558 {2200}	7.22	21558 {2200}	5.87	21558 {2200}	4.95	21558 {2200}	2.83	21558 {2200}	0.70	21558 {2200}
	750	7.02	21558 {2200}	5.94	21558 {2200}	4.84	21558 {2200}	4.09	21558 {2200}	2.34	21558 {2200}	0.58	21558 {2200}
	900	6.14	21558 {2200}	5.21	21558 {2200}	4.26	21558 {2200}	3.62	21558 {2200}	2.11	21558 {2200}	0.54	21558 {2200}
	1200	4.85	21558 {2200}	4.13	21558 {2200}	3.39	21558 {2200}	2.89	21558 {2200}	1.70	21558 {2200}	0.45	21558 {2200}
	1500	4.34	22646 {2311}	3.70	22646 {2311}	3.03	22646 {2311}	2.59	22646 {2311}	1.52	22646 {2311}	0.40	22646 {2311}
	1800	3.82	22646 {2311}	3.26	22646 {2311}	2.69	22646 {2311}	2.30	22646 {2311}	1.37	22646 {2311}	0.37	22646 {2311}
	2400	3.05	22646 {2311}	2.61	22646 {2311}	2.16	22646 {2311}	1.86	22646 {2311}	1.12	22646 {2311}	0.31	22646 {2311}
	3000	2.55	22646 {2311}	2.20	22646 {2311}	1.83	22646 {2311}	1.57	22646 {2311}	0.95	22646 {2311}	0.26	22646 {2311}
	3600	2.25	22646 {2311}	1.94	22646 {2311}	1.62	22646 {2311}	1.39	22646 {2311}	0.85	22646 {2311}	0.24	22646 {2311}

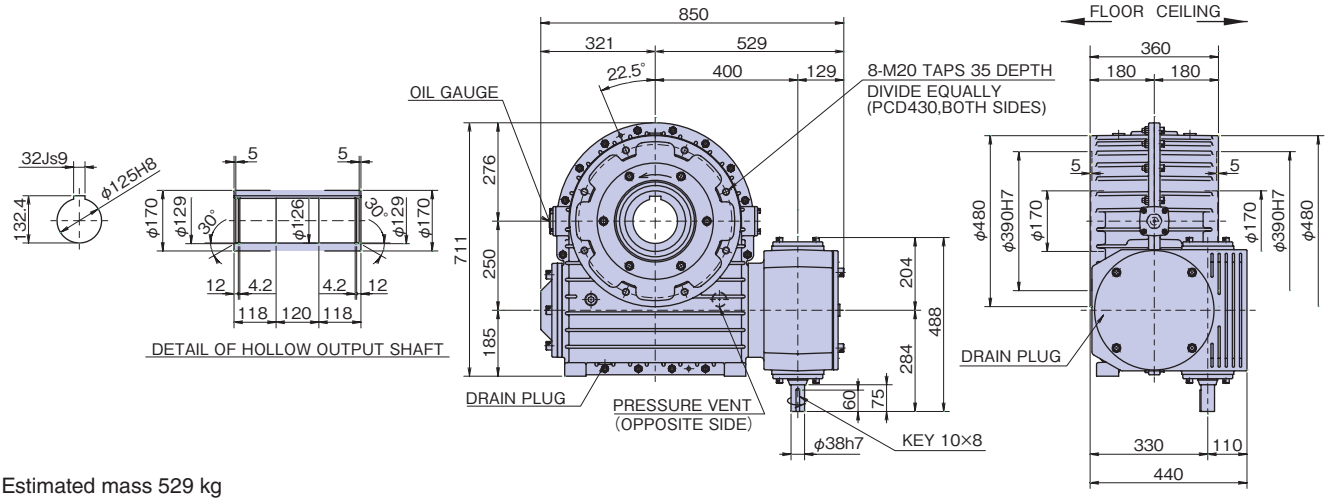
Dimensional Drawings TD250H

TD250H□□B



Estimated mass 522 kg

TD250H□□V



Estimated mass 529 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

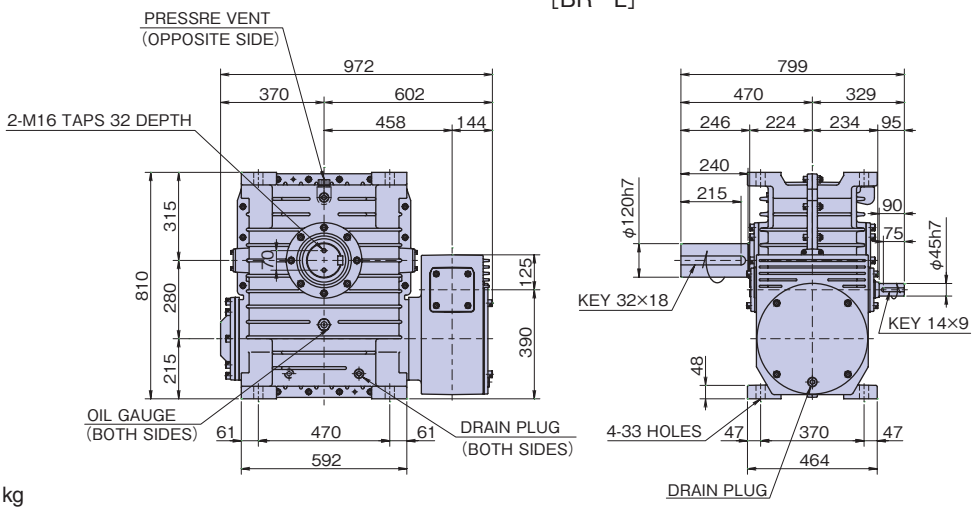
Refer to page 151 for actual reduction ratios.

Size	Input / Reduction ratio	1750 r/min Input kW	1750 r/min Output torque N·m {kgf·m}	1450 r/min Input kW	1450 r/min Output torque N·m {kgf·m}	1150 r/min Input kW	1150 r/min Output torque N·m {kgf·m}	950 r/min Input kW	950 r/min Output torque N·m {kgf·m}	500 r/min Input kW	500 r/min Output torque N·m {kgf·m}	100 r/min Input kW	100 r/min Output torque N·m {kgf·m}
TD250H	100	22.82	11238 {1147}	21.46	12643 {1290}	19.35	14224 {1451}	17.75	15628 {1595}	10.95	17560 {1792}	2.47	17560 {1792}
	150	17.15	12292 {1254}	15.82	13521 {1380}	14.54	15453 {1577}	13.30	16858 {1720}	7.68	17560 {1792}	1.77	17560 {1792}
	200	13.38	12468 {1272}	12.50	13872 {1416}	10.99	15102 {1541}	10.51	17209 {1756}	5.99	17560 {1792}	1.41	17560 {1792}
	250	10.91	12468 {1272}	10.08	13697 {1398}	9.20	15453 {1577}	8.61	17209 {1756}	4.94	17560 {1792}	1.17	17560 {1792}
	300	14.41	19831 {2024}	12.78	20964 {2139}	10.50	21354 {2179}	8.89	21558 {2200}	4.97	21558 {2200}	1.18	21558 {2200}
	450	10.93	21329 {2176}	9.30	21558 {2200}	7.53	21558 {2200}	6.35	21558 {2200}	3.59	21558 {2200}	0.87	21558 {2200}
	600	8.57	21558 {2200}	7.22	21558 {2200}	5.87	21558 {2200}	4.95	21558 {2200}	2.83	21558 {2200}	0.70	21558 {2200}
	750	7.02	21558 {2200}	5.94	21558 {2200}	4.84	21558 {2200}	4.09	21558 {2200}	2.34	21558 {2200}	0.58	21558 {2200}
	900	6.14	21558 {2200}	5.21	21558 {2200}	4.26	21558 {2200}	3.62	21558 {2200}	2.11	21558 {2200}	0.54	21558 {2200}
	1200	4.85	21558 {2200}	4.13	21558 {2200}	3.39	21558 {2200}	2.89	21558 {2200}	1.70	21558 {2200}	0.45	21558 {2200}
	1500	4.34	22646 {2311}	3.70	22646 {2311}	3.03	22646 {2311}	2.59	22646 {2311}	1.52	22646 {2311}	0.40	22646 {2311}
	1800	3.82	22646 {2311}	3.26	22646 {2311}	2.69	22646 {2311}	2.30	22646 {2311}	1.37	22646 {2311}	0.37	22646 {2311}
	2400	3.05	22646 {2311}	2.61	22646 {2311}	2.16	22646 {2311}	1.86	22646 {2311}	1.12	22646 {2311}	0.31	22646 {2311}
	3000	2.55	22646 {2311}	2.20	22646 {2311}	1.83	22646 {2311}	1.57	22646 {2311}	0.95	22646 {2311}	0.26	22646 {2311}
	3600	2.25	22646 {2311}	1.94	22646 {2311}	1.62	22646 {2311}	1.39	22646 {2311}	0.85	22646 {2311}	0.24	22646 {2311}

Dimensional Drawings TD280S

TD280S□□B

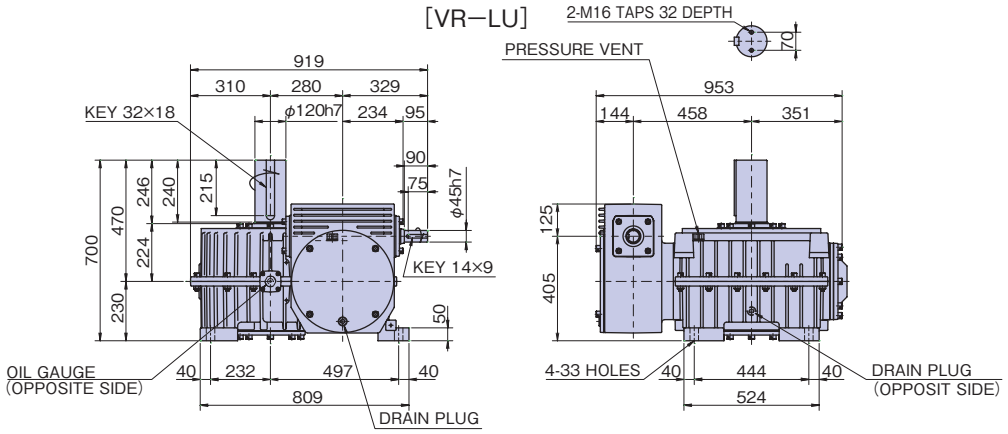
[BR—L]



Estimated mass 793 kg

TD280S□□V

[VR—LU]



Estimated mass 779 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

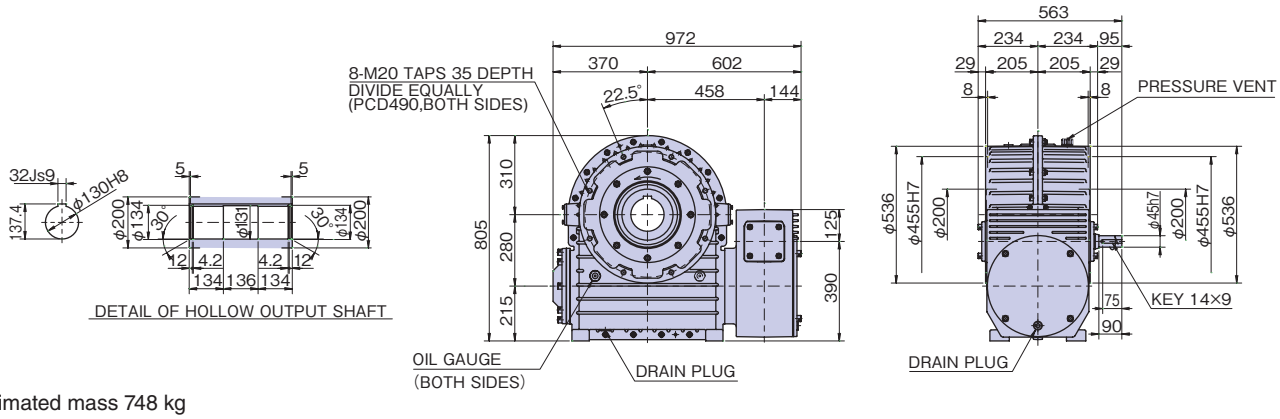
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD280S	100	32.11	15895 {1622}	29.72	17623 {1798}	26.54	19613 {2001}	23.28	20629 {2105}	15.36	24854 {2536}	3.46	24854 {2536}
	150	23.75	17137 {1749}	21.35	18392 {1877}	18.78	20132 {2054}	16.50	21126 {2156}	10.73	24854 {2536}	2.48	24854 {2536}
	200	18.79	17646 {1801}	17.07	19138 {1953}	14.86	20629 {2105}	13.05	21623 {2206}	8.37	24854 {2536}	1.96	24854 {2536}
	250	14.72	16901 {1725}	13.65	18641 {1902}	12.36	20877 {2130}	10.87	21872 {2232}	6.94	24854 {2536}	1.65	24854 {2536}
	300	18.59	25900 {2643}	16.12	26798 {2734}	13.56	27947 {2852}	11.65	28664 {2925}	6.49	28664 {2925}	1.53	28664 {2925}
	450	14.28	27860 {2843}	12.37	28664 {2925}	10.01	28664 {2925}	8.41	28664 {2925}	4.73	28664 {2925}	1.15	28664 {2925}
	600	11.38	28664 {2925}	9.58	28664 {2925}	7.78	28664 {2925}	6.55	28664 {2925}	3.73	28664 {2925}	0.91	28664 {2925}
	750	9.35	28664 {2925}	7.91	28664 {2925}	6.43	28664 {2925}	5.43	28664 {2925}	3.11	28664 {2925}	0.77	28664 {2925}
	900	8.12	28664 {2925}	6.87	28664 {2925}	5.61	28664 {2925}	4.76	28664 {2925}	2.75	28664 {2925}	0.71	28664 {2925}
	1200	6.39	28664 {2925}	5.43	28664 {2925}	4.45	28664 {2925}	3.79	28664 {2925}	2.22	28664 {2925}	0.58	28664 {2925}
	1500	5.74	30110 {3072}	4.88	30110 {3072}	4.00	30110 {3072}	3.40	30110 {3072}	1.99	30110 {3072}	0.52	30110 {3072}
	1800	5.01	30110 {3072}	4.27	30110 {3072}	3.52	30110 {3072}	3.00	30110 {3072}	1.78	30110 {3072}	0.48	30110 {3072}
	2400	3.99	30110 {3072}	3.41	30110 {3072}	2.82	30110 {3072}	2.41	30110 {3072}	1.45	30110 {3072}	0.40	30110 {3072}
	3000	3.36	30110 {3072}	2.89	30110 {3072}	2.39	30110 {3072}	2.05	30110 {3072}	1.25	30110 {3072}	0.35	30110 {3072}
	3600	2.92	30110 {3072}	2.51	30110 {3072}	2.09	30110 {3072}	1.80	30110 {3072}	1.10	30110 {3072}	0.31	30110 {3072}

Dimensional Drawings TD280H

TD280H□□B

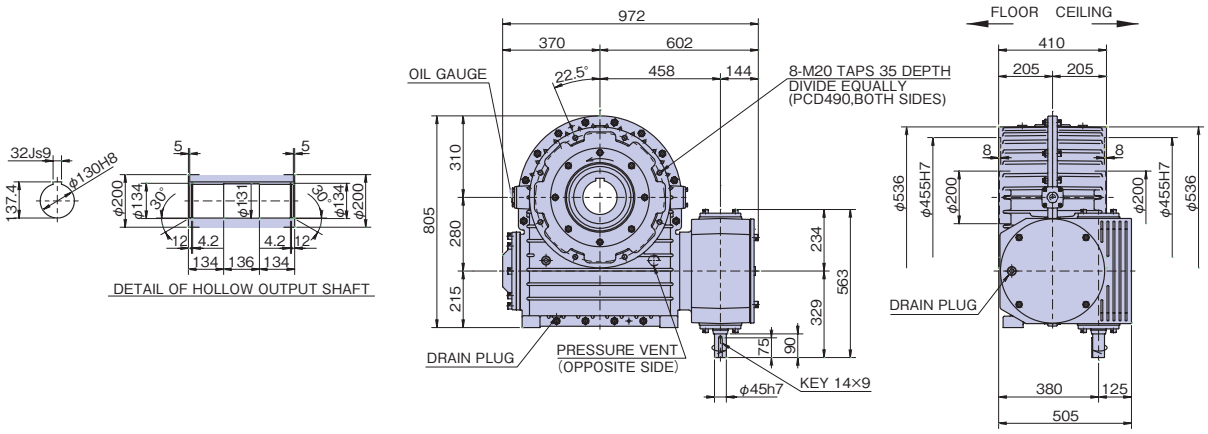
[BR—DF]



Estimated mass 748 kg

TD280H□□V

[VR—LF]



Estimated mass 758 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

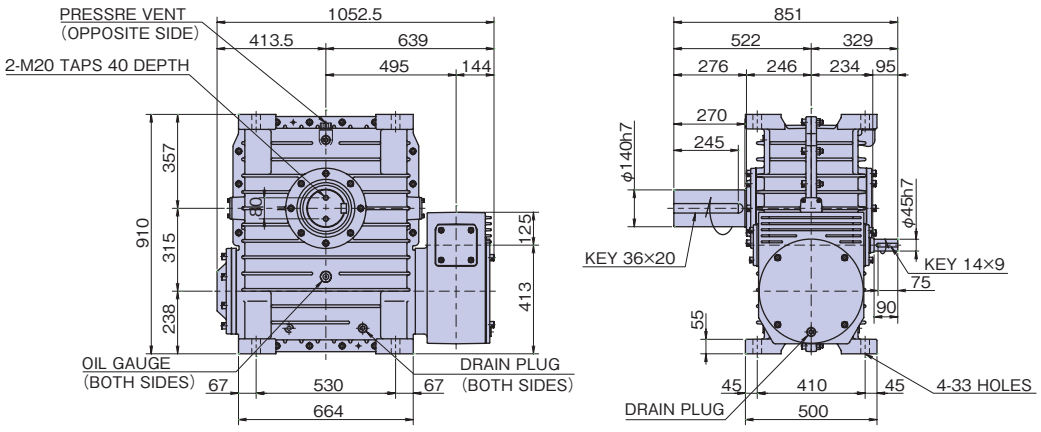
Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD280H	100	32.11	15895 {1622}	29.72	17623 {1798}	26.54	19613 {2001}	23.28	20629 {2105}	15.36	24854 {2536}	3.46	24854 {2536}
	150	23.75	17137 {1749}	21.35	18392 {1877}	18.78	20132 {2054}	16.50	21126 {2156}	10.73	24854 {2536}	2.48	24854 {2536}
	200	18.79	17646 {1801}	17.07	19138 {1953}	14.86	20629 {2105}	13.05	21623 {2206}	8.37	24854 {2536}	1.96	24854 {2536}
	250	14.72	16901 {1725}	13.65	18641 {1902}	12.36	20877 {2130}	10.87	21872 {2232}	6.94	24854 {2536}	1.65	24854 {2536}
	300	18.59	25900 {2643}	16.12	26798 {2734}	13.56	27947 {2852}	11.65	28664 {2925}	6.49	28664 {2925}	1.53	28664 {2925}
	450	14.28	27860 {2843}	12.37	28664 {2925}	10.01	28664 {2925}	8.41	28664 {2925}	4.73	28664 {2925}	1.15	28664 {2925}
	600	11.38	28664 {2925}	9.58	28664 {2925}	7.78	28664 {2925}	6.55	28664 {2925}	3.73	28664 {2925}	0.91	28664 {2925}
	750	9.35	28664 {2925}	7.91	28664 {2925}	6.43	28664 {2925}	5.43	28664 {2925}	3.11	28664 {2925}	0.77	28664 {2925}
	900	8.12	28664 {2925}	6.87	28664 {2925}	5.61	28664 {2925}	4.76	28664 {2925}	2.75	28664 {2925}	0.71	28664 {2925}
	1200	6.39	28664 {2925}	5.43	28664 {2925}	4.45	28664 {2925}	3.79	28664 {2925}	2.22	28664 {2925}	0.58	28664 {2925}
	1500	5.74	30110 {3072}	4.88	30110 {3072}	4.00	30110 {3072}	3.40	30110 {3072}	1.99	30110 {3072}	0.52	30110 {3072}
	1800	5.01	30110 {3072}	4.27	30110 {3072}	3.52	30110 {3072}	3.00	30110 {3072}	1.78	30110 {3072}	0.48	30110 {3072}
	2400	3.99	30110 {3072}	3.41	30110 {3072}	2.82	30110 {3072}	2.41	30110 {3072}	1.45	30110 {3072}	0.40	30110 {3072}
	3000	3.36	30110 {3072}	2.89	30110 {3072}	2.39	30110 {3072}	2.05	30110 {3072}	1.25	30110 {3072}	0.35	30110 {3072}
	3600	2.92	30110 {3072}	2.51	30110 {3072}	2.09	30110 {3072}	1.80	30110 {3072}	1.10	30110 {3072}	0.31	30110 {3072}

Dimensional Drawings TD315S

TD315S□□B

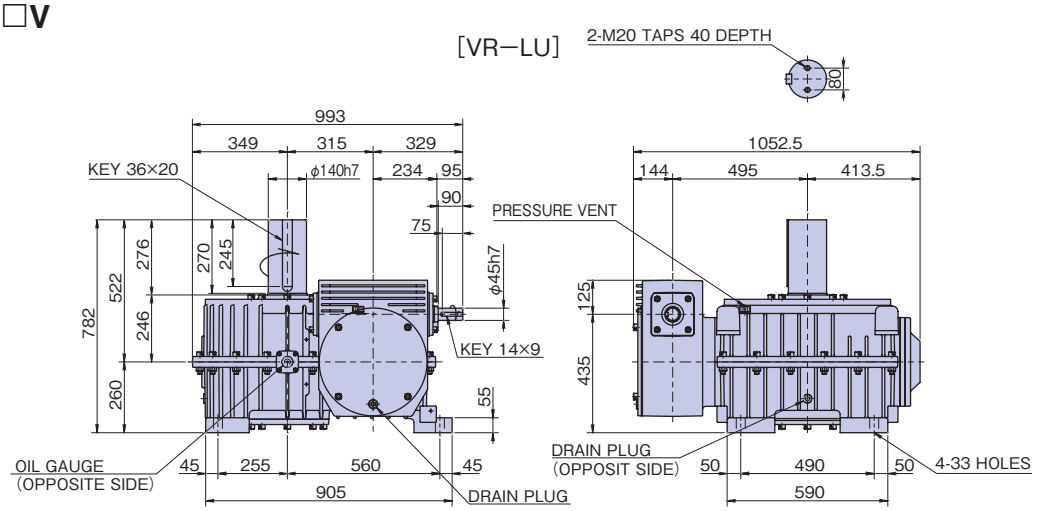
[BR—L]



Estimated mass 1053 kg

TD315S□□V

[VR—LU]



Estimated mass 1061 kg

* Refer to page 122 for shaft arrangements and relative direction of rotation.

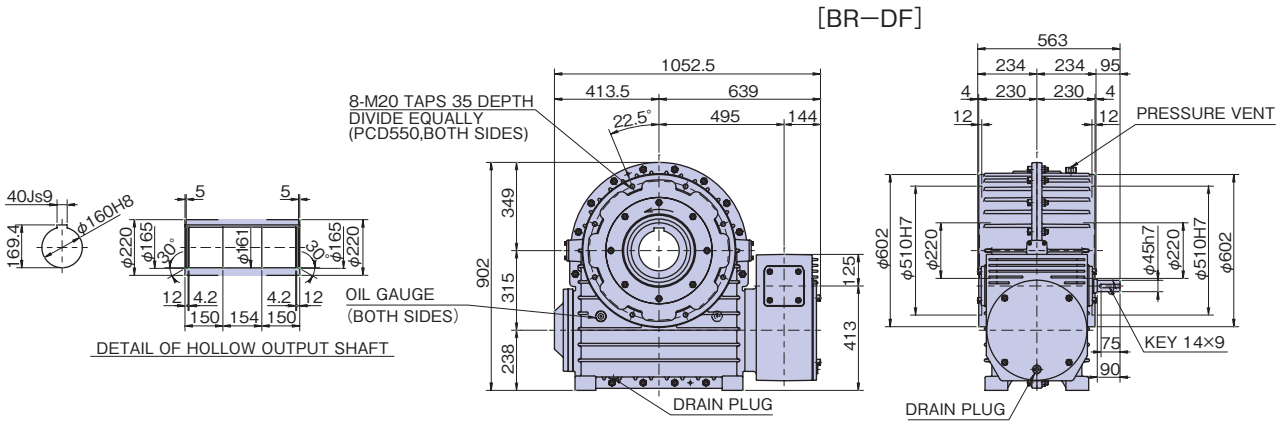
Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD315S	100	32.13	15957 {1628}	29.82	17738 {1810}	26.51	19679 {2008}	23.16	20584 {2100}	15.27	24821 {2533}	4.19	30270 {3089}
	150	23.82	17261 {1761}	21.35	18465 {1884}	18.84	20281 {2069}	16.48	21189 {2162}	10.93	25427 {2595}	3.00	30270 {3089}
	200	18.61	17557 {1791}	16.96	19070 {1946}	14.76	20584 {2100}	13.10	21794 {2224}	8.73	26032 {2656}	2.37	30270 {3089}
	250	14.70	16951 {1730}	13.68	18767 {1915}	12.31	20886 {2131}	10.93	22097 {2255}	7.31	26335 {2687}	2.00	30270 {3089}
	300	28.16	39325 {4013}	24.69	41146 {4199}	20.89	43159 {4404}	18.00	44420 {4533}	10.03	44420 {4533}	2.37	44420 {4533}
	450	21.64	43006 {4388}	18.82	44420 {4533}	15.20	44420 {4533}	12.79	44420 {4533}	7.20	44420 {4533}	1.74	44420 {4533}
	600	17.28	44420 {4533}	14.57	44420 {4533}	11.83	44420 {4533}	9.97	44420 {4533}	5.66	44420 {4533}	1.39	44420 {4533}
	750	14.23	44420 {4533}	12.03	44420 {4533}	9.78	44420 {4533}	8.25	44420 {4533}	4.72	44420 {4533}	1.18	44420 {4533}
	900	12.33	44420 {4533}	10.45	44420 {4533}	8.53	44420 {4533}	7.23	44420 {4533}	4.19	44420 {4533}	1.08	44420 {4533}
	1200	9.71	44420 {4533}	8.25	44420 {4533}	6.77	44420 {4533}	5.76	44420 {4533}	3.38	44420 {4533}	0.89	44420 {4533}
	1500	8.75	46790 {4774}	7.43	46790 {4774}	6.10	46790 {4774}	5.18	46790 {4774}	3.03	46790 {4774}	0.80	46790 {4774}
	1800	7.63	46790 {4774}	6.50	46790 {4774}	5.35	46790 {4774}	4.57	46790 {4774}	2.71	46790 {4774}	0.74	46790 {4774}
	2400	6.07	46790 {4774}	5.19	46790 {4774}	4.29	46790 {4774}	3.68	46790 {4774}	2.20	46790 {4774}	0.61	46790 {4774}
	3000	5.12	46790 {4774}	4.40	46790 {4774}	3.65	46790 {4774}	3.13	46790 {4774}	1.90	46790 {4774}	0.54	46790 {4774}
	3600	4.45	46790 {4774}	3.83	46790 {4774}	3.18	46790 {4774}	2.74	46790 {4774}	1.64	46790 {4774}	0.47	46790 {4774}

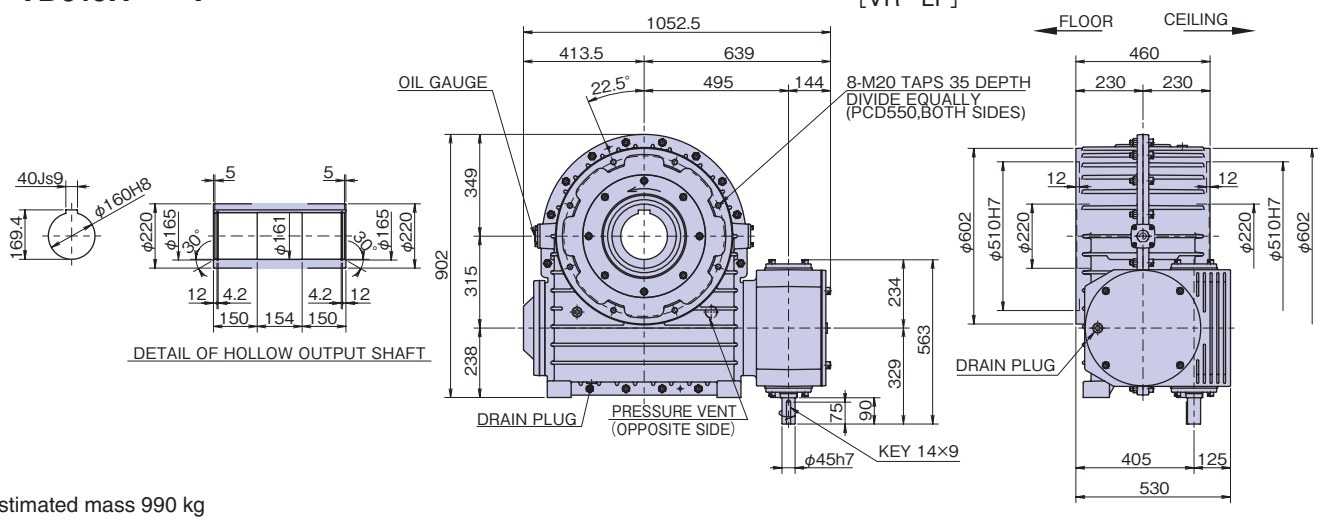
Dimensional Drawings TD315H

TD315H□□B



Estimated mass 975 kg

TD315H□□V



Estimated mass 990 kg

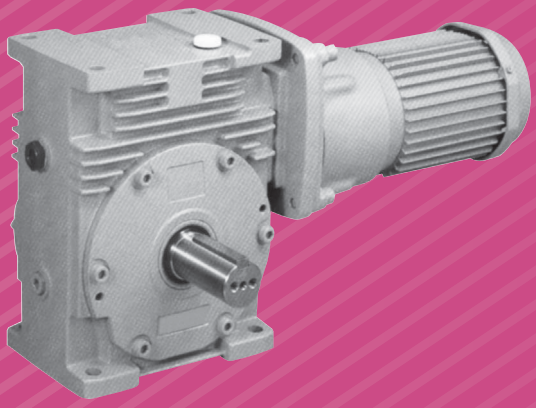
* Refer to page 122 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Refer to page 151 for actual reduction ratios.

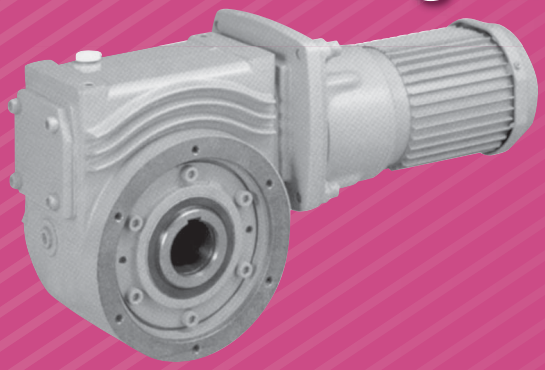
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TD315H	100	32.13	15957 {1628}	29.82	17738 {1810}	26.51	19679 {2008}	23.16	20584 {2100}	15.27	24821 {2533}	4.19	30270 {3089}
	150	23.82	17261 {1761}	21.35	18465 {1884}	18.84	20281 {2069}	16.48	21189 {2162}	10.93	25427 {2595}	3.00	30270 {3089}
	200	18.61	17557 {1791}	16.96	19070 {1946}	14.76	20584 {2100}	13.10	21794 {2224}	8.73	26032 {2656}	2.37	30270 {3089}
	250	14.70	16951 {1730}	13.68	18767 {1915}	12.31	20886 {2131}	10.93	22097 {2255}	7.31	26335 {2687}	2.00	30270 {3089}
	300	28.16	39325 {4013}	24.69	41146 {4199}	20.89	43159 {4404}	18.00	44420 {4533}	10.03	44420 {4533}	2.37	44420 {4533}
	450	21.64	43006 {4388}	18.82	44420 {4533}	15.20	44420 {4533}	12.79	44420 {4533}	7.20	44420 {4533}	1.74	44420 {4533}
	600	17.28	44420 {4533}	14.57	44420 {4533}	11.83	44420 {4533}	9.97	44420 {4533}	5.66	44420 {4533}	1.39	44420 {4533}
	750	14.23	44420 {4533}	12.03	44420 {4533}	9.78	44420 {4533}	8.25	44420 {4533}	4.72	44420 {4533}	1.18	44420 {4533}
	900	12.33	44420 {4533}	10.45	44420 {4533}	8.53	44420 {4533}	7.23	44420 {4533}	4.19	44420 {4533}	1.08	44420 {4533}
	1200	9.71	44420 {4533}	8.25	44420 {4533}	6.77	44420 {4533}	5.76	44420 {4533}	3.38	44420 {4533}	0.89	44420 {4533}
	1500	8.75	46790 {4774}	7.43	46790 {4774}	6.10	46790 {4774}	5.18	46790 {4774}	3.03	46790 {4774}	0.80	46790 {4774}
	1800	7.63	46790 {4774}	6.50	46790 {4774}	5.35	46790 {4774}	4.57	46790 {4774}	2.71	46790 {4774}	0.74	46790 {4774}
	2400	6.07	46790 {4774}	5.19	46790 {4774}	4.29	46790 {4774}	3.68	46790 {4774}	2.20	46790 {4774}	0.61	46790 {4774}
	3000	5.12	46790 {4774}	4.40	46790 {4774}	3.65	46790 {4774}	3.13	46790 {4774}	1.90	46790 {4774}	0.54	46790 {4774}
	3600	4.45	46790 {4774}	3.83	46790 {4774}	3.18	46790 {4774}	2.74	46790 {4774}	1.64	46790 {4774}	0.47	46790 {4774}

Memo



TERUS Series

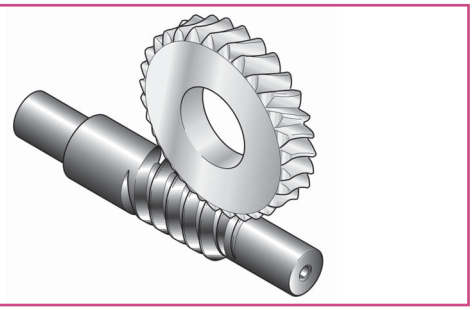
Integrated Gear Reducers



▶Features ..... 171 - 174
▶Model ..... 175 - 176
▶Sizing ..... 176 - 186
• Characteristics
▶External Dimensions ..... 187 - 194

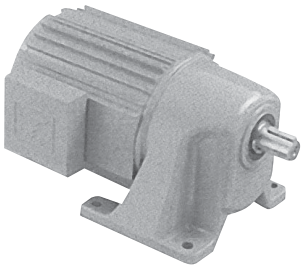
Ideal combination of worm gear and helical gear!!

Worm gear



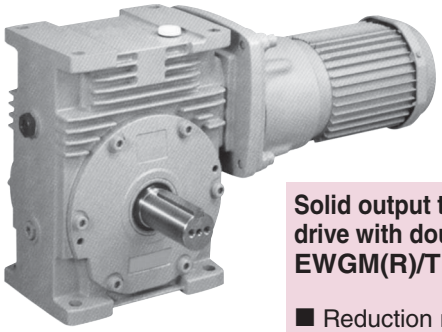
+

Gear motor



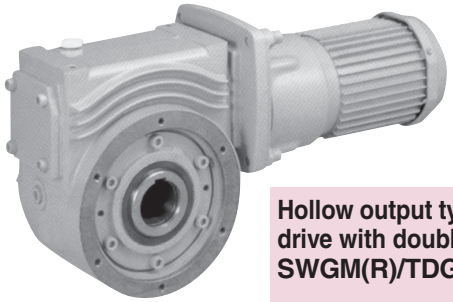
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Helical worm motor



Solid output type, right angle drive with double reduction
EWGM(R)/TDGM(R)-S

- Reduction ratio: 1/100 to 1/3600
- Motor: 0.1 to 2.2 kW



Hollow output type, right angle drive with double reduction
SWGM(R)/TDGM(R)-H

- Reduction ratio: 1/100 to 1/3600
- Motor: 0.1 to 2.2 kW

Features

Tough

With high reduction, the strength of the last gear is key. TERUS series uses a worm gear for the last gear, making this worm gear motor impervious to foreign material intrusion.

Compact

The combination of helical gear and worm gear tightly integrates right-angle and high reduction drive in a single unit. This contributes to more compact design of your equipment, and cost savings due to fewer components.

Silent

This series combines a quiet worm gear and a gear motor designed to be as quiet as possible. Widely used in theatrical equipment where silence is a must.

Extensive

Taking advantage of the wide range of options offered for gear motors, this series is compatible with various requirements such as international standards (CE, UL, CCC, etc.), different voltages, outdoor specifications, and inverter motors.

Combinations

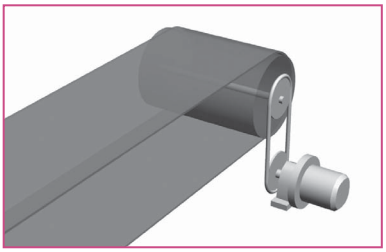
Reduces footprint of your equipment and save your cost by using less components!!

A Standard package

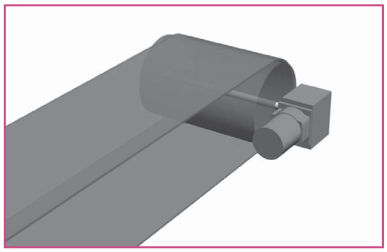
High efficiency and reduction ratio will meet a wide range of applications

Conveyor drives

Ideal for applications that demand compact right angle drives with high reductions. It will reduce your equipment footprint, number of components, and assembly hours (cost reductions).



Geared motor + chain + sprocket



TERUS Series

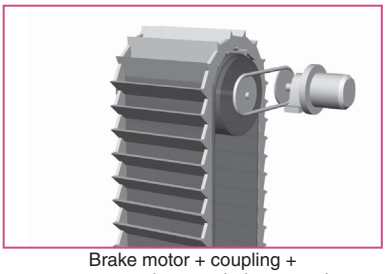
- Motor: 0.1 to 2.2 kW
- Reduction ratio: 1/100 to 1/3600

Typical applications:
low-speed conveyors, drying kilns

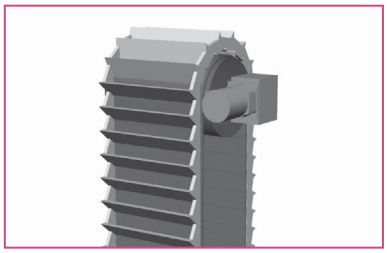
B Self-locking package

Suitable for lifts, elevators, reversing machines, and etc.

Bucket elevators



Brake motor + coupling +
worm gear reducer + chain + sprocket



TERUS Series

- Motor: 0.1 to 2.2 kW
- Reduction ratio: 1/100 to 1/1800

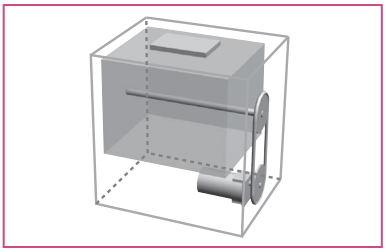
Typical applications:
Reversing machines, opening/
closing devices, inclined conveyors

C Tough package

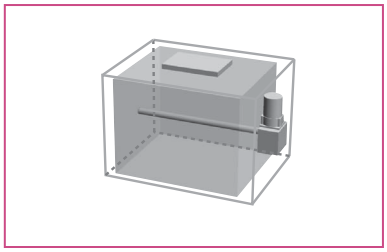
Tough gear train designed to withstand expected shocks.

Garbage disposers

Compact design but still capable of handling the same payload.
Lower inlet can also make garbage disposal easier.



Geared motor + chain + sprocket



TERUS Series

- Motor: 0.1 to 2.2 kW
- Reduction ratio: 1/100 to 1/1200

Typical applications:
garbage disposers, crushers
Mixers

X Made to order

Made to order for drop-in solutions.
Various combination will meet your needs.

Troi Drive
Worm Power Drive
+
Gear Motor

Free combination

- Motor: 0.1 to 2.2 kW
- Reduction ratio: 1/100 to 1/3600

Standard Models

A Type: Standard Package [0.1 to 2.2 kW]

All-purpose model, high efficiency and high reduction gears will meet a wide range of applications.

Motor size \ Nominal reduction ratio	1/100	1/150	1/200	1/250	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200	1/1500	1/1800	1/2400	1/3000	1/3600
0.1 kW	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
0.2 kW	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
0.4 kW	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
0.75 kW	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
1.5 kW	○	□	○	○	○	○	○	○	○	□	○	○	○			
2.2 kW	○	□	○	□	○	○	□									

○: Standard product □: Made to order.

B Type: Self-locking Package [0.1 to 2.2 kW]

Self-locking type, suitable for lifts, elevators, reversing machines, and etc.
- Gear motor: Sized based on durability of gear teeth.
- Worm gear: Sized to achieve self-locking effect, and focused on durability of worm gear at 1/50 or 1/60 ratios.

Motor size \ Reduction ratio	1/250	1/300	1/500	1/600	1/750	1/1000	1/1200	1/1500	1/1800
0.1 kW	○	○	○	○	○	○	○	○	○
0.2 kW	○	○	○	○	○	○	○	○	○
0.4 kW	○	○	○	○	○	○	○	○	○
0.75 kW	○	○	○	○	○	○	○	○	○
1.5 kW	○	○	○	○	□	○	○		○
2.2 kW	○	○	○	○			○		○

○: Standard product □: Made to order.

C Type: Tough Package [0.1 to 2.2 kW]

Tough gear train designed to withstand expected shocks.
- Gear motor: Sized based on durability of gear teeth.
- Worm gear: Sized based on worm gear durability against impacts.

Motor size \ Reduction ratio	1/200	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200
0.1 kW	○	○	○	○	○	○	○	○
0.2 kW	○	○	○	○	○	○	○	○
0.4 kW	○	○	○	○	○	○	○	○
0.75 kW	○	○	○	○	○	○	○	○
1.5 kW	○	○	○	○	○	○	□	○
2.2 kW	○	○	○	□				

○: Standard product □: Made to order.

X Type: Made to Order

The TERUS can be customized to meet your needs.
Please let us know what your expect to TERUS system, and we will select the best gear combination.

[Applicable range] (1) Geared motor: 0.1 to 2.2 kW motor, reduction ratio = 1/5 to 1/200
(2) Troi Drive / Worm Power Drive: Size 25 to 315, reduction ratio = 1/10 to 1/ 60

* Consult Tsubaki representative for transfer capacity and other characteristics of your combination.
* Some combinations may not be possible due to size, mass, and other limitations.

Product Specifications

Motor	Output		Three-phase 0.1, 0.2, 0.4 kW With/without brake	Three-phase 0.75, 1.5, 2.2 kW With/without brake
	Efficiency class		—	Premium efficiency: IE3
	Power source		200/200/220 V 50/60/60 Hz	200/200/220 V 50/60/60 Hz
	Poles		4	
	Protection		0.1 kW Totally enclosed (IP44), 0.2 to 0.4 kW Totally enclosed fan-cooled (IP44)	Totally enclosed fan-cooled (IP44)
	Cooling		0.1 kW Air-cooled (IC410), 0.2 to 0.4 kW Self-cooled (IC411)	Self-cooled (IC411)
	Rating		Continuous (S1)	
	Insulation class		120 (E)	155 (F)
	Brake unit	Brake	DC electromagnetic brake	
		Power source	90 VDC	
		Braking system	Engaged when de-energized	
		Rated torque	Rated motor torque 150% or more	
		Insulation class	130 (B)	
Reducer	Reduction ratio		1/100 to 1/3600	
	Lubrication method		Geared motor: grease lubrication Worm gear reducer: oil lubrication	
	Keyway		New JIS standard JIS B1301-1976 (key supplied with solid shaft models)	
	Output shaft end		Tap holes provided (except for hollow shafts)	
Ambient conditions	Installation		Indoors free of dust and water	
	Temperature		0 to 40°C	
	Humidity		85% or less (no condensation)	
	Altitude		1000 m or less above sea level	
	Atmosphere		Free of corrosive and explosive gases, steam, condensation, and have little or no dust.	
	Mounting direction		Horizontal or vertical (models EWJGM/SWJGM series installs in any direction)	
Paint color			Munsell 2.5G6/3	

Note) Protection rating of brake motor: IP20
Refer to page 14 for motor specifications.

Lubrication Oil

[Worm gear]
A and C types: Daphne Alpha Oil TE380 (IDEMITSU)
B type: Mobil Cylinder Oil 600W (Exxon Mobil)

[Gear motor]
NIGTIGHT LMS No. 000 (Nippon Grease)

X type: Refer to the instruction manual or contact Tsubaki representative.

Model

	Series	Worm size	Output shaft style	Specifications	Installation direction	Total reduction ratio	Shaft arrangement	Motor size	Brake	Motor option	Reducer option
A type Standard package	EWGM	125	S	A	T	3600	L	020	B		
B type Self-locking package	SWGM	100	H	B	V	1200	LF	010		ZH -	K
C type Tough package	TDGMR	200	H	C	B	3000	DF	075	B	W	
X type Made to order	TDGM	150	S	X	V	4800	LF	010			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

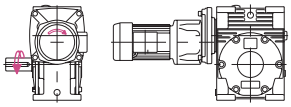
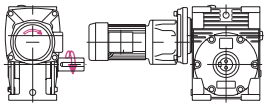
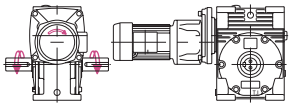
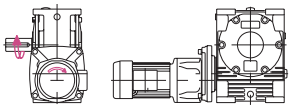
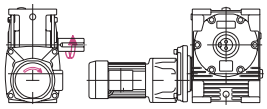
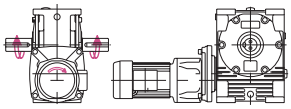
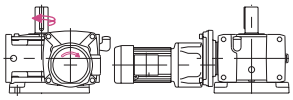
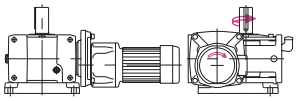
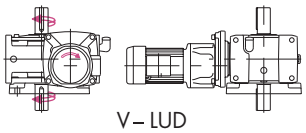
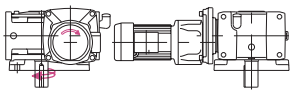
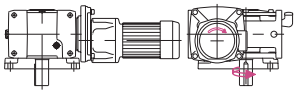
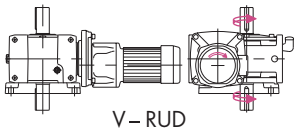
(1) Series	EWJGM, EWGM(R), SWJGM, SWGM(R), TDGM(R) [with 0.75 kW or larger IE3 motor] EWGMR, SWGMR, TDGMR	
(2) Worm size (Center distance: mm)	EWJGM: 50, 63, 70 EWGM(R): 80, 100, 125, 150, 175, 200 SWJGM: 50, 63, 70 SWGM(R): 80, 100, 125, 150, 175, 200 TDGM(R): 175, 200, 225	
(3) Output shaft style	S: Solid (EWJGM, EWGM(R), TDGM(R)) H: Hollow (SWJGM, SWGM(R), TDGM(R))	
(4) Combinations	A: Standard B: Self-locking C: Tough X: Made to order	
(5) Installation direction	T: Output shaft horizontal B: Output shaft horizontal V: Output shaft vertical E: Output shaft horizontal (EWJGM, SWJGM)	
(6) Total reduction ratio (Nominal reduction ratio)	(Ex.) 1200 = 1/1200 600 = 1/600	
(7) Shaft arrangement * When viewed from motor	[S: Solid shaft] Installation T/B/E: L, R, LR Installation V: LU, RU, LD, RD, LUD, RUD	[H: Hollow shaft] Installation T/B/E: LF, RF, DF Installation V: LF, RF
(8) Motor size	(Ex.) 020 = 3-phase 0.2 kW	
(9) With/without brake	No code: Without brake B: With brake	
(10) Motor option	Z: Inverter motor W: Outdoor type E: With rotary encoder V: 400 V class 4) V1: 380 V 50 Hz V2: 380 V 60 Hz V3: 415 V 50 Hz V4: 460 V 60 Hz N: 200 V class CE compliant N2: 200 V class UL compliant N3: 200 V class CCC compliant H: Hard terminal box Q: Manual quick-release brake M: Manual release shaft	
(11) Reducer option	K: Power-Lock TB: Taper bush	

Note 1) Refer to our properties chart for motor size, reducer size, and reduction ratio combinations.
2) Contact Tsubaki representative for combination of model and option codes. Option symbol combinations.
3) 400 V class voltage frequency

0.1 to 0.4 kW:	400/400/440 V	50/60/60 Hz
0.75 to 2.2 kW:	380/400/400/440 V	50/50/60/60 Hz

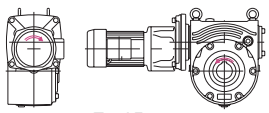
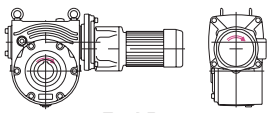
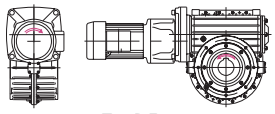
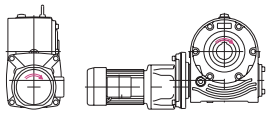
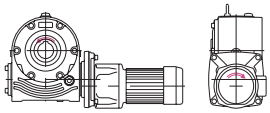
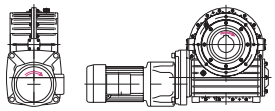
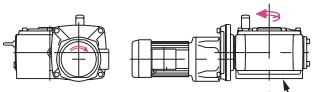
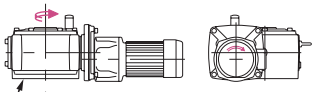
Shaft Arrangement

Solid Output Shaft [S] EWJGM-S/EWGM(R)-S/TDGM(R)-S

Installation direction	Shaft arrangement: Single output shaft		Shaft arrangement: Double output shaft
T (E)	 T – L (E–L)	 T – R (E–R)	 T – LR (E–LR)
B	 B – L	 B – R	 B – LR
V	 V – LU	 V – RU	 V – LUD
V	 V – LD	 V – RD	 V – RUD

Hollow output shaft: contact Tsubaki representative.
EWJGM installation direction: E type only and can be installed in any direction.
Motor and output rotational relationship: depend on the type and reduction ratio.
Refer to the characteristic tables on pages 179 to 186 for more information.

Hollow Output Shaft [H] SWJGM-H/SWGM(R)-H/TDGM(R)-H

Installation direction	Shaft arrangement: Single-faced flange (size 70 to 200)		Shaft arrangement: Double-faced flange (size 50, 63, 225)
T	 T – LF	 T – RF	 T – DF
B (E)	 B – LF (E–LF)	 B – RF (E–RF)	 B – DF (E–DF)
V	 V – LF Installation face	 Installation face V – RF	Note) V type Installation face: bottom side only Size 225 shaft arrangement: double output not available

Solid output shaft: contact Tsubaki representative.
SWJGM installation direction: E type only and can be installed in any direction.
Motor and output rotational relationship: depend on the type and reduction ratio.
Refer to the characteristic tables on page 179 to 186 for more information.

Option

Ex.: **P2** **D2** **C1**
(12) (13) (14)

(12)	[Terminal box position]	Refer to page 225. P2: 180° swing
(13)	[Terminal box outlet directions]	Refer to pages 224 and 225. No code: fan cover side D1: 90° swing cw D2: 180° swing cw D3: 270° swing cw
(14)	[Paint color]	C0: light gray (Munsell N7.5) C1: light sliver metallic C2: ivory white (Munsell 7.5Y9/1) C3: dark silver metallic

Procedures

Follow these procedures for sizing TERUS EWJGM/EWGM(R)/SWJGM/SWGM(R)/TDGM(R) series integrated gear reducers. In order to select your model, make sure on motor capacity, load torque, input speed, reduction ratio, load characteristics, operating hours, start/stop frequency, and etc.

1. Select package: A/B/C/X type

Select the suitable package according to your application.

A type: Standard package - All-purpose model, high efficiency and high reduction gears for a wide range of applications.

B type: Self-locking package - Self-locking type, suitable for lifts, elevators, reversing machines, and etc.

C type: Tough package - Tough gear train designed to withstand expected shock.

X type: Made to order - Freely combine gear motor/worm sizes and reduction ratios.

2. Determine service factor

All allowable torque on output shaft and motor kW values in the Characteristics table are when the service factor (sf) is 1.0. Choose the service factor (sf) depending on the load characteristics, operating hours, and start frequency. Use the larger value as the compensation factor. Refer to the table of Load Categories by Machine Type for the load characteristics. If you cannot find your machine, choose the closest or contact us for assistance.

Table 1 Service factor table (Sf)

Load characteristics \ Motor	Operating hours (per day)			
	0.5	2	10	24
U: Constant load	1.00 (1.00)	1.00 (1.00)	1.00 (1.25)	1.25 (1.50)
M: Load with light impact	1.00 (1.00)	1.00 (1.25)	1.25 (1.50)	1.50 (1.75)
H: Load with heavy impact	1.00 (1.25)	1.25 (1.50)	1.50 (1.75)	1.75 (2.00)

Note) 1. Use the figure within ( ) if the reducer is to be started more than 10 times per hour.
2. The service factors in the table above are general guidelines. Determine the usage factor based on actual usage conditions.

3. Determine compensation torque

Use formula 1 and multiple the required load torque or required motor kW by the compensation factor to determine the compensation torque.

Compensation kW = load kW × compensation factor ... (Formula 1)

Compensation torque = load torque × compensation factor ... (Formula 1)

4. Determine reduction ratio

Use the actual input speed you will be using, and the required output speed to determine the reduction ratio.

Note) The reduction ratios for TERUS series are given as nominal reduction ratios. Always check the actual reduction ratios.

5. Determine size and model number

From the allowable torque on output shaft in the Characteristics table for each type, select the size and model that satisfies the compensation kW or compensation torque.

6. Check shaft load

Use formula 3 to check that the radial load on the shaft is within the allowable radial load for each series.

$$\text{Allowable radial load} \geq \frac{T \times f \times Lf}{R} \quad \cdots\cdots\cdots\text{(Formula 3)}$$

T: Compensation torque
f: O.H.L. factor
Lf: Point of action factor
R: Pitch radius of sprockets, pulleys, etc.

O.H.L. factor (f)

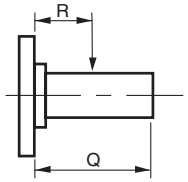
Chain	1.00
Gear	1.25
Toothed belt	1.25

(Solid shaft type)

Point of action factor (Lf)

$R \leq \frac{Q}{2}$ ..... Lf = 1

$R > \frac{Q}{2}$ ..... $Lf = \frac{2R}{Q}$



(Check axial load)

If axial loads are anticipated on the output shaft, make sure they are within the allowable axial loads for each series.

(Alternating loads)

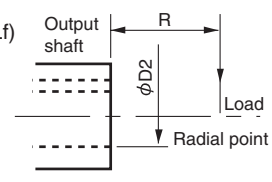
If alternating loads act upon hollow shaft on the TDGM (including outputs with a Power-Lock), it is necessary to check the strength of the tapped holes in the housing. Check the type of load that occurs and contact us for assistance.

(Hollow shaft type)

Point of action factor (Lf)

$R \leq D_2$ ..... Lf =1

$R > D_2$ ..... $Lf = \frac{R}{D_2}$



7. Determine size and model number

If the allowable torque on output shaft does not satisfy the required torque, consider increasing the size. Check the shaft load again, and then select the final model number.

Selection Example

[Conditions]

- Application: Mixer (kneader)
- Motor: 0.2 kW, 1450 r/min
- Output shaft speed: 1.45 r/min
- Output shaft torque: 605 N
- Output shaft load: Radial load 500 N
- Operating hours: 10 hours/day
- Operating frequency: 1/hour
- Installation: Hollow, vertical

[Sizing]

1. Select package type: A, B, C, or X type

   C type: with tough gear from your application.

2. Determine service factor

   From the Load Categories by Machine Type (table 2), a mixer (kneader) has a load characteristic of M, which gives sf = 1.25 from the service factor table (table 1).

3. Determine compensation torque

   Use the service factor and load torque to obtain the compensation torque.

   Compensation torque = 605 N·m × 1.25 ≈ 726 N·m

4. Determine reduction ratio

   Use the motor speed and output speed to obtain the reduction ratio.

   Reduction ratio = 1450 r/min ÷ 1.45 r/min ≈ 1000

5. Determine size

   From the Characteristics table for C type, select the size that satisfies the compensation torque and reduction ratio.

   Size: SWGM100HC - 1/1000, motor: 0.2 kW

6. Check shaft load

   Check that the radial load on the output shaft is within the allowable load.

   Radial load: 500 N < allowable radial load = 6478 N and is acceptable

7. Determine size and model number

From vertical mount (V type), hollow output shaft (H), your selection is **Model: SWGM100HCV1000RF(LF)020**.

Notes

● Transfer capacity before oil temperature settles

The transfer capacities listed in this catalog assume the reducer is driving a load rate of 100% using the recommended oil in continuous operation, and at constant oil temperature.
Efficiencies will lower during cold starts, and when the oil temperature has yet to stabilize due to frequent starts and stops. This is due to the low fluidity of the lubrication oil which increases the mixing resistance of the oil, thus resulting in less transfer capacity than published in our catalog.
To make a general estimate, discount the capacity using the ratios given below.

Efficiency ratio (reference) to use before oil temperature settles.

Worm gear reduction ratio	Efficiency ratio
10 to 15	-2% to -4%
20 to 30	-3% to -6%
40 to 60	-6% to -8%

* Refer to the worm gear reduction ratio for TERUS combinations in the Characteristics table.

● Self-locking

A worm gear reducer is said to be self-locking if the input shaft does not begin to turn when force is applied to the output shaft to turn it from a standstill condition. If, in fact, the input shaft turns but requires a large force on the output shaft, known as the braking effect, the reducer is said to have self-locking properties.
These effects are factors of the lead angle and surface condition of the teeth on the worm gear, as well as lubrication. Our standard EWJGM/EWGM(R)/SWJGM(R)/SWGM(R) Series with a reduction ratio of 1/50, 1/60 and TDGM(R) Series with a reduction ratio of 1/60 can be expected to be self-locking from a standstill condition.
Other reduction ratios (1/10 to 1/40) can be expected to exhibit self-locking properties or, the braking effect.

* Notes about self-locking and self-locking properties

(1) Shocks or vibration may reduce the self-locking effect. Self-locking is not guaranteed. For applications that require the output to be held still, the user should furnish a brake or other means of restraint.
(2) If the braking effect occurs in applications where an extremely heavy load inertia is being moved (such as equipment that travels or swings), the self-locking effect or properties can be dangerous. For such applications, select a reduction ratio from 1/10 to 1/20.

Characteristics

A Type: Standard Package/Solid Output Shaft [S]

Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft		Allowable radial load on output	Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm			50 Hz	60 Hz	50 Hz	60 Hz					
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}	N·m {kgf·m}	N {kgf}	Page	Motor model	Page	Motor model
0.1	100	EWJGM50S	18	10	50	10	97.79	15.3	18.4	47 {4.8}	39 {4.0}	2558 {261}	188	AA2	190	BA2
	150			15		10	148.00	10.1	12.2	70 {7.1}	59 {6.0}	2558 {261}				
	200			20		10	198.21	7.57	9.08	93 {9.5}	78 {7.9}	2558 {261}				
	250			25		10	248.43	6.04	7.25	109 {11}	97 {9.9}	2558 {261}				
	300	EWJGM63S	18	30	63	10	294.64	5.09	6.11	136 {14}	114 {12}	4155 {424}	188	AB2	190	BB2
	400			40		10	401.53	3.74	4.48	184 {19}	154 {16}	4155 {424}				
	500			50		10	498.17	3.01	3.61	224 {23}	190 {19}	4155 {424}				
	600			40		15	602.30	2.49	2.99	224 {23}	211 {22}	4155 {424}				
	800	EWJGM70S	18	40	70	20	803.06	1.87	2.24	315 {32}	265 {27}	5674 {579}	188	AC1	190	BC1
	1000	EWGM80S	18	50	80	20	996.34	1.51	1.81	397 {41}	334 {34}	7575 {773}	188	AD1	190	BD1
	1200	EWGM100S	24	120	100	10	1221.60	1.23	1.47	538 {55}	451 {46}	11505 {1174}	188	AE2	190	BE2
	1500			100		15	1494.66	1.00	1.20	607 {62}	511 {52}	11505 {1174}				
	1800			120		15	1832.40	0.82	0.98	738 {75}	620 {63}	11505 {1174}				
	2400			120		20	2443.20	0.61	0.74	844 {86}	763 {78}	11505 {1174}				
	3000	EWGM125S	24	120	125	25	3054.00	0.49	0.59	1090 {111}	918 {94}	15131 {1544}	188	AF1	190	BF1
	3600			120		30	3664.80	0.41	0.49	1162 {119}	982 {100}	15131 {1544}				
0.2	100	EWJGM50S	18	10	50	10	97.79	15.3	18.4	93.9 {9.6}	79 {8.1}	2558 {261}	188	AA3	190	BA3
	150	EWJGM63S	18	15	63	10	148.00	10.1	12.2	141 {14}	118 {12}	4155 {424}	188	AB4	190	BB4
	200			20		10	198.21	7.57	9.08	186 {19}	156 {16}	4155 {424}				
	250			25		10	248.43	6.04	7.25	224 {23}	194 {20}	4155 {424}				
	300			20		15	297.32	5.05	6.05	224 {23}	215 {22}	4155 {424}				
	400	EWJGM70S	18	20	70	20	396.42	3.78	4.54	315 {32}	272 {28}	5674 {579}	188	AC3	190	BC3
	500	EWGM80S	18	25	80	20	496.86	3.02	3.62	409 {42}	344 {35}	7575 {773}	188	AD2	190	BD2
	600		24	40		15	585.45	2.56	3.07	470 {48}	421 {43}	7575 {773}	188	AD3	190	BD3
	800	EWGM100S	24	40	100	20	780.60	1.92	2.31	639 {65}	537 {55}	11505 {1174}	188	AE4	190	BE4
	1000			50		20	988.14	1.52	1.82	777 {79}	653 {67}	11505 {1174}				
	1200			60		20	1188.34	1.26	1.51	844 {86}	778 {79}	11505 {1174}				
	1500	EWGM125S	24	75	125	20	1445.72	1.04	1.25	1146 {117}	962 {98}	15131 {1544}	188	AF3	190	BF3
	1800		28	120		15	1809.80	0.83	0.99	1465 {149}	1232 {126}	15131 {1544}	188	AF4	190	BF4
	2400	EWGM150S	28	120	150	20	2413.06	0.62	0.75	1853 {189}	1562 {159}	21825 {2227}	188	AG1	190	BG1
	3000			120		25	3016.33	0.50	0.60	2240 {229}	1888 {193}	21825 {2227}				
	3600			120		30	3619.59	0.41	0.50	2330 {238}	1972 {201}	21825 {2227}				
0.4	100	EWJGM63S	24	10	63	10	103.13	14.5	17.5	199 {20}	167 {17}	4155 {424}	188	AB5	190	BB5
	150	EWJGM70S	24	15	70	10	151.25	9.92	11.9	287 {29}	241 {25}	5674 {579}	188	AC4	190	BC4
	200	EWGM80S	24	20	80	10	193.88	7.74	9.28	371 {38}	311 {32}	7575 {773}	188	AD4	190	BD4
	250			25		10	247.50	6.06	7.27	469 {48}	394 {40}	7575 {773}				
	300			20		15	290.82	5.16	6.19	470 {48}	432 {44}	7575 {773}				
	400	EWGM100S	24	20	100	20	387.76	3.87	4.64	659 {67}	555 {57}	11505 {1174}	188	AE5	190	BE5
	500			25		20	495.00	3.03	3.64	830 {85}	698 {71}	11505 {1174}				
	600	EWGM125S	28	60	125	10	600.00	2.50	3.00	1095 {112}	917 {94}	15131 {1544}	188	AF6	190	BF6
	800			40		20	810.38	1.85	2.22	1318 {135}	1108 {113}	15131 {1544}				
	1000			50		20	1018.18	1.47	1.77	1572 {160}	1377 {141}	15131 {1544}				
	1200	EWGM150S	28	60	150	20	1200.00	1.25	1.50	1923 {196}	1616 {165}	21825 {2227}	188	AG3	190	BG3
	1500			75		20	1464.94	1.02	1.23	2328 {238}	1955 {199}	21825 {2227}				
	1800		38	120		15	1756.70	0.85	1.02	2589 {264}	2422 {247}	21825 {2227}	188	AG4	190	BG4
	2400	EWGM175S	38	120	175	20	2342.26	0.64	0.77	3459 {353}	3102 {317}	24451 {2495}	188	AH2	190	BH2
	3000	EWGM200S	38	120	200	25	2927.83	0.51	0.61	4259 {435}	3580 {365}	29743 {3035}	188	AI1	190	BI1
	3600			120		30	3513.39	0.43	0.51	4550 {464}	3832 {391}	29743 {3035}				

A Type: Standard Package/Solid Output Shaft [S]

Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft				Allowable radial load on output		Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm					50 Hz		60 Hz							
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}		N·m {kgf·m}		N {kgf}		Page	Motor model	Page	Motor model
0.75	100	EWGMR80S	28	10	80	10	101.59	14.8	17.7	374	{38}	314	{32}	7575	{773}	188	AD5	190	BD5
	150	EWGMR100S	28	15	100	10	146.94	10.2	12.2	542	{55}	455	{46}	11505	{1174}	188	AE6	190	BE6
	200			20		10	199.48	7.52	9.02	727	{74}	610	{62}	11505	{1174}				
	250			25		10	253.97	5.91	7.09	844	{86}	769	{79}	11505	{1174}				
	300	EWGMR125S	28	20	125	15	299.22	5.01	6.02	1023	{104}	860	{88}	15131	{1544}	188	AF7	190	BF7
	400			20		20	398.96	3.76	4.51	1301	{133}	1096	{112}	15131	{1544}				
	500			25		20	507.94	2.95	3.54	1572	{160}	1376	{140}	15131	{1544}				
	600	EWGMR150S	38	60	150	10	600.82	2.50	3.00	2067	{211}	1733	{177}	21825	{2227}	188	AG6	190	BG6
	800			40		20	812.70	1.85	2.21	2488	{254}	2093	{214}	21825	{2227}				
	1000	EWGMR175S	38	50	175	20	982.86	1.53	1.83	3019	{308}	2539	{259}	24451	{2495}	188	AH4	190	BH4
	1200			60		20	1201.64	1.25	1.50	3459	{353}	3073	{314}	24451	{2495}				
	1500	EWGMR200S	38	75	200	20	1493.34	1.00	1.21	4412	{450}	3710	{379}	29743	{3035}	188	AI2	190	BI2
	1800		42	120	200	15	1837.50	0.82	0.98	5360	{547}	4498	{459}	29743	{3035}	188	AI3	190	BI3
	2400	TDGMR200S	42	120	200	20	2450.00	0.61	0.73	8101	{827}	6806	{694}	32400	{3306}	188	AK1	190	BK1
	3000			100	200	30	3032.82	0.49	0.59	9075	{926}	7651	{781}	32400	{3306}				
	3600			120	200	30	3858.75	0.39	0.47	11143	{1137}	9586	{978}	32400	{3306}				
1.5	100	EWGMR100S	38	10	100	10	100.00	15.0	18.0	750	{76}	630	{64}	11505	{1174}	188	AE7	190	BE7
	150	EWGMR125S	38	15	125	10	150.00	10.0	12.0	1113	{114}	935	{95}	15131	{1544}	188	AF8	190	BF8
	200			20		10	196.15	7.65	9.18	1439	{147}	1209	{123}	15131	{1544}				
	250			25		10	240.91	6.23	7.47	1572	{160}	1472	{150}	15131	{1544}				
	300	EWGMR150S	38	30	150	10	300.00	5.00	6.00	2180	{222}	1830	{187}	21825	{2227}	188	AG7	190	BG7
	400			20		20	392.30	3.82	4.59	2578	{263}	2173	{222}	21825	{2227}				
	500	EWGMR175S	38	25	175	20	481.82	3.11	3.74	3171	{324}	2672	{273}	24451	{2495}	188	AH5	190	BH5
	600	EWGMR200S	42	60	200	10	614.92	2.44	2.93	4227	{431}	3546	{362}	29743	{3035}	188	AI5	190	BI5
	800			40		20	785.06	1.91	2.29	4802	{490}	4046	{413}	29743	{3035}				
	1000			50		20	974.08	1.54	1.85	5805	{592}	4955	{506}	29743	{3035}				
	1200	TDGMR200S	42	60	200	20	1229.84	1.22	1.46	8840	{902}	7425	{758}	32400	{3306}	188	AK3	190	BK3
	1500			75		20	1457.18	1.03	1.24	10397	{1061}	8733	{891}	32400	{3306}				
	1800			60		30	1937.00	0.77	0.93	11143	{1137}	10603	{1082}	32400	{3306}				
2.2	100	EWGMR125S	42	10	125	10	98.70	15.2	18.2	1094	{112}	920	{93.9}	15131	{1544}	188	AF9	190	BF9
	150			15		10	144.54	10.4	12.5	1572	{160}	1324	{135}	15131	{1544}				
	200	EWGMR150S	42	20	150	10	206.59	7.26	8.71	2235	{228}	1877	{192}	21825	{2227}	188	AG8	190	BG8
	250			25		10	254.55	5.89	7.07	2589	{264}	2293	{234}	21825	{2227}				
	300	EWGMR175S	42	30	175	10	291.43	5.15	6.18	3137	{320}	2633	{269}	24451	{2495}	188	AH6	190	BH6
	400			20		20	413.18	3.63	4.36	3459	{353}	3393	{346}	24451	{2495}				
	500	EWGMR200S	42	25	200	20	509.10	2.95	3.54	4837	{494}	4081	{416}	29743	{3035}	188	AI6	190	BI6

Characteristics

A Type: Standard Package/Hollow Output Shaft [H]

Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft				Allowable radial load on output		Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm					50 Hz		60 Hz							
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}		N·m {kgf·m}		N {kgf}		Page	Motor model	Page	Motor model
0.1	100	SWJGM50H	18	10	50	10	97.79	15.3	18.4	47	{4.8}	39	{4.0}	3305	{337}	192	CA1	194	DA1
	150			15		10	148.00	10.1	12.2	70	{7.1}	59	{6.0}	3305	{337}				
	200			20		10	198.21	7.57	9.08	93	{9.5}	78	{7.9}	3305	{337}				
	250			25		10	248.43	6.04	7.25	109	{11}	97	{9.9}	3305	{337}				
	300	SWJGM63H	18	30	63	10	294.64	5.09	6.11	136	{14}	114	{12}	3153	{322}	192	CA5	194	DA5
	400			40		10	401.53	3.74	4.48	184	{19}	154	{16}	3153	{322}				
	500			50		10	498.17	3.01	3.61	224	{23}	190	{19}	3153	{322}				
	600			40		15	602.30	2.49	2.99	224	{23}	211	{22}	3153	{322}				
	800	SWJGM70H	18	40	70	20	803.06	1.87	2.24	315	{32}	265	{27}	3591	{366}	192	CB1	194	DB1
	1000	SWGM80H	18	50	80	20	996.34	1.51	1.81	397	{41}	334	{34}	8849	{903}	192	CC1	194	DC1
	1200	SWGM100H	24	120	100	10	1221.60	1.23	1.47	538	{55}	451	{46}	10711	{1093}	192	CD2	194	DD2
	1500			100		15	1494.66	1.00	1.20	607	{62}	511	{52}	10711	{1093}				
	1800			120		15	1832.40	0.82	0.98	738	{75}	620	{63}	10711	{1093}				
	2400			120		20	2443.20	0.61	0.74	844	{86}	763	{78}	10711	{1093}				
	3000	SWGM125H	24	120	125	25	3054.00	0.49	0.59	1090	{111}	918	{94}	18531	{1891}	192	CE1	194	DE1
	3600			120		30	3664.80	0.41	0.49	1162	{119}	982	{100}	18531	{1891}				
0.2	100	SWJGM50H	18	10	50	10	97.79	15.3	18.4	94	{9.6}	79	{8.1}	3305	{337}	192	CA3	194	DA3
	150	SWJGM63H	18	15	63	10	148.00	10.1	12.2	141	{14}	118	{12}	3153	{322}	192	CA7	194	DA7
	200			20		10	198.21	7.57	9.08	186	{19}	156	{16}	3153	{322}				
	250			25		10	248.43	6.04	7.25	224	{23}	194	{20}	3153	{322}				
	300			20		15	297.32	5.05	6.05	224	{23}	215	{22}	3153	{322}				
	400	SWJGM70H	18	20	70	20	396.42	3.78	4.54	315	{32}	272	{28}	3591	{366}	192	CB3	194	DB3
	500	SWGM80H	18	25	80	20	496.86	3.02	3.62	409	{42}	344	{35}	8849	{903}	192	CC2	194	DC2
	600		24	40		15	585.45	2.56	3.07	470	{48}	421	{43}	8849	{903}	192	CC3	194	DC3
	800	SWGM100H	24	40	100	20	780.60	1.92	2.31	639	{65}	537	{55}	10711	{1093}	192	CD4	194	DD4
	1000			50		20	988.14	1.52	1.82	777	{79}	653	{67}	10711	{1093}				
	1200			60		20	1188.34	1.26	1.51	844	{86}	778	{79}	10711	{1093}				
	1500	SWGM125H	24	75	125	20	1445.72	1.04	1.25	1146	{117}	962	{98}	18531	{1891}	192	CE3	194	DE3
	1800		28	120		15	1809.80	0.83	0.99	1465	{149}	1232	{126}	18531	{1891}	192	CE4	194	DE4
	2400	SWGM150H	28	120	150	20	2413.06	0.62	0.75	1853	{189}	1562	{159}	15680	{1600}	192	CF1	194	DF1
	3000			120		25	3016.33	0.50	0.60	2240	{229}	1888	{193}	15680	{1600}				
	3600			120		30	3619.59	0.41	0.50	2330	{238}	1972	{201}	15680	{1600}				
0.4	100	SWJGM63H	24	10	63	10	103.13	14.5	17.5	199	{20}	167	{17}	3153	{322}				
	150	SWJGM70H	24	15	70	10	151.25	9.92	11.9	287	{29}	241	{25}	3591	{366}	192	CB4	194	DB4
	200	SWGM80H	24	20	80	10	193.88	7.74	9.28	371	{38}	311	{32}	8849	{903}	192	CC4	194	DC4
	250			25		10	247.50	6.06	7.27	469	{48}	394	{40}	8849	{903}				
	300			20		15	290.82	5.16	6.19	470	{48}	432	{44}	8849	{903}				
	400	SWGM100H	24	20	100	20	387.76	3.87	4.64	659	{67}	555	{57}	10711	{1093}	192	CD5	194	DD5
	500			25		20	495.00	3.03	3.64	830	{85}	698	{71}	10711	{1093}				
	600	SWGM125H	28	60	125	10	600.00	2.50	3.00	1095	{112}	917	{94}	18531	{1891}	192	CE6	194	DE6
	800			40		20	810.38	1.85	2.22	1318	{135}	1108	{113}	18531	{1891}				
	1000			50		20	1018.18	1.47	1.77	1572	{160}	1377	{141}	18531	{1891}				
	1200	SWGM150H	28	60	150	20	1200.00	1.25	1.50	1923	{196}	1616	{165}	15680	{1600}	192	CF3	194	DF3
	1500			75		20	1464.94	1.02	1.23	2328	{238}	1955	{199}	15680	{1600}				
	1800		38	120		15	1756.70	0.85	1.02	2589	{264}	2422	{247}	15680	{1600}	192	CF4	194	DF4
	2400	SWGM175H	38	120	175	20	2342.26	0.64	0.77	3459	{353}	3102	{317}	26558	{2710}	192	CG2	194	DG2
	3000	SWGM200H	38	120	200	25	2927.83	0.51	0.61	4259	{435}	3580	{365}	29743	{3035}	192	CH1	194	DH1
	3600			120		30	3513.39	0.43	0.51	4550	{464}	3832	{391}	29743	{3035}				

A Type: Standard Package/Hollow Output Shaft [H]

Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft				Allowable radial load on output		Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm					50 Hz		60 Hz							
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}		N·m {kgf·m}		N {kgf}		Page	Motor model	Page	Motor model
0.75	100	SWGMR80H	28	10	80	10	101.59	14.8	17.7	374	{38}	314	{32}	8849	{903}	192	CC5	194	DC5
	150	SWGMR100H	28	15	100	10	146.94	10.2	12.2	542	{55}	455	{46}	10711	{1093}	192	CD6	194	DD6
	200			20		10	199.48	7.52	9.02	727	{74}	610	{62}	10711	{1093}				
	250			25		10	253.97	5.91	7.09	844	{86}	769	{79}	10711	{1093}				
	300	SWGMR125H	28	20	125	15	299.22	5.01	6.02	1023	{104}	860	{88}	18531	{1891}	192	CE7	194	DE7
	400			20		20	398.96	3.76	4.51	1301	{133}	1096	{112}	18531	{1891}				
	500			25		20	507.94	2.95	3.54	1572	{160}	1376	{140}	18531	{1891}				
	600	SWGMR150H	38	60	150	10	600.82	2.50	3.00	2067	{211}	1733	{177}	15680	{1600}	192	CF6	194	DF6
	800			40		20	812.70	1.85	2.21	2488	{254}	2093	{214}	15680	{1600}				
	1000	SWGMR175H	38	50	175	20	982.86	1.53	1.83	3019	{308}	2539	{259}	19364	{1976}	192	CG4	194	DG4
	1200			60		20	1201.64	1.25	1.50	3459	{353}	3073	{314}	19364	{1976}				
	1500	SWGMR200H	38	75	200	20	1493.34	1.00	1.21	4412	{450}	3710	{379}	22834	{2330}	192	CH2	194	DH2
	1800		42	120	200	15	1837.50	0.82	0.98	5360	{547}	4498	{459}	22834	{2330}	192	CH3	194	DH3
	2400	TDGMR200H	42	120	200	20	2450.00	0.61	0.73	8101	{827}	6806	{694}	38803	{3960}	192	CJ1	194	DJ1
	3000			100	200	30	3032.82	0.49	0.59	9075	{926}	7651	{781}	38803	{3960}				
	3600			120	200	30	3858.75	0.39	0.47	11143	{1137}	9586	{978}	38803	{3960}				
1.5	100	SWGMR100H	38	10	100	10	100.00	15.0	18.0	750	{76}	630	{64}	10711	{1093}	192	CD7	194	DD7
	150	SWGMR125H	38	15	125	10	150.00	10.0	12.0	1113	{114}	935	{95}	18531	{1891}	192	CE8	194	DE8
	200			20		10	196.15	7.65	9.18	1439	{147}	1209	{123}	18531	{1891}				
	250			25		10	240.91	6.23	7.47	1572	{160}	1472	{150}	18531	{1891}				
	300	SWGMR150H	38	30	150	10	300.00	5.00	6.00	2180	{222}	1830	{187}	15680	{1600}	192	CF7	194	DF7
	400			20		20	392.30	3.82	4.59	2578	{263}	2173	{222}	15680	{1600}				
	500	SWGMR175H	38	25	175	20	481.82	3.11	3.74	3171	{324}	2672	{273}	19364	{1976}	192	CG5	194	DG5
	600	SWGMR200H	42	60	200	10	614.92	2.44	2.93	4227	{431}	3546	{362}	22834	{2330}	192	CH5	194	DH5
	800			40		20	785.06	1.91	2.29	4802	{490}	4046	{413}	22834	{2330}				
	1000			50		20	974.08	1.54	1.85	5805	{592}	4955	{506}	22834	{2330}				
	1200	TDGMR200H	42	60	200	20	1229.84	1.22	1.46	8840	{902}	7425	{758}	38803	{3960}	192	CJ3	194	DJ3
	1500			75		20	1457.18	1.03	1.24	10397	{1061}	8733	{891}	38803	{3960}				
	1800			60		30	1937.00	0.77	0.93	11143	{1137}	10603	{1082}	38803	{3960}				
2.2	100	SWGMR125H	42	10	125	10	98.70	15.2	18.2	1094	{112}	920	{93.9}	18531	{1891}	192	CE9	194	DE9
	150			15		10	144.54	10.4	12.5	1572	{160}	1324	{135}	18531	{1891}				
	200	SWGMR150H	42	20	150	10	206.59	7.26	8.71	2235	{228}	1877	{192}	15680	{1600}	192	CE8	194	DF8
	250			25		10	254.55	5.89	7.07	2589	{264}	2293	{234}	15680	{1600}				
	300	SWGMR175H	42	30	175	10	291.43	5.15	6.18	3137	{320}	2633	{269}	19364	{1976}	192	CG6	194	DG6
	400			20		20	413.18	3.63	4.36	3459	{353}	3393	{346}	19364	{1976}				
	500	SWGMR200H	42	25	200	20	509.10	2.95	3.54	4837	{494}	4081	{416}	22834	{2330}	192	CH6	194	DH6

Characteristics

B Type: Self-locking Package/Solid Output Shaft [S]

Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft				Allowable radial load on output		Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm					50 Hz		60 Hz							
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}		N·m {kgf·m}		N {kgf}		Page	Motor model	Page	Motor model
0.1	250	EWJGM50S	18	5	50	50	251.55	5.96	7.16	82	{8.3}	70	{7.1}	2558	{261}	188	AA1	190	BA1
	300	EWJGM63S	18	5	63	60	301.86	4.97	5.96	94	{9.6}	81	{8.2}	4155	{424}	188	AB1	190	BB1
	500			10		50	488.95	3.07	3.68	150	{15}	128	{13}	4155	{424}	188	AB2	190	BB2
	600			10		60	586.74	2.56	3.07	169	{17}	144	{15}	4155	{424}				
	750	EWJGM70S	18	15	70	50	740.00	2.03	2.43	220	{22}	186	{19}	5674	{579}	188	AC1	190	BC1
	1000	EWGM80S	18	20	80	50	991.05	1.51	1.82	298	{30}	252	{26}	7575	{773}	188	AD1	190	BD1
	1200			20		60	1189.26	1.26	1.51	338	{35}	287	{29}	7575	{773}				
	1500	EWGM100S	18	30	100	50	1473.20	1.02	1.22	445	{45}	377	{38}	11505	{1174}	188	AE1	190	BE1
	1800			30		60	1767.84	0.85	1.02	504	{51}	427	{44}	11505	{1174}				
0.2	250	EWJGM63S	18	5	63	50	251.55	5.96	7.16	167	{17}	142	{15}	4155	{424}	188	AB3	190	BB3
	300	EWJGM70S	18	5	70	60	301.86	4.97	5.96	191	{19}	163	{17}	5674	{579}	188	AC2	190	BC2
	500	EWGM80S	18	10	80	50	488.95	3.07	3.68	315	{32}	268	{27}	7575	{773}	188	AD2	190	BD2
	600			10		60	586.74	2.56	3.07	358	{37}	305	{31}	7575	{773}				
	750	EWGM100S	18	15	100	50	740.00	2.03	2.43	475	{48}	403	{41}	11505	{1174}	188	AE3	190	BE3
	1000			20		50	991.05	1.51	1.82	619	{63}	525	{54}	11505	{1174}				
	1200	EWGM125S	18	20	125	60	1189.26	1.26	1.51	705	{72}	599	{61}	15131	{1544}	188	AF3	190	BF3
	1500		24	30	125	50	1473.20	1.02	1.22	900	{92}	762	{78}	15131	{1544}	188	AF4	190	BF4
	1800			30		60	1767.84	0.85	1.02	1009	{103}	856	{87}	15131	{1544}				
0.4	250	EWGM80S	24	5	80	50	247.50	6.06	7.27	345	{35}	294	{30}	7575	{773}	188	AD4	190	BD4
	300	EWGM100S	24	5	100	60	297.00	5.05	6.06	410	{42}	351	{36}	11505	{1174}	188	AE5	190	BE5
	500			10		50	515.65	2.91	3.49	687	{70}	585	{60}	11505	{1174}				
	600	EWGM125S	24	10	125	60	618.78	2.42	2.91	790	{81}	674	{69}	15131	{1544}	188	AF5	190	BF5
	750			15		50	756.25	1.98	2.38	985	{100}	837	{85}	15131	{1544}				
	1000			20		50	969.40	1.55	1.86	1231	{126}	1045	{107}	15131	{1544}				
	1200	EWGM150S	24	20	150	60	1163.28	1.29	1.55	1433	{146}	1218	{124}	21825	{2227}	188	AG2	190	BG2
	1500		28	30		50	1543.75	0.97	1.17	1982	{202}	1678	{171}	21825	{2227}	188	AG3	190	BG3
	1800	EWGM175S	28	30	175	60	1852.50	0.81	0.97	2231	{228}	1892	{193}	24451	{2495}	188	AH1	190	BH1
0.75	250	EWGMR125S	28	5	125	50	253.05	5.93	7.11	704	{72}	601	{61}	15131	{1544}	188	AF7	190	BF7
	300			5		60	303.66	4.94	5.93	799	{82}	683	{70}	15131	{1544}				
	500			10		50	507.95	2.95	3.54	1296	{132}	1104	{113}	15131	{1544}				
	600	EWGMR150S	28	10	150	60	609.54	2.46	2.95	1517	{155}	1294	{132}	21825	{2227}	188	AG5	190	BG5
	750			15		50	734.70	2.04	2.45	1896	{193}	1610	{164}	21825	{2227}				
	1000	EWGMR175S	28	20	175	50	997.40	1.50	1.80	2478	{253}	2105	{215}	24451	{2495}	188	AH3	190	BH3
	1200			20		60	1196.88	1.25	1.50	2824	{288}	2401	{245}	24451	{2495}				
	1500	EWGMR200S	38	30	200	50	1519.05	0.99	1.18	3520	{359}	2991	{305}	29743	{3035}	188	AI2	190	BI2
	1800			30		60	1822.86	0.82	0.99	3911	{399}	3327	{340}	29743	{3035}				
1.5	250	EWGMR150S	38	5	150	50	250.00	6.00	7.20	1462	{149}	1246	{127}	21825	{2227}	188	AG7	190	BG7
	300			5		60	300.00	5.00	6.00	1641	{167}	1403	{143}	21825	{2227}				
	500	EWGMR175S	38	10	175	50	500.00	3.00	3.60	2687	{274}	2290	{234}	24451	{2495}	188	AH5	190	BH5
	600	EWGMR200S	38	10	200	60	600.00	2.50	3.00	2972	{303}	2545	{260}	29743	{3035}	188	AI4	190	BI4
	750			15		50	750.00	2.00	2.40	3769	{385}	3215	{328}	29743	{3035}				
	1000			20		50	980.75	1.53	1.84	4771	{487}	4064	{415}	29743	{3035}				
	1200	TDGMR200S	38	20	200	60	1235.75	1.21	1.46	7411	{756}	6278	{641}	32400	{3306}	188	AK2	190	BK2
	1800	TDGMR225S	38	30	225	60	1800.00	0.83	1.00	10870	{1109}	9205	{939}	37000	{3776}	188	AL1	190	BL1
2.2	250	EWGMR175S	42	5	175	50	250.00	6.00	7.20	2154	{220}	1839	{188}	24451	{2495}	188	AH6	190	BH6
	300			5		60	300.00	5.00	6.00	2473	{252}	2115	{216}	24451	{2495}				
	500	EWGMR200S	42	10	200	50	493.50	3.04	3.65	3841	{392}	3282	{335}	29743	{3035}	188	AI6	190	BI6
	600			10		60	592.20	2.53	3.04	4311	{440}	3691	{377}	29743	{3035}				
	1200	TDGMR225S	42	20	225	60	1239.54	1.21	1.45	11340	{1157}	9594	{979}	37000	{3776}	188	AL3	190	BL3
	1800			30		60	1748.58	0.86	1.03	15527	{1584}	13148	{1342}	37000	{3776}				

B Type: Self-locking Package/Hollow Output Shaft [H]

Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft				Allowable radial load on output		Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm					50 Hz		60 Hz							
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}		N·m {kgf·m}		N {kgf}		Page	Motor model	Page	Motor model
0.1	250	SWJGM50H	18	5	50	50	251.55	5.96	7.16	82	{8.3}	70	{7.1}	5262	{537}	192	CA2	194	DA2
	300	SWJGM63H	18	5	63	60	301.86	4.97	5.96	94	{9.6}	81	{8.2}	7066	{721}	192	CA6	194	DA6
	500			10		50	488.95	3.07	3.68	150	{15}	128	{13}	5404	{551}	192	CA5	194	DA5
	600			10		60	586.74	2.56	3.07	169	{17}	144	{15}	7066	{721}				
	750	SWJGM70H	18	15	70	50	740.00	2.03	2.43	220	{22}	186	{19}	6103	{623}	192	CB1	194	DB1
	1000	SWGM80H	18	20	80	50	991.05	1.51	1.82	298	{30}	252	{26}	8849	{903}	192	CC1	194	DC1
	1200			20		60	1189.26	1.26	1.51	338	{35}	287	{29}	8849	{903}				
	1500	SWGM100H	18	30	100	50	1473.20	1.02	1.22	445	{45}	377	{38}	10711	{1093}	192	CD1	194	DD1
	1800			30		60	1767.84	0.85	1.02	504	{51}	427	{44}	10711	{1093}				
0.2	250	SWJGM63H	18	5	63	50	251.55	5.96	7.16	167	{17}	142	{15}	5404	{551}	192	CA8	194	DA8
	300	SWJGM70H	18	5	70	60	301.86	4.97	5.96	191	{19}	163	{17}	8385	{866}	192	CB2	194	CB2
	500	SWGM80H	18	10	80	50	488.95	3.07	3.68	315	{32}	268	{27}	8849	{903}	192	CC2	194	DC2
	600			10		60	586.74	2.56	3.07	358	{37}	305	{31}	8849	{903}				
	750	SWGM100H	18	15	100	50	740.00	2.03	2.43	475	{48}	403	{41}	10711	{1093}	192	CD3	194	DD3
	1000			20		50	991.05	1.51	1.82	619	{63}	525	{54}	10711	{1093}				
	1200	SWGM125H	18	20	125	60	1189.26	1.26	1.51	705	{72}	599	{61}	18531	{1891}	192	CE2	194	DE2
	1500		24	30		50	1473.20	1.02	1.22	900	{92}	762	{78}	18531	{1891}	192	CE3	194	DE3
	1800			30		60	1767.84	0.85	1.02	1009	{103}	856	{87}	18531	{1891}				
0.4	250	SWGM80H	24	5	80	50	247.50	6.06	7.27	345	{35}	294	{30}	8849	{903}	192	CC4	194	DC4
	300	SWGM100H	24	5	100	60	297.00	5.05	6.06	410	{42}	351	{36}	10711	{1093}	192	CD5	194	DD5
	500			10		50	515.65	2.91	3.49	687	{70}	585	{60}	10711	{1093}				
	600	SWGM125H	24	10	125	60	618.78	2.42	2.91	790	{81}	674	{69}	18531	{1891}	192	CE5	194	DE5
	750			15		50	756.25	1.98	2.38	985	{100}	837	{85}	18531	{1891}				
	1000			20		50	969.40	1.55	1.86	1231	{126}	1045	{107}	18531	{1891}				
	1200	SWGM150H	24	20	150	60	1163.28	1.29	1.55	1433	{146}	1218	{124}	15680	{1600}	192	CF2	194	DF2
	1500		28	30		50	1543.75	0.97	1.17	1982	{202}	1678	{171}	15680	{1600}	192	CF3	194	DF3
	1800	SWGM175H	28	30	175	60	1852.50	0.81	0.97	2231	{228}	1892	{193}	19364	{1976}	192	CG1	194	DG1
0.75	250	SWGMR125H	28	5	125	50	253.05	5.93	7.11	704	{72}	601	{61}	18513	{1891}	192	CE7	194	DE7
	300			5		60	303.66	4.94	5.93	799	{82}	683	{70}	18513	{1891}				
	500			10		50	507.95	2.95	3.54	1296	{132}	1104	{113}	18513	{1891}				
	600	SWGMR150H	28	10	150	60	609.54	2.46	2.95	1517	{155}	1294	{132}	15680	{1600}	192	CF5	194	DF5
	750			15		50	734.70	2.04	2.45	1896	{193}	1610	{164}	15680	{1600}				
	1000	SWGMR175H	28	20	175	50	997.40	1.50	1.80	2478	{253}	2105	{215}	19364	{1976}	192	CG3	194	DG3
	1200			20		60	1196.88	1.25	1.50	2824	{288}	2401	{245}	19364	{1976}				
	1500	SWGMR200H	38	30	200	50	1519.05	0.99	1.18	3520	{359}	2991	{305}	22834	{2330}	192	CH2	194	DH2
	1800			30		60	1822.86	0.82	0.99	3911	{399}	3327	{340}	22834	{2330}				
1.5	250	SWGMR150H	38	5	150	50	250.00	6.00	7.20	1462	{149}	1246	{127}	15680	{1600}	192	CF7	194	DF7
	300			5		60	300.00	5.00	6.00	1641	{167}	1403	{143}	15680	{1600}				
	500	SWGMR175H	38	10	175	50	500.00	3.00	3.60	2687	{274}	2290	{234}	19364	{1976}	192	CG5	194	DG5
	600	SWGMR200H	38	10	200	60	600.00	2.50	3.00	2972	{303}	2545	{260}	22834	{2330}	192	CH4	194	DH4
	750			15		50	750.00	2.00	2.40	3769	{385}	3215	{328}	22834	{2330}				
	1000			20		50	980.75	1.53	1.84	4771	{487}	4064	{415}	22834	{2330}				
	1200	TDGMR200H	38	20	200	60	1235.75	1.21	1.46	7411	{756}	6278	{641}	38803	{3960}	192	CJ2	194	DJ2
	1800	TDGMR225H	38	30	225	60	1800.00	0.83	1.00	10870	{1109}	9205	{939}	45821	{4676}	192	CK1	194	DK1
2.2	250	SWGMR175H	42	5	175	50	250.00	6.00	7.20	2154	{220}	1839	{188}	19364	{1976}	192	CG6	194	DG6
	300			5		60	300.00	5.00	6.00	2473	{252}	2115	{216}	19364	{1976}				
	500	SWGMR200H	42	10	200	50	493.50	3.04	3.65	3841	{392}	3282	{335}	22834	{2330}	192	CH6	194	DH6
	600			10		60	592.20	2.53	3.04	4311	{440}	3691	{377}	22834	{2330}				
	1200	TDGMR225H	42	20	225	60	1239.54	1.21	1.45	11340	{1157}	9594	{979}	45821	{4676}	192	CK3	194	DK3
	1800			30		60	1748.58	0.86	1.03	15527	{1584}	13148	{1342}	45821	{4676}				

Characteristics

C Type: Tough Package/Solid Output Shaft [S]

Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft		Allowable radial load on output	Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm					50 Hz	60 Hz					
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}	N·m {kgf·m}	N {kgf}	Page	Motor model	Page	Motor model
0.1	200	EWJGM50S	18	20	50	10	198.21	7.57	9.08	93 {9.5}	78 {7.9}	2558 {261}	188	AA2	190	BA2
	300	EWJGM63S	18	30	63	10	294.64	5.09	6.11	136 {14}	114 {12}	4155 {424}	188	AB2	190	BB2
	400			40		10	401.53	3.74	4.48	184 {19}	154 {16}	4155 {424}				
	500	EWJGM70S	18	50	70	10	498.17	3.01	3.61	227 {23}	190 {19}	5674 {579}	188	AC1	190	BC1
	600			40		15	602.30	2.49	2.99	251 {26}	211 {22}	5674 {579}				
	800	EWGM80S	18	40	80	20	803.06	1.87	2.24	323 {33}	272 {28}	7575 {773}	188	AD1	190	BD1
	1000			50		20	996.34	1.51	1.81	397 {41}	334 {34}	7575 {773}				
	1200	EWGM100S	24	120	100	10	1221.60	1.23	1.47	538 {55}	451 {46}	11505 {1174}	188	AE2	190	BE2
0.2	200	EWJGM63S	18	20	63	10	198.21	7.57	9.08	186 {19}	156 {16}	4155 {424}	188	AB4	190	BB4
	300	EWJGM70S	18	20	70	15	297.32	5.05	6.05	256 {26}	215 {22}	5674 {579}	188	AC3	190	BC3
	400	EWGM80S	18	20	80	20	396.42	3.78	4.54	330 {34}	278 {28}	7575 {773}	188	AD2	190	BD2
	500			25		20	496.86	3.02	3.62	409 {42}	344 {35}	7575 {773}				
	600	EWGM100S	24	40	100	15	585.45	2.56	3.07	514 {52}	432 {44}	11505 {1174}	188	AE4	190	BE4
	800			40		20	780.60	1.92	2.31	639 {65}	537 {55}	11505 {1174}				
	1000			50		20	988.14	1.52	1.82	777 {79}	653 {67}	11505 {1174}				
	1200	EWGM125S	24	60	125	20	1188.34	1.26	1.51	950 {97}	798 {81}	15131 {1544}	188	AF3	190	BF3
0.4	200	EWGM80	24	20	80	10	193.88	7.74	9.28	371 {38}	311 {32}	7575 {773}	188	AD4	190	BD4
	300	EWGM100S	24	20	100	15	290.82	5.16	6.19	527 {54}	443 {45}	11505 {1174}	188	AE5	190	BE5
	400			20		20	387.76	3.87	4.64	659 {67}	555 {57}	11505 {1174}				
	500	EWGM125S	24	25	125	20	495.00	3.03	3.64	851 {87}	716 {73}	15131 {1544}	188	AF5	190	BF5
	600		28	60		10	600.00	2.50	3.00	1095 {112}	917 {94}	15131 {1544}	188	AF6	190	BF6
	800			40		20	810.38	1.85	2.22	1318 {135}	1108 {113}	15131 {1544}				
	1000	EWGM150S	28	50	150	20	1018.18	1.47	1.77	1644 {168}	1382 {141}	21825 {2227}	188	AG3	190	BG3
	1200			60		20	1200.00	1.25	1.50	1923 {196}	1616 {165}	21825 {2227}				
0.75	200	EWGMR100S	28	20	100	10	199.48	7.52	9.02	727 {74}	610 {62}	11505 {1174}	188	AE6	190	BE6
	300	EWGMR125S	28	20	125	15	299.22	5.01	6.02	1023 {104}	860 {88}	15131 {1544}	188	AF7	190	BF7
	400			20		20	398.96	3.76	4.51	1301 {133}	1096 {112}	15131 {1544}				
	500	EWGMR150S	28	25	150	20	507.94	2.95	3.54	1644 {168}	1385 {141}	21825 {2227}	188	AG5	190	BG5
	600		38	30		20	607.62	2.47	2.96	1947 {199}	1639 {167}	21825 {2227}	188	AG6	190	BG6
	800		28	20		40	797.92	1.88	2.26	2091 {213}	1773 {181}	21825 {2227}	188	AG5	190	BG5
	1000	EWGMR175S	28	25	175	40	1015.88	1.48	1.77	2661 {271}	2255 {230}	24451 {2495}	188	AH3	190	BH3
	1200		38	30		40	1215.24	1.23	1.48	3133 {320}	2653 {271}	24451 {2495}	188	AH4	190	BH4
1.5	200	EWGMR150S	38	20	150	10	196.15	7.65	9.18	1450 {148}	1218 {124}	21825 {2227}	188	AG7	190	BG7
	300			30		10	300.00	5.00	6.00	2180 {222}	1830 {187}	21825 {2227}				
	400	EWGMR175S	38	20	175	20	392.30	3.82	4.59	2614 {267}	2204 {225}	24451 {2495}	188	AH5	190	BH5
	500			25		20	481.82	3.11	3.74	3171 {324}	2672 {273}	24451 {2495}				
	600	EWGMR200S	42	60	200	10	614.92	2.44	2.93	4227 {431}	3546 {362}	29743 {3035}	188	AI5	190	BI5
	800			40		20	785.06	1.91	2.29	4802 {490}	4046 {413}	29743 {3035}				
	1000	TDGMR200S	42	50	200	20	974.08	1.54	1.85	7073 {722}	5940 {606}	32400 {3306}	188	AK3	190	BK3
	1200			60		20	1229.84	1.22	1.46	8840 {902}	7425 {758}	32400 {3306}				
2.2	200	EWGMR150S	42	20	150	10	206.59	7.26	8.71	2235 {228}	1877 {192}	21825 {2227}	188	AG8	190	BG8
	300	EWGMR175S	42	30	175	10	291.43	5.15	6.18	3137 {320}	2633 {269}	24451 {2495}	188	AH6	190	BH6
	400	EWGMR200S	42	20	200	20	413.18	3.63	4.36	3982 {406}	3361 {343}	29743 {3035}	188	AI6	190	BI6
	500			25		20	509.10	2.95	3.54	4837 {494}	4081 {416}	29743 {3035}				

C Type: Tough Package/Hollow Output Shaft [H]

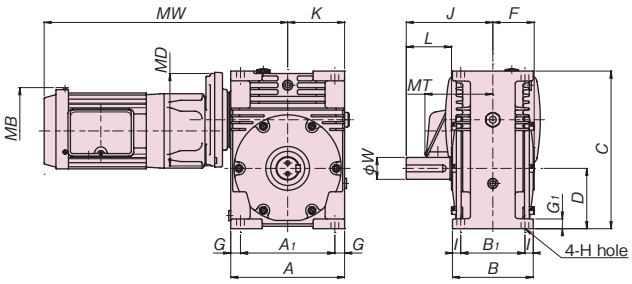
Motor output (kW)	Nominal Reduction ratio	TERUS Model No.	TERUS combinations				Actual reduction ratio	Output shaft speed r/min		Allowable torque on output shaft				Allowable radial load on output		Mounting direction T/B/E External dimensions		Mounting direction V External dimensions	
			GMTA		Worm					50 Hz		60 Hz							
			Frame No.	Reduction ratio	Frame No.	Reduction ratio		50 Hz	60 Hz	N·m {kgf·m}		N·m {kgf·m}		N {kgf}		Page	Motor model	Page	Motor model
0.1	200	SWJGM50H	18	20	50	10	198.21	7.57	9.08	93	{9.5}	78	{7.9}	3305	{337}	192	CA2	194	DA2
	300	SWJGM63H	18	30	63	10	294.64	5.09	6.11	136	{14}	114	{12}	3153	{322}	192	CA5	194	DA5
	400			40		10	401.53	3.74	4.48	184	{19}	154	{16}	3153	{322}				
	500	SWJGM70H	18	50	70	10	498.17	3.01	3.61	227	{23}	190	{19}	3591	{366}	192	CB1	194	DB1
	600			40		15	602.30	2.49	2.99	251	{26}	211	{22}	3591	{366}				
	800	SWGM80H	18	40	80	20	803.06	1.87	2.24	323	{33}	272	{28}	8849	{903}	192	CC1	194	DC1
	1000			50		20	996.34	1.51	1.81	397	{41}	334	{34}	8849	{903}				
	1200	SWGM100H	24	120	100	10	1221.60	1.23	1.47	538	{55}	451	{46}	10711	{1093}	192	CD1	194	DD1
0.2	200	SWJGM63H	18	20	63	10	198.21	7.57	9.08	186	{19}	156	{16}	3153	{322}	192	CA7	194	DA7
	300	SWJGM70H	18	20	70	15	297.32	5.05	6.05	256	{26}	215	{22}	3591	{366}	192	CB3	194	DB3
	400	SWGM80H	18	20	80	20	396.42	3.78	4.54	330	{34}	278	{28}	8849	{903}	192	CC2	194	DC2
	500			25		20	496.86	3.02	3.62	409	{42}	344	{35}	8849	{903}				
	600	SWGM100H	24	40	100	15	585.45	2.56	3.07	514	{52}	432	{44}	10711	{1093}	192	CD4	194	DD4
	800			40		20	780.60	1.92	2.31	639	{65}	537	{55}	10711	{1093}				
	1000			50		20	988.14	1.52	1.82	777	{79}	653	{67}	10711	{1093}				
	1200	SWGM125H	24	60	125	20	1188.34	1.26	1.51	950	{97}	798	{81}	18531	{1881}	192	CE3	194	DE3
0.4	200	SWGM80H	24	20	80	10	193.88	7.74	9.28	371	{38}	311	{32}	8849	{903}	192	CC3	194	DC3
	300	SWGM100H	24	20	100	15	290.82	5.16	6.19	527	{54}	443	{45}	10711	{1093}	192	CD5	194	DD5
	400			20		20	387.76	3.87	4.64	659	{67}	555	{57}	10711	{1093}				
	500	SWGM125H	24	25	125	20	495.00	3.03	3.64	851	{87}	716	{73}	18531	{1891}	192	CE5	194	DE5
	600		28	60		10	600.00	2.50	3.00	1095	{112}	917	{94}	18531	{1891}	192	CE6	194	DE6
	800			40		20	810.38	1.85	2.22	1318	{135}	1108	{113}	18531	{1891}				
	1000	SWGM150H	28	50	150	20	1018.18	1.47	1.77	1644	{168}	1382	{141}	15680	{1600}	192	CF3	194	DF3
	1200			60		20	1200.00	1.25	1.50	1923	{196}	1616	{165}	15680	{1600}				
0.75	200	SWGMR100H	28	20	100	10	199.48	7.52	9.02	727	{74}	610	{62}	10711	{1093}	192	CD6	194	DD6
	300	SWGMR125H	28	20	125	15	299.22	5.01	6.02	1023	{104}	860	{88}	18531	{1891}	192	CE7	194	DE7
	400			20		20	398.96	3.76	4.51	1301	{133}	1096	{112}	18531	{1891}				
	500	SWGMR150H	28	25	150	20	507.94	2.95	3.54	1644	{168}	1385	{141}	15680	{1600}	192	CF5	194	DF5
	600		38	30		20	607.62	2.47	2.96	1947	{199}	1639	{167}	15680	{1600}	192	CF6	194	DF6
	800		28	20		40	797.92	1.88	2.26	2091	{213}	1773	{181}	15680	{1600}	192	CF5	194	DF5
	1000	SWGMR175H	28	25	175	40	1015.88	1.48	1.77	2661	{271}	2255	{230}	19364	{1976}	192	CG3	194	DG3
	1200		38	30		40	1215.24	1.23	1.48	3133	{320}	2653	{271}	19364	{1976}	192	CG4	194	DG4
1.5	200	SWGMR150H	38	20	150	10	196.15	7.65	9.18	1450	{148}	1218	{124}	15680	{1600}	192	CF7	194	DF7
	300			30		10	300.00	5.00	6.00	2180	{222}	1830	{187}	15680	{1600}				
	400	SWGMR175H	38	20	175	20	392.30	3.82	4.59	2614	{267}	2204	{225}	19364	{1976}	192	CG5	194	DG5
	500			25		20	481.82	3.11	3.74	3171	{324}	2672	{273}	19364	{1976}				
	600	SWGMR200H	42	60	200	10	614.92	2.44	2.93	4227	{431}	3546	{362}	22834	{2330}	192	CH5	194	DH5
	800			45		20	785.06	1.91	2.29	4802	{490}	4046	{413}	22834	{2330}				
	1000	TDGMR200H	42	50	200	20	974.08	1.54	1.85	7073	{722}	5940	{606}	38803	{3960}	192	CJ3	194	DJ3
	1200			60		20	1229.84	1.22	1.46	8840	{902}	7425	{758}	38803	{3960}				
2.2	200	SWGMR150H	42	20	150	10	206.59	7.26	8.71	2235	{228}	1877	{192}	15680	{1600}	192	CF8	194	DF8
	300	SWGMR175H	42	30	175	10	291.43	5.15	6.18	3137	{320}	2633	{269}	19364	{1976}	192	CG6	194	DG6
	400	SWGMR200H	42	20	200	20	413.18	3.63	4.36	3982	{406}	3361	{343}	22834	{2330}	192	CH6	194	DH6
	500			25		20	509.10	2.95	3.54	4837	{494}	4081	{416}	22834	{2330}				

External Dimensions

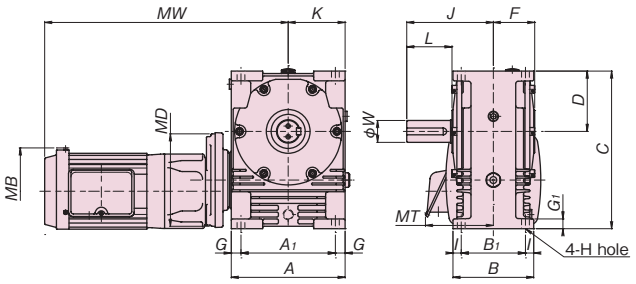
Solid Output Shaft [S]: Mounting Direction T/B/E Dimensions

EWJGM50 to 70S, EWGM(R)80S to 200S
TDGMR175S/200S

[E-R] [T-R]

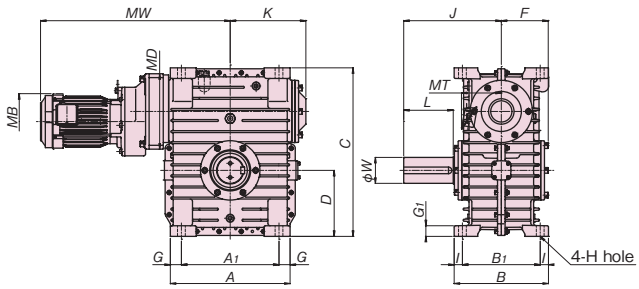


[B-R]

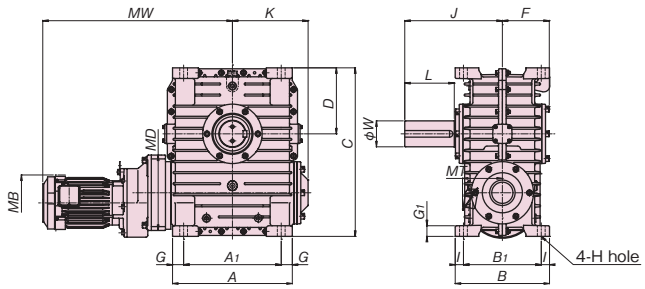


TDGMR225S

[T-R]



[B-R]



Note) Refer to page 189 for the detailed dimensions of tap output shaft.

EWJGM50S to 70S/EWGM(R)80S to 200S

Note: Values in ( ) are for a motor with a brake. Unit: mm

Size	A	A1	B	B1	C	D	F	G	G1	H	I	J	K	Output shaft dimensions			Motor model	Geared motor related dimensions				T/B/E type Estimated mass kg
														L	φW	Keyway		MW	MB	MD	MT	
EWJGM50S	144	112	110	88	198	80	54	16	11	9	11	106	74	50	25	8 × 7 × 40	AA1	317.5 (355.5)	127 (140)	165	81 (104.5)	17 (19)
																	AA2	297 (335.0)	127 (140)	155	81 (104.5)	15 (17)
																	AA3	335 (352.0)	140 (140)	155	81 (104.5)	16 (18)
EWJGM63S	174	136	126	104	239	98	61	19	13	11	11	124	90	60	30	8 × 7 × 50	AB1	332.5 (370.5)	127 (140)	165	81 (104.5)	21 (23)
																	AB2	312 (350.0)	127 (140)	155	81 (104.5)	19 (21)
																	AB3	370.5 (387.5)	140 (140)	165	81 (104.5)	22 (24)
																	AB4	350 (367.0)	140 (140)	155	81 (104.5)	20 (22)
																	AB5	392 (409.0)	140 (140)	165	81 (104.5)	22 (25)
EWJGM70S	180	142	132	104	250	100	62	19	15	14	14	138	94	70	35	10 × 8 × 55	AC1	321 (359.0)	127 (140)	155	81 (104.5)	21 (23)
																	AC2	379.5 (396.5)	140 (140)	165	81 (104.5)	24 (26)
																	AC3	359 (376.0)	140 (140)	155	81 (104.5)	22 (24)
																	AC4	401 (418.0)	140 (140)	165	81 (104.5)	24 (27)
EWGM(R)80S	200	165	144	114	275	110	74	17.5	17	14	15	154	100	75	38	10 × 8 × 60	AD1	332 (370.0)	127 (140)	155	81 (104.5)	35 (37)
																	AD2	370 (387.0)	140 (140)	155	81 (104.5)	36 (38)
																	AD3	390.5 (407.5)	140 (140)	165	81 (104.5)	38 (40)
																	AD4	412 (429.0)	140 (140)	165	81 (104.5)	38 (41)
																	AD5	478.5 (523.5)	178 (178)	190	140 (140.0)	50 (53)
EWGM(R)100S	234	194	166	132	324	124	85	20	20	16	17	178	117	90	45	14 × 9 × 75	AE1	354 (392.0)	127 (140)	155	81 (104.5)	50 (52)
																	AE2	374.5 (412.5)	127 (140)	165	81 (104.5)	52 (54)
																	AE3	392 (409.0)	140 (140)	155	81 (104.5)	51 (53)
																	AE4	412.5 (429.5)	140 (140)	165	81 (104.5)	53 (55)
																	AE5	434 (451.0)	140 (140)	165	81 (104.5)	53 (56)
																	AE6	500.5 (545.5)	178 (178)	190	140 (140.0)	65 (68)
																	AE7	575.5 (639.5)	204 (202)	280	158 (155.0)	94 (99)
EWGM(R)125S	292	242	194	154	405	155	100	25	25	18	20	225	146	120	60	18 × 11 × 100	AF1	409.5 (447.5)	127 (140)	165	81 (104.5)	90 (92)
																	AF2	427 (444.0)	140 (140)	155	81 (104.5)	89 (91)
																	AF3	447.5 (464.5)	140 (140)	165	81 (104.5)	91 (93)
																	AF4	469 (486.0)	140 (140)	190	81 (104.5)	95 (97)
																	AF5	469 (486.0)	140 (140)	165	81 (104.5)	91 (94)
																	AF6	494 (511.0)	140 (140)	190	81 (104.5)	95 (98)
																	AF7	536.5 (581.5)	178 (178)	190	140 (140.0)	103 (106)
																	AF8	575.5 (639.5)	204 (202)	280	158 (155.0)	132 (137)
																	AF9	572 (627.5)	218 (226)	255	169 (166.0)	149 (156)
EWGM(R)150S	350	292	224	178	480	180	115	29	30	22	23	246	175	126	65	18 × 11 × 110	AG1	498 (515.0)	140 (140)	190	81 (104.5)	135 (137)
																	AG2	499 (516.0)	140 (140)	165	81 (104.5)	131 (134)
																	AG3	523 (540.0)	140 (140)	190	81 (104.5)	135 (138)
																	AG4	552.5 (569.5)	140 (140)	280	81 (104.5)	155 (157)
																	AG5	565.5 (610.5)	178 (178)	190	140 (140.0)	143 (146)
																	AG6	598 (643.0)	178 (178)	280	140 (140.0)	163 (167)
																	AG7	641.5 (705.5)	204 (202)	280	158 (155.0)	172 (177)
																	AG8	665 (720.5)	218 (226)	255	169 (166.0)	189 (196)
EWGM(R)175S	402	336	254	202	555	200	130	33	34	22	26	275	201	140	70	20 × 12 × 120	AH1	553 (570.0)	140 (140)	190	81 (104.5)	197 (200)
																	AH2	576.5 (593.5)	140 (140)	280	81 (104.5)	217 (219)
																	AH3	595.5 (640.5)	178 (178)	190	140 (140.0)	205 (208)
																	AH4	622 (667.0)	178 (178)	280	140 (140.0)	225 (229)
																	AH5	665.5 (729.5)	204 (202)	280	158 (155.0)	234 (239)
																	AH6	688 (743.5)	218 (226)	255	169 (166.0)	251 (258)
EWGM(R)200S	450	376	290	230	635	235	154	37	37	26	30	329	225	170	80	22 × 14 × 150	AI1	607.5 (624.5)	140 (140)	280	81 (104.5)	345 (347)
																	AI2	653 (698.0)	178 (178)	280	140 (140.0)	353 (357)
																	AI3	667 (712.0)	178 (178)	255	140 (140.0)	365 (368)
																	AI4	696.5 (760.5)	204 (202)	280	158 (155.0)	362 (367)
																	AI5	700 (764.0)	204 (202)	255	158 (155.0)	372 (377)
																	AI6	715 (770.5)	218 (226)	255	169 (166.0)	379 (386)

TDGMR175S to 225S

Unit: mm

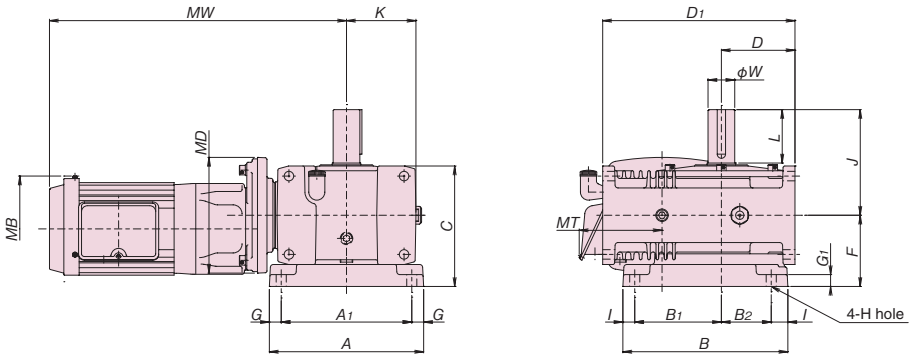
Size	A	A1	B	B1	C	D	F	G	G1	H	I	J	K	Output shaft dimensions			Motor model	Geared motor related dimensions				T/B type Estimated mass kg
														L	φW	Keyway		MW	MB	MD	MT	
TDGMR175S	402	336	254	202	555	200	130	33	34	22	26	275	201	140	72	20 × 12 × 120	AJ1	688 (743.5)	218 (226.0)	255	169 (166.0)	270 (277)
TDGMR200S	450	376	290	230	635	235	154	37	37	26	30	329	225	170	80	22 × 14 × 150	AK1	667 (712.0)	178 (178.0)	255	140 (140.0)	376 (379)
																	AK2	696.5 (760.5)	204 (202.0)	280	158 (155.0)	373 (378)
																	AK3	700 (764.0)	204 (202.0)	255	158 (155.0)	383 (388)
																	AK4	715 (770.5)	218 (226.0)	255	169 (166.0)	390 (397)
TDGMR225S	464	384	356	296	650	255	183	40	39	26	30	398	289	210	100	28 × 16 × 190	AL1	713.5 (777.5)	204 (202.0)	280	158 (155.0)	398 (403)
																	AL3	730 (785.5)	218 (226.0)	255	169 (166.0)	415 (422)

External Dimensions

Solid Output Shaft [S]: Mounting Direction V Dimensions

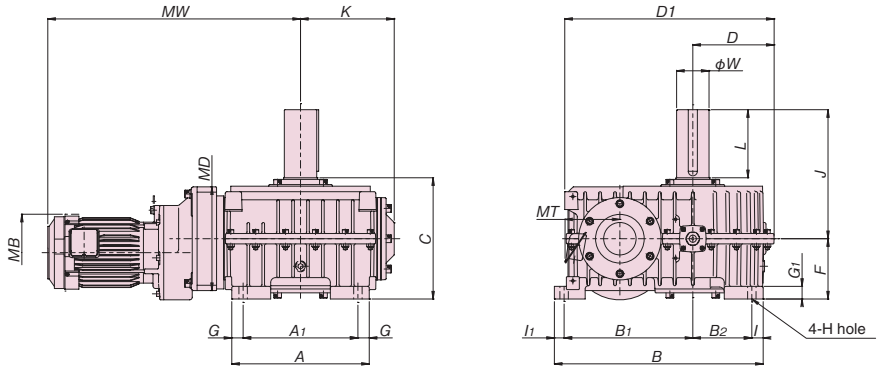
■ EWJGM50 to 70S, EWGM(R)80S to 200S TDGMR175S/200S

[V-LU]

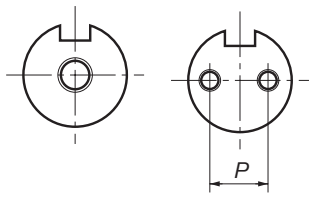


■ TDGMR225S

[V-LU]



Output shaft tap dimensions (Common for mounting directions T, B, E, and V)



Size	EWJGM50S	EWJGM63S	EWJGM70S	EWGM(R)80S	EWGM(R)100S
Type	I	I	II	II	II
Size	M8	M10	M10	M8	M10
Depth (L)	16	20	20	16	20
Pitch (P)	—	—	—	20	22

Size	EWGM(R)125S	EWGM(R)150S	EWGM(R)175S TDGMR175S	EWGM(R)200S TDGMR200S	TDGMR225S
Type	II	II	II	II	II
Size	M10	M12	M12	M12	M16
Depth (L)	20	24	24	24	32
Pitch (P)	36	36	36	45	60

EWJGM50S to 70S/EWGM(R)80S to 200S

Note: Values in ( ) are for a motor with a brake. Unit: mm

Size	A	A1	B	B1	B2	C	D	D1	F	G	G1	H	I	I1	J	K	Output shaft dimensions L	Output shaft dimensions φW	Output shaft dimensions Keyway	Motor model	Geared motor related dimensions MW	Geared motor related dimensions MB	Geared motor related dimensions MD	Geared motor related dimensions MT	V type Estimated mass kg
EWJGM50S	144	120	163	84	53	136	80	198	82	13	11	9	13	13	106	74	50	25	8 × 7 × 40	BA1	317.5 (355.5)	127 (140)	165	81 (104.5)	18 (20)
																				BA2	297 (335.0)	127 (140)	155	81 (104.5)	16 (18)
																				BA3	335 (352.0)	140 (140)	155	81 (104.5)	16 (18)
EWJGM63S	176	144	197	101	64	156	98	239	95	16	14	11	16	16	124	90	60	30	8 × 7 × 50	BB1	332.5 (370.5)	127 (140)	165	81 (104.5)	22 (24)
																				BB2	314 (352.0)	127 (140)	155	81 (104.5)	20 (22)
																				BB3	370.5 (387.5)	140 (140)	165	81 (104.5)	23 (25)
																				BB4	350 (367.0)	140 (140)	155	81 (104.5)	21 (23)
																				BB5	392 (409.0)	140 (140)	165	81 (104.5)	23 (26)
EWJGM70S	186	152	207	106	67	170	100	250	104	17	15	14	17	17	138	94	70	35	10 × 8 × 55	BC1	321 (359.0)	127 (140)	155	81 (104.5)	23 (25)
																				BC2	379.5 (396.5)	140 (140)	165	81 (104.5)	25 (27)
																				BC3	359 (376.0)	140 (140)	155	81 (104.5)	23 (25)
																				BC4	398 (415.0)	140 (140)	165	81 (104.5)	26 (28)
EWGM(R)80S	210	174	227	118	73	178	110	275	104	18	17	15	18	18	154	100	75	38	10 × 8 × 60	BD1	332 (370.0)	127 (140)	155	81 (104.5)	38 (40)
																				BD2	370 (387.0)	140 (140)	155	81 (104.5)	39 (41)
																				BD3	390.5 (407.5)	140 (140)	165	81 (104.5)	41 (43)
																				BD4	412 (429.0)	140 (140)	165	81 (104.5)	41 (44)
																				BD5	478.5 (523.5)	178 (178)	190	140 (140.0)	53 (56)
EWGM(R)100S	260	220	278	146	84	205	124	324	120	20	20	17	28	20	178	117	90	45	14 × 9 × 75	BE1	354 (392.0)	127 (140)	155	81 (104.5)	56 (58)
																				BE2	374.5 (412.5)	127 (140)	165	81 (104.5)	58 (60)
																				BE3	392 (409.0)	140 (140)	155	81 (104.5)	57 (59)
																				BE4	412.5 (429.5)	140 (140)	165	81 (104.5)	59 (61)
																				BE5	434 (451.0)	140 (140)	165	81 (104.5)	59 (62)
																				BE6	500.5 (545.5)	178 (178)	190	140 (140.0)	71 (74)
																				BE7	575.5 (639.5)	204 (202)	280	158 (155.0)	100 (105)
EWGM(R)125S	314	270	346	186	104	245	155	405	145	22	25	19	34	22	225	146	120	60	18 × 11 × 100	BF1	409.5 (447.5)	127 (140)	165	81 (104.5)	100 (102)
																				BF2	427 (444.0)	140 (140)	155	81 (104.5)	99 (101)
																				BF3	447.5 (464.5)	140 (140)	165	81 (104.5)	101 (103)
																				BF4	469 (486.0)	140 (140)	190	81 (104.5)	105 (107)
																				BF5	469 (486.0)	140 (140)	165	81 (104.5)	101 (104)
																				BF6	494 (511.0)	140 (140)	190	81 (104.5)	105 (108)
																				BF7	536.5 (581.5)	178 (178)	190	140 (140.0)	113 (116)
																				BF8	608.5 (672.5)	204 (202)	280	158 (155.0)	142 (147)
																				BF9	624 (679.5)	218 (226)	255	169 (166.0)	159 (166)
EWGM(R)150S	350	300	420	225	125	282	180	480	167	25	30	24	45	25	246	175	126	65	18 × 11 × 110	BG1	498 (515.0)	140 (140)	190	81 (104.5)	160 (162)
																				BG2	499 (516.0)	140 (140)	165	81 (104.5)	156 (159)
																				BG3	523 (540.0)	140 (140)	190	81 (104.5)	160 (163)
																				BG4	552.5 (569.5)	140 (140)	280	81 (104.5)	180 (182)
																				BG5	565.5 (610.5)	178 (178)	190	140 (140.0)	168 (171)
																				BG6	598 (643.0)	178 (178)	280	140 (140.0)	188 (192)
																				BG7	641.5 (705.5)	204 (202)	280	158 (155.0)	197 (202)
																				BG8	665 (720.5)	218 (226)	255	169 (166.0)	214 (221)
EWGM(R)175S	406	350	490	267	138	320	200	555	190	28	34	24	57	28	275	201	140	70	20 × 12 × 120	BH1	553 (570.0)	140 (140)	190	81 (104.5)	224 (227)
																				BH2	576.5 (593.5)	140 (140)	280	81 (104.5)	244 (246)
																				BH3	595.5 (640.5)	178 (178)	190	140 (140.0)	232 (235)
																				BH4	622 (667.0)	178 (178)	280	140 (140.0)	252 (256)
																				BH5	665.5 (729.5)	204 (202)	280	158 (155.0)	261 (266)
																				BH6	688 (743.5)	218 (226)	255	169 (166.0)	278 (285)
EWGM(R)200S	471	405	568	310	155	379	235	635	225	33	37	26	70	33	329	225	170	80	22 × 14 × 150	BI1	607.5 (624.5)	140 (140)	280	81 (104.5)	395 (397)
																				BI2	653 (698.0)	178 (178)	280	140 (140.0)	403 (407)
																				BI3	667 (712.0)	178 (178)	255	140 (140.0)	415 (418)
																				BI4	696.5 (760.5)	204 (202)	280	158 (155.0)	412 (417)
																				BI5	700 (764.0)	204 (202)	255	158 (155.0)	422 (427)
																				BI6	715 (770.5)	218 (226)	255	169 (166.0)	429 (436)

TDGMR175S to 225S

Unit: mm

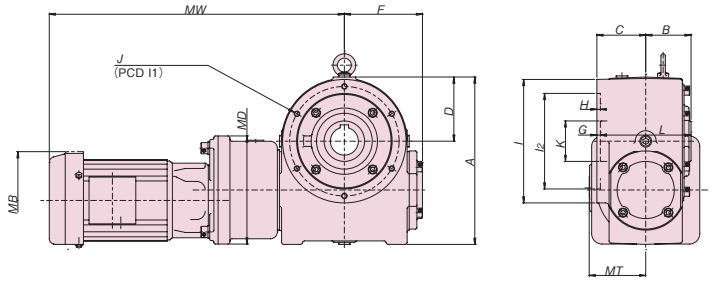
Size	A	A1	B	B1	B2	C	D	D1	F	G	G1	H	I	I1	J	K	Output shaft dimensions L	Output shaft dimensions φW	Output shaft dimensions Keyway	Motor model	Geared motor related dimensions MW	Geared motor related dimensions MB	Geared motor related dimensions MD	Geared motor related dimensions MT	V type Estimated mass kg
TDGMR175S	406	350	490	267	138	320	200	555	190	28	34	24	57	28	275	201	140	72	20 × 12 × 120	BJ1	688.0 (743.5)	218 (226.0)	255	169 (166.0)	294 (301)
TDGMR200S	471	405	568	310	155	379	235	635	225	33	37	26	70	33	329	225	170	80	22 × 14 × 150	BK1	667.0 712	178 178	255	140 140	420 (423)
																				BK2	696.5 760.5	204 202	280	158 155	417 (422)
																				BK3	700.0 764	204 202	255	158 155	427 (432)
																				BK4	715.0 770.5	218 226	255	169 166	434 (441)
TDGMR225S	424	354	644	397	182	369	251	646	186	35	39	26	35	30	398	289	210	100	28 × 16 × 190	BL1	713.5 777.5	204 202	280	158 155	388 393
																				BL3	730.0 785.5	218 226	255	169 166	405 412

External Dimensions

Hollow Output Shaft [H]: Mounting Direction T/B/E Dimensions

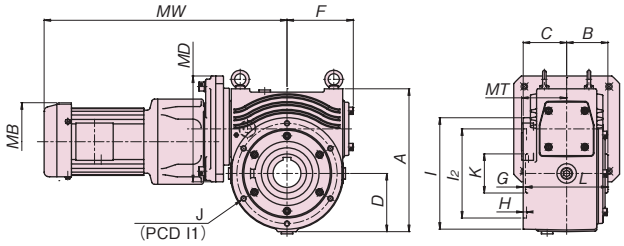
■ SWJGM50H to 70H

[E-DF] [E-RF]

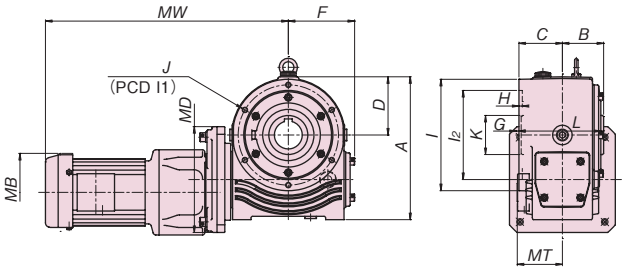


■ SWJGM(R)80H to 200H/TDGMR175H/200H

[T-RF]

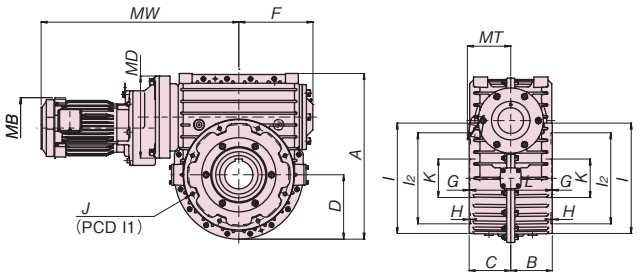


[B-RF]

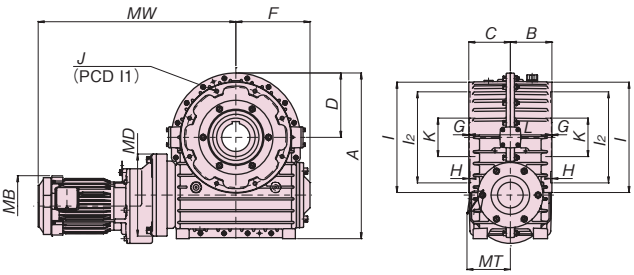


■ TDGMR225H

[T-DF]



[B-DF]



Note) Refer to page 193 for the detailed dimensions of hollow output shaft.

SWJGM50H to 70H/SWGM(R)80H to 200H Note: Values in ( ) are for a motor with a brake. An asterisk (*) indicates models with GM couplings. Unit: mm

Size	A	B	C	D	F	G	H	φI	l_1	φl_2	J (evenly spaced)	Output shaft dimensions				Motor model	Geared motor related dimensions								T/B/E type Estimated mass kg	
												φK	L	φU	Keyway		MW		MB		MD	MT				
SWJGM50H	180	56	56	72	74	2	6	138	120	100	4-M8 16 deep	45	108	30	8	CA1*	360	(398.0)	127	(140)	155	81	(104.5)	21	(23)
																CA2*	380.5	(418.5)	127	(140)	165	81	(104.5)	23	(24)
																CA3*	398	(415.0)	140	(140)	155	81	(104.5)	21	(23)
SWJGM63H	220	66	66	87	90	2	2	165	145	120	4-M10 18 deep	48	128	35	10	CA5*	385	(423.0)	127	(140)	155	81	(104.5)	27	(28)
																CA6*	405.5	(443.5)	127	(140)	165	81	(104.5)	29	(30)
																CA7*	423	(440.0)	140	(140)	165	81	(104.5)	27	(29)
																CA8*	443.5	(460.5)	140	(140)	155	81	(104.5)	29	(31)
SWJGM70H	240	65	70	92	112	5	5	177	157	137	6-M8 15 deep	58	130	40	12	CB1*	385	(423.0)	127	(140)	155	81	(104.5)	34	(36)
																CB2*	443.5	(460.5)	140	(140)	165	81	(104.5)	36	(38)
																CB3*	423	(440.0)	140	(140)	155	81	(104.5)	34	(36)
																CB4*	482	(499.0)	140	(140)	165	81	(104.5)	36	(38)
SWGM(R)80H	256.5	74	78	104.5	119	4	6	200	180	160	6-M10 20 deep	70	148	50	14	CC1	332	(370.0)	127	(140)	155	81	(104.5)	34	(36)
																CC2	370	(387.0)	140	(140)	155	81	(104.5)	35	(37)
																CC3	390.5	(407.5)	140	(140)	165	81	(104.5)	37	(39)
																CC4	412	(429.0)	140	(140)	165	81	(104.5)	37	(40)
																CC5	478.5	(523.5)	178	(178)	190	140	(140.0)	49	(52)
SWGM(R)100H	296	87	90	120	140	3	7	230	205	185	6-M10 20 deep	80	174	55	16	CD1	354	(392.0)	127	(140)	155	81	(104.5)	46	(48)
																CD2	374.5	(412.5)	127	(140)	165	81	(104.5)	48	(50)
																CD3	392	(409.0)	140	(140)	155	81	(104.5)	47	(49)
																CD4	412.5	(429.5)	140	(140)	165	81	(104.5)	49	(51)
																CD5	434	(451.0)	140	(140)	165	81	(104.5)	49	(52)
																CD6	500.5	(545.5)	178	(178)	190	140	(140.0)	61	(64)
																CD7	575.5	(639.5)	204	(202)	280	158	(155.0)	90	(95)
SWGM(R)125H	360	100	110	148	174	10	6	285	255	230	6-M12 25 deep	105	200	70	20	CE1	409.5	(447.5)	127	(140)	165	81	(104.5)	82	(84)
																CE2	427	(444.0)	140	(140)	155	81	(104.5)	81	(83)
																CE3	447.5	(464.5)	140	(140)	165	81	(104.5)	83	(85)
																CE4	469	(486.0)	140	(140)	190	81	(104.5)	87	(89)
																CE5	469	(486.0)	140	(140)	165	81	(104.5)	83	(86)
																CE6	494	(511.0)	140	(140)	190	81	(104.5)	87	(90)
																CE7	536.5	(581.5)	178	(178)	190	140	(140.0)	95	(98)
																CE8	608.5	(672.5)	204	(202)	280	158	(155.0)	124	(129)
																CE9	624	(679.5)	218	(226)	255	169	(166.0)	141	(148)
SWGM(R)150H	420	125	125	173	204	—	6	335	300	270	8-M12 25 deep	115	250	80	22	CF1	498	(515.0)	140	(140)	190	81	(104.5)	128	(130)
																CF2	499	(516.0)	140	(140)	165	81	(104.5)	124	(127)
																CF3	523	(540.0)	140	(140)	190	81	(104.5)	128	(131)
																CF4	552.5	(569.5)	140	(140)	280	81	(104.5)	148	(150)
																CF5	565.5	(610.5)	178	(178)	190	140	(140.0)	136	(139)
																CF6	598	(643.0)	178	(178)	280	140	(140.0)	156	(160)
																CF7	641.5	(705.5)	204	(202)	280	158	(155.0)	165	(170)
																CF8	665	(720.5)	218	(226)	255	169	(166.0)	182	(189)
SWGM(R)175H	493	135	135	203	234	—	5	385	350	320	8-M14 30 deep	125	270	90	25	CG1	553	(570.0)	140	(140)	190	81	(104.5)	183	(186)
																CG2	576.5	(593.5)	140	(140)	280	81	(104.5)	203	(205)
																CG3	595.5	(640.5)	178	(178)	190	140	(140.0)	191	(194)
																CG4	622	(667.0)	178	(178)	280	140	(140.0)	211	(215)
																CG5	665.5	(729.5)	204	(202)	280	158	(155.0)	220	(225)
																CG6	688	(743.5)	218	(226)	255	169	(166.0)	237	(244)
SWGM(R)200H	543	145	145	223	262	—	5	420	380	340	8-M16 30 deep	145	290	100	28	CH1	607.5	(624.5)	140	(140)	280	81	(104.5)	269	(271)
																CH2	653	(698.0)	178	(178)	280	140	(140.0)	277	(281)
																CH3	667	(712.0)	178	(178)	255	140	(140.0)	289	(292)
																CH4	696.5	(760.5)	204	(202)	280	158	(155.0)	286	(291)
																CH5	700	(764.0)	204	(202)	255	158	(155.0)	296	(301)
																CH6	715	(770.5)	218	(226)	255	169	(166.0)	303	(310)

TDGMR175H to 225H Unit: mm

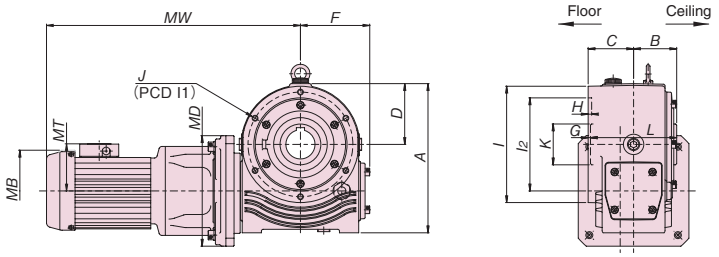
Size	A	B	C	D	F	G	H	φI	l_1	φl_2	J (evenly spaced)	Output shaft dimensions				Motor model	Geared motor related dimensions								T/B type Estimated mass kg	
												φK	L	φU	Keyway		MW		MB		MD	MT				
TDGMR175H	493	135	135	203	234	—	5	385	350	320	8-M14 30 deep	125	270	90	25	CI1	688.0	743.5	218	226	255	169	166	254	261
TDGMR200H	543	145	145	223	262	—	5	420	380	340	8-M16 30 deep	145	290	100	28	CJ1	667.0	712.0	178	178	255	140	140	310	313
																CJ2	696.5	760.5	204	202	280	158	155	307	312
																CJ3	700.0	764.0	204	202	255	158	155	317	322
																CJ4	715.0	770.5	218	226	255	169	166	324	331
TDGMR225H	646	162	162	251	289	2	5	430	390	355	8-M16, 28 deep (both sides)	150	320	110	28	CK1	715.5	779.5	204	202	280	158	155	367	372
																CK3	730.0	785.5	218	226	255	169	166	384	391

External Dimensions

Hollow Output Shaft [H]: Mounting Direction V Dimensions

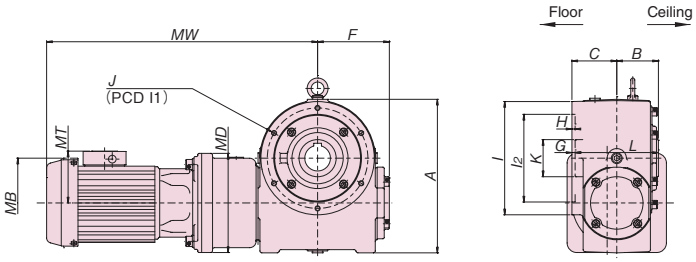
■ SWJGM50H to 70H

[V-RF]



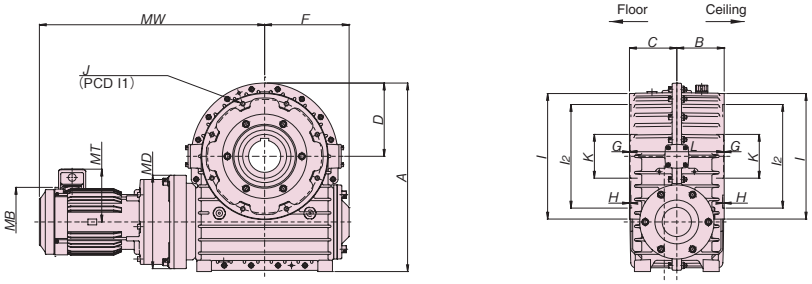
■ SWJGM(R)80H to 200H/TDGMR175H/200H

[V-RF]

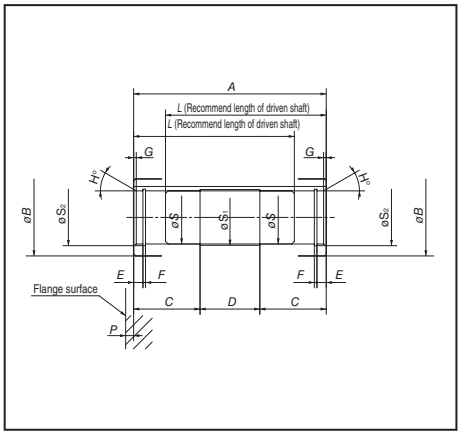


■ TDGMR225H

[V-RF]



Detailed dimensions of hollow output shaft



Unit: mm

Size	A	B	C	D	E	F	G	H°	P	S (H8)	S1	S2	L
SWJGM 50	108	45	35	38	5	1.35	1.5	30°	2	30	31	31.4	89
SWJGM 63	128	48	40	48	6	1.65	2	30°	2	35	26	37	109
SWJGM 70	130	58	45	40	7	1.95	2	30°	5	40	41	42.5	106
SWGM(R)80	148	70	50	48	8	2.2	3	30°	4	50	51	53	122
SWGM(R)100	174	80	60	54	8	2.2	3	30°	3	55	56	58	146
SWGM(R)125	200	105	70	60	8	2.7	3	30°	10	70	71	73	170
SWGM(R)150	250	115	80	90	8	2.7	4	30°	0	80	81	83.5	220
SWGM(R)175	270	125	90	90	9	3.2	4	30°	0	90	91	93.5	238
SWGM(R)200	290	145	95	100	9	3.2	4	30°	0	100	101	103.5	258
TDGMR175H	270	125	90	90	9	3.2	4	30°	0	90	91	93.5	238
TDGMR200H	290	145	95	100	9	3.2	4	30°	0	100	101	103.5	258
TDGMR225H	320	150	108	104	12	4.2	4	30°	2	110	111	114	272

Note) Dimension “P” measures from the flange surface to the end of the shaft.

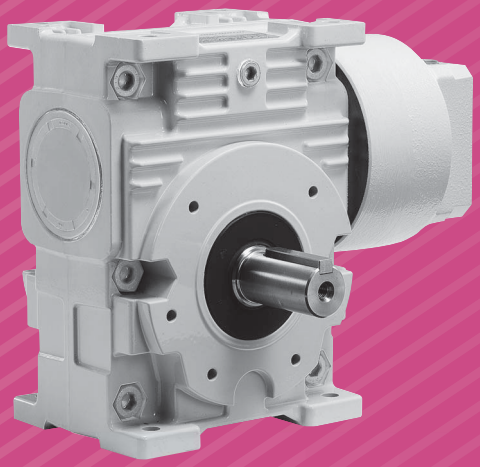
SWJGM50H to 70H/SWGM(R)80H to 200H Note: Values in ( ) are for a motor with a brake. An asterisk (*) indicates models with GM couplings. Unit: mm

Size	A	B	C	D	F	G	H	φI	l_1	φl_2	J (evenly spaced)	Output shaft dimensions				Motor model	Geared motor related dimensions								V type Estimated mass kg	
												φK	L	φU	Keyway		MW		MB		MD	MT				
SWJGM50H	180	56	56	72	74	2	6	138	120	100	4-M8 16 deep	45	108	30	8	DA1*	360	(398.0)	127	(140)	155	81	(104.5)	21	(23)
																DA2*	380.5	(418.5)	127	(140)	165	81	(104.5)	23	(24)
																DA3*	398	(415.0)	140	(140)	155	81	(104.5)	21	(23)
SWJGM63H	220	66	66	87	90	2	2	165	145	120	4-M10 18 deep	48	128	35	10	DA5*	385	(423.0)	127	(140)	155	81	(104.5)	27	(28)
																DA6*	405.5	(443.5)	127	(140)	165	81	(104.5)	29	(30)
																DA7*	423	(440.0)	140	(140)	165	81	(104.5)	27	(29)
																DA8*	443.5	(460.5)	140	(140)	155	81	(104.5)	29	(31)
SWJGM70H	240	65	70	92	112	5	5	177	157	137	6-M8 15 deep	58	130	40	12	DB1*	385	(423.0)	127	(140)	155	81	(104.5)	34	(36)
																DB2*	443.5	(460.5)	140	(140)	165	81	(104.5)	36	(38)
																DB3*	423	(440.0)	140	(140)	155	81	(104.5)	34	(36)
																DB4*	482	(499.0)	140	(140)	165	81	(104.5)	36	(38)
SWGM(R)80H	256.5	74	78	104.5	119	4	6	200	180	160	6-M10 20 deep	70	148	50	14	DC1	332	(370.0)	127	(140)	155	81	(104.5)	34	(36)
																DC2	370	(387.0)	140	(140)	155	81	(104.5)	35	(37)
																DC3	390.5	(407.5)	140	(140)	165	81	(104.5)	37	(39)
																DC4	412	(429.0)	140	(140)	165	81	(104.5)	37	(40)
																DC5	478.5	(523.5)	178	(178)	190	140	(140.0)	49	(52)
SWGM(R)100H	296	87	90	120	140	3	7	230	205	185	6-M10 20 deep	80	174	55	16	DD1	354	(392.0)	127	(140)	155	81	(104.5)	46	(48)
																DD2	374.5	(412.5)	127	(140)	165	81	(104.5)	48	(50)
																DD3	392	(409.0)	140	(140)	155	81	(104.5)	47	(49)
																DD4	412.5	(429.5)	140	(140)	165	81	(104.5)	49	(51)
																DD5	434	(451.0)	140	(140)	165	81	(104.5)	49	(52)
																DD6	500.5	(545.5)	178	(178)	190	140	(140.0)	61	(64)
																DD7	575.5	(639.5)	204	(202)	280	158	(155.0)	90	(95)
SWGM(R)125H	360	100	110	148	174	10	6	285	255	230	6-M12 25 deep	105	200	70	20	DE1	409.5	(447.5)	127	(140)	165	81	(104.5)	82	(84)
																DE2	427	(444.0)	140	(140)	155	81	(104.5)	81	(83)
																DE3	447.5	(464.5)	140	(140)	165	81	(104.5)	83	(85)
																DE4	469	(486.0)	140	(140)	190	81	(104.5)	87	(89)
																DE5	469	(486.0)	140	(140)	165	81	(104.5)	83	(86)
																DE6	494	(511.0)	140	(140)	190	81	(104.5)	87	(90)
																DE7	536.5	(581.5)	178	(178)	190	140	(140.0)	95	(98)
																DE8	608.5	(672.5)	204	(202)	280	158	(155.0)	124	(129)
																DE9	624	(679.5)	218	(226)	255	169	(166.0)	141	(148)
SWGM(R)150H	420	125	125	173	204	—	6	335	300	270	8-M12 25 deep	115	250	80	22	DF1	498	(515.0)	140	(140)	190	81	(104.5)	128	(130)
																DF2	499	(516.0)	140	(140)	165	81	(104.5)	124	(127)
																DF3	523	(540.0)	140	(140)	190	81	(104.5)	128	(131)
																DF4	552.5	(569.5)	140	(140)	280	81	(104.5)	148	(150)
																DF5	565.5	(610.5)	178	(178)	190	140	(140.0)	136	(139)
																DF6	598	(643.0)	178	(178)	280	140	(140.0)	156	(160)
																DF7	641.5	(705.5)	204	(202)	280	158	(155.0)	165	(170)
																DF8	665	(720.5)	218	(226)	255	169	(166.0)	182	(189)
SWGM(R)175H	493	135	135	203	234	—	5	385	350	320	8-M14 30 deep	125	270	90	25	DG1	553	(570.0)	140	(140)	190	81	(104.5)	183	(186)
																DG2	576.5	(593.5)	140	(140)	280	81	(104.5)	203	(205)
																DG3	595.5	(640.5)	178	(178)	190	140	(140.0)	191	(194)
																DG4	622	(667.0)	178	(178)	280	140	(140.0)	211	(215)
																DG5	665.5	(729.5)	204	(202)	280	158	(155.0)	220	(225)
																DG6	688	(743.5)	218	(226)	255	169	(166.0)	237	(244)
SWGM(R)200H	543	145	145	223	262	—	5	420	380	340	8-M16 30 deep	145	290	100	28	DH1	607.5	(624.5)	140	(140)	280	81	(104.5)	269	(271)
																DH2	653	(698.0)	178	(178)	280	140	(140.0)	277	(281)
																DH3	667	(712.0)	178	(178)	255	140	(140.0)	289	(292)
																DH4	696.5	(760.5)	204	(202)	280	158	(155.0)	286	(291)
																DH5	700	(764.0)	204	(202)	255	158	(155.0)	296	(301)
																DH6	715	(770.5)	218	(226)	255	169	(166.0)	303	(310)

TDGMR175H to 225H Unit: mm

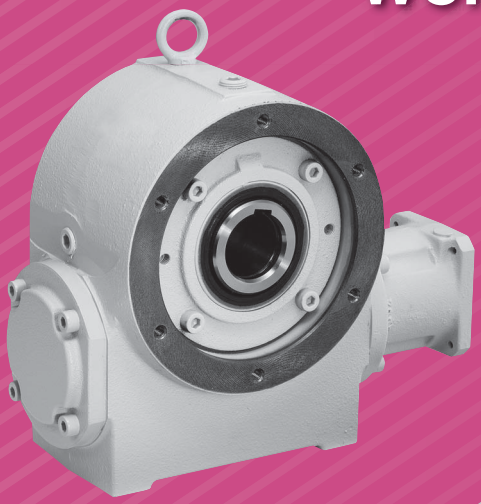
Size	A	B	C	D	F	G	H	φI	l_1	φl_2	J (evenly spaced)	Output shaft dimensions				Motor model	Geared motor related dimensions								V type Estimated mass kg	
												φK	L	φU	Keyway		MW		MB		MD	MT				
TDGMR175H	493	135	135	203	234	—	5	385	350	320	8-M14 30 deep	125	270	90	25	DI1	688.0	743.5	218	226	255	169	166	254	261
TDGMR200H	543	145	145	223	262	—	5	420	380	340	8-M16 30 deep	145	290	100	28	DJ1	667.0	712.0	178	178	255	140	140	310	313
																DJ2	696.5	760.5	204	202	280	158	155	307	312
																DJ3	700.0	764.0	204	202	255	158	155	317	322
																DJ4	715.0	770.5	218	226	255	169	166	324	331
TDGMR225H	646	162	162	251	289	2	5	430	390	355	8-M16, 28 deep (both sides)	150	320	110	28	DK1	715.5	779.5	204	202	280	158	155	367	372
																DK3	730.0	785.5	218	226	255	169	166	384	391

Memo



TERVO® Series

Worm Gear Reducers

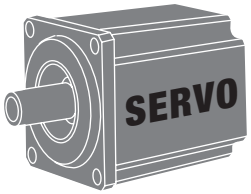


▶ Features 197

▶ Model ..... 198 - 200

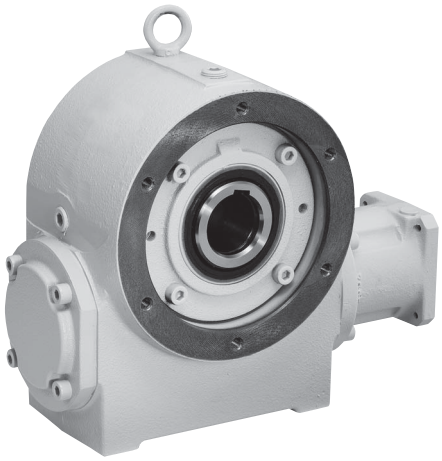
- Model
- Shaft Arrangement

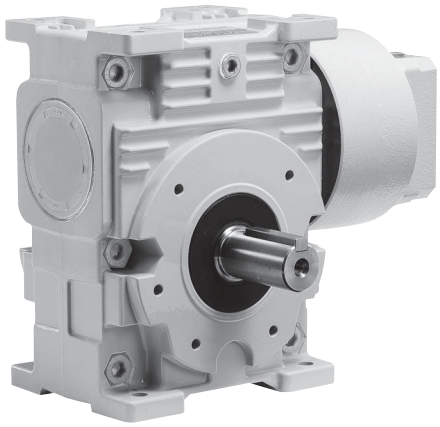
Features

Tsubaki's TERVO Converts Equipment to 

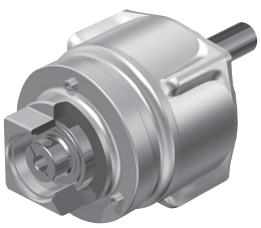
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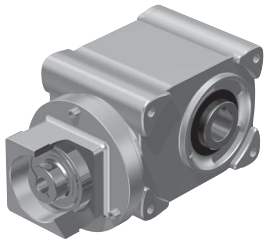
BROAD LINE UP

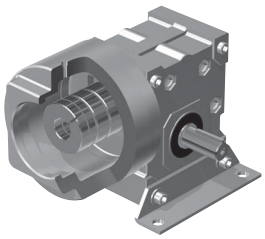




Standardized clamp for servo motors.



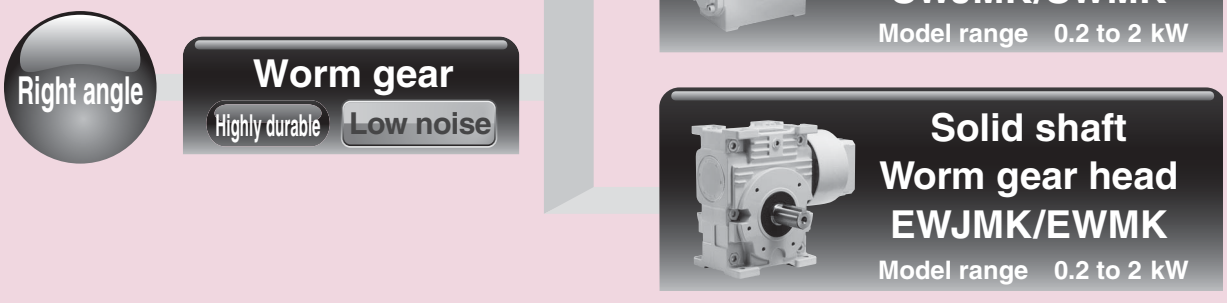




Highly versatile

- Right angle models with solid output shafts and hollow output shaft models are each available in seven sizes.
- Standardized selection of flanges for servo motor manufacturers. (Specified by mount code)

Economical



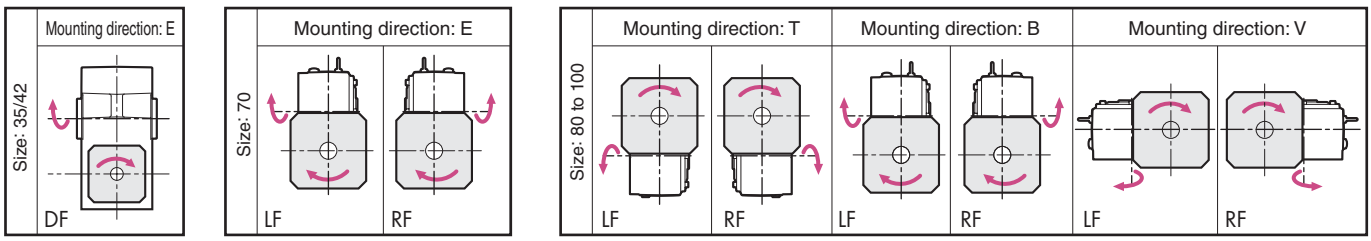
Model

Series		Size	Mounting direction	Reduction ratio	Shaft arrangement		Mount code (clamp type)
TERVO Series	Hollow output shaft **SWJMK**	**42**	**E**	**30**	**DF**	-	□□□**C**
	SWMK	**80**	**T**	**30**	**LF**	-	□□□**C**
	Solid output shaft **EWJMK**	**70**	**E**	**30**	**LR**	-	□□□**C**
	EWMK	**80**	**T**	**30**	**L**	-	□□□**C**
		SWJMK 35/42/ 50/63/70 • • • • • • • • SWMK 80/100 • • • • • • • • EWJMK 35/42/ 50/63/70 • • • • • • • • EWMK 80/100	SWJMK E: Mounting direction E • • • • • • • • SWMK 80/100 T: Mounting direction T B: Mounting direction B V: Mounting direction V • • • • • • • • EWJMK E: Mounting direction E V: Mounting direction V • • • • • • • • EWMK T: Mounting direction T V: Mounting direction V	10: 1/10 15: 1/15 20: 1/20 25: 1/25 30: 1/30 40: 1/40 50: 1/50 60: 1/60	See Table below.		Mount code is determined based on the servo motor dimensions. Mount codes for each servo motor manufacturer can be found in pages 199 and 200.

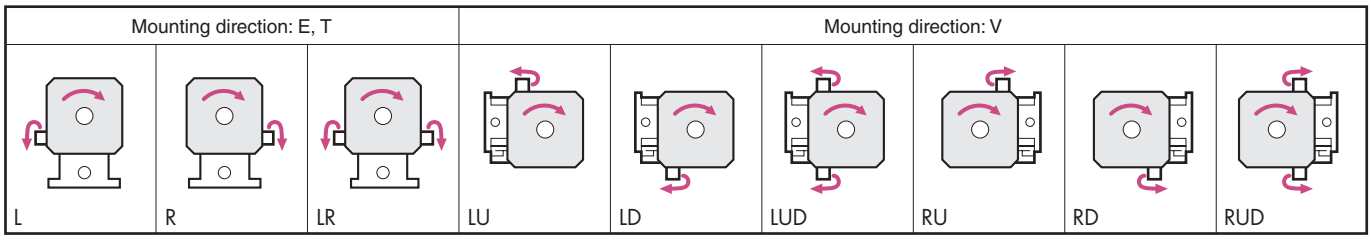
Note) Shafts can also be made for keyed servo motors. Contact us.

Shaft Arrangement

SWJMK/SWMK



EWJMK/EWMK



* Transfer capacities and dimensions are shown in “Tsubaki TERVO” catalog.

Models

Worm Gear Head SWJMK/SWMK, EWJMK/EWMK

Transfer capacity at input speed of 2000 r/min (kW)

Upper row SWJMK/SWMK
Lower row EWJMK/EWMK

Size \ Reduction ratio	10	15	20	25	30	40	50	60
35	0.38	0.30	0.25	0.22	0.19	0.16	0.14	0.13
42	0.57	0.45	0.37	0.33	0.28	0.23	0.21	0.19
50	0.96	0.75	0.65	0.57	0.47	0.41	0.36	0.32
	1.87	1.40	1.10	0.92	0.81	0.64	0.52	0.43
63	1.69	1.32	1.12	1.00	0.83	0.70	0.63	0.58
	3.32	2.94	1.99	1.65	1.44	1.14	0.93	0.77
70	2.66	2.08	1.79	1.59	1.30	1.12	0.93	0.77
	4.30	3.23	2.59	2.16	1.86	1.47	1.21	1.00
80	6.33	4.72	3.63	3.02	2.69	2.05	1.67	1.38
100	10.26	7.64	6.04	4.94	4.31	3.36	2.70	2.20

Motor Mount Codes

Upon referring to the Transfer Capacity Chart of each series, always select a model within the capacity range of each gear head for the load conditions.

■ Standard mount codes by worm gear head

Flange	Mount code	SWJMK/SWMK type							EWJMK/EWMK type						
		SWJMK35	SWJMK42	SWJMK50	SWJMK63	SWJMK70	SWMK80	SWMK100	EWJMK35	EWJMK42	EWJMK50	EWJMK63	EWJMK70	EWMK80	EWMK100
□60	E4DC	○	○	–	–	–	–	–	○	○	–	–	–	–	–
	E4HC	○	○	–	–	–	–	–	○	○	–	–	–	–	–
□80	G2HC	–	–	○	○	○	–	–	–	–	○	–	–	–	–
	G5LC	–	–	○	○	○	–	–	–	–	○	○	–	–	–
□130	K2LC	–	–	–	○	○	○	–	–	–	–	○	○	○	–
	K3YC	–	–	–	○	○	○	–	–	–	–	○	○	○	–
	K4PC	–	–	–	□	□	□	–	–	–	–	□	□	□	–
□176	L1MC	–	–	–	○	○	○	○	–	–	–	○	○	○	○
	L1PC	–	–	–	○	○	○	○	–	–	–	○	○	○	○
	L1RC	–	–	–	○	○	○	○	–	–	–	○	○	○	○

○: Standard product □: Made to order. Ask for delivery time.

■ Mount codes by motor manufacturer

1. Mitsubishi Electric Corporation

Servo motor J4 Series

Motor capacity	Rating Speed	Model No.	Mount code
200 W	3000 r/min	HG-KR23	E4HC
400 W		HG-KR43	E4HC
750 W		HG-KR73	G5LC
200 W	3000 r/min	HG-MR23	E4HC
400 W		HG-MR43	E4HC
750 W		HG-MR73	G5LC
500 W	2000 r/min	HG-SR52	K3YC
1000 W		HG-SR102	K3YC
1500 W		HG-SR152	K3YC
2000 W		HG-SR202	L1RC
500 W	1000 r/min	HG-SR51	K3YC
850 W		HG-SR81	K3YC
1200 W		HG-SR121	L1RC
2000 W		HG-SR201	L1RC
3500 W	2000 r/min	HG-SR352	L1RC
5000 W		HG-SR502	L1RC
7000 W		HG-SR702	L1RC
3000 W	1000 r/min	HG-SR301	L1RC
4200 W		HG-SR401	L1RC

* The product names above are trademarks or registered trademarks of their respective companies.

Servo motor J3 Series

Motor capacity	Rating Speed	Model No.	Mount code
200 W	3000 r/min	HF-KP23	E4HC
400 W		HF-KP43	E4HC
750 W		HF-KP73	G5LC
200 W	3000 r/min	HF-MP23	E4HC
400 W		HF-MP43	E4HC
750 W		HF-MP73	G5LC
500 W	2000 r/min	HF-SP52	K3YC
1000 W		HF-SP102	K3YC
1500 W		HF-SP152	K3YC
2000 W		HF-SP202	L1RC
500 W	2000 r/min	HC-LP52	K3YC
1000 W		HC-LP102	K3YC
1500 W		HC-LP152	K3YC
2000 W		HC-LP202	L1RC

Note 1. Mount code chart shows the typical examples as of June 2018. Servo motors that are not listed in the table may be available. Please contact us for details.

Note 2. The specifications of servo motors are subject to change due to each manufacturer's circumstances. Please be sure to check the gear head dimension matches the updated motor installation dimension.

2. Yaskawa Electric Corporation

Servo motor ∑-7 Series

Motor size	Rating Speed	Model No.	Mount code
200 W	3000 r/min	SGM7A-02	E4HC
400 W		SGM7A-04	E4HC
600 W		SGM7A-06	E4HC
750 W		SGM7A-08	G5LC
1000 W		SGM7A-10	G5LC
1500 W		SGM7A-15	J3YC
2000 W		SGM7A-20	J3YC
300 W	1500 r/min	SGM7G-03	H2KC
450 W		SGM7G-05	H2KC
850 W		SGM7G-09	K3YC
1300 W		SGM7G-13	K3YC
1800 W		SGM7G-20	K3YC
200 W	3000 r/min	SGM7J-02	E4HC
400 W		SGM7J-04	E4HC
600 W		SGM7J-06	E4HC
750 W		SGM7J-08	G5LC
200 W	3000 r/min	SGM7P-02	G2HC
400 W		SGM7P-04	G2HC
750 W		SGM7P-08	K2LC

Servo motor ∑-V Series

Motor size	Rating Speed	Model No.	Mount code
200 W	3000 r/min	SGMAV-02	E4HC
400 W		SGMAV-04	E4HC
200 W	3000 r/min	SGMJV-02	E4HC
400 W		SGMJV-04	E4HC

3. Fuji Electric FA Components & Systems

Motor size	Rating Speed	Model No.	Mount code
200 W	3000 r/min	GYC201	G2HC
400 W		GYC401	G2HC
750 W		GYC751	J2KC
1000 W		GYC102	K3YC
1500 W		GYC152	K3YC
2000 W		GYC202	K3YC
200 W	3000 r/min	GYS201	E4HC
375 W		GYS371	E4HC
400 W		GYS401	E4HC
750 W		GYS751	G5KC
500 W	1500 r/min	GYA501	K3YC
1500 W		GYA152	K4PC

4. Panasonic Corporation

Servo motor MINAS A5 Series

Motor size	Rating Speed	Model No.	Mount code
200 W	3000 r/min	MSMD02	E3GC
400 W		MSMD04	E3HC
750 W		MSMD08	G4LC
400 W	3000 r/min	MSME04	E3HC
750 W		MSME08	G4LC
1000 W	2000 r/min	MDME10	J5LC
1500 W		MDME15	J5LC
2000 W		MDME20	J5LC

5. Tamagawa Seiki Co., Ltd.

Servo motor TBL-i Ⅱ Series

Motor size	Rating Speed	Model No.	Mount code
200 W	3000 r/min	TS4607	E4HC
400 W		TS4609	E4HC
200 W	3000 r/min	TS4611	G2HC
400 W		TS4612	G2HC
600 W		TS4613	G5LC
750 W		TS4614	G5LC

Note 1. Mount code chart shows the typical examples as of June 2018. Servo motors that are not listed in the table may be available. Please contact us for details.
Note 2. The specifications of servo motors are subject to change due to each manufacturer's circumstances. Please be sure to check the gear head dimension matches the updated motor installation dimension.

Transfer Capacity Table

Size	Installation direction	Reduction ratio (Actual reduction ratio)	Allowable input kW			Allowable torque on output shaft N·m		
			Input rotation speed r/min			Input rotation speed r/min		
			3000	2000	1500	3000	2000	1500
SWJMK35	E	10	0.44	0.38	0.35	12.2	15.7	19.2
		15	0.35	0.30	0.27	13.9	17.7	21.6
		20	0.28	0.25	0.23	14.5	18.4	22.3
		25	0.25	0.22	0.20	15.5	19.6	23.8
		30	0.22	0.19	0.17	15.4	19.4	23.5
		40	0.18	0.16	0.15	15.6	19.5	23.6
		50	0.16	0.14	0.13	16.4	20.5	24.8
		60	0.14	0.13	0.12	16.2	20.3	24.4
SWJMK42	E	10	0.65	0.57	0.51	18.2	23.3	28.5
		15	0.52	0.45	0.41	20.9	26.6	32.3
		20	0.42	0.37	0.33	21.9	27.7	33.5
		25	0.37	0.33	0.30	23.4	29.6	35.8
		30	0.32	0.28	0.26	23.3	29.2	35.2
		40	0.26	0.23	0.21	23.6	29.5	35.5
		50	0.24	0.21	0.19	25.0	31.2	37.4
		60	0.21	0.19	0.18	26.0	32.4	38.9
SWJMK50	E	10	1.09	0.96	0.86	31.1	40.1	49.2
		15	0.86	0.75	0.67	35.3	45.1	54.9
		20	0.74	0.65	0.58	39.7	50.5	61.4
		25	0.65	0.57	0.51	42.3	53.6	64.9
		30	0.54	0.47	0.43	40.1	50.4	60.7
		40	0.46	0.41	0.37	44.0	55.2	66.4
		50	0.41	0.36	0.33	45.9	57.4	69.0
		60	0.36	0.32	0.29	47.2	58.9	68.5
SWJMK63	E	10	1.92	1.69	1.52	55.0	71.3	87.2
		15	1.51	1.32	1.18	62.8	80.5	97.7
		20	1.28	1.12	1.00	69.3	88.1	107
		25	1.15	1.00	0.90	76.0	96.3	116
		30	0.95	0.83	0.74	71.9	90.5	109
		40	0.80	0.70	0.63	76.9	96.4	115
		50	0.72	0.63	0.57	83.1	104	124
		60	0.65	0.58	0.52	87.5	109	129
SWJMK70	E	10	3.03	2.66	2.40	86.8	113	138
		15	2.38	2.08	1.86	99.2	127	154
		20	2.05	1.79	1.60	112	142	172
		25	1.83	1.59	1.43	121	154	186
		30	1.49	1.30	1.17	114	143	172
		40	1.28	1.12	1.01	125	156	187
		50	1.06	0.93	0.84	124	155	184
		60	0.87	0.77	0.69	118	147	174
SWMK80	T B V	10	7.44	6.33	5.55	215	271	323
		15	5.51	4.72	4.16	232	293	350
		20	4.34	3.63	3.30	238	292	358
		25	3.56	3.02	2.72	240	297	360
		30	3.09	2.69	2.40	241	303	362
		40	2.40	2.05	1.88	239	293	358
		50	1.93	1.67	1.53	232	287	347
		60	1.57	1.38	1.25	220	274	326
SWMK100	T B V	10	—	10.26	8.85	—	443	521
		15	—	7.64	6.65	—	481	569
		20	—	6.04	5.30	—	494	586
		25	—	4.94	4.37	—	495	591
		30	—	4.31	3.81	—	499	592
		40	—	3.36	3.00	—	495	588
		50	—	2.70	2.42	—	478	571
		60	—	2.20	1.99	—	454	542

Size	Installation direction	Reduction ratio (Actual reduction ratio)	Allowable input kW			Allowable torque on output shaft N·m		
			Input rotation speed r/min			Input rotation speed r/min		
			3000	2000	1500	3000	2000	1500
EWJMK35	E	10	0.44	0.38	0.35	12.2	15.7	19.2
		15	0.35	0.30	0.27	13.9	17.7	21.6
		20	0.28	0.25	0.23	14.5	18.4	22.3
		25	0.25	0.22	0.20	15.5	19.6	23.8
		30	0.22	0.19	0.17	15.4	19.4	23.5
		40	0.18	0.16	0.15	15.6	19.5	23.6
		50	0.16	0.14	0.13	16.4	20.5	24.8
		60	0.14	0.13	0.12	16.2	20.3	24.4
EWJMK42	E	10	0.65	0.57	0.51	18.2	23.3	28.5
		15	0.52	0.45	0.41	20.9	26.6	32.3
		20	0.42	0.37	0.33	21.9	27.7	33.5
		25	0.37	0.33	0.30	23.4	29.6	35.8
		30	0.32	0.28	0.26	23.3	29.2	35.2
		40	0.26	0.23	0.21	23.6	29.5	35.5
		50	0.24	0.21	0.19	25.0	31.2	37.4
		60	0.21	0.19	0.18	26.0	32.4	38.9
EWJMK50	E V	10	2.21	1.87	1.60	62.7	78.4	90.8
		15	1.65	1.40	1.20	67.8	84.6	97.6
		20	1.27	1.10	0.93	68.2	86.2	98.1
		25	1.06	0.92	0.77	69.0	86.5	98.0
		30	0.91	0.81	0.70	67.8	86.2	100.5
		40	0.72	0.64	0.55	68.4	56.2	97.9
		50	0.59	0.52	0.45	66.7	83.4	94.3
		60	0.49	0.43	0.37	63.4	78.9	89.0
EWJMK63	E V	10	3.96	3.32	2.59	113	140	169
		15	2.94	2.49	2.21	122	152	182
		20	2.33	1.99	1.75	126	157	186
		25	1.92	1.65	1.44	127	159	186
		30	1.67	1.44	1.29	126	158	188
		40	1.30	1.14	1.02	126	157	186
		50	1.05	0.93	0.82	122	153	179
		60	0.87	0.77	0.68	116	145	168
EWJMK70	E V	10	5.21	4.30	3.90	149	182	225
		15	3.87	3.23	2.92	161	198	242
		20	3.05	2.59	2.32	166	206	248
		25	2.51	2.16	1.91	167	209	248
		30	2.18	1.86	1.70	167	205	250
		40	1.70	1.47	1.34	166	206	248
		50	1.38	1.21	1.09	161	201	239
		60	1.13	1.00	0.90	153	192	226
EWMK80	T V	10	7.44	6.33	5.55	215	271	323
		15	5.51	4.72	4.16	232	293	350
		20	4.34	3.63	3.30	238	292	358
		25	3.56	3.02	2.72	240	297	360
		30	3.09	2.69	2.40	241	303	362
		40	2.40	2.05	1.88	239	293	358
		50	1.93	1.67	1.53	232	287	347
		60	1.57	1.38	1.25	220	274	326
EWMK100	T V	10	—	10.26	8.85	—	443	521
		15	—	7.64	6.65	—	481	569
		20	—	6.04	5.30	—	494	586
		25	—	4.94	4.37	—	495	591
		30	—	4.31	3.81	—	499	592
		40	—	3.36	3.00	—	495	588
		50	—	2.70	2.42	—	478	571
		60	—	2.20	1.99	—	454	542

(1) Maximum input rotation speed: [SWJMK35 to 70, SWMK80, EWJMK35 to 70, EWMK80] 3,000 r/min, [SWMK100, EWMK100] 2,000 r/min

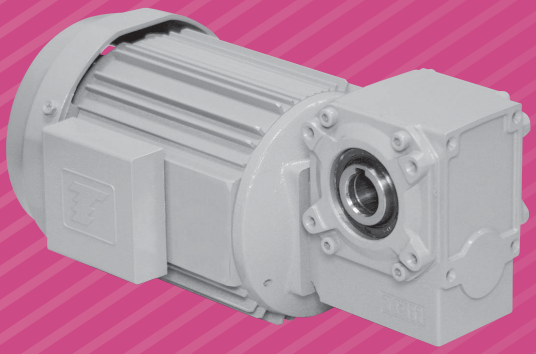
(2) SWJMK70, SWMK80, and SWMK100 output shaft allowable torques are for intermittent operation. Use with an operating time ratio (ED ratio) of 50% and continuous operation of 20 minutes or less.
The thermal rating capacity must be considered for continuous operation applications. Contact us for details.

(3) For intermittent operation, make sure that the motor can accelerate at motor start-up torque. The efficiency at start-up must be lower than half of the efficiency, calculated from the allowable input kW and allowable output torque.

(4) SWM Series are available for servo motors larger than those listed above. Fill in the Inquiry Form in page 259 and contact Tsubaki representative.

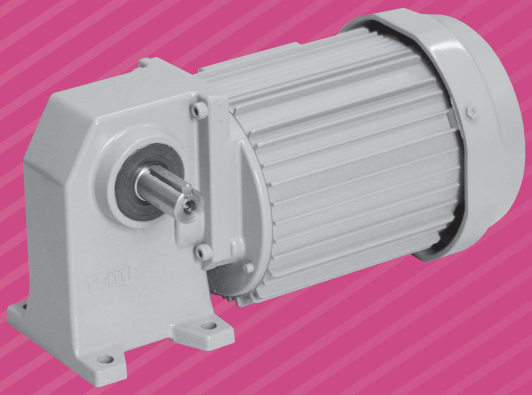
(5) Contact Tsubaki represenatative for details on the moment of inertia on the input shaft and backlash.

(6) Depending on the mount code, the highlited figures in ▭ may exceed the allowable torque of the servo motor and reducer coupling. Contact Tsubaki representative for detail.



Croise Motor

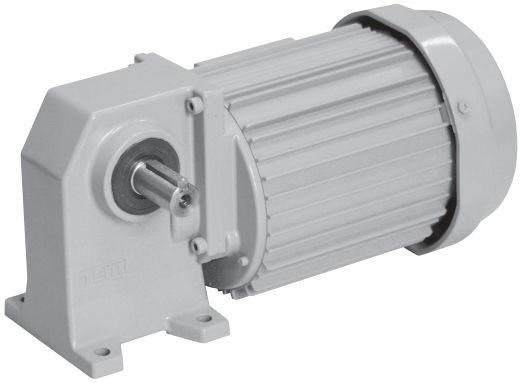
Right-angle Worm Gear Motors

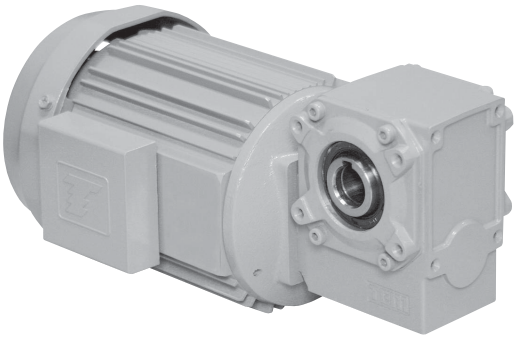


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Features

Croise motor right-angle shaft type (Hollow shaft, face mount, foot mount style)





Compact

Worm motors satisfy various needs from the customer's perspective

1.	Right angle drive and high reduction ratio	The Croise motor, using a worm gear, provides space savings in the equipment layout with the right-angle shaft. CSMA series provides a maximum reduction ratio of up to 1/60 in single reduction, and the HCMA/HCMR series provides a maximum reduction ratio of up to 1/300 with the combination of a 1st helical gear and a 2nd worm gear.
2.	Light weight and compact	An aluminum frame motor is used in all capacity ranges. The CSMA series delivers compactness in the longitudinal direction, and HCMA/HCMR series is also compact in height by reducing the offset volume of output and input shafts of the worm gear.
3.	Quitet operation	With the use of a worm gear, provides very smooth and quiet operation compared to other gear mechanisms. Also, the silent-type brake eliminates annoying metallic sound during suction.
4.	High stopping accuracy	Excellent positioning accuracy can be expected due to less backlash compared to other gear mechanisms.
5.	Shock resistant	The worm gear has a stronger tooth root than other gear mechanisms, providing superior shock resistance.

Model (0.1 to 0.55 kW)

Refer to “Tsubaki Gear Motors” catalog for details on characteristic and dimensions.

	Series	Motor size		Reducer frame No.	Mounting direction	Mounting type	Reduction ratio	Shaft arrangement	Specification	Option
Croise Motor (0.1 to 0.55 kW)	CSMA	010	-	13	0	L	20	T	B	□□□
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)

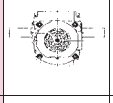
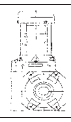
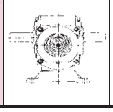
(1) Series	CSMA: Single reduction type with motor HCMA: Double reduction type with motor
(2) Motor size	(Ex.) 010: three-phase 0.1 kW
(3) Reducer frame No.	(Ex.) 13: frame No. 13
(4) Mounting direction	(Ex.) 0 (See mounting direction codes and corresponding mounting direction diagrams)
(5) Mounting type	H: Hollow shaft U: Face mount L: Foot mount
(6) Reduction ratio	(Ex.) 20: 1/20
(7) Shaft arrangement	L: Output shaft located to the left as viewed from the motor side, T: Output shaft located on both sides, R: Output shaft located to the right as viewed from the motor side, No Code: Hollow Shaft Type *Only for hollow shaft type with overload protection (L: Mounting side located to the left as viewed from the motor side (OLPD located to the right) R: Mounting side located to the right as viewed from the motor side (OLPD located to the left)
(8) Specification	No code: No Brake Type, B: Brake Type, BE: Encoder Type, SR: Shock Relay Type (0.1 to 0.4 kW only)
(9) Option	G: Mechanical overload protection (hollow shaft type only) Z: Inverter motor (0.1 to 0.4 kW) W: Outdoor type J: Water-resistant V: 400 V class (400/400/400 V 50/60/60 Hz) V1: 380 V 50 Hz V2: 380 V 60 Hz V3: 415 V 50 Hz V4: 460 V 60 Hz Global series (N: 200 V class CE compliant; N2: 200 V class UL compliant; PN3: 200 V class CCC compliant (plastic terminal box); HN3: 200 V class CCC compliant (hard terminal box); VN: 400 V class CE compliant; VN2: 400 V class UL compliant; PVN3: 200 V class CCC compliant (plastic terminal box); PVN3: 200 V class CCC compliant (hard terminal box)) H: Hard terminal box Q: Manual quick-release brake M: Manual release shaft
	Terminal box position P1: 90° swing P2: 180° swing P3: 270° swing
	Outdoor type, hard terminal box lead outlet direction 1) D1: 90° swing D2: 180° swing D3: 270° swing
	Paint color (standard: Munsell 2.5G6/3, no code) C0: Light gray (Munsell N7.5) C1: Light silver metallic C2: Ivory white (Munsell 7.5Y9/1) C3: Dark silver metallic

1) Standard terminal box outlet direction is located to the motor fan cover side. For standard motors with plastic terminal box, lead outlet directions can be changed by the terminal box cover direction.

■ Mounting direction codes

CSMA Series		HCMA Series			
Frame No. 13 to 28		Frame No. 16 to 28		Frame No. 32 to 50	
Mounting No.	Mounting direction	Mounting No.	Mounting direction	Mounting No.	Mounting direction
0	Always specify 0, as it can be mounted in any direction.	0	Standard	1	Standard
			L side on top	2	L side on top
			R side on top	3	R side on top
			Base on top	4	Base on top
		5	Input on top	5	Input on top
		6	Other	6	Other

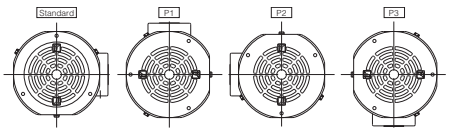
■ Mounting direction diagrams

Mounting No.	0 or 1	2	3	4	5	6
Mounting direction	Standard	L side on top	R side on top	Base on top (Opposite from standard)	Input on top	Other
Hollow shaft (Floor <-> Ceiling)						Specify when ordering.
Face mount (Floor <-> Ceiling)						
Foot mount (Floor <-> Ceiling)						

■ Terminal box mounting direction and outlet direction

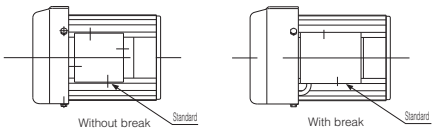
Mounting direction

The terminal box can be mounted in any 90° position. Specify when ordering.



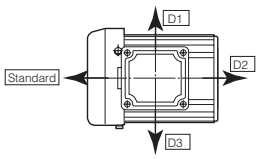
Lead outlet direction

For standard motors, lead outlet directions can be changed by the terminal box cover direction.



Outdoor models and hard terminal box lead outlet

Lead outlet directions can be located in any 90° positions as viewed from the cover side.



■ Combination of specification and option

No code: No brake type

Z	ZW	ZWV	ZWVH
	ZJ	ZJV	
	ZV	ZVH	
	ZH		
W	WN		
	WV	WV1	
		WV2	
		WV3	
		WV4	
		WVN	
J	JV	JV1	
		JV2	
		JV3	
		JV4	
V	VN		
	VN2		
	VH		
	V1	V1H	
	V2	V2H	
	V3	V3H	
	V4	V4H	
N			
N2			
PN3	PVN3		
HN3	HVN3		
WN3	WVN3		
H			

B: Brake type

ZV	ZVH	ZWVH
		ZVQ
		ZVM
	ZH	ZHQ
		ZHM
	ZQ	ZQM
	ZM	
V	VN	
	VH	VHQ
		VHM
	VQ	VQM
	VM	
	V1	V1H
	V2	V2H
	V3	V3H
	V4	V4H
N		
N2	V1H	
PN3	PVN3	
HN3	HVN3	
H	HQ	HQM
	HM	
Q	QM	
M		

BE: Encoder type

Z	ZV
V	VH
H	

SR: Shock relay type

N

Note) Brake motors with water resistant spec for outdoor use are made to order, and the motor spec differs from standard motors.

Model (0.75 to 5.5 kW)

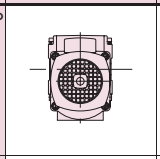
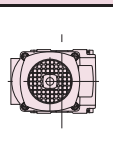
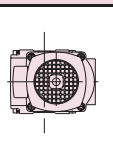
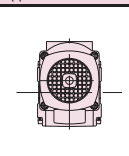
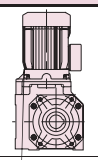
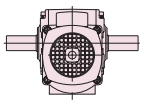
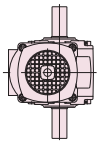
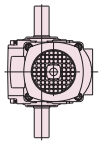
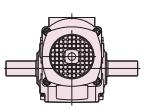
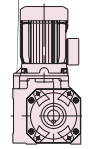
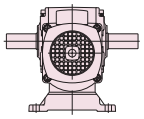
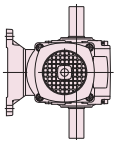
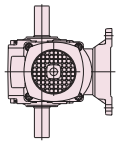
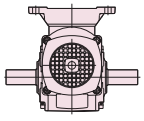
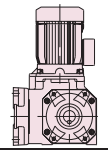
Refer to “Tsubaki Gear Motors” catalog for details on characteristic and dimensions.

	Series	Motor size		Reducer frame No.	Mounting direction	Mounting type	Reduction ratio	Shaft arrangement	Specification	Option
Croise Motor (0.75 to 3.7 kW)	CSMR	150	-	32	1	L	60	T	B	□□□
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) Series	CSMR: Single reduction type with IE3 motor HCMR: Double reduction type with IE3 motor
(2) Motor size	(Ex.) 150: three-phase 1.5 kW
(3) Reducer frame No.	(Ex.) 32: frame No. 32 1)
(4) Mounting direction	(Ex.) 1 (See mounting direction codes and corresponding mounting direction diagrams)
(5) Mounting type	H: Hollow shaft U: Face mount L: Foot mount
(6) Reduction ratio	(Ex.) 60: 1/60
(7) Shaft arrangement	L: Output shaft located to the left as viewed from the motor side, T: Output shaft located on both sides, R: Output shaft located to the right as viewed from the motor side, No Code: Hollow Shaft Type *Only for hollow shaft type with overload protection (L: Mounting side located to the left as viewed from the motor side (OLPD located to the right) R: Mounting side located to the right as viewed from the motor side (OLPD located to the left)
(8) Specification	No code: No Brake Type, B: Brake Type, BE: Encoder Type, SR: Shock Relay Type (0.75 to 2.2 kW only)
(9) Option	G: Mechanical overload protection (hollow shaft type only) W: Outdoor type V: 400 V class 2) N: CE compliant (global series) 3) Q: Manual quick-release brake
	Terminal box position P1: 90° swing P2: 180° swing P3: 270° swing
	Terminal box lead outlet direction F1: 90° swing F2: 180° swing F3: 270° swing
	Paint color (standard: Munsell 2.5G 6/3, no code) C0: Light gray (Munsell N7.5) C1: Light silver metallic C2: Ivory white (Munsell 7.5Y9/1) C3: Dark silver metallic

Note 1) Pressure vent is installed to frame No. 32 to 50
2) 400 V class: 380/400/400/440 V, 50/50/60/60 Hz
3) Refer to “Tsubaki Gear Motors” catalog for more information on global series.

■ Mounting direction diagrams

Mounting No.	0 or 1	2	3	4	5	6
Mounting direction	Standard	L side on top	R side on top	Base on top (Opposite from standard)	Input on top	Other
Hollow shaft Floor <- -> Ceiling						Specify when ordering.
Face mount Floor <- -> Ceiling						
Foot mount Floor <- -> Ceiling						

Note) CSM series, frame No. 28: always specify 0, as it can be mounted in any direction.
HCM series: always specify 6, as the mounting position is limited.

■ Combination of specification and option

No code or G: Mechanical overload protection type

W	WV	
V		
VN		
N		

B: Brake type

Q		

B: Brake type

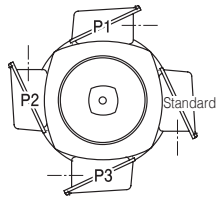
V		

Note) Brake motors with water resistant spec for outdoor use are made to order, and the motor spec differs from standard motors.

■ Terminal box mounting direction and lead outlet direction

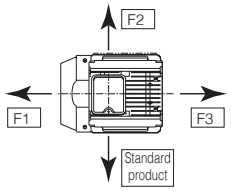
Mounting direction

The terminal box can be mounted in any 90° position. Specify when ordering.



■ Standard outdoor type terminal lead outlet direction

Lead outlet directions can be located in any 90° positions as viewed from the cover side.



Models

Croise Motor (Hollow Shaft)

	CSMA/CSMR Series								HCMA/HCMR Series											
	10	15	20	25	30	40	50	60	40	50	60	75	90	100	120	150	180	200	240	300
0.1 kW	13H								16H										22H	
0.2 kW	13H					16H			16H				22H						28H	
0.4 kW	16H					22H			22H				28H						32H	
0.55 kW	16H					22H			22H			28H					32H		40H	
0.75 kW	22H					28H			28H				32H				40H		50H	
1.5 kW	28H					32H			32H			40H					50H			
2.2 kW	32H					40H			40H				50H							
3.7 kW	40H					50H			50H											
5.5 kW	50H								50H			50H								

Croise Motor (Face Mount)

	CSMA/CSMR Series								HCMA/HCMR Series											
	10	15	20	25	30	40	50	60	40	50	60	75	90	100	120	150	180	200	240	300
0.1 kW	13U								16U										22U	
0.2 kW	13U					16U			16U				22U						28U	
0.4 kW	16U					22U			22U				28U						32U	
0.55 kW	16U					22U			22U			28U					32U		40U	
0.75 kW	22U					28U			28U				32U				40U		50U	
1.5 kW	28U					32U			32U			40U					50U			
2.2 kW	32U					40U			40U				50U							
3.7 kW	40U					50U			50U											
5.5 kW	50U								50U			50U								

Croise Motor (Foot Mount)

	CSMA/CSMR Series								HCMA/HCMR Series											
	10	15	20	25	30	40	50	60	40	50	60	75	90	100	120	150	180	200	240	300
0.1 kW	13L								16L										22L	
0.2 kW	13L					16L			16L				22L						28L	
0.4 kW	16L					22L			22L				28L						32L	
0.55 kW	16L					22L			22L			28L					32L		40L	
0.75 kW	22L					28L			28L				32L				40L		50L	
1.5 kW	28L					32L			32L			40L					50L			
2.2 kW	32L					40L			40L				50L							
3.7 kW	40L					50L			50L											
5.5 kW	50L								50L			50L								

Frame sizes in bold-framed areas comes with built-in foot mount.

Reduction Ratio (Combinations)

CSMA, CSMR Series [Worm gear = Single reduction]

Reduction ratio	10	15	20	25	30	40	50	60

HCMA, HCMR Series [Worm gear = Double reduction]

Reduction ratio	40	50	60	75	90	100	120	150	180	200	240	300
High speed reduction ratio (Helical gear)	4	5	4	5	4.5	5	4	5	4.5	5	4	5
Low speed reduction ratio (Worm gear)	10	10	15	15	20	20	30 (31.5)	30 (31.5)	40	40	60 (63)	60 (63)

Note 1) The figures in ( ) indicate the reduction ratio of the worm gear for 1.5 kW and 2.2 kW motors with reduction ratio 240 and 300.
2) For 0.75 kW or larger motors, reduction ratio 90 and 180 are available as made-to-order.

Stanadard Specifications

■ Specifications

Motor	Output	0.1, 0.2, 0.4, 0.55 kW: Three-phase standard motor, 0.75, 1.5, 2.2, 3.7, 5.5 kW: Three-phase IE3 motor
		With/without brake
	Power source	0.1 to 5.5 kW 200/200/220 V 50/60/60 Hz
	Poles	4
	Protection	0.1 to 5.5 kW: Totally enclosed fan-cooled (IP44)
	Cooling	0.1 to 5.5 kW: Self-cooling (IC411)
	Rating	S1 (continuous)
	Insulation	0.1 to 0.4 kW-120(E), 0.75 kW-155(F), 1.5 to 5.5 kW-130(B)
	Brake	Non-excitation operation, DC electromagnetic brake
Reducer	Reduction ratio	1/10 to 1/300
	Lubrication	Oil lubrication
	Shaft end keyway	New JIS key (JIS B1301-1976): output shaft key supplied (normal grade)
	Output shaft end	Tapped
Ambient conditions	Installation	Indoors free of dust and water
	Temperature	5 to 40°C
	Humidity	85% or less (no condensation)
	Altitude	1000 m or less above sea level
	Atmosphere	Free of corrosive and explosive gases and steam.
	Mounting direction	Mounts in any angle, horizontal, vertical, or inclined.
Paint color		Light green (Munsell 2.5G6/3)

Note) Protection rating of brake motor: IP20

■ Motor Specifications

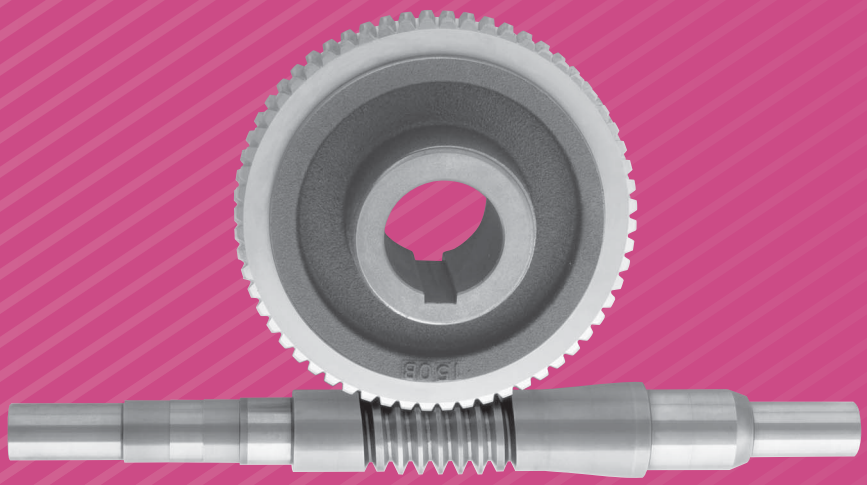
0.1 to 0.55 kW

No. of phases	Motor size kW	Poles P	Frequency Hz	Voltage V	Rated current A	Rated speed r/min	Reference AC brake current at 20°C
3	0.1	4	50/60/60	200/200/220 (400/400/440)	0.63/0.57/0.58 (0.32/0.29/0.29)	1420/1680/1710 (1440/1740/1740)	0.12
	0.2				1.2/1.1/1.1 (0.59/0.55/0.55)	1420/1700/1720 (1410/1690/1720)	0.12
	0.4				2.3/2.0/2.0 (1.2/1.0/1.0)	1380/1650/1680 (1390/1670/1700)	0.16
	0.55				2.9/2.6/2.5 (1.45/1.3/1.3)	1380/1650/1690 (1380/1650/1690)	0.16

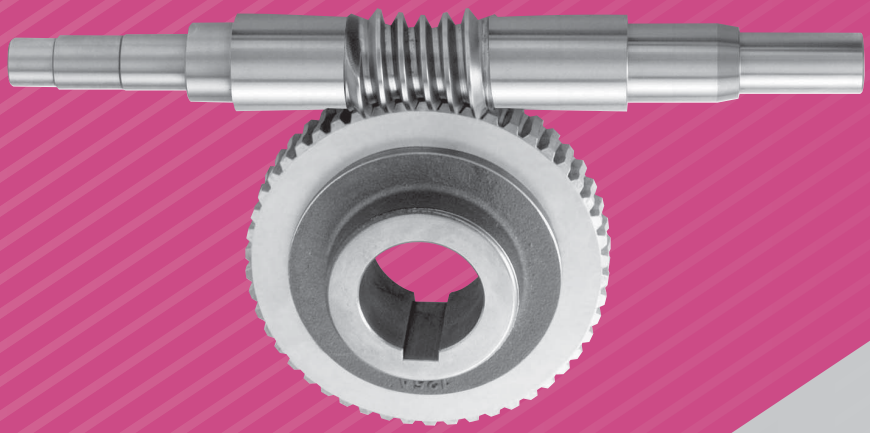
0.75 to 5.5 kW, IE3

No. of phases	Motor size kW	Poles P	Frequency Hz	Voltage V	Rated current A	Rated speed r/min	Efficiency %	Efficiency class	Reference AC brake current at 20°C
3	0.75	4	50/60/60 (50/50/60/60)	200/200/220 (380/400/400/440)	4.0/3.5/3.4 (1.9/2.0/1.75/1.7)	1440/1730/1740 (1435/1440/1730/1740)	83.9/86.4/86.4 (83.6/83.9/86.4/86.4)	IE3	0.17
	1.5				6.6/6.0/5.8 (3.4/3.3/3.0/2.9)	1450/1745/1755 (1445/1450/1745/1755)	86.9/88.6/89.1 (86.7/86.9/88.6/89.1)		0.10
	2.2				9.6/8.8/8.4 (4.8/4.8/4.4/4.2)	1450/1745/1755 (1445/1450/1745/1755)	88.2/89.9/90.2 (88.1/88.2/89.9/90.2)		0.10
	3.7				15.4/14.4/13.6 (7.8/7.7/7.2/6.8)	1450/1745/1755 (1445/1450/1745/1755)	89.2/89.8/90.7 (88.6/89.2/89.8/90.7)		0.08
	5.5				22.6/20.8/20.0 (11.3/11.3/10.4/10.0)	1465/1760/1765 (1460/1465/1760/1765)	91.2/92.1/92.4 (91.2/91.2/92.1/92.4)		0.10

Note 1) 400 V class: refer to the figures in paranthesis.
Note 2) Brake type: add the brake current above when wiring the brake lead to the motor lead. AC brake current is at 200 VAC and 60 Hz.
Note 3) 0.75 kW to 5.5 kW figures are for Japanese standard motors. Please contact Tsubaki representative for overseas models.



Worm Gear Set



Worm Power Drive Gear Set

▶Model 209

Troi Drive Gear Set

▶Model 210

▶Transfer Capacity Table ... 211 - 212

▶Dimensions ..... 213 - 214

▶Technical Data 215

Worm Power Drive® Gear Set

Worm gear sets used in Worm Power Drive EWJ and EW Series are also available.

■ Specify information regarding the size, reduction ratio, and dimensional requirements when inquiring.

Gear Set Model

	Size		Reduction ratio	Worm Gear Set
EWJ Series	**WEJ70**	-	**10**	**WGS**
EW Series	**WE100**	-	**30**	**WGS**

Models

WEJ25	WEJ35	WEJ42	WEJ50	WEJ63	WEJ70	WE80	WE100	WE125	WE150	WE175	WE200
○	○	○	○	○	○	○	○	○	○	○	○

Reduction ratio	WEJ25 to 70, WE80 to 200: 1/10, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60

Note 1) ○: Standard design, in right hand worm.
2) Contact Tsubaki representative for left hand worm.

Specifications

Transfer capacity

Refer to the transfer capacity of each size.
(Contact Tsubaki representative for details.)

Actual reduction ratio

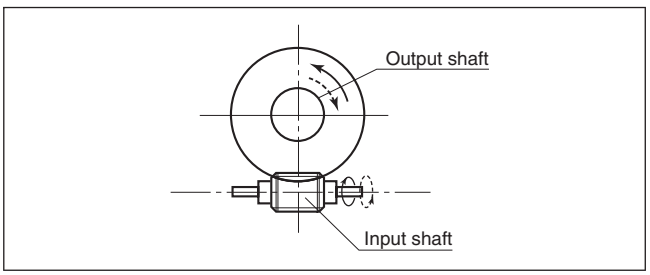
Reduction ratios are all integer ratios.

Keyway

Keyways are finished in fine class of New JIS standards (JIS B 1301-1976). (Key supplied for input shaft)

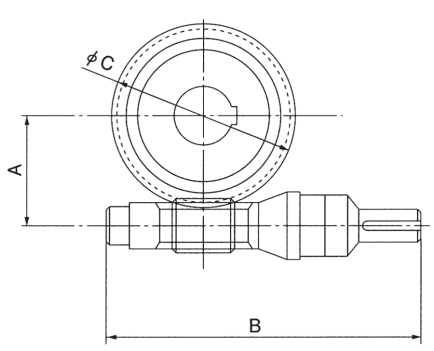
Relation between input and output shaft rotation

Standard gear set are right hand worms, and the output shaft always rotates as shown with respect to the rotating direction of the input shaft.



Reference Dimension

(Dimensions are for reference and are subject to vary depending on the reduction ratio. Contact Tsubaki representative for details.)



Reduction ratio: 1/10

Size	A (center distance)	B	C
WEJ25	25	92	41
WEJ35	35	117	56.5
WEJ42	42	138	68
WEJ50	50	176	85
WEJ63	63	217	107
WEJ70	70	221	119
WE80	80	252	137
WE100	100	293	174
WE125	125	354	210
WE150	150	417	259
WE175	175	477	307
WE200	200	546	341

TroiDrive® Gear Set

Worm gear sets used in Troi Drive TD Series are also available.

Gear Set Model

Size		Nominal reduction ratio	Worm Gear Set
TD175	-	40	WGS

Models

TD125WGS	TD150WGS	TD175WGS	TD200WGS	TD225WGS	TD250WGS	TD280WGS	TD315WGS
○	○	○	○	○	○	○	○

Nominal reduction ratio	TD125 to 315: 1/10, 1/20, 1/30, 1/40, 1/50, 1/60

Note 1) ○: Standard design, in right hand worm.
2) Contact Tsubaki representative for reduction ratio 15 and 25, and on left hand worm.

Specifications

Transfer capacity (Refer to pages 211 to 212)

- Figures indicate actual reduction ratio of the gear set.
- It may be necessary to consider the thermal rating when installing the gear set to your equipment. Contact Tsubaki representative for details.
- Assembly may affect the transfer capacity. Contact Tsubaki representative for details.

Actual reduction ratio

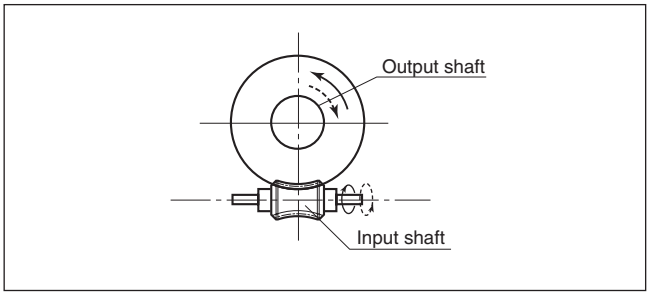
	TD125WGS	TD150WGS	TD175WGS	TD200WGS	TD225WGS	TD250WGS	TD280WGS	TD315WGS
10	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25
20	20.00	20.50	20.50	20.00	20.50	20.50	20.50	20.50
30	31.50	31.50	32.50	31.50	31.00	31.00	30.50	31.00
40	40.00	41.00	41.00	40.00	40.00	40.00	41.00	40.00
50	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
60	63.00	63.00	65.00	63.00	60.00	62.00	61.00	62.00

Keyway

Keyways are finished in fine class of New JIS standards (JIS B 1301-1976). (Key supplied for input shaft)

Relation between input and output shaft rotation

Tsubaki standard is a right hand worm, and the output shaft always rotates as shown with respect to the rotating direction of the input shaft.

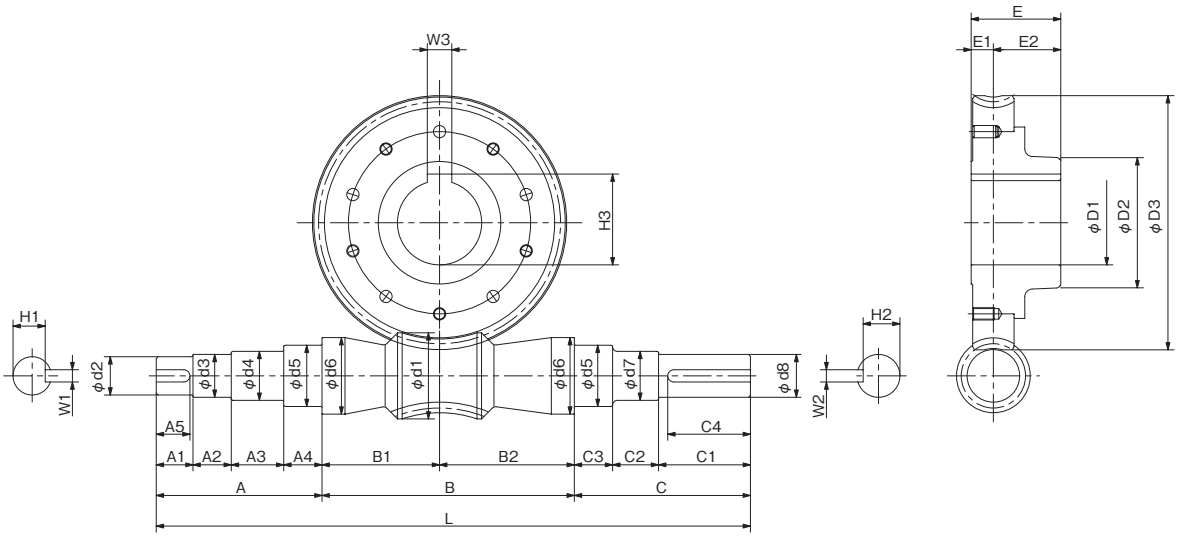


TroiDrive® Gear Set Transfer Capacity

Size		TD125WGS		TD150WGS		TD175WGS		TD200WGS	
Nominal reduction ratio	Input Speed r/min	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
10	Actual reduction ratio		10.25		10.25		10.25		10.25
	1750	32.9	1745{178}	54.8	2918{298}	84.3	4485{458}	115.1	6126 {625}
	1450	28.4	1818{186}	48.2	3093{316}	74.0	4751{485}	101.3	6498 {663}
	1150	24.0	1930{197}	41.2	3323{339}	63.3	5118{522}	86.8	7019 {716}
	950	23.0	2004{204}	35.6	3477{355}	54.9	5362{547}	75.4	7367 {752}
	500	13.0	2382{243}	23.0	4236{432}	35.2	6493{663}	48.5	8950 {913}
	100	3.0	2671{273}	5.4	4861{496}	8.6	7764{792}	11.5	10314 {1052}
20	Actual reduction ratio		20.00		20.50		20.50		20.00
	1750	19.7	1976{202}	31.1	3213{328}	47.7	4952{505}	67.2	6763 {690}
	1450	17.2	2076{212}	27.3	3401{347}	40.9	5127{523}	59.2	7192 {734}
	1150	14.5	2205{225}	23.3	3650{372}	32.5	5127{523}	50.5	7727 {788}
	950	12.5	2290{234}	20.2	3816{389}	26.9	5127{523}	43.8	8084 {825}
	500	8.3	2868{293}	11.2	3995{408}	14.3	5127{523}	28.1	9780 {998}
	100	1.8	2948{301}	2.4	3995{408}	3.0	5127{523}	6.7	11244 {1147}
30	Actual reduction ratio		31.50		31.50		32.50		31.50
	1750	14.4	2157{220}	22.5	3398{347}	33.4	5263{537}	47.4	7181 {733}
	1450	12.5	2255{230}	19.7	3583{366}	29.3	5565{568}	41.8	7628 {778}
	1150	10.5	2390{244}	16.9	3848{393}	25.1	5975{610}	35.8	8202 {837}
	950	9.1	2480{253}	14.6	4025{411}	21.7	6249{638}	31.0	8585 {876}
	500	6.3	3197{326}	9.6	4919{502}	14.0	7543{770}	19.9	10340 {1055}
	100	1.6	3889{397}	2.5	6002{612}	3.2	8164{833}	4.9	11819{1206}
40	Actual reduction ratio		40.00		41.00		41.00		40.00
	1750	11.8	2200{224}	17.8	3426{350}	27.1	5289{540}	38.7	7270 {742}
	1450	10.3	2306{235}	15.6	3623{370}	23.8	5588{570}	34.6	7829 {799}
	1150	8.7	2449{250}	13.3	3888{397}	18.9	5588{570}	29.2	8313 {848}
	950	7.5	2545{260}	11.6	4065{415}	15.7	5588{570}	25.2	8636 {881}
	500	5.0	3146{321}	6.5	4290{438}	8.4	5588{570}	16.2	10395 {1061}
	100	1.1	3146{321}	1.4	4290{438}	1.8	5588{570}	4.0	11836 {1208}
50	Actual reduction ratio		50.00		50.00		50.00		50.00
	1750	10.0	2248{229}	15.1	3475{355}	23.6	5390{550}	32.4	7407 {756}
	1450	8.8	2374{242}	13.3	3683{376}	21.1	5789{591}	28.6	7851 {801}
	1150	7.5	2543{259}	11.4	3950{403}	17.8	6144{627}	24.4	8424 {860}
	950	6.5	2655{271}	9.9	4128{421}	15.4	6415{655}	21.1	8806 {899}
	500	4.8	3575{365}	5.7	4397{449}	9.9	7701{786}	13.6	10577{1079}
	100	1.1	3870{395}	1.2	4397{449}	2.3	8164{833}	3.3	11851{1209}
60	Actual reduction ratio		63.00		63.00		65.00		63.00
	1750	8.7	2325{237}	13.1	3535{361}	19.5	5480{559}	27.8	7538 {769}
	1450	7.6	2436{249}	11.6	3748{382}	17.2	5824{594}	24.5	7990 {815}
	1150	6.6	2663{272}	10.0	4081{416}	14.8	6277{641}	21.0	8602 {878}
	950	5.8	2814{287}	8.8	4303{439}	12.9	6579{671}	18.3	9010 {919}
	500	4.2	3756{383}	6.3	5686{580}	8.6	8078{824}	11.9	10873 {1109}
	100	1.0	3889{397}	1.5	6176{630}	1.9	8164{833}	2.9	11851 {1209}

Size		TD225WGS		TD250WGS		TD280WGS		TD315WGS	
Nominal reduction ratio	Input Speed r/min	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
10	Actual reduction ratio		10.25		10.25		10.25		10.25
	1750	170.0	9060 {924}	223.7	11932{1218}	252.7	13463{1374}	346.8	18518{1890}
	1450	148.1	9512 {971}	199.4	12838{1310}	220.7	14193{1448}	302.6	19478{1988}
	1150	125.4	10148{1036}	166.6	13511{1379}	186.7	15125{1543}	255.7	20750{2117}
	950	107.9	10572{1079}	142.4	13959{1424}	161.4	15824{1615}	220.0	21597{2204}
	500	67.3	12462{1272}	88.5	16425{1676}	99.2	18403{1878}	136.8	25438{2596}
	100	15.0	13588{1387}	19.4	17560{1792}	27.4	24854{2536}	33.2	30270{3089}
20	Actual reduction ratio		20.50		20.50		20.50		20.50
	1750	97.7	10107{1031}	127.4	13247{1352}	144.0	14947{1525}	203.5	21163{2159}
	1450	85.2	10621{1084}	111.2	13941{1423}	125.9	15750{1607}	177.5	22252{2271}
	1150	72.0	11292{1152}	94.0	14845{1515}	106.2	16739{1708}	149.9	23665{2415}
	950	61.9	11739{1198}	81.0	15447{1576}	91.8	17493{1785}	128.9	24607{2511}
	500	38.5	13746{1403}	46.7	16828{1717}	56.4	20261{2067}	79.6	28704{2929}
	100	8.8	15179{1549}	9.7	16828{1717}	15.3	26445{2698}	20.1	35090{3581}
30	Actual reduction ratio		31.00		31.00		32.50		31.00
	1750	71.6	10825{1105}	94.1	14200{1449}	106.3	15840{1616}	152.8	23123{2359}
	1450	62.6	11397{1163}	82.2	14938{1524}	92.9	16687{1703}	133.2	24304{2480}
	1150	52.9	12108{1236}	69.5	15903{1623}	78.4	17728{1809}	112.6	25839{2637}
	950	45.5	12583{1284}	59.9	16547{1688}	67.8	18513{1889}	96.8	26862{2741}
	500	28.2	14627{1493}	37.2	19326{1972}	41.7	21414{2185}	61.0	31882{3253}
	100	6.7	16363{1670}	8.8	21558{2200}	11.7	28664{2925}	17.8	44420{4533}
40	Actual reduction ratio		40.00		40.00		41.00		40.00
	1750	57.8	10926{1115}	75.5	14383{1468}	83.4	16233{1656}	123.8	23660{2414}
	1450	50.8	11560{1180}	66.1	15188{1550}	73.2	17158{1751}	108.5	24959{2547}
	1150	42.8	12260{1251}	56.1	16214{1654}	61.6	18158{1853}	91.3	26470{2701}
	950	36.8	12727{1299}	48.5	16897{1724}	53.3	18970{1936}	78.5	27476{2804}
	500	22.9	14817{1512}	28.5	18630{1901}	32.8	21954{2240}	51.5	33902{3459}
	100	5.2	15762{1608}	6.1	18630{1901}	9.1	28392{2897}	11.8	36685{3743}
50	Actual reduction ratio		50.00		50.00		50.00		50.00
	1750	49.2	11229{1146}	64.1	14709{1501}	71.6	16514{1685}	106.0	24421{2492}
	1450	42.9	11780{1202}	56.2	15527{1584}	62.8	17458{1781}	92.8	25756{2628}
	1150	36.2	12512{1277}	47.5	16518{1686}	53.0	18527{1890}	78.4	27370{2793}
	950	31.2	13000{1327}	41.0	17179{1753}	45.7	19274{1967}	67.5	28446{2903}
	500	19.4	15099{1541}	25.4	19948{2036}	28.1	22245{2270}	45.7	36105{3684}
	100	4.7	16789{1713}	6.1	22147{2260}	8.1	29634{3024}	12.1	44546{4546}
60	Actual reduction ratio		60.00		62.00		61.00		62.00
	1750	43.2	11460{1169}	55.1	15057{1536}	62.1	16793{1714}	92.0	25242{2576}
	1450	38.0	12114{1236}	48.4	15909{1623}	54.5	17771{1813}	80.6	26649{2719}
	1150	32.1	12856{1312}	40.9	16920{1727}	46.0	18855{1924}	68.1	28312{2889}
	950	27.6	13349{1362}	35.3	17595{1795}	39.8	19643{2004}	58.7	29421{3002}
	500	17.2	15454{1577}	22.1	20524{2094}	24.6	22722{2319}	41.4	38868{3966}
	100	4.3	17542{1790}	5.4	22646{2311}	7.1	30110{3072}	10.8	46790{4774}

TroiDrive® Gear Set Dimensions

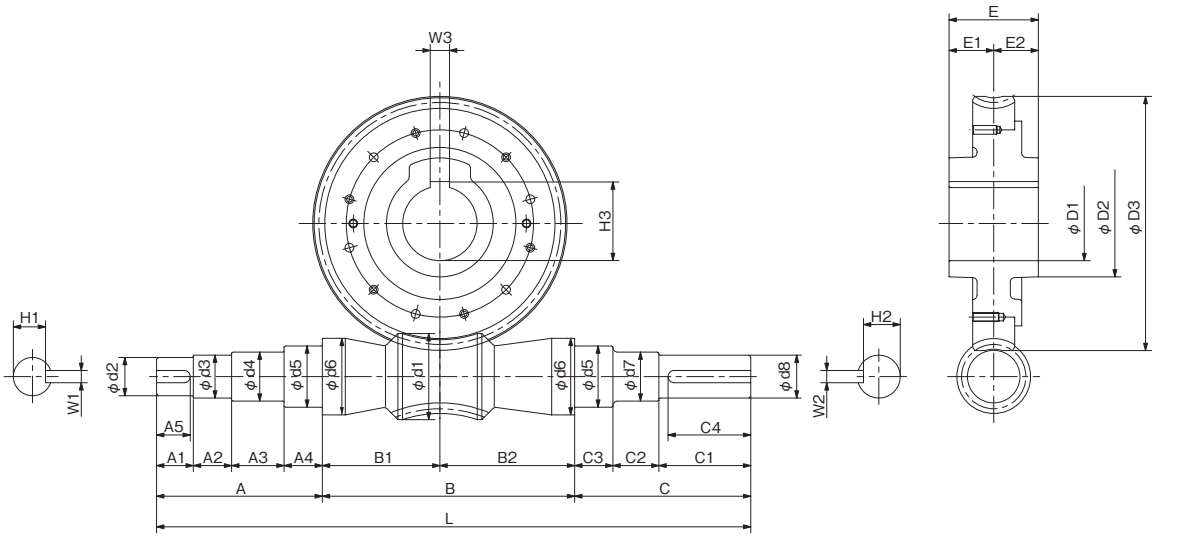


Unit: mm

Size	Worm																	
	L	A	A1	A2	A3	A4	A5	B	B1	B2	C	C1	C2	C3	C4	$d1_{max}$	$d2_{h7}$	d3	$d4_{h9}$
TD125	475	125	26	36.7	36.6	25.5	24	218	103.3	114.7	132.2	70	36.7	25.5	60	X65	X28	X31	32
TD150	550	161	32	38	39	52	30	243.2	105	138.2	145.8	75	41.8	29	65	75	35	44	45

Size	Worm								Wheel								Approximate mass kg	
	$d5_{m6}$	d6	$d7_{h9}$	$d8_{h7}$	$W1_{N9}$	$W2_{N9}$	H1	H2	E	E1	E2	$D1_{H7}$	D2	$D3_{max}$	$W3_{JS9}$	H3	Worm	Wheel
TD125	X45	55	45	35	8	10	24	30	69	18	51	70	110	212	20	74.9	7	10
TD150	55	67	55	38	10	10	30	33	102	37	65	75	115	257	20	79.9	10	17

Note) Figures are for gear sets used in a standard unit, and made-to-orders are also available. Contact us for further details.
Dimensions d1 and D3 differ depending on reduction ratio, even on the same size.

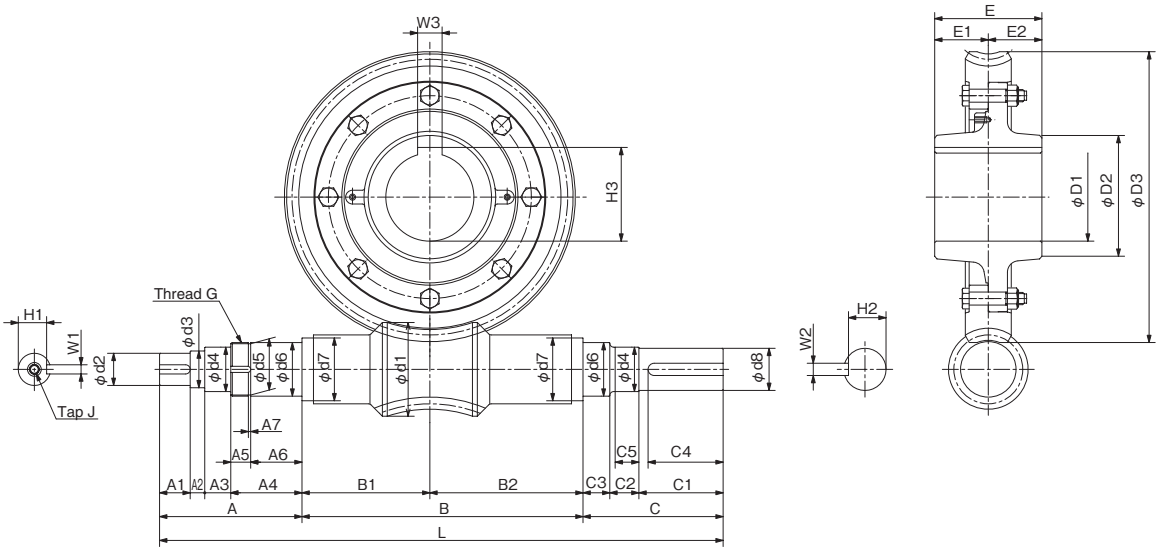


Unit: mm

Size	Worm																	
	L	A	A1	A2	A3	A4	A5	B	B1	B2	C	C1	C2	C3	C4	$d1_{max}$	$d2_{h7}$	d3	$d4_{h9}$
TD175	621	174	35	32	42	65	30	279.2	118	161.2	167.8	90	46.8	31	82	89	38	44	45
TD200	716	203.5	40	48	47	68.5	39	312.5	135.5	177	200	110	55	35	97	104	42	44	45

Size	Worm								Wheel								Approximate mass kg	
	$d5_{m6}$	d6	$d7_{h9}$	$d8_{h7}$	$W1_{N9}$	$W2_{N9}$	H1	H2	E	E1	E2	$D1_{H7}$	D2	$D3_{max}$	$W3_{JS9}$	H3	Worm	Wheel
TD175	60	74	58	45	10	14	33	39.5	102	51	51	85	150	304	22	90.4	15	27
TD200	70	84	68	48	12	14	37	42.5	130	65	65	95	170	339	25	100.4	23	36

Note) Figures are for gear sets used in a standard unit, and made-to-orders are also available. Contact us for further details.
Dimensions d1 and D3 differ depending on reduction ratio, even on the same size.



Unit: mm

Size	Worm																					
	L	A	A1	A2	A3	A4	A5	A6	A7	B	B1	B2	C	C1	C2	C3	C4	C5	$d1_{max}$	$d2_{h7}$	d3	$d4_{h9}$
TD225	736	186	40	19	34	93	26	67	3	367	167	200	183	110	38	35	98	31	115	42	48	58
TD250	804	212	46	24	34	108	34	74	4	400	184	216	192	110	43	39	102	31	123	48	65	68
TD280	907	232	46	23	43	120	38	82	4	462	212	250	213	120	50	43	110	40	144	48	65	80
TD315	996	246	50	16	43	137	40	97	4	519	238	281	231	130	54	47	116	38	155	65	80	90

Size	Worm										Wheel								Approximate mass kg	
	d5	$d6_{m6}$	d7	$d8_{h7}$	$W1_{N9}$	$W2_{N9}$	H1	H2	G	J	E	E1	E2	$D1_{H7}$	D2	$D3_{max}$	$W3_{JS9}$	H3	Worm	Wheel
TD225	67	70	82	55	12	16	37	49	M70 P = 2	M12 × 24L	140	70	70	115	165	384	32	122.4	26	49
TD250	76	80	94	65	14	18	42.5	58	M80 P = 2	M12 × 24L	160	80	80	125	180	432	32	132.4	38	64
TD280	86	90	108	75	14	20	42.5	67.5	M90 P = 2	M12 × 24L	180	90	90	135	195	481	36	143.4	55	83
TD315	94	100	120	80	18	22	58	71	M100 P = 2	M16 × 30L	200	100	100	155	220	545	40	164.4	75	129

Note) Figures are for gear sets used in a standard unit, and made-to-orders are also available. Contact us for further details.
Dimensions d1 and D3 differ depending on reduction ratio, even on the same size.

TroiDrive® Technical Data for Gear Sets

1. Machining accuracy of housing

The final machining accuracy of the housing has a impact on the performance of the gear set. Gear sets will not have appropriate tooth area contact and mesh when assembled into housings that fail to meet the recommended machining tolerances. This will cause poor performance, short life, noise, and other problems. Obey the machining tolerances indicated below.
Tolerances for center distance and perpendicularity differ depending on the size. Determine the proper tolerance from Table 1 while referring to Figures 1 and 2.

Figure 1 Center distance tolerance

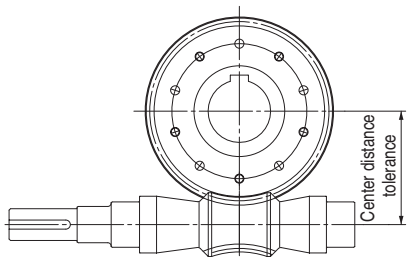


Figure 2 Perpendicularity tolerance

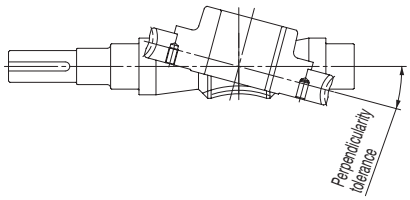


Table 1 Center distance and perpendicularity tolerances

Size	Center distance tolerance (H7)	Perpendicularity difference
125	0 to +0.040	± 0.008°
150	0 to +0.040	± 0.008°
175	0 to +0.040	± 0.008°
200	0 to +0.046	± 0.006°
225	0 to +0.046	± 0.006°
250	0 to +0.046	± 0.006°
280	0 to +0.052	± 0.006°
315	0 to +0.052	± 0.006°

2. Inspection hole

Furnish an inspection hole on the housing to visually verify the correct position of the worm wheel and to adjust the tooth contact during assembly. This hole can also be used for regular inspection to check the condition of the worm wheel tooth.

3. Input/output shaft bearing

The input and output shafts are subject to both radial and thrust loads. Always use a taper roller bearing, and make sure the bearings and bearing supports are designed to support both thrust at the same time.
Contact Tsubaki representative for instruction manual which shows tooth contact adjustment and assembly instructions.

4. Lubrication

Recommended oil
input shaft speed = 500 r/min+: Daphne Alpha Oil TE260 (IDEMITSU)
input shaft speed = 500 r/min-: Daphne Alpha Oil TE380 (IDEMITSU)

Contact Tsubaki representative for conditions other than above.

Technical Data

Reducer ..... 217 - 221

- Reduction Ratio
- Backlash (Angle)
- Tapped Hole Positions and Plug Sizes
- Mounting Surface Dimensions for V Type
- Input and Output Shaft Rotation
- Detailed Dimensions of Hollow Output Shaft

Motor ..... 222 - 227

- Motor Current
- Brake
- Standard Terminal Box
- Motor Flange Dimensions
- Wiring
- Inverter Drive (VFD)
- Inverter Motor

Reducer

■ Reduction Ratio

EWJ/EWJM(R)/EW/EWM(R)/SWJ/SWJM(R)/SW/SWM(R) Series

1. Actual reduction ratio

All reduction ratios are actual.

2. Double reduction type: reduction ratio and size combinations

Standard reduction ratios are 10, 15, 20, 25, 30, 40, 50, and 60 (eight types).
Double reduction ratios are available in 16 combinations shown below. * Refer to page 18 for information on self-locking.

Total reduction ratio	100	150	200	250	300	400	500	600	800	1000	1200	1500	1800	2400	3000	3600
High speed side	10	15	20	25	15	20	25	30	40	50	60	25	30	40	50	60
Low speed side	10	10	10	10	20	20	20	20	20	20	20	60	60	60	60	60

Size combinations

Size	EWJ50	EWJ63	EWJ70	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
High speed side	35	42	42	50	50	63	80	100	125
Low speed side	50	63	70	80	100	125	150	175	200

TD Series

1. Actual reduction ratio

Single reduction type

	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
10	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25
20	20.00	20.50	20.50	20.00	20.50	20.50	20.50	20.50
30	31.50	31.50	32.50	31.50	31.00	31.00	30.50	31.00
40	40.00	41.00	41.00	40.00	40.00	40.00	41.00	40.00
50	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
60	63.00	63.00	65.00	63.00	60.00	62.00	61.00	62.00

Double reduction type

	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
100	102.50	102.50	102.50	102.50	102.50	102.50	102.50	102.50
150	153.75	153.75	153.75	153.75	153.75	153.75	153.75	153.75
200	205.00	205.00	205.00	205.00	205.00	205.00	205.00	205.00
250	256.25	256.25	256.25	256.25	256.25	256.25	256.25	256.25
300	315.00	315.00	325.00	315.00	310.00	310.00	305.00	310.00
450	472.50	472.50	487.50	472.50	465.00	465.00	457.50	465.00
600	630.00	630.00	650.00	630.00	620.00	620.00	610.00	620.00
750	787.50	787.50	812.50	787.50	775.00	775.00	762.50	775.00
900	945.00	945.00	975.00	945.00	930.00	930.00	915.00	930.00
1200	1260.00	1260.00	1300.00	1260.00	1240.00	1240.00	1220.00	1240.00
1500	1575.00	1575.00	1625.00	1575.00	1500.00	1550.00	1525.00	1550.00
1800	1890.00	1890.00	1950.00	1890.00	1800.00	1860.00	1830.00	1860.00
2400	2520.00	2520.00	2600.00	2520.00	2400.00	2480.00	2440.00	2480.00
3000	3150.00	3150.00	3250.00	3150.00	3000.00	3100.00	3050.00	3100.00
3600	3780.00	3780.00	3900.00	3780.00	3600.00	3720.00	3660.00	3720.00

2. Double reduction type: reduction ratio and size combinations

Standard reduction ratios are 10, 20, 30, 40, 50, and 60 (six types).
Double reduction ratios are available in 15 combinations shown below. Always check the actual reduction ratio in the table shown above.

Nominal total reduction ratio	100	150	200	250	300	450	600	750	900	1200	1500	1800	2400	3000	3600
High speed side	10	15	20	25	10	15	20	25	30	40	25	30	40	50	60
Low speed side	10	10	10	10	30	30	30	30	30	30	60	60	60	60	60

Size combinations

Size	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
High speed side	EWJ70	EW80	EW100	EW125	EW125	EW150	EW175	EW175
Low speed side	125	150	175	200	225	250	280	315

■ Backlash (Angle)

EWJ/EW/SWJ/SW Series

Solid output shaft

Single reduction type

Unit: angle°

Size / Reduction ratio	EWJ25	EWJ35	EWJ42	EWJ50	EWJ63	EWJ70	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
10	0.24 to 1.09	0.17 to 0.80	0.14 to 0.66	0.07 to 0.49	0.06 to 0.69	0.05 to 0.64	0.09 to 0.46	0.07 to 0.42	0.07 to 0.40	0.07 to 0.37	0.08 to 0.35	0.10 to 0.34
15	0.15 to 0.99	0.17 to 0.78	0.14 to 0.65	0.07 to 0.49	0.06 to 0.69	0.05 to 0.64	0.09 to 0.46	0.07 to 0.42	0.07 to 0.40	0.07 to 0.37	0.08 to 0.35	0.10 to 0.34
20	0.23 to 1.06	0.18 to 0.81	0.14 to 0.65	0.07 to 0.47	0.06 to 0.69	0.05 to 0.63	0.06 to 0.41	0.07 to 0.40	0.06 to 0.36	0.06 to 0.34	0.05 to 0.31	0.07 to 0.31
25	0.14 to 0.96	0.17 to 0.79	0.14 to 0.63	0.07 to 0.47	0.06 to 0.68	0.05 to 0.62	0.06 to 0.41	0.05 to 0.36	0.06 to 0.35	0.05 to 0.31	0.05 to 0.31	0.05 to 0.28
30	0.24 to 1.08	0.17 to 0.78	0.14 to 0.65	0.07 to 0.49	0.06 to 0.69	0.05 to 0.64	0.09 to 0.46	0.07 to 0.42	0.07 to 0.40	0.07 to 0.37	0.08 to 0.35	0.10 to 0.34
40	0.23 to 1.06	0.18 to 0.81	0.14 to 0.65	0.07 to 0.47	0.06 to 0.69	0.05 to 0.63	0.06 to 0.41	0.07 to 0.40	0.06 to 0.36	0.06 to 0.34	0.05 to 0.31	0.07 to 0.31
50	0.23 to 1.04	0.17 to 0.79	0.14 to 0.63	0.07 to 0.47	0.06 to 0.68	0.05 to 0.62	0.06 to 0.41	0.05 to 0.36	0.06 to 0.35	0.05 to 0.31	0.05 to 0.31	0.05 to 0.28
60	0.23 to 1.03	0.17 to 0.80	0.14 to 0.62	0.07 to 0.47	0.05 to 0.67	0.05 to 0.62	0.06 to 0.41	0.05 to 0.36	0.04 to 0.34	0.05 to 0.31	0.03 to 0.27	0.05 to 0.27

Double reduction type

Unit: angle°

Size / Reduction ratio	EWJ50	EWJ63	EWJ70	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
100 to 250	0.09 to 0.61	0.08 to 0.80	0.07 to 0.74	0.09 to 0.54	0.07 to 0.50	0.07 to 0.47	0.08 to 0.41	0.08 to 0.39	0.11 to 0.38
300 to 1200	0.08 to 0.54	0.07 to 0.74	0.06 to 0.68	0.06 to 0.45	0.07 to 0.44	0.06 to 0.39	0.06 to 0.36	0.05 to 0.33	0.07 to 0.33
1500 to 3600	0.07 to 0.49	0.06 to 0.69	0.05 to 0.64	0.06 to 0.42	0.05 to 0.37	0.04 to 0.35	0.05 to 0.32	0.04 to 0.28	0.05 to 0.28

Hollow output shaft

Single reduction type

Unit: angle°

Size / Reduction ratio	SWJ25	SWJ35	SWJ42	SWJ50	SWJ63	SWJ70	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
10	0.24 to 1.09	0.17 to 0.80	0.14 to 0.66	0.07 to 0.49	0.06 to 0.39	0.05 to 0.34	0.09 to 0.23	0.07 to 0.20	0.07 to 0.19	0.07 to 0.17	0.08 to 0.18	0.10 to 0.19
15	0.15 to 0.99	0.17 to 0.78	0.14 to 0.65	0.07 to 0.49	0.06 to 0.39	0.05 to 0.34	0.09 to 0.23	0.07 to 0.20	0.07 to 0.19	0.07 to 0.17	0.08 to 0.18	0.10 to 0.19
20	0.23 to 1.06	0.18 to 0.81	0.14 to 0.65	0.07 to 0.47	0.06 to 0.39	0.05 to 0.33	0.06 to 0.18	0.07 to 0.18	0.06 to 0.14	0.06 to 0.14	0.05 to 0.13	0.07 to 0.15
25	0.14 to 0.96	0.17 to 0.79	0.14 to 0.63	0.07 to 0.47	0.06 to 0.38	0.05 to 0.32	0.06 to 0.17	0.05 to 0.14	0.06 to 0.14	0.05 to 0.12	0.05 to 0.13	0.05 to 0.12
30	0.24 to 1.08	0.17 to 0.78	0.14 to 0.65	0.07 to 0.49	0.06 to 0.39	0.05 to 0.34	0.09 to 0.23	0.07 to 0.20	0.07 to 0.19	0.07 to 0.17	0.08 to 0.18	0.10 to 0.19
40	0.23 to 1.06	0.18 to 0.81	0.14 to 0.65	0.07 to 0.47	0.06 to 0.39	0.05 to 0.33	0.06 to 0.18	0.07 to 0.18	0.06 to 0.14	0.06 to 0.14	0.05 to 0.13	0.07 to 0.15
50	0.23 to 1.04	0.17 to 0.79	0.14 to 0.63	0.07 to 0.47	0.06 to 0.38	0.05 to 0.32	0.06 to 0.17	0.05 to 0.14	0.06 to 0.14	0.05 to 0.12	0.05 to 0.13	0.05 to 0.12
60	0.23 to 1.03	0.17 to 0.80	0.14 to 0.62	0.07 to 0.47	0.05 to 0.37	0.05 to 0.32	0.06 to 0.17	0.05 to 0.14	0.04 to 0.13	0.05 to 0.12	0.03 to 0.10	0.05 to 0.11

Double reduction type

Unit: angle°

Size / Reduction ratio	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
100 to 250	0.09 to 0.30	0.07 to 0.27	0.07 to 0.26	0.08 to 0.21	0.08 to 0.22	0.11 to 0.23
300 to 1200	0.06 to 0.21	0.07 to 0.21	0.06 to 0.18	0.06 to 0.17	0.05 to 0.15	0.07 to 0.17
1500 to 3600	0.06 to 0.18	0.05 to 0.15	0.04 to 0.14	0.05 to 0.12	0.04 to 0.11	0.05 to 0.12

* The figures in the above represent the total mechanical clearance that can be calculated in the rotating direction of the output shaft when the input shaft of the reducer is fixed.

Reducer

■ Backlash (Angle)

TD Series

Solid output shaft (S)

Single reduction type

Unit: angle°

Size / Nominal reduction ratio	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
10	0.09 to 0.50	0.09 to 0.45	0.07 to 0.40	0.07 to 0.37	0.06 to 0.33	0.05 to 0.31	0.05 to 0.30	0.05 to 0.26
20	0.09 to 0.49	0.08 to 0.44	0.07 to 0.39	0.07 to 0.36	0.06 to 0.33	0.05 to 0.31	0.05 to 0.30	0.05 to 0.26
30	0.09 to 0.47	0.09 to 0.45	0.07 to 0.38	0.07 to 0.36	0.06 to 0.32	0.05 to 0.30	0.05 to 0.28	0.05 to 0.25
40	0.09 to 0.49	0.08 to 0.44	0.07 to 0.39	0.07 to 0.36	0.06 to 0.33	0.05 to 0.31	0.05 to 0.30	0.05 to 0.26
50	0.09 to 0.49	0.08 to 0.44	0.07 to 0.38	0.07 to 0.37	0.06 to 0.33	0.05 to 0.30	0.05 to 0.28	0.05 to 0.26
60	0.09 to 0.47	0.09 to 0.45	0.07 to 0.38	0.07 to 0.36	0.06 to 0.32	0.05 to 0.30	0.05 to 0.28	0.05 to 0.25

Double reduction type

Unit: angle°

Size / Nominal reduction ratio	TD125S	TD150S	TD175S	TD200S	TD225S	TD250S	TD280S	TD315S
100 to 150	0.10 to 0.56	0.09 to 0.49	0.08 to 0.44	0.08 to 0.41	0.06 to 0.37	0.06 to 0.35	0.06 to 0.34	0.06 to 0.29
200 to 250	0.10 to 0.56	0.09 to 0.49	0.08 to 0.44	0.08 to 0.40	0.06 to 0.37	0.06 to 0.35	0.06 to 0.33	0.05 to 0.29
300 to 1200	0.09 to 0.49	0.09 to 0.46	0.07 to 0.40	0.07 to 0.37	0.06 to 0.33	0.05 to 0.31	0.06 to 0.29	0.05 to 0.26
1500 to 3600	0.09 to 0.48	0.09 to 0.45	0.07 to 0.39	0.07 to 0.36	0.06 to 0.33	0.05 to 0.31	0.05 to 0.29	0.05 to 0.25

Hollow output shaft (H)

Single reduction type

Unit: angle°

Size / Nominal reduction ratio	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
10	0.09 to 0.28	0.09 to 0.25	0.07 to 0.23	0.07 to 0.21	0.06 to 0.18	0.05 to 0.17	0.05 to 0.17	0.05 to 0.14
20	0.09 to 0.28	0.08 to 0.24	0.07 to 0.22	0.07 to 0.21	0.06 to 0.18	0.05 to 0.17	0.05 to 0.16	0.05 to 0.14
30	0.09 to 0.26	0.09 to 0.25	0.07 to 0.21	0.07 to 0.20	0.06 to 0.17	0.05 to 0.16	0.05 to 0.15	0.05 to 0.13
40	0.09 to 0.28	0.08 to 0.24	0.07 to 0.22	0.07 to 0.21	0.06 to 0.18	0.05 to 0.17	0.05 to 0.16	0.05 to 0.14
50	0.09 to 0.28	0.08 to 0.24	0.07 to 0.21	0.07 to 0.21	0.06 to 0.18	0.05 to 0.16	0.05 to 0.15	0.05 to 0.14
60	0.09 to 0.26	0.09 to 0.25	0.07 to 0.21	0.07 to 0.20	0.06 to 0.17	0.05 to 0.16	0.05 to 0.15	0.05 to 0.13

Double reduction type

Unit: angle°

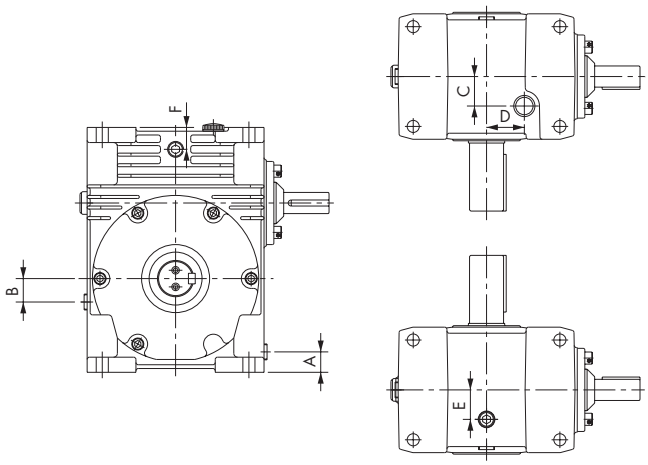
Size / Nominal reduction ratio	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
100 to 250	0.10 to 0.35	0.09 to 0.29	0.08 to 0.27	0.08 to 0.25	0.06 to 0.22	0.06 to 0.21	0.06 to 0.20	0.06 to 0.18
300 to 450	0.09 to 0.28	0.09 to 0.26	0.07 to 0.22	0.07 to 0.21	0.06 to 0.18	0.05 to 0.17	0.06 to 0.16	0.05 to 0.15
600 to 750	0.09 to 0.28	0.09 to 0.26	0.07 to 0.22	0.07 to 0.21	0.06 to 0.18	0.05 to 0.17	0.05 to 0.16	0.05 to 0.14
900 to 1200	0.09 to 0.28	0.09 to 0.26	0.07 to 0.22	0.07 to 0.21	0.06 to 0.18	0.05 to 0.17	0.06 to 0.16	0.05 to 0.15
1500	0.09 to 0.27	0.09 to 0.26	0.07 to 0.21	0.07 to 0.20	0.06 to 0.17	0.05 to 0.16	0.05 to 0.16	0.05 to 0.14
1800 to 3600	0.09 to 0.27	0.09 to 0.26	0.07 to 0.21	0.07 to 0.21	0.06 to 0.17	0.05 to 0.17	0.05 to 0.16	0.05 to 0.14

* The figures in above table represent the total mechanical clearance that can be calculated in the rotating direction of the output shaft when the input shaft of the reducer is fixed.

■ Tapped Hole Positions and Plug Sizes

EW Series

EW80 to 200



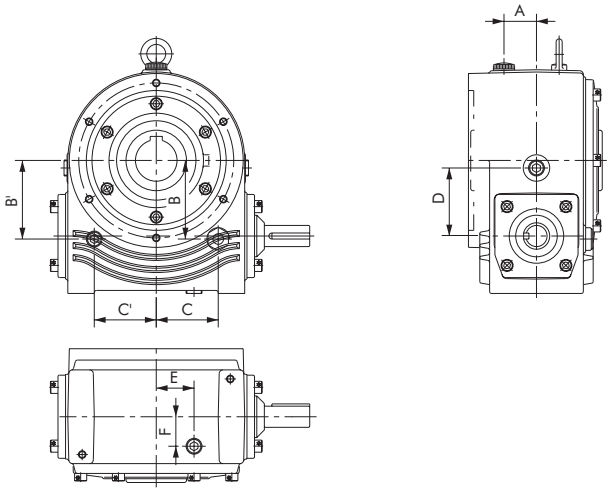
Unit: mm

Size	A	B	C	D	E	F	Housing side plug
EW80	26	30	32	40	32	27	6-PS 1/2
EW100	27	31	39	50	39	29	6-PS 1/2
EW125	35	39	44	65	44	37	6-PS 3/4
EW150	38	40	55	80	55	40	5-PS 3/4
EW175	40	33	64	90	64	43	5-PS 3/4
EW200	43	38	77	100	77	46	5-PS 3/4

* Uses an R (PT) plug.

SW Series

SW80 to 200



Unit: mm

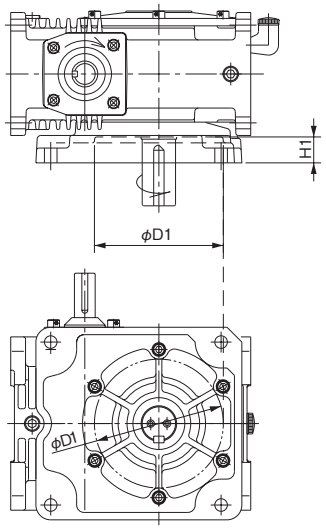
Size	A	B	B′	C	C′	D	E	F	Housing side plug
SW 80	35	80	80	71	71	80	40	32	5-PS 1/2
SW100	43	104	104	82	82	90	50	39	5-PS 1/2
SW125	53	125	125	105	105	90	65	44	5-PS 3/4
SW150	64	134	134	130	130	110	80	55	5-PS 3/4
SW175	72	155	155	160	160	125	90	64	5-PS 3/4
SW200	74	165	165	170	170	135	100	65	5-PS 3/4

* Uses an R (PT) plug.
B′and C′ are the dimensions when the shaft arrangement is V-LF.

■ Mounting Surface Dimensions for V Type

EWJ/EW Series

EWJ50 to 70, EW80 to 200



Unit: mm

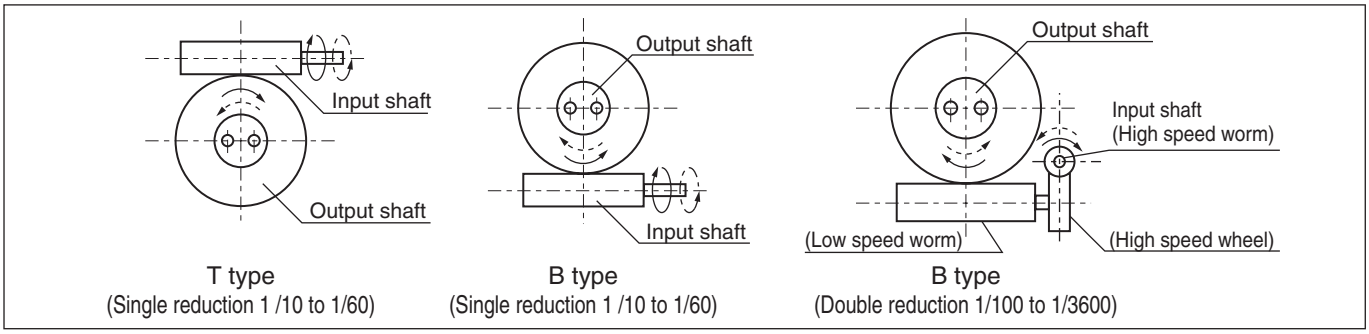
Size	D1	H1
EWJ50	78	27
EWJ63	92	32
EWJ70	108	38
EW80	132	30
EW100	168	35
EW125	214	45
EW150	254	49
EW175	298	57
EW200	335	71

Reducer

■ Input and Output Shaft Rotation

EWJ/EW/EWJM/EWM/SWJ/SW/SWJM/SWM/TD Series

All models are desinged in right hand worm, and the output shaft always rotates as shown with respect to the rotating direction of the input shaft.

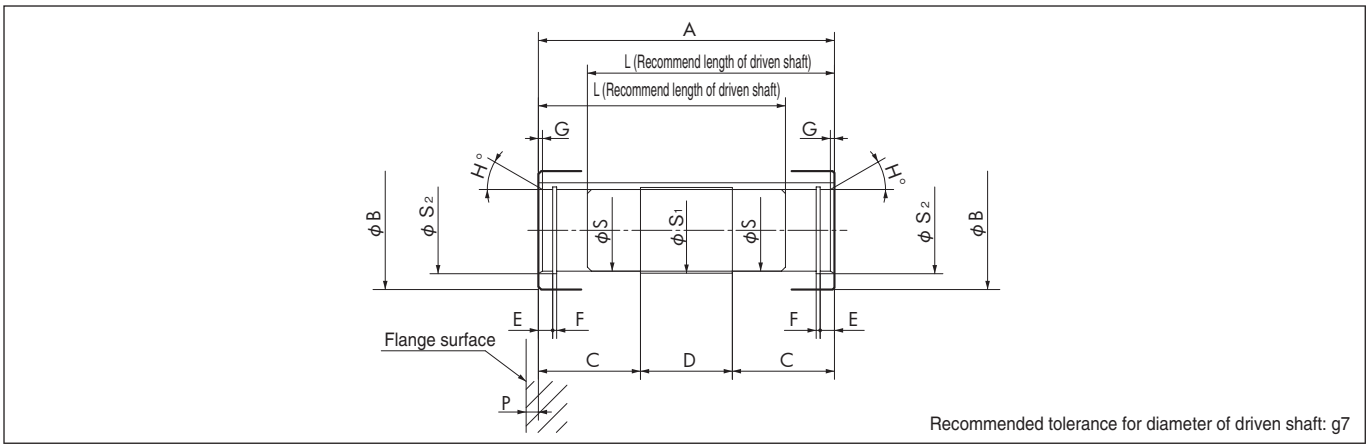


T type
(Single reduction 1 /10 to 1/60)

B type
(Single reduction 1 /10 to 1/60)

B type
(Double reduction 1/100 to 1/3600)

■ Detailed Dimensions of Hollow Output Shaft



Recommended tolerance for diameter of driven shaft: g7

SWJ/SWJM/SW/SWM Series, EW/EWM Series (H: hollow output shaft type)

Unit: mm

Size	A	B	C	D	E	F	G	H°	P	S	S_1	S_2	L
SWJ25	60	20	21	18	—	—	1	30°	–5	12	13	—	58
SWJ35	70	30	25	20	—	—	1	30°	-2.5	20	21	—	68
SWJ42	80	40	28	24	—	—	1	30°	-4.5	25	26	—	78
SWJ50	108	45	35	38	5	1.35	1.5	30°	2	30	31	31.4	89
SWJ63	128	48	40	48	6	1.65	2	30°	2	35	36	37	109
SWJ70	130	58	45	40	7	1.95	2	30°	5	40	41	42.5	106
SW80/EW80 H	148	70	50	48	8	2.2	3	30°	4	50	51	53	122
SW100/EW100 H	174	80	60	54	8	2.2	3	30°	3	55	56	58	146
SW125/EW125 H	200	105	70	60	8	2.7	3	30°	10	70	71	73	170
SW150/EW150 H	250	115	80	90	8	2.7	4	30°	0	80	81	83.5	220
SW175/EW175 H	270	125	90	90	9	3.2	4	30°	0	90	91	93.5	238
SW200/EW200 H	290	145	95	100	9	3.2	4	30°	0	100	101	103.5	258

Note: SWJ25, SWJ35, and SWJ42: no stop ring groove
SWJ, SWJM, SW, and SWM Series: P = dimension from the flange surface to the shaft end.
Hollow shaft bore: tolerance = H8, keyway = JIS Js9

TD Series

Unit: mm

Size	A	B	C	D	E	F	G	H°	P	S	S_1	S_2	L
TD125H	200	105	70	60	8	2.7	3	30°	10	70	71	73	170
TD150H	250	115	80	90	8	2.7	4	30°	0	80	81	83.5	220
TD175H	270	125	90	90	9	3.2	4	30°	0	90	91	93.5	238
TD200H	290	145	95	100	9	3.2	4	30°	0	100	101	103.5	258
TD225H	320	150	108	104	12	4.2	4	30°	2	110	111	114	272
TD250H	356	170	118	120	12	4.2	5	30°	2	125	126	129	303
TD280H	404	200	134	136	12	4.2	5	30°	3	130	131	134	344
TD315H	454	220	150	154	12	4.2	5	30°	3	160	161	165	386

Note: P = dimension from the flange surface to the shaft end.

Motor

■ Motor

No. of phases	Motor Size	Poles	Frequency Hz	Voltage V	Rated current A	Rated speed r/min	Reference AC brake current at 20℃
3	0.1 kW	4	50/60/60 (50/60/60)	200/200/220 (400/400/400)	0.63/0.57/0.58 (0.32/0.29/0.29)	1420/1680/1710 (1440/1740/1740)	0.12 (0.14)
	0.2 kW				1.2/1.1/1.1 (0.59/0.55/0.55)	1420/1700/1720 (1410/1690/1720)	0.12 (0.14)
	0.4 kW				2.3/2.0/2.0 (1.2/1.0/1.0)	1380/1650/1680 (1390/1670/1700)	0.16 (0.11)
	0.75 kW		50/60/60 (50/50/60/60)	200/200/220 (380/400/400/440)	4.0/3.5/3.4 (1.9/2.0/1.75/1.7)	1440/1730/1740 (1435/1440/1730/1740)	0.17
	1.5 kW				6.6/6.0/5.8 (3.4/3.3/3.0/2.9)	1450/1745/1755 (1445/1450/1745/1755)	0.10
	2.2 kW				9.6/8.8/8.4 (4.8/4.8/4.4/4.2)	1450/1745/1755 (1445/1450/1745/1755)	0.10
	3.7 kW				15.4/14.4/13.6 (7.8/7.7/7.2/6.8)	1450/1745/1755 (1445/1450/1745/1755)	0.08
	5.5 kW				22.6/20.8/20.0 (11.3/11./10.4/10.0)	1465/1760/1765 (1460/1465/1760/1765)	0.10

Note 1) 400 V class: refer to the figures in paranthesis.
2) Brake type: add the brake current above when wiring the brake lead to the motor lead. AC brake current is at 200 VAC and 60 Hz.
3) 0.75 kW to 5.5 kW figures are for Japanese standard motors. Please contact Tsubaki representative for overseas models.

■ Brake

1. Brake characteristics

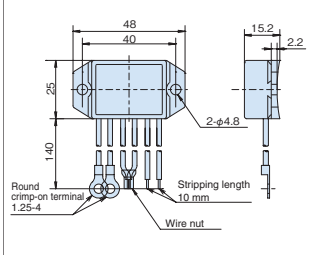
Motor Size	3-phase	0.1 kW	0.2 kW	0.4 kW	0.75 kW	1.5 kW	2.2 kW	3.7 kW	5.5 kW
Brake model	3-phase 200 V	SLB01	SLB02	SLB04	SLB07E	SLB15	SLB22	VNB371K NB-31190	VNB55KE
	3-phase 400 V	SLB01	SLB02	SLB04V	SLB07E 180V	SLB15 180V	SLB22 180V	VNB371KV NB-31192	VNB55KE
Rectifire	3-phase 200 V	DM200D			DM200D				PM180B
	3-phase 400 V				DM400D				HD-120MH1
Rated torque	Static friction torque N·m	0.98	1.96	3.92	7.35	15	22	37	55
	{kgf·m}	0.1	0.2	0.40	0.75	1.50	2.20	3.77	5.61
	Dynamic friction torque N·m	0.78	1.57	3.14	5.88	12.0	17.6	29.6	44
	{kgf·m}	0.08	0.16	0.32	0.60	1.20	1.79	3.02	4.48
Voltage	3-phase 200 V	90 VDC			90 VDC				Inst. 180 V, Cont. 50 V
	3-phase 400 V				180 VDC				Inst. 270 V, Cont. 90 V
Current at 20°C A	3-phase 200 V	0.178	0.178	0.232	0.273	0.289	0.289	0.261	0.253
	3-phase 400 V				0.142	0.145	0.145	0.135	0.452
Capacity	at 20°C W	16.0	16.0	20.9	24.6/25.5	26.0/26.1	26.0/26.1	26.1/26.1	12.6/40.7
Initial gap	mm	0.15 to 0.20	0.15 to 0.20	0.15 to 0.20	0.15 to 0.20	0.15 to 0.20	0.15 to 0.20	0.3	0.35
Gap limit	mm	0.5	0.5	0.5	0.5	0.5	0.5	1.2	1.2
Moment of inertia	$kg \cdot m^2$	0.02×10^{-3}	0.04×10^{-3}	0.04×10^{-3}	0.11×10^{-3}	0.21×10^{-3}	0.50×10^{-3}	0.50×10^{-3}	1.70×10^{-3}
GD^2	$kgf \cdot m^2$	0.10×10^{-3}	0.15×10^{-3}	0.15×10^{-3}	0.44×10^{-3}	0.80×10^{-3}	2.00×10^{-3}	2.00×10^{-3}	6.8×10^{-3}
Total brake duty	J	1.31×10^{8}	1.85×10^{8}	1.85×10^{8}	3.66×10^{8}	3.73×10^{8}	3.73×10^{8}	13.5×10^{8}	24.7×10^{8}
	{kgf·m}	1.34×10^{7}	1.89×10^{7}	1.89×10^{7}	3.73×10^{7}	3.81×10^{7}	3.81×10^{7}	13.8×10^{7}	25.2×10^{7}
Allowable starting frequency		10 times/min							
Braking delay time S (reference)	AC internal wiring	0.18 to 0.25	0.15 to 0.21	0.14 to 0.17	0.20 to 0.24	0.30 to 0.45	0.30 to 0.45	0.50 to 0.70 (0.40 to 0.60)	0.20 to 0.30 (0.50 to 0.70)
	AC external wiring	0.11 to 0.18	0.09 to 0.12	0.06 to 0.09	0.10 to 0.13	0.10 to 0.13	0.10 to 0.13	0.20 to 0.40	0.02 to 0.04 (0.20 to 0.40)
	AC external operation	0.11 to 0.18	0.09 to 0.12	0.06 to 0.09	0.10 to 0.13	0.10 to 0.13	0.10 to 0.13	0.20 to 0.40	0.02 to 0.04 (0.20 to 0.40)
	DC external wiring	0.05 to 0.07	0.04 to 0.06	0.03 to 0.05	0.04 to 0.06	0.01 to 0.06	0.01 to 0.06	- (0.02 to 0.04)	- (0.03 to 0.05)

Note 1) Rated torque: Static and dynamic friction torque after initial wear.
2) Brake delay: For reference only, it may differ depending on the brake, operating condition, and individual differences. Values in parenthese are for 400 V operation. DC external wiring is recommended to shorten the braking delay time.
3) Current and capacity values are for 200 V and 400 V operations.

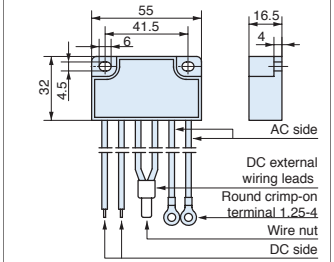
2. Rectifier (DC module)

Rectifires are built-in and pre-wired to the motor leads. When DC external wiring on brake, specify at time of order or connect as shown in the wiring diagram on page 226.
In case you do not prefer pre-wired to the motor leads, specify at time of order.

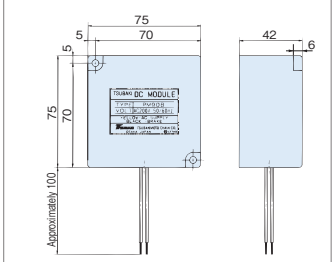
External dimensions (DM200D)



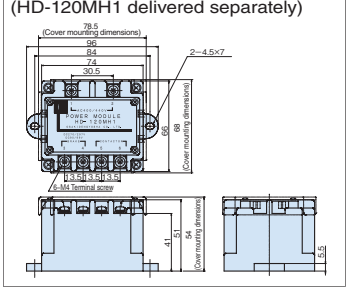
External dimensions (DM400D)



External dimensions (PM180B)



External dimensions (HD-120MH1 delivered separately)

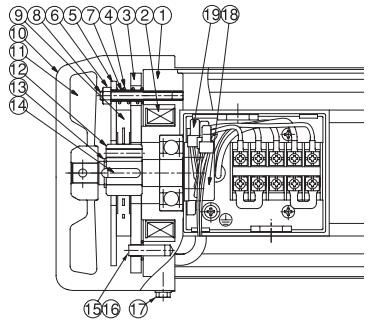


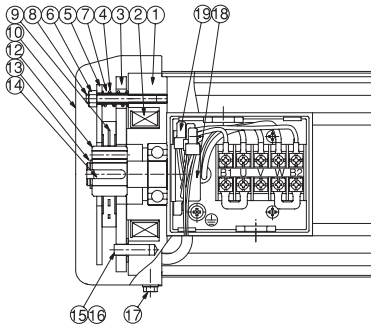
Motor

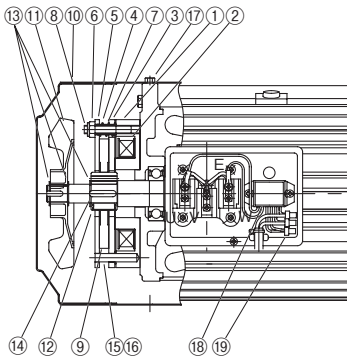
■ Brake

3. Structure

SLB brake (0.1 to 2.2 kW)



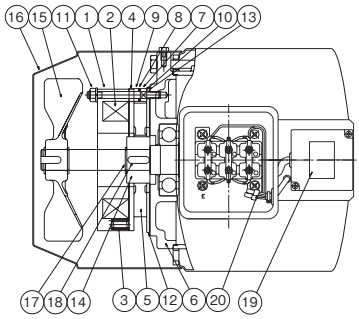




(1) Anti-load bracket with yoke
(2) Coil
(3) Armature
(4) Pressure bar spring
(5) Brake plate
(6) U-nut
(7) Collar
(8) Guide bolt
(9) Lining
(10) Fan cover
(11) Fan
(12) Square hub
(13) Snap ring
(14) Key
(15) Spring pin
(16) Braking spring
(17) Fan cover set screw
(18) Rectifire
(19) Closed-end connector

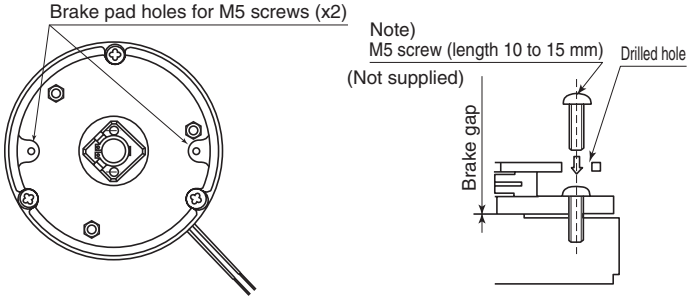
VNB brake (3.7 to 5.5 kW)

(1) Yoke
(2) Coil
(3) Braking spring
(4) Armature
(5) Lining
(6) Anti-load bracket
(7) Stud bolt
(8) Liner
(9) Distance collar
(10) Protective liner
(11) Hex nut
(12) Brake plate
(13) Sheet packing
(14) Center hub
(15) Fan
(16) Fan cover
(17) Stop ring
(18) Key
(19) Rectifire
(20) Wire nut



* Manual release (standard: 0.1 to 2.2 kW)

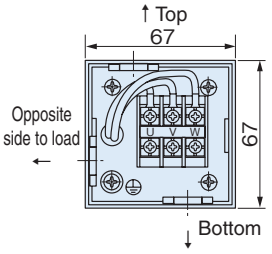
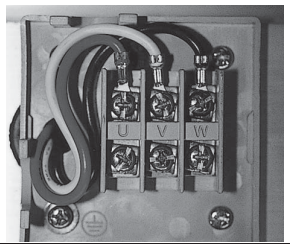
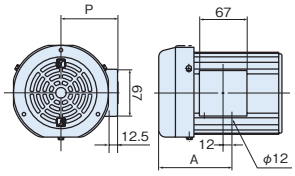
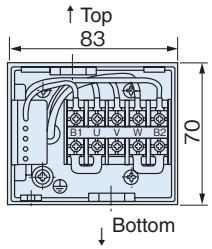
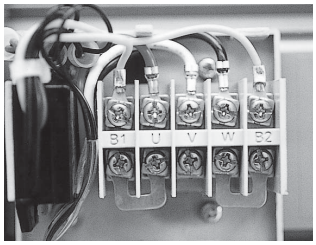
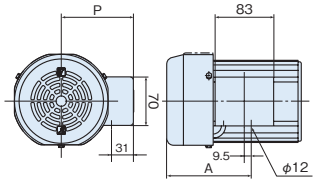
- Make sure to remove the load on output shaft, then release the brake.
- Remove the fan cover and attach the screws.
- Make sure to remove the screws and replace the fan cover before operating the motor.



Note) 1.5 kW and 2.2 kW motors: screw size = M6

■ Standard Terminal Box

1. Motor size: 0.1 to 0.4 kW (resin)

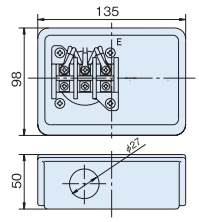
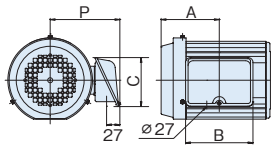
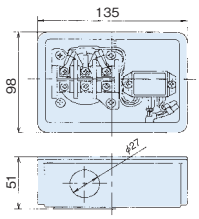
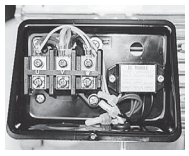
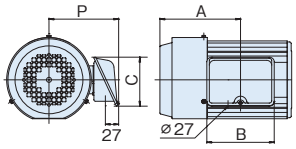
	Terminal dimensions	Terminal box position
Without brake	 	
With brake	 	

Motor size	A	P
0.1 kW	64.5	81
0.2 kW	102.5	81
0.4 kW	102.5	81

Motor size	A	P
0.1 kW	102.5	104.5
0.2 kW	119.5	104.5
0.4 kW	119.5	104.5

1. Terminal screw size: M3.5 (tightening torque: 0.8 N·m {Reference 0.08 kgf·m})
2. Ground terminal screw size: M4 (tightening torque 1.2 N·m {Reference 0.12 kgf·m})

2. Motor size: 0.75 kW (steel)

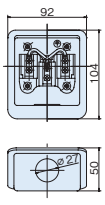
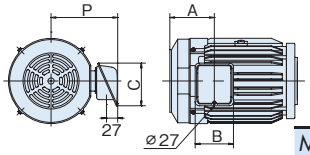
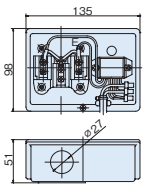
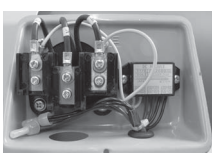
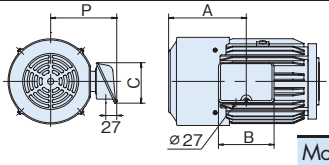
	Terminal dimensions	Terminal box position
Without brake	 	
With brake	 	

Motor size	A	B	C	P
0.75 kW	116.5	135	98	140

Motor size	A	B	C	P
0.75 kW	161.5	135	98	140

1. Terminal screw size: M4 (tightening torque 1.2 N·m {0.12 kgf·m})
2. Ground terminal screw size: M4 (tightening torque: 1.2 N·m {0.12 kgf·m})

3. Motor size: 1.5 to 3.7 kW (steel)

	Terminal dimensions	Terminal box position
Without brake	 	
With brake	 	

Motor size	A	B	C	P
1.5 kW	90	93	104	149
2.2 kW	108	93	104	162
3.7 kW	112	93	104	173

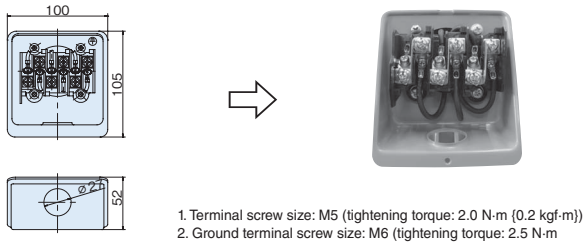
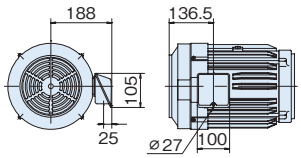
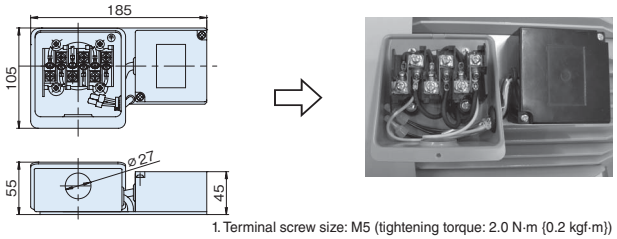
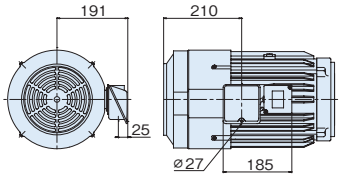
Motor size	A	B	C	P
1.5 kW	177.5	135	98	147
2.2 kW	188.5	135	98	160
3.7 kW	218	135	98	171

1. Terminal screw size: M4 (tightening torque 1.2 N·m {0.12 kgf·m})
2. Ground terminal screw size: M5 (tightening torque: 2.0 N·m {0.2 kgf·m})

Motor

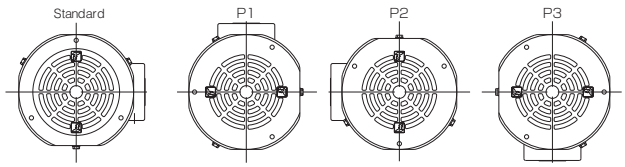
■ Standard Terminal Box

4. Motor size: 5.5 kW (steel)

	Terminal dimensions	Terminal box position
Without brake	 1. Terminal screw size: M5 (tightening torque: 2.0 N·m {0.2 kgf·m}) 2. Ground terminal screw size: M6 (tightening torque: 2.5 N·m {0.26 kgf·m})	
With brake	 1. Terminal screw size: M5 (tightening torque: 2.0 N·m {0.2 kgf·m}) 2. Ground terminal screw size: M6 (tightening torque: 2.5 N·m {0.26 kgf·m}) Note) 400 V class: rectifires are shipped with reducers, but not wired.	

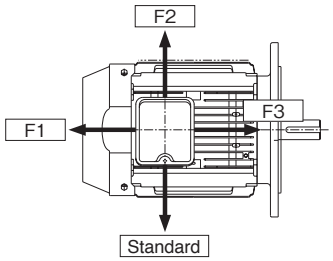
● Terminal box position

Terminal boxes can be mounted in any 90° position. Specify the position code when ordering. It is also possible to change the mounting position by removing the motor mounting bolts and turning the motor.

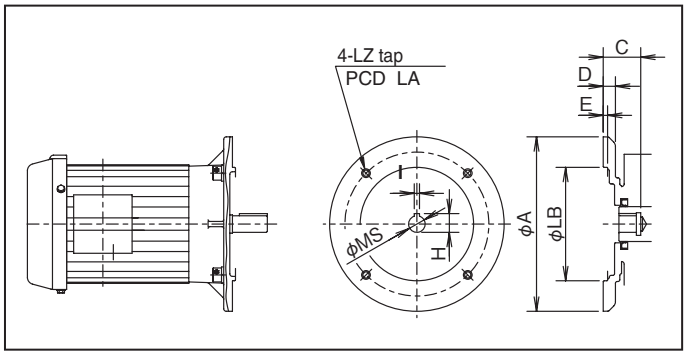


● Terminal box outlet direction

Terminal box outlet can be arranged in 90° degrees, except on 5.5 kW motors with brake. Specify the direction code when ordering.



■ Motor Flange Dimensions



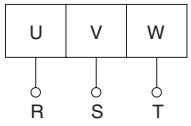
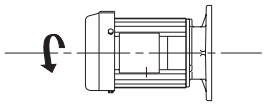
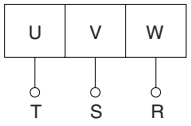
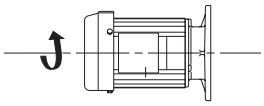
Unit: mm

Motor (kW)	ϕ A	ϕ LB	C	D	E	ϕ MS	H	I	LZ	LA	Mounting bolts
0.2	160	110	26	12	5	11	12.5*	4*	M8	130	M8 × 25
0.4	160	110	33	12	5	14	16.1	5	M8	130	M8 × 25
0.75	200	130	43	13	5	19	21.6	6	M10	165	M10 × 30
1.5	200	130	53	13	5	24	27.1	8	M10	165	M10 × 30
2.2, 3.7	250	180	63	14	6	28	31.1	8	M12	215	M12 × 30
5.5, (7.5)	300	230	83	16	6	38	41.1	10	M12	265	M12 × 35

* Motor flange dimensions are based on JIS C 4212: 2000 IP4X (totally enclosed).
* Standard 0.2 kW 4P motors are with keyways. Please contact Tsubaki representative for motors with D cut shafts.
* LB tolerance = G7

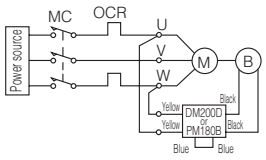
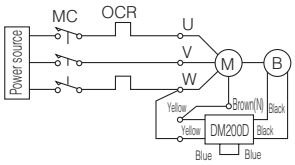
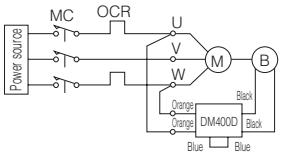
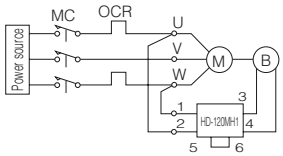
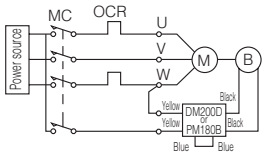
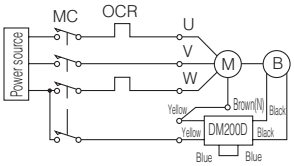
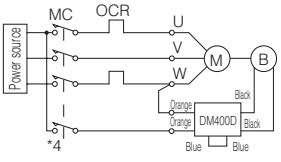
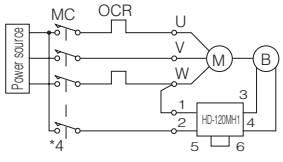
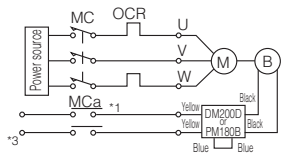
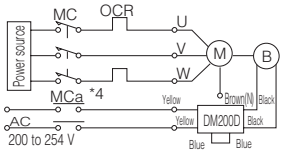
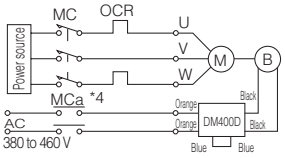
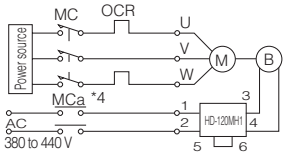
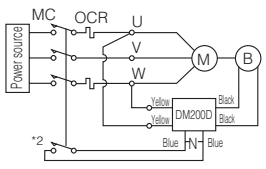
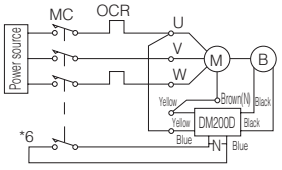
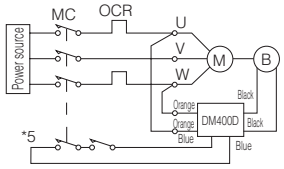
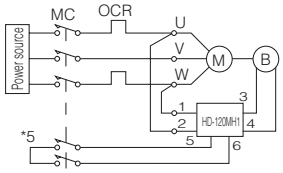
■ Wiring

1. Rotating direction

Motor size	Wiring	Rotating direction	Wiring	Rotating direction
0.1 kW to 5.5 kW				

2. Brake motor wirings

- Standard models are shipped with AC internal wiring.
- Brake response time will differ by wiring, refer to below and select the suitable wiring to the application.

Application		3-phase 200 V	3-phase 400 V		
		0.1 to 5.5 kW	0.1 to 0.4 kW	0.75 to 2.2 kW	3.7 kW, 5.5 kW
AC internal wiring	● For general use ● Standard shipping specifications				
AC external wiring	● To shorten the stop time ● When installing a phase advancing condenser.				
AC external operation	● For use with an inverter, set the inverter to MC. ● When operating the brake individually.	 *3: Brake power source 0.1 and 0.2 kW: 200 to 254 VAC 0.4, 0.75, and 3.7 kW: 200 to 220 VAC 1.5 and 2.2 kW: 200 to 230 VAC	 Note. The brown lead (N) wired into the wiring nut must be isolated from the terminal block. Also, use a 60 V transformer when using a transformer to wire rectifires.		
DC external wiring	● When stopping accuracy is required	 PM180B rectifire is for AC power supply only.			

Ⓜ : Motor Ⓑ : Brake MC: Magnetic contactor MCa: Auxiliary relay OCR: Overcurrent relay DM200D, PM180B, DM400D, HD-120MH1: rectifires
-N-: Protective element (varistor)

Note 1) The brake voltage is 90 VDC when inputting 200 VAC to DM200D and PM180B.

2) When DC external wiring, the brake power supply module can be damaged depending on the wiring length, wiring method, relay type, or other factors. Connect a varistor between terminals closer to the brake power supply (blue lead wire). For DM200D rectifires, select a 470 V varistor model from below table. DM400D rectifires are varistor built-in type and no need of additional installation.

Product	Manufacturer	Model
		For DM200D
Surge absorber	Panasonic	ERZV14D471
Zetwrap	Fuji Electric Device Technology	ENE471D-14A
Ceramic varistor	Nippon Chemi-Con	TND14V-471KB00AAA0

3) MCa *1 contact: resistant load = 200 VAC, 7 A or higher
MC *2 contact: resistant load = 200 VAC, 10 A or higher
MCa *4 contact: inductive load = 400 to 440 VAC, 1 A or higher
MCa *5 contact: inductive load = 400 to 440 VAC, 1 A or higher, and 2 or 3 contacts in series circuit

4) The contact on the auxiliary relay (MCa) used at *4 should be rated for 400 to 440 VAC inductive loads of 1 A or more.

5) The contacts on the auxiliary relay (MCa) used at *5 should be rated for 400 to 440 VAC inductive loads of 1 A or more and wired in series of two or three contacts.

Motor

■ Inverter Drive (VFD)

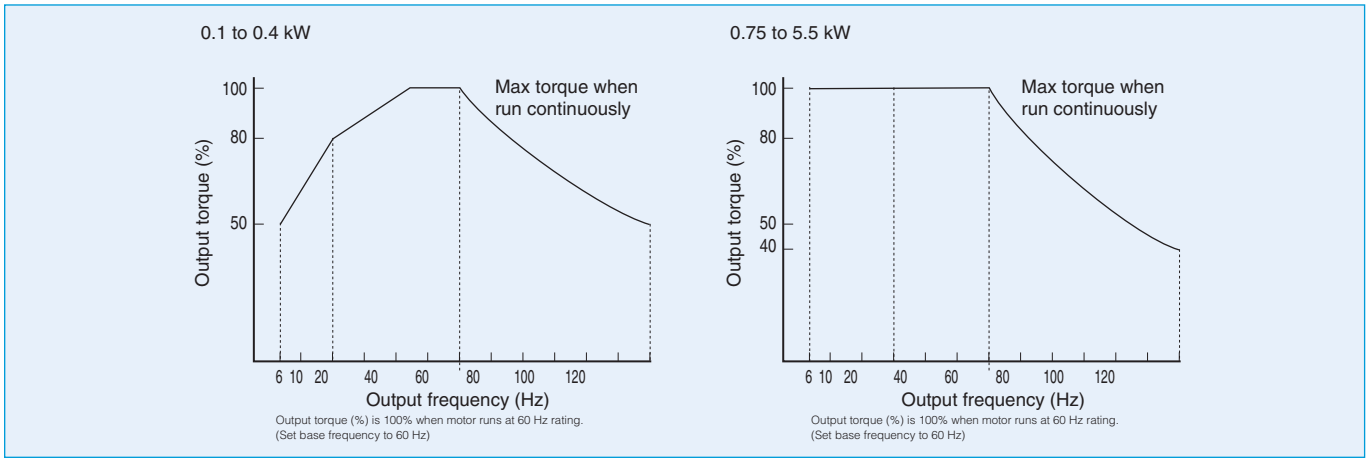
1. Frequency range

The maximum frequency is 120 Hz. Use within allowable frequency range of the inverter when operating at low frequency (low speed range).

2. Torque characteristics

Refer to the graphs below for frequency and torque characteristics.

- At high speeds, torque decreases inversely in proportion to the rotation speed, as the kW are kept stable. As the speed increases, so does the vibration and operating noise of the motor and fan, and the reduction portion.
- In mid speed ranges, output torque is basically at its rated torque.
- In low speed ranges, temperature rise becomes noticeable as the duty cycle and cooling efficiency drop. To prevent these effects from occurring, make sure to lower the torque as shown in the graph below. (0.1 to 0.4 kW motors only)



Note) Torque characteristics shown here are only for the motor itself, and Troi Drive and Worm Power Drive efficiencies must be taken into consideration.

3. When used with a brake

- When using an inverter, always wire the brake circuit referring to the diagram on page 218 and control the brake individually. It must be operated with its rated power source. For standard motors, brake leads are connected to the motor leads with terminal screws. Remove the screws and wire individually.
- Always brake at 60 Hz (1800 r/min) or lower. Braking at high speed ranges above 60 Hz may cause mechanical damage or abnormal abrasion wear on the brake linings.
- Low speed operation also lowers the motor's cooling capacity which can reduce the life of the motor in terms of thermal resistance. In such cases, reduce the duty of the brake under power.

4. Cautions

- When operating at low frequencies or above 60 Hz, reduce the torque as shown in the graph above.
- When inverter driving a 400 V class motor, dielectric breakdown may occur due to high voltage surges (microsurges) generated from the inverter switching. As a result, measures against microsurges are generally required for such motors. Tsubaki 400 V class of motor comes standard with micro sruge protection. In case its level is 1250 V or higher, install a supression filter or a reactor to the inverter side.
- Inverter driving are greater in temperature raise, noise, and vibration.
- To protect the motor from overheating, set up an electric thermal mechanism at general purpose motor characteristics, or use a thermal relay or other device between the inverter and the motor.
- When using at a base frequency of 50 Hz, set the output torque at 0.8x of the figures in above graph. (With 0.4 kW or less motors only)
- The motor may resonate depending on the rotating speed and frequency. When running the motor continuously, avoid the resonance frequency by changing the inverter carrier frequency.
- When test running under light loads, the motor may draw a large current at low frequencies. This is a characteristic of a motor and the current can be lowered by changing the settings in the inverter (lowering the torque boost and/or the V/F ratio, and using torque vector control).
- Continuous operation at frequencies above 60 Hz will cause the reducer to heat up and should be avoided. Contact Tsubaki representative for details.

■ Inverter Motor

Inverter motors are available for motor size 0.1 kW to 0.4 kW. Refer to page 242.

Option

Reducer Option ..... 229 - 241

- Mounting Bolt
- Mounting Feet
- Torque Arm
- Adaptor
- Output Shaft Cover
- Double Input Shaft
- Left Hand Worm
- Input Shaft with Tapped Holes
- Output Shaft with Taper Roller Bearing
- Output Shaft with Power-Lock
- Output Shaft with Taper Bush
- SWM(R) Series with Coupling
- TD Series with Motor
- Double Faced Flange
- Positioning Step on Installation Surface
- Housing Bottom with Tapped Holes
- Low Backlash Model
- Oil Gauge
- Drain Valve
- Ductile Cast Iron Housings (FCD)

Motor Option ..... 242 - 243

- Voltage
- Inverter Motors
- Global Series (International Standards)
- Outdoor Specification
- Encoder
- Manual Quick-release Brake
- Manual Shaft
- Hard Terminal Box
- Steel Fan Cover

Paint Option 244

- Paint Color
- Specified Colors
- Special Paint
- Special Rust-proof

Reducer Option

■ Mounting Bolt

EWJ/EWJM(R)/SWJ/SWJM(R) Series

Flange mountings bolts are available to order individually. All bolts are shipped with nuts.

Model example: J25–FMB

Model	Size	Quantity	Bolt size
J25-FMB	EWJ25 SWJ25	4	M6 × 60
J35-FMB	EWJ35 SWJ35	4	M8 × 80
J42-FMB	EWJ42 SWJ42	4	M10 × 90

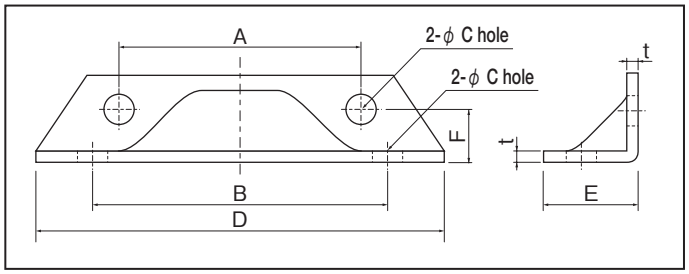
■ Mounting Feet

EWJ/EWJM Series

Mounting feet are are available as an option. Two feet with two sets of mounitng bolts and nuts will be shipped as a set. Contact Tsubaki representative for feet mounted shipment.

(1) Mounting feet dimension

Model example: EWJ35–L



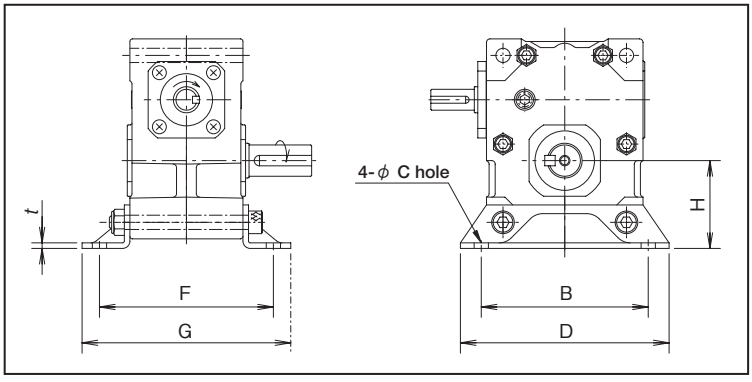
Unit: mm

Model	Size	A	B	C	D	E	F	t	Bolt size
EWJ25-L	EWJ25	57	76	6.2	90	20	12	2.3	M6 × 60
EWJ35-L	EWJ35	71	96	8.2	120	27.5	15	3.2	M8 × 80
EWJ42-L	EWJ42	88	111	10.2	135	37	23	3.2	M10 × 90

* Mounting feet are with surface treatment, and shipped unpainted.

(2) Feet mounted dimensions. Contact Tsubaki representative to have the mounting feet attached prior to shipment.

Model example: EWJ42E10R–LA



Unit: mm

Size	B	C	D	F	G	H	t
EWJ25	76	6.2	90	74	90	40	2.3
EWJ35	96	8.2	120	100	120	50.5	3.2
EWJ42	111	10.2	135	121	145	64	3.2

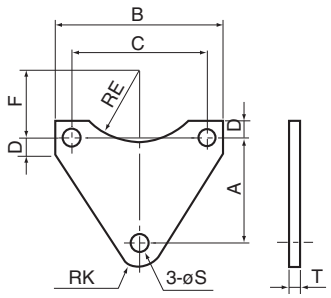
* Other mounting feet arrangements are possible, contact Tsubaki representative for details.

■ Torque Arm

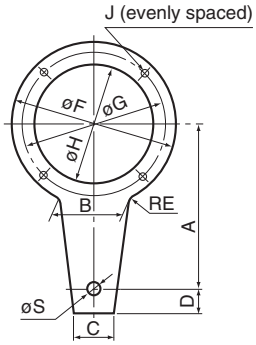
SWJ/SWJM(R)/SW/SWM(R) Series

Model example: SW200TA

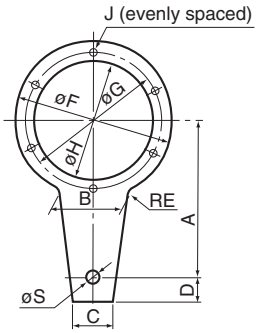
SWJ25TA/SW35TA/SW42TA



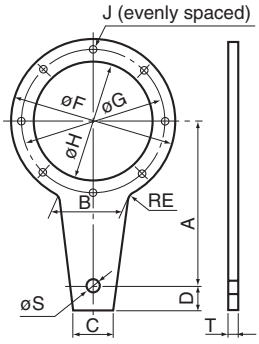
SW56TA/SWJ63TA



SW70TA to SW125TA



SW150TA to SW200TA



Unit: mm

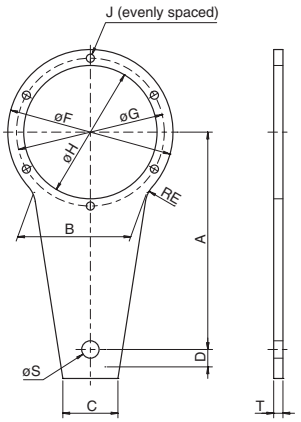
Size	A	B	C	D	RE	ϕ F	ϕ G	ϕ H	J	RK	ϕ S	T
SWJ25TA	37	71	57	7	30	28	–	–	–	9	6.6	4.5
SW35TA	54.5	90	71	9.5	37	35.5	–	–	–	12	9	6
SW42TA	64	110	88	11	45	41	–	–	–	15	11	6
SW56TA	140	60	35	20	25	140	120	100	4-ϕ9	–	11	6
SWJ63TA	170	75	45	25	30	170	145	120	4-ϕ11	–	14	9
SW70TA	175	75	45	25	30	177	157	137	6-ϕ9	–	14	9
SW80TA	230	90	45	25	35	205	180	160	6-ϕ11	–	16	9
SW100TA	250	100	50	30	40	230	205	185	6-ϕ11	–	18	9
SW125TA	320	125	50	30	50	285	255	230	6-ϕ14	–	20	12
SW150TA	380	150	70	40	60	335	300	270	8-ϕ14	–	24	12
SW175TA	440	175	70	40	70	385	350	320	8-ϕ16	–	26	16
SW200TA	500	200	80	50	80	420	380	340	8-ϕ18	–	32	16

* Optional torque arms are available for quick mounting on SWJ35, SWJ42, SWJ50, and SWJ70.
* All sizes are shipped with mounting bolts.

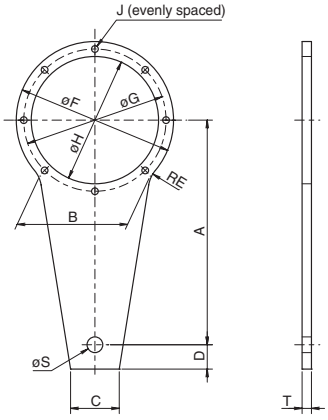
TD Series

Model example: TD225TA

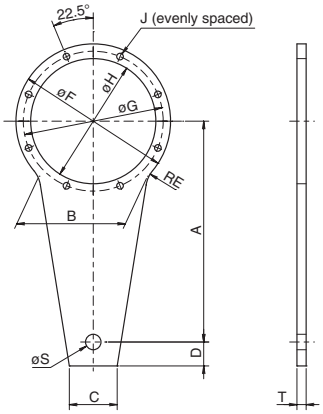
TD125TA



TD150TA to TD200TA



TD225TA to TD315TA



Unit: mm

Size	A	B	C	D	RE	F	G	H	J	S	T
TD125TA	375	195	95	50	50	285	255	230	6-ϕ14	30	16
TD150TA	450	235	110	55	60	335	300	270	8-ϕ14	36	19
TD175TA	525	265	120	60	70	385	350	320	8-ϕ16	39	22
TD200TA	600	295	130	65	80	420	380	340	8-ϕ18	42	25
TD225TA	675	305	140	70	90	430	390	355	8-ϕ18	45	32
TD250TA	750	325	150	75	100	480	430	390	8-ϕ22	48	36
TD280TA	840	375	170	85	110	535	490	455	8-ϕ22	56	36
TD315TA	945	420	190	90	120	600	550	510	8-ϕ22	60	45

* All sizes are shipped with mounting bolts.

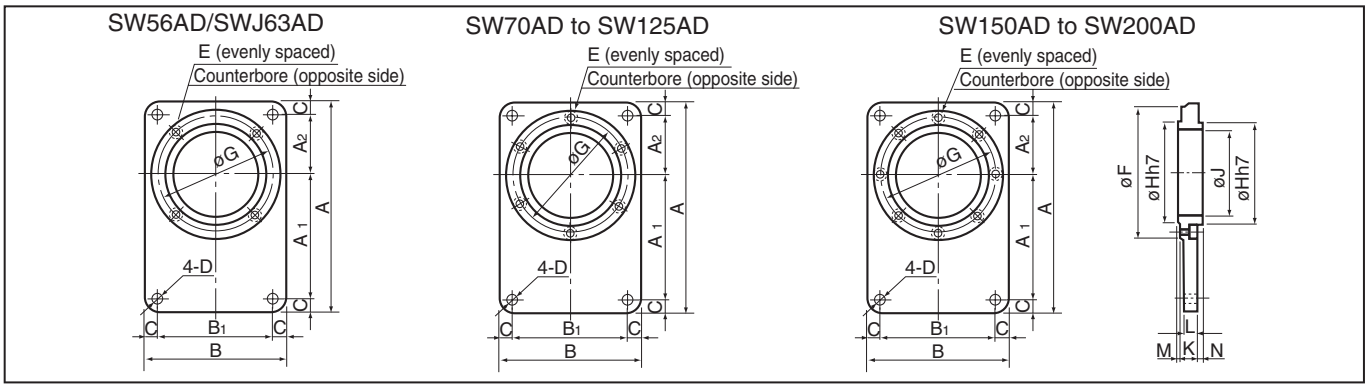
Reducer Option

■ Adaptor

SWJ/SWJM(R)/SW/SWM(R) Series

Adaptors with positioning steps are available. Contact Tsubaki representative for details.

Model example: SW70AD



Unit: mm

Size	A	A_1	A_2	B	B_1	C	D	E	Facing diameter/ Depth	F	G	H	J	K	L	M	N
SW 56AD	213	127	60	146	120	13	11	4-φ9	φ17, 10.5	140	120	100	85	20	16	4	6
SWJ63AD	250	148	72	174	144	15	14	4-φ11	φ20, 13	165	145	120	100	21	18	4	6
SW 70AD	270	165	75	180	150	15	14	6-φ9	φ17, 11	177	157	137	120	21	18	4	6
SW 80AD	310	180	86	216	172	22	16	6-φ11	φ20, 13	205	180	160	140	25	22	4	8
SW100AD	340	195	95	240	190	25	16	6-φ11	φ20, 13	230	205	185	160	25	22	4	8
SW125AD	410	235	115	290	230	30	20	6-φ14	φ23, 16	285	255	230	200	30	27	4	8
SW150AD	485	275	140	350	280	35	24	8-φ14	φ23, 16	335	300	270	240	36	33	4	9
SW175AD	555	315	160	400	320	40	26	8-φ16	φ26, 19	385	350	320	280	40	36	4	9
SW200AD	620	350	180	450	360	45	32	8-φ18	φ30, 21	420	380	340	300	45	42	4	9

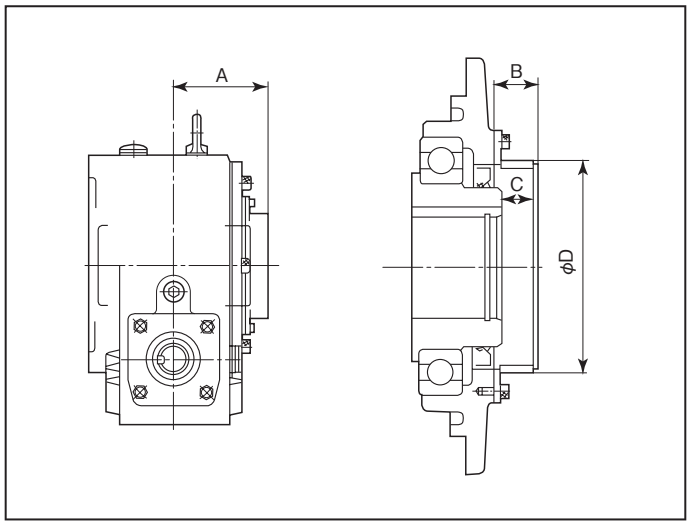
* Adaptor SW56AD: for SWJ50.
* Adaptor SW70AD: for SWJ70.
* All sizes are shipped with mounting bolts.

■ Output Shaft Cover

SWJ/SWJM(R)/SW/SWM(R)/TD Series

These protective covers fit on special machined hollow output models. Contact Tsubaki representative for detail.

Model example: SW125CP
TD175CP



Unit: mm

	Size	A	B	C	D
SW Series	SW 70CP	84	22	17	76
	SW 80CP	94	25	18	89
	SW100CP	110	28	20	102
	SW125CP	123	28	20	140
	SW150CP	154	35	24	140
	SW175CP	165	35	25	140
	SW200CP	175	35	25	165
TD Series	TD125CP	123	28	20	140
	TD150CP	154	35	24	140
	TD175CP	165	35	25	140
	TD200CP	175	35	25	165
	TD225CP	196	40	31	170
	TD250CP	214	40	31	190
	TD280CP	240	45	33	220
	TD315CP	267	50	35	240

* Contact Tsubaki representative for output shaft covers for models SWJ25 to SWJ63.

■ Double Input Shaft

EWJ/EWJM(R)/EW/EWM(R)/SWJ/SWJM(R)/SW/SWM(R)/TD Series

Double input shaft types are avalable. Both input dimensions are the same on Worm Power Drives, and contact Tsubaki representative for TD Series.

Model examples

EWJ/EWJM Series: EWJ25E10L–T2

SWJ/SWJM Series: SWJ25E60DF–T2

Double input shaft

EW/EWM Series: EW100B30–1–1–L

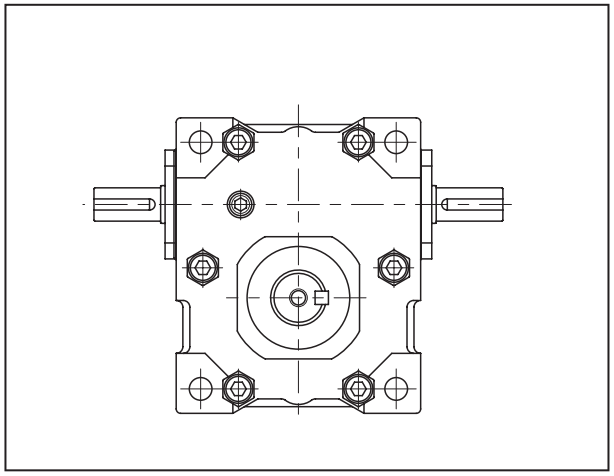
SW/SWM Series: SW150V20–1–1–RF

TD Series: TD250H60–1–1–BDF

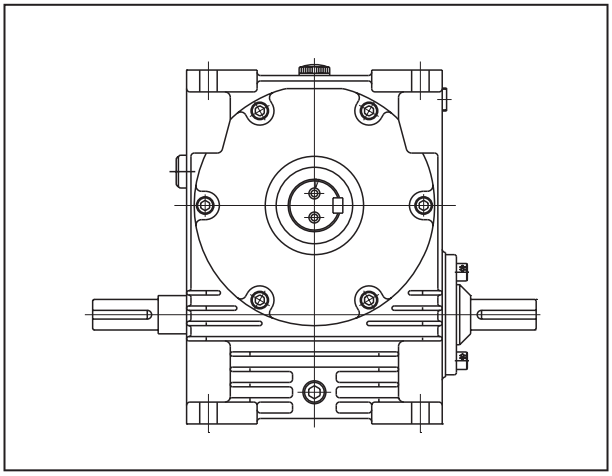
Double input shaft

* Note that codes are different for the EWJ/EWJM(R)/SWJ/SWJM(R) series and the EW/EWM(R)/SW/SWM(R)/TD series.
* Keyway positions do not match one another on double output shafts. Contact Tsubaki representative when required.
* Filters are installed in only one input side on EW(M)(R)80 to 200 and SW(M)(R)80 to 200.

Reference drawing EWJ42E



Reference drawing EW100B



■ Left Hand Worm

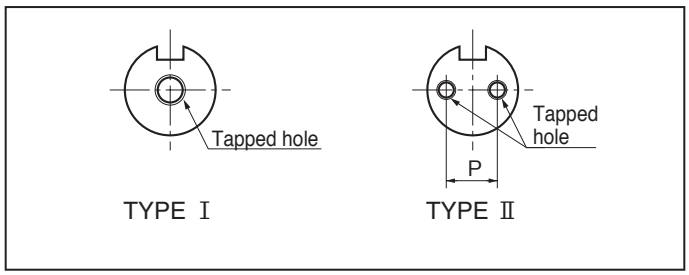
EWJ/EWJM(R)/EW/EWM(R)/SWJ/SWJM(R)/SW/SWM(R) Series

Left hand worms are available with the same transfer capacity and external dimensions, but the rotating direction of the output shaft will differ with respect to the input shaft.
Contact Tsubaki representative for details.

Reducer Option

■ Input Shaft with Tapped Holes

Tapped holes can be machined on the input shaft ends to prevent mounted sprockets and gears from falling off.
EWJ/EW/SW/TD Series: Tapped holes are machined on output shafts.



EWJ/EW/SWJ/SW Series

Single reduction type

Unit: mm

Size	EWJ25 SWJ25	EWJ35 SWJ35	EWJ42 SWJ42	EWJ50 SWJ50	EWJ63 SWJ63	EWJ70 SWJ70	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
Type	-	-	Ⅰ	Ⅰ	Ⅰ	Ⅰ	Ⅰ	Ⅰ	Ⅱ	Ⅱ	Ⅱ	Ⅱ
Size	-	-	M6	M6	M8	M8	M8	M8	M8	M8	M8	M10
Depth (L)	-	-	12	12	12	12	12	12	12	12	12	15
Pitch (P)	-	-	-	-	-	-	-	-	18	20	22	26

Double reduction type

Unit: mm

Size	EWJ50	EWJ63	EWJ70	EW80 SW80	EW100 SW100	EW125 SW125	EW150 SW150	EW175 SW175	EW200 SW200
Type	-	Ⅰ	Ⅰ	Ⅰ	Ⅰ	Ⅰ	Ⅰ	Ⅰ	Ⅱ
Size	-	M6	M6	M8	M8	M8	M8	M8	M8
Depth (L)	-	12	12	12	12	12	12	12	12
Pitch (P)	-	-	-	-	-	-	-	-	18

TD Series

Single reduction type

Unit: mm

Size	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
Type	Ⅱ	Ⅱ	Ⅱ	Ⅱ	Ⅱ	Ⅱ	Ⅱ	Ⅱ
Size	M8	M8	M8	M10	M10	M12	M12	M12
Depth (L)	12	12	12	15	15	18	18	18
Pitch (P)	18	20	22	26	32	40	45	50

Double reduction type

Unit: mm

Size	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
Type	Ⅰ	Ⅰ	Ⅰ	Ⅱ	Ⅱ	Ⅱ	Ⅱ	Ⅱ
Size	M8	M8	M8	M8	M8	M8	M8	M8
Depth (L)	12	12	12	12	12	12	12	12
Pitch (P)	-	-	-	18	18	20	22	22

■ Output Shaft with Taper Roller Bearing

SWJ/SWJM(R)/SW/SWM(R) Series

Taper roller bearings are available for heavy loads, when the radial and/or axial load is lower than the rated allowable load.

Allowable radial load

Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
SWJ70	10	8,043	{ 821}	8,447	{ 862}	8,981	{ 916}	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}
	30	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}
	60	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}	9,320	{ 951}
SW80	10	9,931	{1,013}	10,404	{1,062}	11,098	{1,132}	11,748	{1,199}	14,325	{1,462}	15,513	{1,583}
	30	14,603	{1,490}	15,413	{1,573}	15,513	{1,583}	15,513	{1,583}	15,513	{1,583}	15,513	{1,583}
	60	15,513	{1,583}	15,513	{1,583}	15,513	{1,583}	15,513	{1,583}	15,513	{1,583}	15,513	{1,583}
SW100	10	13,945	{1,423}	14,681	{1,498}	15,543	{1,586}	16,455	{1,679}	17,199	{1,755}	17,199	{1,755}
	30	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}
	60	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}	17,199	{1,755}
SW125	10	23,177	{2,365}	24,366	{2,486}	25,973	{2,650}	27,245	{2,780}	28,763	{2,935}	28,763	{2,935}
	30	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}
	60	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}	28,763	{2,935}
SW150	10	22,080	{2,253}	23,171	{2,364}	24,570	{2,507}	25,863	{2,639}	30,863	{3,149}	36,231	{3,697}
	30	32,744	{3,341}	34,498	{3,520}	36,231	{3,697}	36,231	{3,697}	36,231	{3,697}	36,231	{3,697}
	60	36,231	{3,697}	36,231	{3,697}	36,231	{3,697}	36,231	{3,697}	36,231	{3,697}	36,231	{3,697}
SW175	10	29,636	{3,024}	31,115	{3,175}	33,183	{3,386}	35,129	{3,585}	42,442	{4,331}	47,785	{4,876}
	30	43,853	{4,475}	46,327	{4,727}	47,785	{4,876}	47,785	{4,876}	47,785	{4,876}	47,785	{4,876}
	60	47,785	{4,876}	47,785	{4,876}	47,785	{4,876}	47,785	{4,876}	47,785	{4,876}	47,785	{4,876}
SW200	10	34,041	{3,474}	35,741	{3,647}	37,923	{3,870}	39,794	{4,061}	48,000	{4,898}	55,272	{5,640}
	30	50,337	{5,136}	53,046	{5,413}	55,272	{5,640}	55,272	{5,640}	55,272	{5,640}	55,272	{5,640}
	60	55,272	{5,640}	55,272	{5,640}	55,272	{5,640}	55,272	{5,640}	55,272	{5,640}	55,272	{5,640}

Allowable axial load

Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
SWJ70	10	10,177	{1,038}	10,041	{1,025}	9,866	{1,007}	9,714	{ 991}	9,227	{ 941}	8,760	{ 894}
	30	10,646	{1,086}	10,582	{1,080}	10,495	{1,071}	10,420	{1,063}	10,232	{1,044}	9,957	{1,016}
	60	10,790	{1,101}	10,752	{1,097}	10,713	{1,093}	10,679	{1,090}	10,569	{1,078}	10,365	{1,058}
SW80	10	14,817	{1,512}	14,568	{1,487}	14,333	{1,463}	14,180	{1,447}	13,713	{1,399}	13,486	{1,376}
	30	15,859	{1,618}	15,775	{1,610}	15,682	{1,600}	15,607	{1,593}	15,339	{1,565}	15,120	{1,543}
	60	16,144	{1,647}	16,079	{1,641}	16,002	{1,633}	15,940	{1,627}	15,865	{1,619}	15,698	{1,602}
SW100	10	23,826	{2,431}	23,575	{2,406}	23,109	{2,358}	22,895	{2,336}	21,998	{2,245}	21,665	{2,211}
	30	25,318	{2,583}	25,191	{2,571}	25,046	{2,556}	24,943	{2,545}	24,516	{2,502}	24,172	{2,467}
	60	25,756	{2,628}	25,659	{2,618}	25,541	{2,606}	25,447	{2,597}	25,284	{2,580}	25,038	{2,555}
SW125	10	35,087	{3,580}	34,690	{3,540}	34,223	{3,492}	33,636	{3,432}	32,258	{3,292}	31,517	{3,216}
	30	37,018	{3,777}	36,839	{3,759}	36,609	{3,736}	36,398	{3,714}	35,815	{3,655}	35,173	{3,589}
	60	37,580	{3,835}	37,488	{3,825}	37,308	{3,807}	37,162	{3,792}	36,803	{3,755}	36,422	{3,717}
SW150	10	22,282	{2,274}	21,790	{2,224}	21,098	{2,153}	20,568	{2,099}	18,606	{1,899}	17,043	{1,739}
	30	24,699	{2,520}	24,481	{2,498}	24,168	{2,466}	23,903	{2,439}	23,176	{2,365}	22,049	{2,250}
	60	25,374	{2,589}	25,233	{2,575}	25,048	{2,556}	24,843	{2,535}	24,257	{2,475}	23,745	{2,423}
SW175	10	33,356	{3,404}	32,758	{3,343}	32,121	{3,278}	31,717	{3,236}	30,020	{3,063}	26,596	{2,714}
	30	36,325	{3,707}	36,137	{3,687}	35,913	{3,665}	35,732	{3,646}	34,922	{3,564}	33,416	{3,410}
	60	37,158	{3,792}	36,990	{3,775}	36,802	{3,755}	36,532	{3,728}	35,924	{3,666}	34,986	{3,570}
SW200	10	32,875	{3,355}	32,222	{3,288}	31,304	{3,194}	30,439	{3,106}	28,345	{2,892}	23,666	{2,415}
	30	36,139	{3,688}	35,855	{3,659}	35,449	{3,617}	35,201	{3,592}	34,288	{3,499}	31,661	{3,231}
	60	37,111	{3,787}	36,938	{3,769}	36,687	{3,744}	36,444	{3,719}	35,568	{3,629}	34,234	{3,493}

Reducer Option

■ Output Shaft with Power-Lock

(Friction Type Locking Device)

Model example

SW/SWM(R) Series: **SW100B30LF -K**

TD Series 125 to 200: **TD200H30BLF -K**

With Power-Lock

Shaft arrangement (position on flange face)

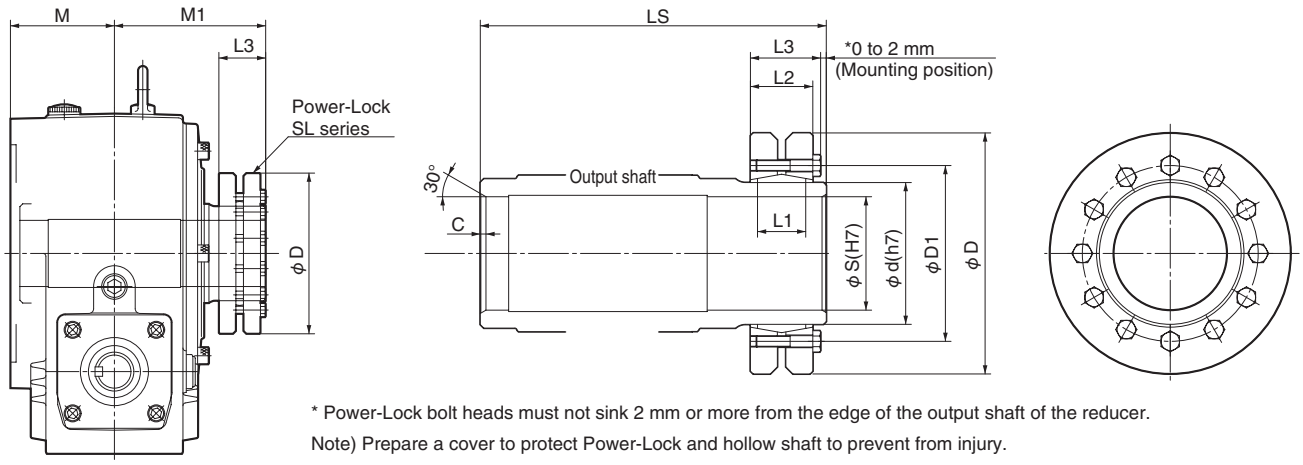
SWJ/SWJM(R) Series: **SWJ50E60DF-KL**

TD Series 225 to 315: With Power-Lock*

* KL: Power-Lock to be mounted on the left side, when viewing from the input shaft.
* KR: Power-Lock to be mounted on the right side, when viewing from the input shaft.

* Contact Tsubaki representative for EW-H and EWM-H types.

● Dimensions



* Power-Lock bolt heads must not sink 2 mm or more from the edge of the output shaft of the reducer.

Note) Prepare a cover to protect Power-Lock and hollow shaft to prevent from injury.

● Combinations/dimensions/capacity

	Reducer Size	Power-Lock package: Tsubaki Power-Lock SL series model number {Hub OD × Outer diameter d × D}	Transfer torque N·m {kgf·m}	Dimensions (mm) φS (H7)	D1	L1	L2	L3	M	M1	LS	C	Tightening bolts: Pieces	Size	Tightening torque MA N·m {kgf·m}	Estimated mass kg
SWJ/SWJM/SW/SWM Series	SWJ50	PL044×080SL	174 { 17.7}	30	61	20	25.5	29.5	56	95	149	1.5	7	M 6 × 20	11.8 { 1.2}	0.6
	SWJ63	PL044×080SL	285 { 29.0}	35	61	20	25.5	29.5	66	105	169	1.5	7	M 6 × 20	11.8 { 1.2}	0.6
	SWJ70	PL055×100SL	320 { 32.7}	40	75	23	30.5	34.5	70	106	171	2	8	M 6 × 25	11.8 { 1.2}	1.1
	SW80	PL068×115SL	562 { 57.4}	50	86	23	30.5	34.5	78	115	189	3	10	M 6 × 25	11.8 { 1.2}	1.4
	SW100	PL080×145SL	773 { 78.9}	55	100	25	32.5	38	90	135	222	3	7	M 8 × 30	29.4 { 3.0}	1.9
	SW125	PL100×170SL	1900 { 194.0}	70	124	34	44	49.5	110	162	262	3	12	M 8 × 35	29.4 { 3.0}	4.7
	SW150	PL110×185SL	2740 { 280.0}	80	136	39	50	57	125	193	318	4	9	M10 × 40	57.8 { 5.9}	5.9
	SW175	PL125×215SL	3920 { 401.0}	90	160	42	54	61	135	210	345	4	12	M10 × 40	57.8 { 5.9}	8.3
	SW200	PL140×230SL	5510 { 563.0}	100	175	46	60.5	68.5	145	230	375	4	10	M12 × 45	98.0 {10.0}	10
TD Series	TD125H	PL 90×170SL-TK	3889 { 397.0}	70	127	50	64.5	72.5	110	184.5	284.5	3	8	M12	245 {25.0}	7
	TD150H	PL110×205SL-TK	6166 { 629.0}	80	160	88	104	114	125	256	381	4	8	M16	245 {25.0}	16
	TD175H	PL110×205SL-TK	7903 { 806.0}	90	160	88	104	114	135	261	396	4	8	M16	480 {49.0}	16
	TD200H	PL140×250SL-TK	11138 {1137.0}	100	201	103	120	133	145	300	445	4	6	M20	480 {49.0}	27
	TD225H	PL140×250SL-TK	17542 {1790.0}	110	201	103	120	133	162	312	472	4	6	M20	480 {49.0}	27
	TD250H	PL165×290SL-TK	22646 {2311.0}	125	231	114	134	147	180	349	527	5	9	M20	480 {49.0}	40
	TD280H	PL175×305SL-TK	30110 {3072.0}	130	239	122	142	155	205	384.5	586.5	5	10	M20	480 {49.0}	46
	TD315H	PL200×350SL-TK	46790 {4774.0}	160	264	122	142	155	230	407	634	5	12	M20	480 {49.0}	61

Note 1) Combinations are for Tsubaki Power-Lock/SL series. Consult Tsubaki repersentative for other combinations.
2) Transfer capacities are the maximum values of Power-Lock, not the reducers.
3) Specify the mounting position of the Power-Lock for models SWJ, SWJM, TD225 to 315H.
4) Refer to the dimensions of the reducer for details.

■ Output Shaft with Power-Lock

● Power-Lock handling

1. Mounting procedures

*These procedures outline the standard torque arm mounting for a Power-lock.

- The Power-Lock is shipped temporarily fixed to the output shaft. After removing it from the reducer, mount it on the machine/equipment using the procedures below.
- These procedures are for standard installation (mount the Power-Lock on the counter flange face side, position the flange toward the machine/equipment side, and mount the Power-Lock to the end of the driven shaft).
- Recommended tolerance for driven shaft diameter: h6

1) Make sure there are no scratches or dust on the periphery of the driven shaft (recommended tolerance: h6), and the hollow output shaft of the reducer. Using the lifting bolt on the top surface of the reducer, suspend the reducer and insert it into the driven shaft.

2) Thoroughly clean all dust and oil from the periphery of the output shaft of the reducer and inner shaft of the Power- Lock with a rag. Lightly push the Power-Lock onto the periphery of the reducer output shaft.
Note) If the Power-Lock is too heavy, disassemble it and reassemble it on the output shaft.
Note) The bolts and main unit of the Power-Lock SL Series are coated with a special lubricant and require no further lubrication.

3) After inserting to the prescribed position, determine the relative positions (circumferential and axial) of the driven shaft and reducer output shaft.
Once the position has been determined, use a torque wrench to lightly tighten the roughly diagonal tightening bolts (In Fig. 2, work from bolt (1) → bolt (5)).
Note) 1/4 fastening torque (refer to MA value on page 235) is ideal.

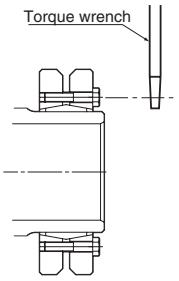


Figure 1 Mounting

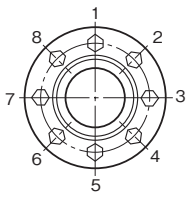


Figure 2 Bolt tightening sequence

4) After the positioning is fixed, tighten the other bolts in sequence.
Note) As in (3) above, tighten the bolts to approximately 1/4 fastening torque.
Note) When tightening, work clockwise from the first bolt. Tighten each bolt no more than 30° each. (In Figure 2, repeat (1) → (2) → (3) → (4) → (5) → (6) → (7) → (8) → (1).)

5) Continue tightening in the same sequence as in Step 3, this time increasing the torque to 1/2 (refer to MA value on page 235).

6) Continue tightening in the same sequence as in Step 3, this time using the prescribed torque (refer to MA value on page 235).

7) Finally, tighten all tightening bolts clockwise in sequence with the specified torque. Repeat this several times. This completes the installation.

2. Removal procedures

*These procedures outline the standard torque arm mounting for a Power-lock.

Note) Make sure power to the machine and equipment is turned off when removing.
Note) If the bolts in the Power-Lock are loosened carelessly, the Power-Lock may suddenly release and pop off. This will also free the reducer and put it in an unbalanced state where it could turn and be very dangerous. Always verify the following points:

- Make sure there is no torque or thrust load on the output shaft of the reducer. Make sure to remove any loads attached.
- If the weight of the reducer and the Power-Lock is heavy, place them in a stable condition. (The lifting bolt on the reducer can be used for this.)

Note) Forcibly removing the Power-Lock from a rusted shaft can leave scratches on the shaft and render it unusable. If rust exists, remove it with a commercially available rust removal spray.

Make sure to follow the above directions before performing the procedures below.

1) Loosen the Power-Lock tightening bolts in sequence. As mentioned in the notes, do not completely remove the bolts at once. Loosen each tightening bolt head by about 30°.

2) After confirming that the Power-Lock has fully released, suspend the reducer by its lifting bolt and remove it from the driven shaft.

3. General notes

1) Always use a torque wrench when tightening bolts. Failure to use a torque wrench with an adjustable dial is inaccurate and can cause problems. Also note that using a pipe as a lever for the torque wrench gives inaccurate tightening torque and should never be done.

2) Do not use any bolts other than those supplied with this product. In case of damage or loss, contact your Tsubaki dealer for replacement or new bolts.

4. Reusability

- If reusing the removed taper Power-Lock, thoroughly remove any dirt from it Power-Lock. The bolts and main unit of the Power-Lock/SL Series are coated with a special lubricant If you notice the coating is peeling off, coat it with molybdenum anti-friction grease (Molycoat, etc.) prior to reuse.

5. Ambient conditions

- The Power-Lock SL Series can be used outdoors in an ambient temperature range of -30°C to +200°C. However, in this case the Power-Lock is considered part of the reducer which limits it to the ambient conditions of the reducer and motor.
  Use in accordance with the standard specifications on pages 13 to 14.

Reducer Option

■ Output Shaft with Taper Bush

Model example

SW100B30LF –TB 40

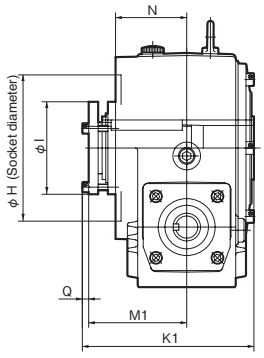
- Mounting direction
- Shaft arrangement (position on flange face)
- With taper bush
- Shaft bore diameter (Ex.: 40 = ϕ 40)

* Output shaft with taper bush type is also available on EW-H and EWM-H models. Contact Tsubaki represntative for detail.

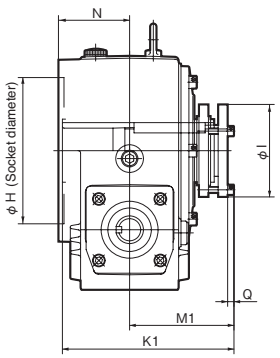
● Dimensions

[Mount Style]

● Standard: install to the flange side.

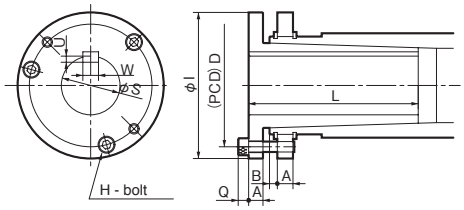


● Option: install to the non-flange side.

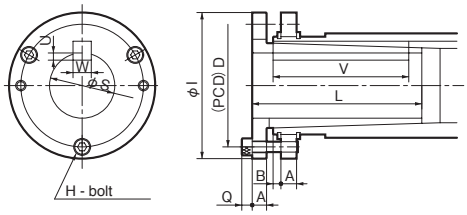


[Taper Bush Types]

● Type I



● Type II



● Dimensions

Unit: mm

Size	K1	M1	ϕH (H7)	N	ϕI	L	Q	A	B	D (PCD)	H - bolt	Bolt tightening torque N·m {kgf·m}
SWJ70	159	94	137	70	85	97	6	9	3	72	M6 × 30	13.7 {1.4}
SW80	197	115	160	78	105	117	8	12	5	87	M8 × 40	34.3 {3.5}
SW100	217	124	185	90	117	130	8	12	5	99	M8 × 40	34.3 {3.5}
SW125	267	157	230	110	150	160	10	15	5	128	M10 × 50	67.6 {6.9}
SW150	309	174	270	125	162	187	10	15	5	140	M10 × 50	67.6 {6.9}

Size	S (H7)	W	U	V	Type	Key for driven shaft
SWJ70	25	8	4	-	I	-
	30	8	4	-	I	-
	35	10	5	60	II	Supplied
	40	12	5	60	II	Supplied
SW80	35	10	5	-	I	-
	40	12	5	-	I	-
	45	14	5.5	90	II	Supplied
	50	14	5.5	90	II	Supplied
SW100	40	12	5	-	I	-
	45	14	5.5	-	I	-
	50	14	5.5	90	II	Supplied
	55	16	6	90	II	Supplied

Size	S (H7)	W	U	V	Type	Key for driven shaft
SW125	55	16	6	-	I	-
	60	18	7	-	I	-
	65	18	7	90	II	Supplied
	70	20	7.5	90	II	Supplied
SW150	60	18	7	-	I	-
	70	20	7.5	-	I	-
	75	20	7.5	90	II	Supplied
	80	22	9	90	II	Supplied

■ Output Shaft with Taper Bush

● Taper bush handling

1. Mounting procedures

These procedures outline the standard torque arm mounting.

- The taper bush is shipped temporarily fixed to the output shaft. After removing it from the reducer, mount it on the machine/equipment using the procedures below.
- These procedures are for standard installation (mount the taper bush on the flange face side, position the flange toward the machine/equipment side, and mount the taper bush between the machine/equipment and reducer).
- Recommended tolerance for driven shaft diameter: g7

(1) Taper bush Type I

1) Make sure there are no marks or dust on the outer periphery of the driven shaft, and install the key prepared by the customer.
   Note) Only the Type II driven shaft key is shipped with the reducer.
2) Thoroughly clean all dust and oil from the inner and outer peripheries of the taper bush with a rag. Then line up the driven shaft key and insert the taper bush. Once inserted, install the provided key in the keyway on the outer periphery of the taper bush.
   Note) Do not coat the taper bush with any oil.
3) Thoroughly clean all oil and dust from the inner periphery of the hollow output shaft on the reducer with a rag. Then suspend the reducer by its lifting bolt, lineup the keyway as in Step 2, and insert it into the taper bush.
4) Verify that the reducer is installed in the correct position with respect to the machine/equipment. Align the tightening bolt to the threads on the flange of the taper bush and tighten.
   Note) Use a torque wrench set to the torque outlined in Table 1 to accurately tighten the bolts.
5) After tightening the bolts, verify that the end face of the hollow output shaft is not interfering with the taper bush.
   Note) If the end face of the hollow output shaft is interfering, either the shaft diameter of the driven shaft is too small or the tightening bolts are not tightened evenly.

(2) Taper bush Type II

- For Type II, the driven shaft key doubles as the hollow output shaft key. Therefore, the basic procedure is the same as for Type I except that the supplied key is used.

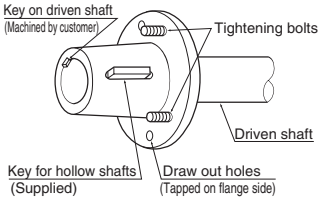


Figure 1 Type I taper bush

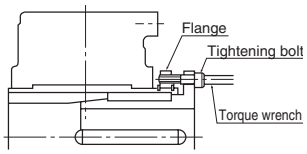


Figure 2 Mounted taper bush

2. Removal

These procedures outline the standard torque arm mounting.
Note) Make sure to turn off the machine and equipment when removing.
Note) If the tightening bolts in the taper bush are loosened carelessly, the taper bush may suddenly unlock and free the reducer, putting it in an unbalanced state where it could turn and be very dangerous. Always verify the following points:

- Make sure there is no torque or thrust load on the taper bush and/or the reducer.
- If the weight of the reducer is heavy, place it in a stable condition. (The lifting bolt on the reducer can be used for this.)

Note) Verify that the tightening bolts do not have any rust on them. Attempting to forcibly remove rusty tightening bolts can damage the threads and make it impossible to remove. Additionally, the bolts cannot be reused. If rust exists, remove it with a commercially available rust removal spray.

Make sure to follow the above directions before performing the procedures below.

1) Lift the reducer using the lifting bolt on the top surface of the reducer.
2) Loosen the taper bush tightening bolts in sequence.
   Note) As mentioned in the notes, do not completely remove the bolts at once. Loosen each tightening bolt head by about 30°.
3) Take the removed bolts and insert them into the two draw holes in the bush. Tighten the bolts which will push out the taper bush and release the lock.
4) After confirming that the taper bush is completely released, remove the reducer from the driven shaft.

3. Flange mounting

- A torque arm mounting is assumed for mounting and fixing a taper bush because there should be no thrust load on the driven shaft and the reducer's bearings.
- If using the taper bush type for flange mounting, follow the procedures below and make sure there is no thrust load on the driven shaft and the reducer's bearings.

1) Make the driven shaft free in the thrust direction.
2) Insert the taper bush into the driven shaft, then insert and fix the reducer.
3) Fix the driven shaft so that it receives no thrust.

4. Allowable radial load on output shaft

- Use within the allowable radial load (Table 2).
- The allowable radial load is the value that can act at dimension S (hollow output shaft bore) from the end face of the taper bush.

5. General notes

1) Always use a torque wrench to tighten the tightening bolts. Failure to use a torque wrench with an adjustable dial is inaccurate and can cause problems. Also note that using a pipe as a lever for the torque wrench gives inaccurate tightening torque and should never be done.
2) Do not use any bolts other than those supplied with this product. In case of damage or loss, contact your Tsubaki dealer for replacement or new bolts.
3) The taper bush tightening bolts are also used as draw bolts during removal. Provide enough room to remove the bolts by referring to the bolt lengths and PCD on page 247.

6. Reusability

- If reusing the removed taper bush, thoroughly remove any dirt from it with a rag.

7. Ambient conditions

- The taper bush is part of the producer. Refer to the ambient conditions for the reducer and the motor. Refer to pages 13 to 18.

Table 1 Tightening torques for tightening bolts

Reducer size		SWJ70	SW80	SW100	SW125	SW150
Bolt size		M6	M8	M8	M10	M10
Tightening torque	N·m	13.7	34.3	34.3	67.6	67.6
	kgf·m	1.4	3.5	3.5	6.9	6.9

Note) Tightening torques are indicated per bolt. Tightening torques are indicated per bolt. Bolt strength class is 10.9.

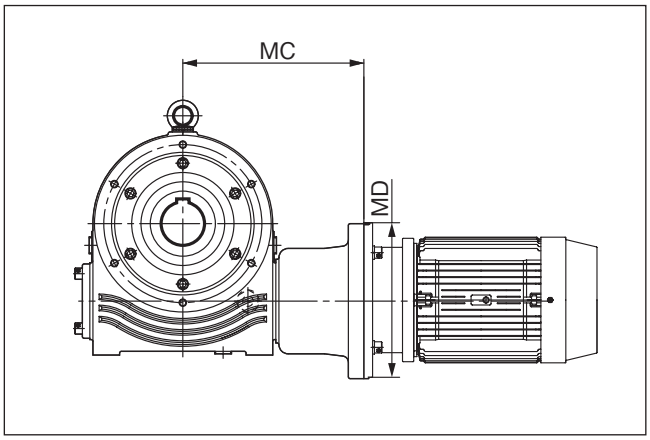
Table 2 Allowable radial load on output shaft

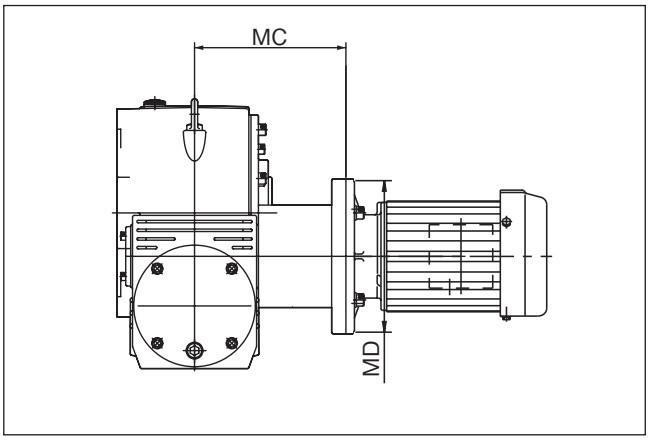
Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
SWJ70	10	2145	219	2230	228	2348	240	2456	251	2954	301	5750	587
	30	3385	345	3563	364	3800	388	4014	410	5011	511	9236	942
	60	4520	461	4793	489	5180	529	5524	564	6904	704	9320	951
SW80	10	2930	299	3029	309	3233	330	3455	353	4412	450	8992	918
	30	4935	504	5223	533	5636	575	6017	614	7539	769	14185	1447
	60	6730	687	7125	727	7670	783	8171	834	10432	1064	15513	1583
SW100	10	3759	384	3945	403	4091	417	4374	446	5430	554	11551	1179
	30	6528	666	6885	703	7399	755	7900	806	9820	1002	17199	1755
	60	8988	917	9479	967	10164	1037	10799	1102	13705	1399	17199	1755
SW125	10	6584	672	6879	702	7317	747	7577	773	9278	947	18796	1918
	30	10907	1113	11497	1173	12298	1255	13006	1327	16159	1649	28763	2935
	60	14674	1497	15575	1589	16649	1699	17641	1800	21991	2244	28763	2935
SW150	10	6184	631	6418	655	6698	683	7014	716	8336	851	17621	1798
	30	10773	1099	11324	1156	12029	1227	12683	1294	15764	1609	29565	3017
	60	14766	1507	15598	1592	16719	1706	17637	1800	21736	2218	36231	3697

Reducer Option

■ SWM(R) Series with Coupling

SWM(R) Series





Reduction ratio: 1/10 to 1/60

Size	Motor kW	MC	MD
SWMR80	0.75 kW/1.5 kW	215	ϕ200
	2.2 kW/3.7 kW	226	ϕ250
SWMR100	0.75 kW/1.5 kW	237	ϕ200
	2.2 kW/3.7 kW	247	ϕ250
	5.5 kW	289	ϕ300
SWMR125	2.2 kW/3.7 kW	292	ϕ250
	5.5 kW	323	ϕ300
SWMR150	5.5 kW	355	ϕ300

* Contact Tsubaki representative for EWM(R) Series with coupling.

Reduction ratio: 1/100 to 1/3600

Size	Motor kW	MC	MD
SWM(R)80	0.2 kW/0.4 kW	148	ϕ160
	0.75 kW	158	ϕ200
SWM(R)100	0.2 kW/0.4 kW	148	ϕ160
	0.75 kW	158	ϕ200
SWM(R)125	0.2 kW/0.4 kW	166	ϕ160
	0.75 kW/1.5 kW	186	ϕ200
	0.4 kW	205	ϕ160
SWMR150	0.75 kW/1.5 kW	215	ϕ200
	2.2 kW/3.7 kW	226	ϕ250
SWMR175	0.75 kW/1.5 kW	237	ϕ200
	2.2 kW/3.7 kW	247	ϕ250
SWMR200	1.5 kW	282	ϕ200
	2.2 kW/3.7 kW	292	ϕ250
	5.5 kW	323	ϕ300

* Contact Tsubaki representative for EWM(R) Series with coupling.

■ TD Series with Motor

TD Series

Models with a motor can also be made.
(Depending on the size and motor kW combination, a coupling connection may be used.)

Model

TDM125S30TL 550 S

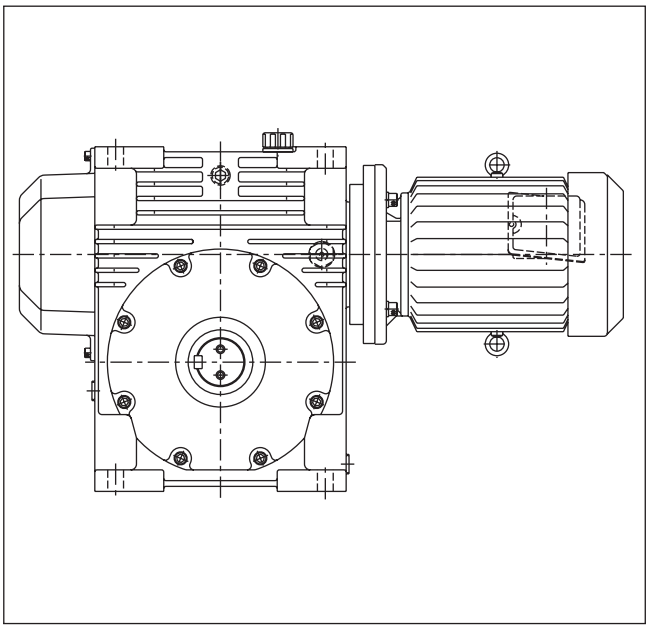
- TDM125S30TL: With motor
- 550: Motor size
- S: Motor

Motor size

• 370: 3.7 kW • 550: 5.5 kW
Contact a Tsubaki representative for models with 7.5 kW or larger motors.

Motor

S: standard motor mounted
SX: customer-supplied motor mounted
SB: motor with brake mounted
Y: motor to be installed by the customer



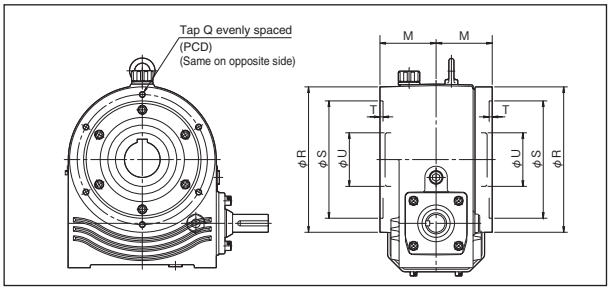
■ Double Faced Flange

Double faced flanges are also available for hollow shaft (H) type for sizes SWJ/SWJM(R)70, SW/SWM(R)80 to 200, and TD125 to 200.

Model examples

SWJ/SWJM(R) Series: **SWJ70E60DF**
SW/SWM(R) Series: **SW80B20DF**
TD Series: **TD175H40BDF**

Double faced flange



Unit: mm

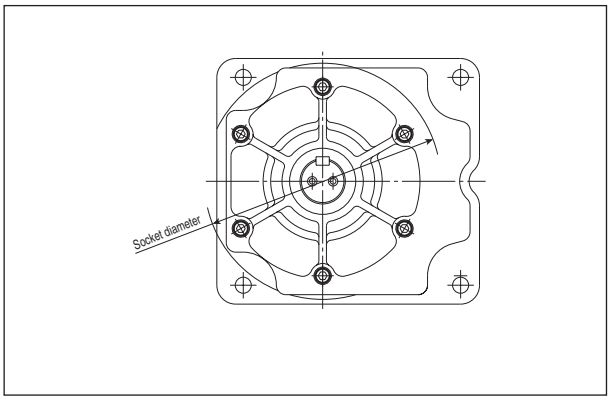
	Size	M	R	S_{H7}	T	U	PCD	Q
SWJ/SWJM/SW/SWM Series	SWJ70	70	177	137	5	58	157	6 - M8 × 15
	SW 80	78	200	160	6	70	180	6 - M10 × 20
	SW100	90	230	185	7	80	205	6 - M10 × 20
	SW125	110	285	230	6	105	255	6 - M12 × 25
	SW150	125	335	270	6	115	300	8 - M12 × 25
	SW175	135	385	320	5	125	350	8 - M14 × 29
	SW200	145	420	340	5	145	380	8 - M16 × 30
TD Series	TD125H	110	285	230	6	105	255	6 - M12 × 25
	TD150H	125	335	270	6	115	300	8 - M12 × 25
	TD175H	135	385	320	5	125	350	8 - M14 × 29
	TD200H	145	420	340	5	145	380	8 - M16 × 30

* SWJ70: Tap positions are 30 degrees apart from one another.

Note) For installation direction V type, shaft arrangement is LF and RF, in which case the standard installation face is the bottom side.

■ Base Positioning Steps

The base side of the EWJ/EWJM(R)/EW/EWM(R) Series with the V type base can be machined with a socket diameter.



Unit: mm

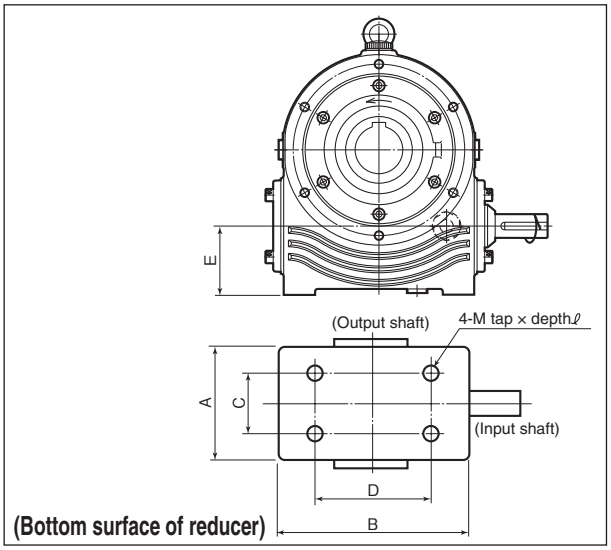
Size	Socket diameter	Depth
EWJ50	ϕ140H8	5
EWJ63	ϕ168H8	5
EWJ70	ϕ178H8	7
EW80	ϕ202H8	7
EW100	ϕ250H8	7
EW125	ϕ302H8	7
EW150	ϕ332H8	7
EW175	ϕ384H8	7
EW200	ϕ446H8	7

* Contact Tsubaki representative for details.

■ Housing Bottom with Tapped Holes

Tapped holes can be machined on the bottom side of the housing for all SW/SWM(R) series and TD125 to 200 models with hollow output shaft (H). These tapped holes can be used to attach a mounting base or motor mounting base to the housing.

Unit: mm



	Size	Reducer			Details of taps on the bottom		
		A	B	E	C	D	M tap × depth ℓ
SW Series	SW80	108	200	71	80	168	M12 × 20
	SW100	124	234	75	100	196	M12 × 20
	SW125	145	290	86	115	245	M16 × 28
	SW150	175	340	97	140	290	M16 × 28
	SW175	205	400	115	168	344	M20 × 35
	SW200	210	440	120	170	380	M20 × 35
TD Series	TD125	145	290	86	115	245	M16 × 28
	TD150	175	340	97	140	290	M16 × 28
	TD175	205	400	115	168	344	M20 × 35
	TD200	210	440	120	170	380	M20 × 35

Note 1) Above machining is available as an option.
2) Tap size × depth is the maximum value.
3) When machining tapped holes to the mount surface, additional machining will also be required.

Reducer Option

■ Low Backlash Model

The EWJ/EWJM(R)/EW/EWM(R), SWJ/SWJM(R)/SW/SWM(R), and TD series can be made with low backlash for applications that require positioning accuracy.

Low backlash: 0.06° to 0.14° (standard: 0.06° to 0.36°)

<Condition> Model: EW125T20L, accuracy on the output shaft

(Accuracy varies depending on the series, type, and reduction ratio. Consult Tsubaki representative for further details.)

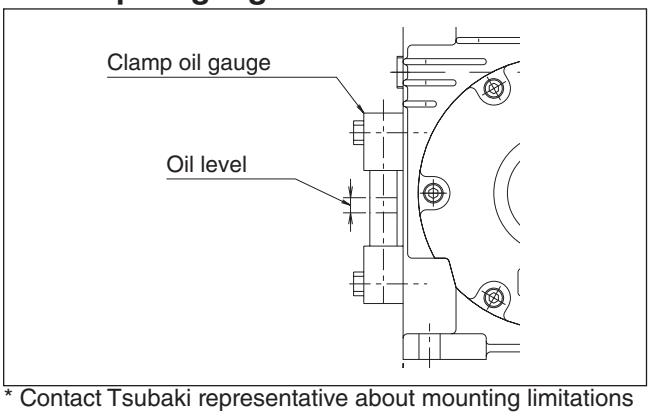
■ Oil Gauge

Standard oil gauge is plastic bulls-eye type, and other oil guage types are also available upon request.

1. Steel oil gauge

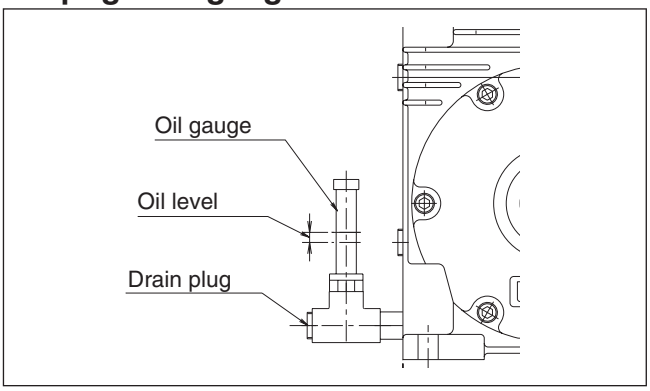
Steel oil gauges are avialable as an option.

2. Clamp oil gauge



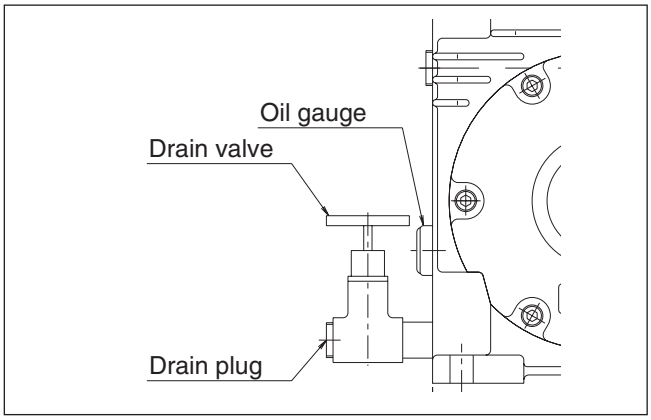
* Contact Tsubaki representative about mounting limitations by series, type, size, and mounting direction.

3. Upright oil gauge for indoors



■ Drain Valve

A drain valve can be furnished to make draining oil easier when replacing the oil and when installing piping.



■ Ductile Cast Iron Housings (FCD)

Housings can be made of ductile cast iron to meet special usage conditions.
Contact Tsubaki representative about limitations by series, type, and size.

Motor Option

■ Voltage (Code: V, V1, V2, V3, V4)

Motor sizes: 0.1 to 0.4 kW

400 V class motors and other voltages are available as an option.

Voltage	400 V class (400/400/440 V 50/60/60 Hz)	380 V/50 Hz	380 V/60 Hz	415 V/50 Hz	460 V/60 Hz
Code	V	V1	V2	V3	V4

■ Inverter Motors (Code: 200 V Class = Z, 400 V Class = ZV)

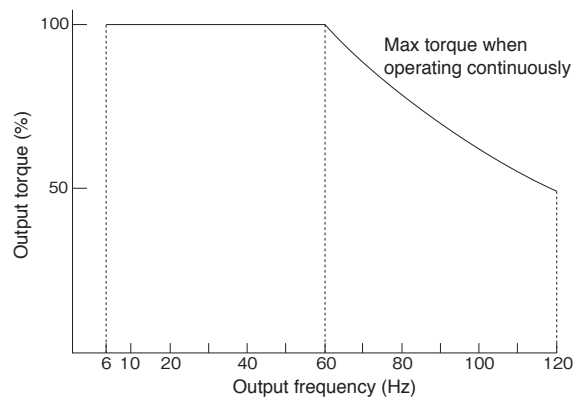
Motor sizes: 0.1 to 0.4 kW

Inverter motors (VFD) are available. These will perform the 60 Hz rated torque in continuous operation at 6 to 60 Hz.

* Standard 0.75 to 5.5 kW motors are capable of constant torque from 6 to 60 Hz, with rated torque at 60 Hz.

Notes on models with motors

- From 60 to 120 Hz, inverter motors enter their rated horsepower range as do standard motors. The output torque is limited in this range so be careful of the load torque.
- The input voltage from the motor to the inverter should be set by adjusting the base frequency and base voltage settings of the inverter. Make sure the inverter's output voltage falls within the voltage and frequency specifications on the motor nameplate. (When using a inverter motor, the base frequency must be set at 60 Hz.)
  Inverter motors should not be connected directly to the power source without going through the inverter except on test running or in emergency. Voltage fluctuations may cause current raise. This effect is particularly noticeable at 50 Hz.
- Always set the base frequency of the inverter at 60 Hz.
- If 100% torque is required at low frequency ranges, apply the torque boost feature in the inverter. Excessive torque boost over prolonged continuous operation can cause overheating and should be avoided.
- Also refer to the notes on inverter driven motors on page 227.



Output torque (%) is 100% when motor runs at 60 Hz rating. (Set base frequency to 60 Hz)

Note) Torque characteristics shown here only for the motor itself. For practical use, the efficiencies of the Troi Drive or Worm Power Drive must be taken into consideration.

■ Global Series

Global Series motors are compatible with worldwide directives, regulations, and systems. Triple 200 motors comply with all three standards of CE, UL, and CCC.

TRIPLE200 (Code: N4) Motor sizes: 0.1 to 0.4 kW 200/200/220 V 50/60/60 Hz

One motor satisfies three standards (CE/UL/CCC). It is ideal for machine tools and peripheral equipments.

Europe (Code: N) Motor sizes: 0.1 to 5.5 kW

Products exported to Europe must bear the CE mark in order to be sold on the European market. The CE marking indicates the product complies with safety regulations stipulated in European EC directives.
(CE compliance means that the product is affixed with the CE mark which certifies that it conforms to applicable EC directives.)

* The motor efficiency class is IE1.

North America (Code: N2) Motor sizes: 0.1 to 5.5 kW

"UL" is an acronym for Underwriters Laboratories Inc., the representative product-safety testing and certification organization in the United States.
(UL compliance means the product is affixed with the UL mark which certifies the product conforms to UL standards by using a UL approved motor.) Our products conform to both UL and CSA standards and are C-UR models.

China compliance (Code: PN3, HN3, WN3) Motor sizes: 0.1 to 5.5 kW

The CCC mark is a compulsory certification system used in China. Any small-power motors of 1.1 kW or less being exported to China must display a CCC mark to indicate compulsory certification.
Our products have received certification from the China Quality Certification Centre (CQC).

South Korea compliance (Code: N8) Motor sizes: 0.75 to 5.5 kW (0.4 kW or less not regulated)

All 0.75 to 375 kW motors must satisfy the IE3 efficiency standard value (KS C 4202 efficiency class) rated in the Korean energy consumption efficiency grade display siystem.

Motor Option

■ Outdoor Specification [Code: W]

Motor sizes: 0.1 to 5.5 kW

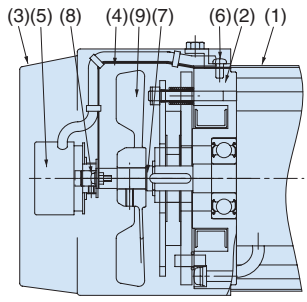
- Outdoor motors have a different sized terminal box.
- 0.75 kW or larger motors with a brake for outdoor use are made to order for a continuous rating.

The area where the outdoor motor will be installed should be free of dust. A cover must also be furnished for harsh environments such as strong currents, stormy weather, steam, heavy snowfall, and etc. Always protect with an insulation cover and maintain the ambient temperature at 40°C or lower for use in environments that reach 40°C or more. Contact us if the motor is to be installed in a non-horizontal position. Do not point the wiring inlet on the terminal box toward water. Contact Tsubaki representative for details.

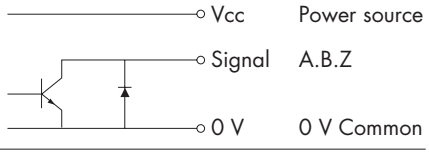
■ Encoder

Motor sizes: 0.1 to 2.2 kW

A rotary encoder can be mounted to the end of the motor shaft (with a brake) to pick up rotary signals from the reducer.



(1) Motor
(2) Bracket for opposite side of load with yoke
(3) Fan cover
(4) Encoder mounting plate
(5) Encoder
(6) Mounting screw
(7) Motor shaft
(8) Mounting screw
(9) Fan (0.2 kW or larger)

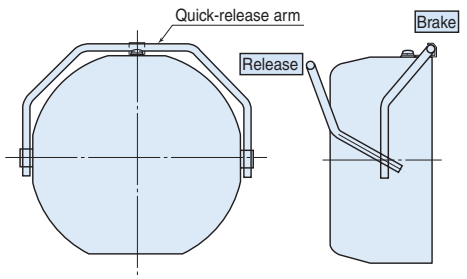
Supply voltage	4.5 to 30 VDC
Pulses	100 pulses
Output type	Open collector outputs (NPN type) x 6 AB 90° phase difference signal +Z origin signal
Output circuit	
Power consumption	30 mA or less
Output voltage	0.5 V or less (during maximum output)
Maximum output current	Max. 40 mA
Duration of signal leading edge and trailing edge	1 μs or less
Maximum response frequency	240 kHz
Withstanding voltage of output circuit	Max. 50 V
Cable length	With 0.5-m connector (Hirose Electric DF3-6S-2C)
Vibration	4.9 m/s² {0.5G} or less (20 to 50 Hz)

■ Manual Quick-release Brake (Code: Q)

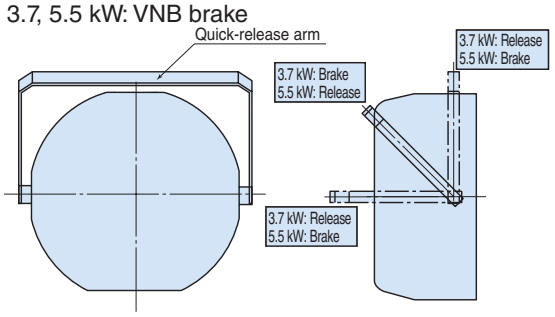
Motor sizes: 0.1 to 5.5 kW

Manual quick-release is available for easy motor brakes release.

3-phase, 0.1 to 2.2 kW: SLB brake



3-phase, 3.7, 5.5 kW: VNB brake

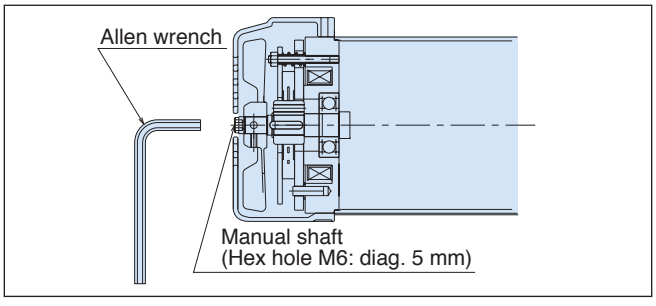


Contact Tsubaki representative for Croise motors.

■ Manual Shaft (Code: M)

Motor sizes: 0.1 to 0.75 kW

Make sure the brake is released, then turn the motor manually using an allen wrench. Never turn the shaft during operation.



■ Hard Terminal Box (Code: H)

Motor sizes: 0.1 to 0.4 kW

Aluminum terminal boxes are available as an option.

■ Steel Fan Cover

Motor sizes: 0.1 to 0.4 kW

Steel fan covers are available as an option.

Paint Option

■ Paint Color

Paint colors can be arranged upon request.
Specify the option code or paint color when ordering.

* Baked electrostatic powder in light gray (Munsell N7.5) is also available with an antibacterial agent. Contact Tsubaki representative for details.

Color	Option code
Standard (Munsell 2.5G 6/3)	—
Light gray (Munsell N7.5)	C0
Light silver metallic	C1
Ivory white (Munsell 7.5Y9/1)	C2
Dark silver metallic	C3

■ Specified Colors

Reducers can be painted in customer-specified color upon request. Specify the Munsell code when ordering.

■ Special Paint

Special paints are available upon request.

Category		Paint specifications						
Classification	Paint	Generic name		Weather resistant	Water resistant	Acid resistant	Alkali resistant	Application
Standard	Indoors	EWJ25 to 42, SWJ25 to 42, EWJ50 to 70 (single reduction)	Baked electrostatic powder (Epoxy polyester binder)	△	△	△	△	
		Primer	Soluble nitrocellulose	—	—	△	△	
		Top coat	Acrylic lacquer					
Option	Outdoors	Primer	Soluble nitrocellulose	△	△	△	△	
		Top coat	Phthalic acid (alkyd) resin					
	Waterproof	Primer	Special modified epoxy	○	●	○	●	
		Top coat	Two-component urethane resin					
Special paint	Long-oil phthalic acid resin	Primer	Long-oil alkyd resin rust prevention	○	○	△	△	Ships, bridges, coastal areas, outdoor humid environments
		Top coat	Long-oil alkyd resin top coat					
	Phenolic resin	Primer	Rust prevention JIS-K-5623 (2 grade)	○	○	●	△	Factory indoor/outdoor areas where acid is used, chemical plant sites, on-water areas
		Top coat	Phenolic resin acid-resistant					
	Chlorinated rubber	Primer	Epoxide resin for prime coat	●	○	○	○	Ships, bridges, coastal areas, outdoor humid environments corrosive gases
		Middle coat	Chlorinated rubber for middle coat					
		Top coat	Chlorinated rubber for top coat					
	Heat-resistant	Primer	Special alkyd for heat-resistant prime coat	○	×	×	×	Normally withstands up to 100°C, momentarily withstands maximum 150°C
		Top coat	Special alkyd for heat-resistant top coat					
	Epoxide resin	Primer	Epoxide resin for prime coat	○	●	○	●	Good resistance against seawater and chemicals
		Top coat	Epoxide resin for top coat					
	Tar epoxide	Primer	Organic zinc rich primer	×	●	●	●	Good resistance against chemicals, oil, seawater, and water
		Top coat	Tar epoxide resin JIS-K-5664 (1 grade)					

Note) Contact Tsubaki representative for details.
●: Most suitable ○: Suitable △: Contact Tsubaki representative before making your selection ×: Unsuitable

■ Special Rust-proof

If rust prevention must last longer, contact Tsubaki representative for more information.
(Standard rust prevention lasts six months after shipment from Tsubaki when stored indoors.)

Memo

Handling

Handling ..... 247 - 255

Part List ..... 256 - 258

Handling

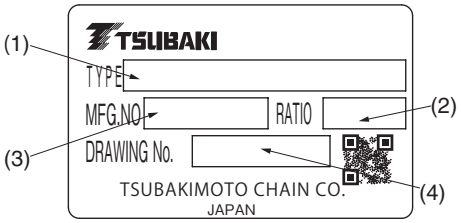
This section contains general information regarding the handling of the EWJ/EWJM(R)/EW/EWM(R), and SWJ/SWJM(R)/SW/SWM(R), and TD Series. For more information, see the user manual provided with the product.

1. Upon receipt of your reducer

Check the following items upon receipt of your reducer. Contact Tsubaki representative if any defects are found, or if you have any questions.

(1) Verify that the specifications on the nameplate match those requested. Pay special attention to the shaft arrangement and rotational direction. Check this against the position of the input and output shafts, oil gauge and plugs.
(2) Make sure all accessories, such as pressure vents, are included.
(3) Visually inspect for damage sustained during transport.
(4) Make sure there are no loose screws or nuts.

1-1. Nameplate



When inquiring, please provide the following information: (1) TYPE (Model), (2) RATIO (Reduction ratio), (3) MFG. No. (Manufacturing No.), and (4) DRAWING NO. (Drawing No.).

1-2. Model

Make sure the model of the unit matches your order.

2. Storage

If you will not be using the reducer immediately upon delivery, store it by observing these precautions.

2-1. Storage location

Store in a clean and dry indoor environment.

Do no store outdoors or where the reducer/motor may be exposed to humidity, dust, extreme temperature fluctuations, or corrosive gases.

2-2. Storage position

The reducer is packed and shipped in its final mounting position. Store it as delivered in the upright position. For reducers with special installation styles, if stored in the wrong position or direction, the bearing grease and lubrication may mix or even leak from the unit.

2-3. Storage period

(1) The maximum storage period is six months.
(2) Special anti-rust treatment is required for storage over six months. Contact Tsubaki representative for details.
(3) Anti-rust treatment for export models is special and must be done prior to export. Contact Tsubaki representative for details.

2-4. Operating the reducer after storage

(1) Non-metallic parts like oil seals, oil gauges, and oil plugs wear easily from environmental conditions such as extreme temperatures and ultraviolet rays. Make sure to inspect these parts and replace them if damaged, before operation.
(2) Make sure there is no abnormal noise, vibration, or overheating. Stop operation immediately if you notice any of these signs, and contact your distributor.

3. Transport

Be sure to use the eye-nut on the top surface of the housing (fastened with a hex bolt) when transporting the reducer. Never hook wires or slings to the input/output shafts. Doing so may cause unexpected load to the shaft/bearing and shorten the life of the reducer or cause a malfunction.

If the reducer comes with a motor, use the lifting hook on the motor as well to keep it balanced while lifting.

Note 1) EWJ25 to 42, and EWJM(R)42: No through holes on the top surface of the housing. Move by hand.
2) SWJ25 to 63, SWJM(R)35 to 63: No lifting bolts provided. Move by hand.

4. Installation

The area of installation should have an ambient temperature of 0 to 40°C, be well-ventilated, low in humidity, and have little or no dust. Avoid use in areas with corrosive, explosive, or flammable liquids and gases.
If the reducer is to be used outdoors, furnish a cover or similar protection to avoid direct exposure to rain.
(1) When installing or removing the reducer from the driven shaft, make sure to shut off the power source before working.
(2) Always use the lifting bolt on the top surface of the reducer housing when installing or removing it from the driven shaft. Never hook wires or slings to the input/output shafts.
(3) Make sure the reducer is balanced and stable when installing or removing it from the driven shaft. Working with the reducer in an unbalanced position is extremely dangerous as it may turn over. Always maintain the reducer in a stable position.
(4) Models SWJ25 to 63 and SWJM(R)35 to 63 do not have lifting bolts. Hold the reducer with both hands to keep it steady and parallel to the driven shaft while inserting or removing it from the driven shaft.

4-1. Solid output shaft type

Reducers with a solid output shaft are either foot-mounted (EWJ/EWJM(R)/EW/EWM(R)/TD-S), or flange-mounted (SW/SWM80 to 200).

4-1-1. Foot mount (EWJ/EWJM(R)/EW/EWM(R)/TD-S)

- Confirm whether the installation is standard.
- If the installation is non-standard, refer to the outline drawing or contact us as the volume of lubrication oil and the method of lubrication differs from the standard design.
- Install on a smooth flat installation surface that can easily withstand the weight of the equipment. The installation angle should be within ±1°.
- Use bolts compliant to JIS strength class 10.9T for installation.

Recommended bolts for mounting

EWJ/EWJM sizes	EWJ25	EWJ35	EWJ42	EWJ50	EWJ63	EWJ70
Recommended bolts	M6 × 15	M8 × 15	M10 × 20	M8 × 25	M10 × 30	M12 × 35

EW/EWM sizes	EW80	EW100	EW125	EW150	EW175	EW200
Recommended bolts	M12 × 40	M14 × 45	M16 × 55	M20 × 60	M20 × 70	M24 × 80

TD-S sizes	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
Recommended bolts	M16 × 55	M20 × 60	M20 × 70	M24 × 80	M24 × 80	M30 × 100	M30 × 100	M30 × 110

- Avoid installing in such a way that can cause the housing to become deformed.
- The reducer is filled with lubrication oil and plugged before shipment. The oil filling port is plugged to prevent leakage during transport. Make sure to replace the plug with the supplied pressure vent before usage. Otherwise, oil may leak from the oil seal due to high internal pressure, particularly if the unit is run continuously.
  Note) EWJ25 to 70/EWJM42 to 70 (including double reduction models), and SWJ25 to 70/SWJM35 to 70: A pressure vent is not necessary and can be used as it is.

4-1-2. Flange mounting (EWJ25 to 42/EWJM(R)42/SW80 to 200/SWM(R)80 to 200)

Mount the reducer using the flange side of the housing. Observe these points.

(1) SW/SWM(R) solid output shaft type

(1) Use the positioning step on the housing and fix the reducer flange by using the tapped holes.
(2) Install the reducer by adjusting the radial runout, and the connection and angularity of the input/output shafts.
(3) Refer to the following table for recommended bolts and pitches for the flange surface of the reducer.
  Note) Always use the position step for positioning and fix the flange before connecting the input and output shafts. It may cause an unexpected load on the shafts and bearings, and shorten the reducer life time when the input and output shafts are connected at first.

Recommended bolt sizes for lange surface

Size	SW80	SW100	SW125	SW150	SW175	SW200
Bolt size	M10 20 mm depth	M10 20 mm depth	M12 25 mm depth	M12 25 mm depth	M14 30 mm depth	M16 30 mm depth
Mounting PCD	180	205	255	300	350	380
Bolt quantity	6	6	6	8	8	8

Handling

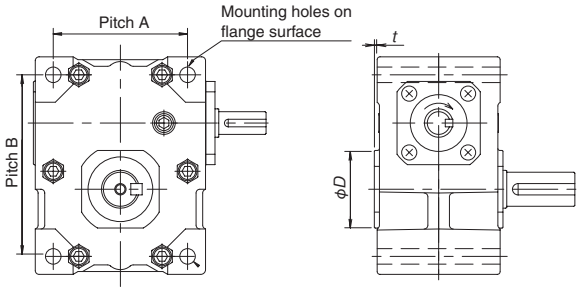
(2) EWJ25 to 42/EWJM(R)42

When mounting the reducer to the floor or wall, take note of the following:

(1) Use the mounting holes provided on the flange surface to mount the reducer. The surface of the housing protrudes beyond the mounting surface of the reducer. Leave at least the amount of clearance (ϕD, t) shown in the drawing between the reducer and the mounting surface.

(2) Install the reducer by adjusting the radial runout, and the connection and angularity of the input/output shafts.

(3) Refer to the following table for recommended bolts and pitches for the flange surface of the reducer.



Note) Always fix the flange before connecting the input and output shafts. It may cause an unexpected load on the shafts and bearings, and shorten the reducer life time when the shafts are connected at first.

Clearance required between installation surfaces

Size	ϕD	t
EWJ25	46	3
EWJ35	48	1.5
EWJ42	63	3

Mounting bolt quantity, size, pitch

Size	Bolt sizes	Pitch A	Pitch B
EWJ25	4-M6 × 60	57	76
EWJ35	4-M8 × 80	71	96
EWJ42	4-M10 × 90	88	111

Recommended tightening torque

Size	Tightening torque (N·m)	Tightening torque {kgf·m}
EWJ25	4.9 to 5.9	0.5 to 0.6
EWJ35	12 to 14	1.2 to 1.4
EWJ42	24 to 27	2.4 to 2.7

4-2. Hollow output shaft type

There are three ways to prevent the reducer from rotating: torque arm mount, flange mount, foot mount (EW-H (hollow output shaft type) only). The recommended tolerance for the driven shaft is g7.

(1) Before inserting the driven shaft into the hollow output shaft, make sure the outside of the driven shaft and the inside of the hollow shaft are free of scratches and dust.

(2) To make insertion easier, apply grease or molybdenum disulfide to the driven shaft.

(3) If the shafts fit very tightly, help the hollow shaft slide smoothly by tapping its opposite end with a plastic hammer. Be careful not to damage the oil seal.

(4) Hollow shaft keyways are finished at JIS standard, and refer to the following table for key length.

Recommended driven shaft length (Refer to Figures 1 and 2 below.)

Series	SWJ						SW/EW		SW/EW/TD				TD			
Reducer size	25	35	42	50	63	70	80	100	125	150	175	200	225	250	280	315
Output shaft length: A	60	70	80	108	128	130	148	174	200	250	270	290	320	356	404	454
Recommended length of driven shaft: L	58	68	78	89	109	106	122	146	170	220	238	258	272	303	344	386

4-2-1. Installation/removal of torque arm

1. Installation procedures

Note) Avoid using a line shaft to connect reducers with double input shafts.

(1) Fix the torque arm to the reducer with bolts. Use a grade 10.9 or equivalent bolts when installing a torque arm. Tsubaki torque arms come with bolt set.

(2) Insert the reducer onto the driven shaft.

(3) Fix the reducer to the driven shaft in the axial direction.

- ○ SWJ25 to 42: Tsubaki recommends fixing the end plate on the output shaft end. (Figure 1)
- ○ SWJ50 to 70, SW80 to 200, EW80-H to 200-H (hollow output shaft), TD125H to 315H: Tsubaki recommends fixing the stop plate and end plate by using the snap ring groove on the hollow output shaft (Figure 2). (Refer to the hollow output shaft dimension details on page 221)

(4) After finalizing the installation position of the reducer, fix the torque arm to prevent the reducer and driven shaft from rotating. Provide sufficient room so that the torque arm is free to move in the axial direction.

Note) Do not fix the torque arm position before fixing it to the reducer. Doing so may damage the reducer. Follow the work procedure as outlined here. (EW80-H to 200-H are with foot mounts. After fixing the output hollow shaft and driven shaft, set up the position of the bearing to support the driven shaft.)

Note) The dimensions and outline given in Table 1 on the next page are recommended for the end plate, which also function as a draw plate.

Figure 1 SWJ25 to 42

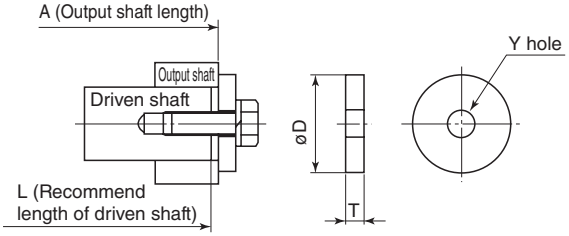


Figure 2 SWJ50 to 70/SW80 to 200
EW80-H to 200-H/TD125H to 315H

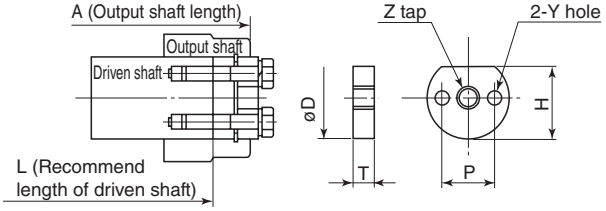


Table 1 Recommended end plate and draw plate dimensions

Size	Output shaft hole diameter	Plate						Bolt for plate (Spring washer)	Stop ring size
		ϕD	T	H	Z	Y hole	P		
SWJ25	ϕ 12	16	4.5	-	-	5.5	-	1-M 5 × 15	
SWJ35	ϕ 20	26	6	-	-	9	-	1-M 8 × 25	-
SWJ42	ϕ 25	32	6	-	-	9	-	1-M 8 × 25	-
SWJ50	ϕ 30	29.6	9	25	M12	-	-	1-M10 × 40	C 30
SWJ63	ϕ 35	34.6	9	30	M12	-	-	1-M10 × 40	C 35
SWJ70	ϕ 40	39.6	12	34	M12	2- 6.6	24	2-M 6 × 40	C 40
EW/SW80	ϕ 50	49.6	12	44	M16	2- 9	30	2-M 8 × 45	C 50
EW/SW100	ϕ 55	54.6	14	48	M16	2-11	32	2-M10 × 55	C 55
EW/SW125	ϕ 70	69.5	14	62	M24	2-14	44	2-M12 × 60	C 70
EW/SW150	ϕ 80	79.5	17	70	M24	2-14	52	2-M12 × 65	C 80
EW/SW175	ϕ 90	89.5	17	80	M30	2-14	60	2-M12 × 65	C 90
EW/SW200	ϕ 100	99.5	17	89	M30	2-18	65	2-M16 × 75	C100
TD125	ϕ 70	69.5	14	62	M24	2-14	44	2-M12 × 60	C 70
TD150	ϕ 80	79.5	17	70	M24	2-14	52	2-M12 × 65	C 80
TD175	ϕ 90	89.5	17	80	M30	2-14	60	2-M12 × 65	C 90
TD200	ϕ 100	99.5	17	89	M30	2-18	65	2-M16 × 75	C100
TD225	ϕ 110	109.6	20	99	M30	2-18	65	2-M16 × 85	C110
TD250	ϕ 125	124.4	20	113	M30	2-18	70	2-M16 × 85	C125
TD280	ϕ 130	129.4	24	118	M36	2-22	80	2-M20 × 100	C130
TD315	ϕ 160	159.4	24	146	M36	2-22	85	2-M20 × 100	C160

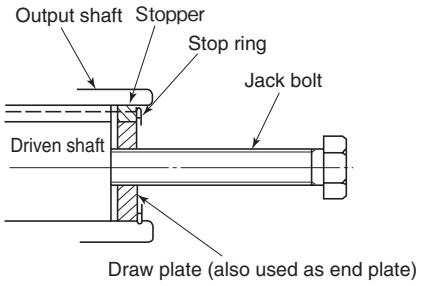
2. Removal procedures

(1) Lift the reducer using the lifting bolt.
(2) Loosen the end plate bolt which fixes (axial direction) the reducer to the driven shaft.
(3) Free the torque arm end that stops in the shaft rotating direction.
(4) Remove the hollow output shaft from the driven shaft while preventing from applying excessive force between it and the housing. Prepare a draw plate (Table 1) and jack up bolt (Table 2). Removal is much easier when the draw plate is used as shown in Figure 3.

Table 2 Jack-up bolt size

Size	Output shaft bore diameter	Jack bolt (full thread)	Size	Output shaft bore diameter	Jack bolt (full thread)
SWJ50	ϕ 30	M12 × 80	TD125H	ϕ 70	M24 × 150
SWJ63	ϕ 35	M12 × 80	TD150H	ϕ 80	M24 × 150
SWJ70	ϕ 40	M12 × 80	TD175H	ϕ 90	M30 × 180
EW/SW80	ϕ 50	M16 × 100	TD200H	ϕ 100	M30 × 180
EW/SW100	ϕ 55	M16 × 100	TD225H	ϕ 110	M30 × 180
EW/SW125	ϕ 70	M24 × 150	TD250H	ϕ 125	M30 × 180
EW/SW150	ϕ 80	M24 × 150	TD280H	ϕ 130	M36 × 250
EW/SW175	ϕ 90	M30 × 180	TD315H	ϕ 160	M36 × 250
EW/SW200	ϕ 100	M30 × 180			

Figure 3 Mounting a jack bolt



4-2-2. Installation/removal of flange mounting

1. Installation procedures

* Mounting the reducer to the driven machine (if radial load does not affect the reducer)

(1) Insert the reducer onto the driven shaft.
(2) Use the taps on the flange surface of the housing for mounting.
- ○ SWJ25 to 42: Use the holes on the flange surface to bolt the housing in place.
- ○ Refer to the table and figure on page 249 under section (2) for mounting information such as bolt size, dimensions, and pitch.

(3) Use the positioning steps on the housing for positioning. (SWJ25 does not have a socket diameter.)
Note) The end plate is not necessary for flange mounting. If the end plate is used to fix the hollow output shaft, the bearing may be damaged due to the thrust to the bearing on the hollow output shaft.

Handling

* Mounting the flange mount reducer when radial load is applied.

(1) Insert the reducer onto the driven shaft.
(2) Adjust the radial runout of the driven shaft, and install the reducer so that it is free in the thrust direction.
(3) Use the positioning step on the housing and fix the reducer flange by using the tapped holes. (SWJ25: no positioing step)
(4) After fixing the reducer, fix the driven shaft in the axial direction.
Note) If the driven shaft is fixed in the thrust direction first, the bearing may be damaged due to the thrust to the bearing on the hollow output shaft.

2. Removal procedures

* When reducer is fixed and no radial load is applied.

(1) Loosen the flange bolts which fix the reducer to the driven equipment.
(2) Remove the hollow output shaft from the driven shaft while preventing from applying excessive force between it and the housing. Prepare a draw plate (Table 1) and jack up bolt (Table 2). Removal is much easier when the draw plate is used as shown in Figure 3.

* When flange mount reducer is fixed and radial load is applied.

(1) Hold the driven shaft steady in a balanced state.
(2) Loosen the flange bolts which fix the reducer to the driven equipment.
(3) Remove the hollow output shaft from the driven shaft while preventing from applying excessive force between it and the housing. Prepare a draw plate (Table 1) and jack up bolt (Table 2). Removal is much easier when the draw plate is used as shown in Figure 3.

4-2-3. Installation/removal of EW Series foot mount type with hollow outuput shaft EW-H hollow output shaft

Make sure the driven machine and reducer are aligned properly by referring to these installation procedures: Section 4-1-1, Foot mount; Section 4-2-1, Torque arm; Section 4-2-2, Flange mount. Improper alignment can cause unexpected loads which may lead to breakage of the shaft/bearing.

5. Connection

5-1. Verifying the direction of rotation

All standard models are with right hand worm. Verify the rotational direction of the input and output shafts.

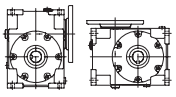
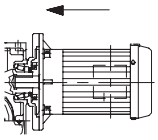
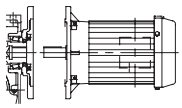
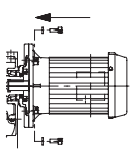
5-2. Connection

- Do not apply impact or excessive thrust loads to the shaft when installing pulleys, sprockets, or couplings to the reducer input/output shafts.
- Align accurately. Refer to pulley, sprocket, or coupling catalogs/manuals to ensure alignment accuracy
- Shaft eccentricity, and radial and axial loads that exceed allowable values may cause vibration or noise, possibly shortening gear, bearing, and shaft life.

5-3. Motor installation for EWJM/EWM/SWJM/SWM Series with code = Y

- No need of couplings, all models come with hollow input shaft.
- Hollow input shafts are machined with bore and keyway size according to the specified motor size. Use the key supplied with the motor.
- Be careful with safety and follow the procedure below.

Motor installation procedures

Step	Installation procedure	Note	Step	Installation procedure	Note
1	Place the reducer so that the motor can be mounted easily. 	Be careful with safety during transportation.	3	Gently insert the motor output shaft into the reducer input shaft. 	Apply grease to the motor output shaft and the reducer input shaft bore. Grease: Molybdenum Special (COSMO OIL)
2	Align the keyway phases of the motor shaft and the reducer input. 	Be careful with safety during transportation. Align accurately to eliminate any shaft eccentricity.	4	Fully tighten the supplied hex bolts to the motor flange using the spring washers. 	The bolts should be tightened after verifying the motor has entered the reducer properly. Tighten with the torque required to the bolt size and its grade.

Note) Motor flange sizes, input bore, and keyway sizes differ according to the motor size, not to the reducer size. Even with the same size reducer, motor flange diameters differ depending on the motor size. Similarly, the input bore and keyway are machined differently.
Note) When connecting the reducer and motor, be careful with safety and use the lifting hook on the motor.

EWJM(R)42, double reduction EWJM(R)50 to 70, and SWJM(R)35 to 70 with code = Y
Motors are to be connected with Jaw-Flex couplings.

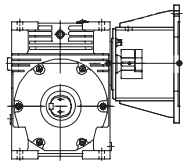
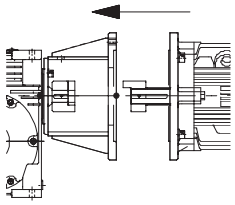
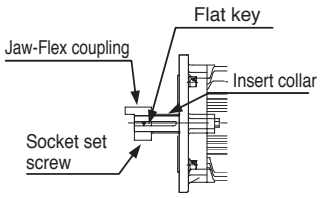
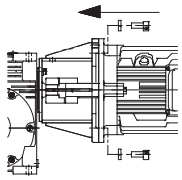
- The coupling hub on the reducer side is set (key and set screw) when shipped. Make sure it has not loosened during transportation.
- Each coupling hub is machined with a bore diameter and keyway that matches the specified motor size.

* Alwyas install the provided collars to adjust the length of the motor shaft.
Note) Use the key and set screws supplied with the reducer when installing the coupling hub on the motor.

- Use the supplied inserts.
- Motor and flange mounting bolts and spring washers are also supplied. Refer to the table below.

Motor size	0.1 kW	0.2 kW	0.4 kW	0.75 kW	1.5 kW	2.2 kW	3.7 kW	5.5 kW
Bolt size	M8 × 25 mm	M8 × 25 mm	M8 × 25 mm	M10 × 30 mm	M10 × 30 mm	M12 × 30 mm	M12 × 30 mm	M12 × 35 mm
Spring washer	For M8	For M8	For M8	For M10	For M10	For M12	For M12	For M12
Quantity	4	4	4	4	4	4	4	4

Motor installation procedures: take safety precautions when following the procedures below.

Step	Installation procedure	Note	Step	Installation procedure	Note
1	Place the reducer so that the motor can be mounted easily. 	Be sure with safety during transportation.	3	Insert the Jaw-Flex coupling insert into the coupling on the reducer. Then assemble it keeping it aligned to the phase of the coupling. 	Make sure the coupling on the motor side fits into the insert smoothly. Do not force it. When do not fit smoothly, realign the phases and the centers of the hub and the insert.
2	Apply a small amount of grease to the motor output shaft. Insert the input collar and then attach the Jaw-Flex coupling. Make sure to assemble with the key in place. Then, tighten the socket set screw. 	Do not hit the coupling with a hammer or other object when inserting it. Be sure with safety during transportation.	4	Fully tighten the supplied hex bolts to the motor flange using the spring washers. 	The bolts should be tightened after verifying the motor has entered the reducer properly. Tighten with the torque required to the bolt size and its grade.

Note) When connecting the reducer and motor, be careful with safety and use the lifting hook on the motor.

6. Operation

- The reducer is filled with lubrication oil and plugged before shipment. Replace the plug with the supplied pressure vent before use. Oil may leak from the oil seal due to high internal pressure when not replaced.
  There is no need to change the pressure vent on all EWJ/EWJM(R) and SWJ/SWJM(R) models.

6-1. Double checking before operation

• Upon completing the installation, check the following prior to operation:
(1) The reducer is filled with the correct amount of lubrication oil. (The amount of lubrication oil is correct if it can be seen in the oil gauge.)
(2) The pressure vent is installed. (If the reducer mounting direction is a special design and comes with a grease nipple, install it as well.)
(3) The reducer is connected properly to the driven machine.
(4) All mounting bolts are fully tightened.
(5) The direction of rotation is correct.

- For reducers equipped with a motor, also check the following items:
- Appropriate circuit breaker and overcurrent relay is wired.
- All wiring is correct.
- The motor is properly grounded.
- Make sure the equipment incorporates failsafe measures to prevent accidents from occurring during operation of the reducer, or in the event the reducer stops working properly.

Handling

6-2. Trial run

- No trial run is made prior to shipment. For best use, operate the reducer for roughly one day under 1/2 to 1/3 load.

6-3. Load

- Loads must be within its rated capacity. Applying the load than its rated capacity will cause shorter life and damage.

6-4. Verification after operation starts

- Verify the following after starting operation:

(1) There is no abnormal vibration or noise.
(2) There is no shock.
(3) The temperature is not unusually high.

- The reducer may generate heat during the first two or three days of operation. This is expected and is not a problem. However, if the housing temperature exceeds 100°C, it could indicate an undersized reducer, low oil level, or improper installation. Do not touch the reducer with your bare hands to prevent from burn injuries.

7. Daily inspection and maintenance

7-1. Daily inspection

Be sure to inspect the following items daily. Failure to do so may result in problems.

Inspection items	Inspection details
Noise	Is the noise louder than usual? Are there any unusual noises?
Vibration	Is there any unusual vibration? Any rapid changes in vibration?
Temperature	Is the surface temperature of the reducer higher than usual? Any rapid temperature rises?
Oil level	Is the oil level correct when the machine is stopped?
Installation bolts	Are any of the bolts loose?
Chain/belt	Are the chains/belts loose?
Lubricant condition	Has the lubricant blackened due to abrasion powder?
Oil leakage	Are there any leakages from the connection points on the reducer, oil seals, caps?
Pressure vent	Are the holes for air not clogged?

If you discover any abnormalities during daily inspection, take the appropriate measures by referring to “9. Troubleshooting” on page 255. If the problem persists, contact your dealer.

7-2. Lubrication

All Troi Drives and Worm Power Drives are filled and sealed with premium quality lubrication oil and are ready to be used.

(1) Recommended oil

- Lubrication oil is vital to reducer capacity, life, and efficiency.
  Use only lubrication oil recommended by Tsubaki. Do not mix the oil with other brands.
  Note) For TERUS series products, refer to page 174 or the instruction manual attached to the product.

EWJ/EWJM(R)/EW/EWM(R) Series SWJ/SWJM(R)/SW/SWM(R) Series	All models	Daphne Alpha Oil TE260 (IDEMITSU)
TD Series	Single reduction type	Daphne Alpha Oil TE260 (IDEMITSU)
	Double reduction type	Daphne Alpha Oil TE380 (IDEMITSU)

- The above oils are recommended for normal operation.
  Single reduction reducers running at an input speed of 500 r/min or slower can benefit from longer life by switching to Daphne Alpha Oil TE380.
- Daphne Alpha Oil TE150 is recommended for reducers that have trouble starting in low temperature environments with an input speed of 1500 r/min or faster.
  Note) Contact Tsubaki representative if the ambient temperature is below -10°C or above 50°C.

(2) Oil replacement

- Lubrication oil is vital to reducer capacity, life, and efficiency. Use only lubrication oil recommended by Tsubaki.
- It is not necessary to replace the oil for the EWJ/EWJM(R) series and SWJ/SWJM(R) series. However, if the lubrication oil deteriorates significantly due to usage conditions, it can be replaced for reassurance.
- Follow these guidelines to determine when to replace the lubrication oil for models EW/EWM80 to 200 and SW/SWM80 to 200, and TD125 to 315:
  - First change: After 1000 hours or three months from initial operation, whichever comes first.
  - Subsequent changes: Every 5000 hours or one year depending on operating conditions, whichever comes first.
  - It is easier to drain oil while it is warm after operation. However, hot oil may cause burns and is extremely dangerous. Allow the temperature of the housing to cool to 40 to 50°C before draining the oil.
  - Tsubaki recommends flushing the inside of the housing with the new oil.

  Note) Do not mix the oil with other brands.

(3) Approximate oil volume

- Even with the same size reducer, oil volume varies depending on the reduction ratio. Use the volumes in the following tables as a guideline, and always check the oil volume with the oil gauge. (The oil volume is correct when it can be seen in the oil gauge when the reducer is not under operation.)

Note) Do not mix the oil with other brands.
Note) TD oil differs between single and double reduction.
Note) No oil gauge is provided on the EWJ/EWJM(R) series and SWJ/SWJM(R) series.

■ **EWJ/EWJM(R) Series**

(Single reduction Reduction ratio: 1/10 to 1/60) (L)

Type \ Size		25	35	42	50	63	70
Mounting direction	E	0.08	0.17	0.29	0.55	0.95	1.0
	V						

■ **EWJ/EWJM(R) Series**

(Double reduction Reduction ratio: 1/100 to 1/3600) (L)

Type \ Size		50	63	70
Mounting direction	B&T	0.7	1.2	1.3
	V			

■ **EW/EWM(R) Series**

(Single reduction Reduction ratio: 1/10 to 1/60) (L)

Type \ Size		80	100	125	150	175	200
Mounting direction	B	1.2	1.7	3.1	5.1	8.4	13
	T	2.3	4.1	6.4	11	16	25
	V	1.7	2.8	4.8	8.2	12	19

■ **EW/EWM(R) Series**

(Double reduction Reduction ratio: 1/100 to 1/3600) (L)

Type \ Size		80	100	125	150	175	200
Mounting direction	B	1.5	2.4	3.7	7.0	11	17
	V	2.2	2.9	5.7	10	13	22

■ **SWJ/SWJM(R) Series**

(Single reduction Reduction ratio: 1/10 to 1/60) (L)

Type \ Size		25	35	42	50	63	70
Mounting direction	E	0.08	0.10	0.16	0.55	0.95	1.3

■ **SW/SWM(R) Series**

(Single reduction Reduction ratio: 1/10 to 1/60) (L)

Type \ Size		80	100	125	150	175	200
Mounting direction	B	1.0	1.4	2.2	4.2	6.5	8.5
	T	1.8	2.8	5.1	8.0	13.0	15.0
	V	1.4	2.1	3.7	5.9	9.6	11.7

■ **SW/SWM(R) Series**

(Double reduction Reduction ratio: 1/100 to 1/3600) (L)

Type \ Size		80	100	125	150	175	200
Mounting direction	B	1.5	1.9	3.1	6.3	9.1	12.5
	V	1.9	2.6	4.6	8.0	12.2	15.7

■ **TD Series**

(Single reduction ratio: 1/10 to 1/60)
(1) Solid output shaft (S) (L)

Type \ Size		125	150	175	200	225	250	280	315
Mounting direction	B	3.1	5.1	8.4	13.0	9.1	13.0	18.0	29.0
	T	6.5	11.0	16.0	25.0	24.0	35.0	49.0	75.0
	V	4.8	8.2	12.0	19.0	16.0	22.0	31.0	46.0

■ **TD Series**

(Single reduction ratio: 1/10 to 1/60)
(2) Hollow output shaft type (H) (L)

Type \ Size		125	150	175	200	225	250	280	315
Mounting direction	B	2.2	4.2	6.5	8.5	9.0	13.0	18.0	29.0
	T	5.1	8.0	13.0	15.0	20.0	27.0	38.0	58.0
	V	3.7	5.9	9.6	12.0	15.0	20.0	28.0	44.0

■ **TD Series**

(Double reduction Reduction ratio: 1/100 to 1/3600)
(1) Solid output shaft (S) (L)

Type \ Size		125	150	175	200	225	250	280	315
Mounting direction	B	4.1	7	11	17	13	19	28	39
	V	5.8	10	13	22	20	28	41	56

■ **TD Series**

(Double reduction Reduction ratio: 1/100 to 1/3600)
(2) Hollow output shaft type (H) (L)

Type \ Size		125	150	175	200	225	250	280	315
Mounting direction	B	3.2	6	9	13	13	19	28	39
	V	4.7	8	12	16	19	26	38	54

7-3. Inspection and replacement of the oil seal

- Oil seals wear and have expected lifetimes which may eventually lead to oil leakage. Lifetimes may be shorter when used at high temperatures, high rotating speeds, outdoors, or otherwise harsh conditions. Inspect the oil seal at regular intervals, and replace immediately if oil leaks exist. Always replace oil seals with the same model number and material. (Do not use oil seals made of different materials as this can cause oil leakage.) Refer to the oil seal manufacturer's catalog when replacing. Refer to the instruction manual for procedures on replacing oil seals and filters.
- Occasionally, during the first few hours of operation, grease filled during the assembly process may seep out of the oil seal lip. This is normal and does not affect the performance of the reducer.

Handling

7-4. Refilling grease

- If the mounting direction of the reducer causes the input shaft bearing to be face up or face down (where the bearing is located above the oil level), the bearing must be greased periodically. (Applicable to sizes 80 and above, excludes sizes 70 and below.)
- Models that must be greased are provided with a tapped hole for mounting a grease nipple. Refer to the reference drawings.
- A stopper plug (M6 fine threaded hex bolt) is mounted before shipment to prevent oil leakage during transport. Replace it with a grease nipple supplied with the reducer during installation or before operation. All bearings are greased and assembled.

- Follow the procedures below to refill grease every 1000 hours of operation.

Step	Replacement procedures
1	Add grease when the machine is stopped.
2	Use a grease gun or similar tool to supply grease from the grease nipple located on the top of the housing. Use only the recommended grease. Note) Do not over grease. Doing so may cause the reducer to heat up, and cause the lubrication to deteriorate prematurely.

Grease nipple size: A-M6F

7-4-1. Recommended grease (ambient temperature: -10 to 40°C)

Manufacturer	Brand (industrial all-purpose grease JIS grade 2)
Exxon Mobile	Mobilux EP2 (factory filled)
Showa Shell	Shell Alvania EP Grease 2
JXTGEnergy	EPNOC Grease AP2
IDEMITSU	Daphne Eponex No.2

Note) Grease may differ from above brand, depending on the specification. Always follow the grease specification shown in the official drawing and lubricate the appropriate grease.

7-4-2. Approximate greasing volume

Refer to the instruction manual.

8. Disassembly/assembly

(1) Never disassemble the reducer.
(2) Tooth contact and bearings have been adjusted for optimal performance.
(3) Contact Tsubaki representative when the reducer needs to be disassembled.

9. Troubleshooting

If a problem occurs with the reducer, refer to the table below to troubleshoot the problem.

Problem	Possible cause	Action
Abnormal temperature rise	Overload operation	Check and apply the correct load.
	Insufficient or too much lubricant	Fill with the appropriate volume.
	Oil contamination or wrong oil	Replaced with new and correct oil.
	Bearings are overtightened	Contact Tsubaki for adjustment.
Loud noise Strong vibration	Damaged bearings	Contact Tsubaki for repair.
	Bad tooth contact	
	Bearings are overtightened	
	Damage to the teeth	
	Insufficient oil	Contact Tsubaki for repair and lubrication
	Contaminated with foreign objects	Contact Tsubaki for repair and oil replacement.
Oil leak	Wear and damage to the oil seal	Replace the oil seal (including filter, depending on model)
	Damaged oil gauge	Replace the oil gauge
	Bolts/plugs have loosened	Retighten loose bolts/plugs.
Output shaft does not rotate	Wear of worm wheel	Contact Tsubaki for repair.
	Breakage of worm shaft or worm wheel	
	Breakage of worm wheel hub and output shaft key	
Both input and output shafts do not rotate	Jammed with foreign objects	Contact Tsubaki for repair.
	Damaged or broken bearings	
	Seized gear tooth surfaces	

Part List

■ EWJ/EWJM(R) Series (Solid output shaft type)

Single reduction 1/10 to 1/60

Part	Quantity	25	35	42	50	63	70
Input shaft bearing	2	6201ZZNR	3TM-6202ZZNR	6203ZZNR	6206ZZ	6207ZZ	TMB208ZZ
Output shaft bearing	2	6904	6004	6205	6206	6207	TMB208ZZ
Input shaft oil seal	1	D12, 22, 5	D15, 30, 5	D17, 30, 8	D30, 62, 8	D35, 72, 9	D40, 72, 9
Input shaft oil seal (M)	(1)	-	-	-	D30, 45, 8	D35, 50, 8	D40, 58, 8
Output shaft oil seal	1	D20, 35, 5	D20, 35, 5	D25, 47, 7	D30, 62, 8	D35, 72, 9	D40, 72, 9
Output shaft oil seal (V-*D)	(1)	-	-	-	D30, 45, 8	D35, 50, 8	D40, 58, 8
Plug (size)	-	1/8"	1/8"	1/8"	1/4"	3/8"	3/8"

Note 1) These models do not have an oil gauge.
2) There are two oil seals for double output shafts.
V type with output shaft arrangements LU and RU: refer to the “Output shaft oil seal”.
V type with output shaft arrangements LD and RD: refer to the “Output shaft oil seal (V-*D)”.
3) For reducers with motors, different oil seals are used on the input shaft for sizes 50 to 70. Refer to the input shaft oil seal (M) above. Other sizes are common.
4) Filters must also be replaced when replacing oil seals. Contact Tsubaki representative for details.

Double reduction 1/100 to 1/3600

Part	Quantity	50	63	70
Input shaft bearing	2	3TM-6202ZZNR	6203ZZNR	6203ZZNR
Intermediate shaft bearing A	2	6006	6008	6008
Intermediate shaft bearing B	2	6206ZZ	6207ZZ	TMB208ZZ
Output shaft bearing	2	6206	6207	TMB208ZZ
Input shaft oil seal	1	D15, 30, 5	D17, 30, 8	D17, 30, 8
Output shaft oil seal	1	D30, 62, 8	D35, 72, 9	D40, 72, 9
Output shaft oil seal (V-*D)	(1)	D30, 45, 8	D35, 50, 8	D40, 58, 8
Plug (size)	-	1/8" (High speed side housing) 1/4" (Low speed side housing)	1/8" (High speed side housing) 3/8" (Low speed side housing)	1/8" (High speed side housing) 3/8" (Low speed side housing)

Note 1) These models do not have an oil gauge.
2) There are two oil seals for double output shafts.
V type with output shaft arrangements L-RU and R-LU: refer to the “Output shaft oil seal”.
V type with output shaft arrangements L-RD and R-LD: refer to the “Output shaft oil seal (V-*D)”.
3) Filters must also be replaced when replacing oil seals. Contact Tsubaki representative for details.

■ SWJ/SWJM(R) Series (Hollow output shaft type)

Single reduction 1/10 to 1/60

Part	Quantity	25	35	42	50	63	70
Input shaft bearing A	2	6201ZZNR	3TM-6202ZZNR	6203ZZNR	6205ZZ	6207ZZ	6306ZZ
Output shaft bearing	2	6904	6006	6008	6009	6010	6012
Input shaft oil seal	1	D12, 22, 5	D15, 30, 5	D17, 30, 8	D24, 52, 10	D35, 72, 9	DM28, 40, 8
Input shaft oil seal (M)	(1)	-	-	-	D24, 45, 10	D35, 50, 8	-
Output shaft oil seal	2	D20, 35, 5	D30, 50, 5	D40, 62, 5	D45, 62, 9	D48, 70, 9	DM58, 80, 12
Plug (size)	-	1/8"	1/8"	1/8"	1/4"	3/8"	3/8"

Note 1) For reducers with motors, different oil seals are used on the input shaft for sizes 50 and 63. Refer to the Input shaft oil seal (M) above. Other sizes are used in common.
2) Filters must also be replaced when replacing oil seals. Contact Tsubaki representative for details.

Part List

■ EW/EWM(R)/SW/SWM(R) (-S) Series (Solid output shaft type)

Single reduction 1/10 to 1/60

Part	Quantity	80	100	125	150	175	200
Input shaft bearing A	1	32009	32011	32211	30311	30312	30314
Input shaft bearing B	1	32206	32207	32308	32309	32310	32311
Output shaft bearing	2	32208	32210	32213	32214	32216	32218
Input shaft oil seal	1	[5] D44, 68, 12	[5] D54, 72, 9	[5] D54, 72, 9	D55, 72, 9	DM58, 80, 12	D68, 90, 12
Output shaft oil seal	1	D40, 62, 8	D48, 70, 9	D63, 80, 9	DM68, 90, 12	DM75, 100, 13	D85, 110, 13
Plug (size)	-	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"
Oil gauge	1	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"

Note 1) For sizes 80 to 200, the input shaft oil seal is made of acrylic. 2) There are two oil seals for double output shafts.
3) Filters must also be replaced when replacing oil seals. Contact Tsubaki representative for details.
4) Input shaft oil seals are different in double input shaft models. Contact Tsubaki representative for details.
5) Made to order, and not available in general market. Contact Tsubaki representative for more information.

Double reduction 1/100 to 1/3600

Part	Quantity	80	100	125	150	175	200
Input shaft bearing A	1	6206ZZ	6206ZZ	6207ZZ	32009	32011	32211
Input shaft bearing B	1	6206ZZ	6206ZZ	6207ZZ	32206	32207	33208
Intermediate shaft bearing A	1	32009	32011	32211	30311	30312	30314
Intermediate shaft bearing B	1	32206	32207	32308 [5](33208)	32309	32310	32311
Output shaft bearing	2	32208	32210	32213	32214	32216	32218
Input shaft oil seal	1	D30, 62, 8	D30, 62, 8	D35, 72, 9	[6] D44, 68, 12	[6] D54, 72, 9	[6] D54, 72, 9
Input shaft oil seal (M)	(1)	D30, 45, 8	D30, 45, 8	D35, 50, 8	-	-	-
Output shaft oil seal	1	D40, 62, 8	D48, 70, 9	D63, 80, 9	DM68, 90, 12	DM75, 100, 13	D85, 110, 13
Plug (size)	-	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"
Oil gauge	1	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"

Note 1) For sizes 150 to 200, the input shaft oil seal is made of acrylic rubber. 2) There are two oil seals for double output shafts.
3) For reducers with motors, different oil seals are used on the input shaft for sizes 80 to 125. Refer to the input shaft oil seal (M) above. Other sizes are used in common.
4) Filters must also be replaced when replacing oil seals. (Excluding sizes 80 to 125.) Contact Tsubaki representative for details.
5) Part numbers in ( ) apply to the SW/SWM series.
6) Made to order, and not available in general market. Contact Tsubaki representative for more information.

■ EW/EWM(R) (-H)/SW/SWM(R) Series (Hollow output shaft type)

Single reduction 1/10 to 1/60

Part	Quantity	80	100	125	150	175	200
Input shaft bearing A	1	32009	32011	32211	30311	30312	30314
Input shaft bearing B	1	32206	32207	32308	32309	32310	32311
Output shaft bearing	2	6015	6017	6022	6024	6026	6030
Input shaft oil seal	1	[4] D44, 68, 12	[4] D54, 72, 9	[4] D54, 72, 9	D55, 72, 9	DM58, 80, 12	D68, 90, 12
Output shaft oil seal	2	D70, 90, 10	D80, 105, 13	D105, 135, 9	DM115, 145, 14	DM125, 155, 14	DM145, 175, 14
Plug (size)	-	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"
Oil gauge	1	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"

Note 1) For sizes 80 to 200, the input shaft oil seal is made of acrylic.
2) Filters must also be replaced when replacing oil seals. Contact Tsubaki representative for details.
3) Input shaft oil seals are different for double input shaft models. Contact Tsubaki representative for details.
4) Made to order, and not available in general market. Contact Tsubaki representative for more information.

Double reduction 1/100 to 1/3600

Part	Quantity	80	100	125	150	175	200
Input shaft bearing A	1	6206ZZ	6206ZZ	6207ZZ	32009	32011	32211
Input shaft bearing B	1	6206ZZ	6206ZZ	6207ZZ	32206	32207	33208
Intermediate shaft bearing A	1	32009	32011	32211	30311	30312	30314
Intermediate shaft bearing B	1	32206	32207	32308 [4](33208)	32309	32310	32311
Output shaft bearing	2	6015	6017	6022	6024	6026	6030
Input shaft oil seal	1	D30, 62, 8	D30, 62, 8	D35, 72, 9	[5] D44, 68, 12	[5] D54, 72, 9	[5] D54, 72, 9
Input shaft oil seal (M)	(1)	D30, 45, 8	D30, 45, 8	D35, 50, 8	-	-	-
Output shaft oil seal	2	D70, 90, 10	D80, 105, 13	D105, 135, 9	DM115, 145, 14	DM125, 155, 14	DM145, 175, 14
Plug (size)	-	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"
Oil gauge	1	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"

Note 1) For sizes 150 to 200, the input shaft oil seal is made of acrylic rubber.
2) For reducers with motors, different oil seals are used on the input shaft for sizes 80 to 125. Refer to the Input shaft oil seal (M) above. Other sizes are used in common.
3) Filters must also be replaced when replacing oil seals. (Excluding sizes 80 to 125.) Contact Tsubaki representative for details.
4) Part numbers in ( ) apply to the SW/SWM series.
5) Made to order, and not available in general market. Contact Tsubaki representative for more information.

■ TD Series

Single reduction 1/10 to 1/60

Part	Quantity	TD125	TD150	TD175	TD200	Quantity	TD225	TD250	TD280	TD315
Input shaft bearing I	2	30309D	30311D	30312D	30314D	1	NF314	NF316	NF318	NF320
Input shaft bearing II	-	-	-	-	-	2	30314D	30316D	30318D	31320
Output shaft bearing (solid)	2	32213	32214	32216	32218	2	32022	32024	32026	32030
Output shaft bearing (hollow)	2	32022	32024	32026	32030	2	32030	32034	32040	32044
Input shaft oil seal I	1	D45.62.9	D55.72.9	D58.80.12	D68.90.12	2	D58.80.12	D68.90.12	D80.100.13	D90.115.13
Input shaft oil seal II	1	D32.52.8	D45.68.12	D45.68.12	D45.68.12	2	D58.80.12	D68.90.12	D80.100.13	D90.115.13
Output shaft oil seal (Solid)	1 (2)	D63.80.9	DM68.90.12	DM75.100.13	D85.110.13	2 (4)	DM105.135.14	DM115.145.14	D130.160.14	DM145.175.14
Output shaft oil seal (Hollow)	2	D105.135.9	DM115.145.14	DM125.155.14	DM145.175.14	4	DM150.180.14	D170.200.16	D200.235.18	D220.250.16

Note 1) The input shaft oil seal is made of acrylic rubber.
2) The output shaft oil seal is made of nitrile rubber. Figures in ( ) are for dual shafts.
3) Filters must also be replaced when replacing oil seals. (Excluding sizes 225 to 315.) Contact Tsubaki representative for details.

Double reduction 1/100 to 1/3600

Part	Quantity	TD125	TD150	TD175	TD200	Quantity	TD225	TD250	TD280	TD315
Input shaft bearing I	1	6208ZZ	32009	32011	32211	1	32211	30311	30312	30312
Input shaft bearing II	1	6208ZZ	32206	32207	33208	1	33208	32309	32310	32310
Intermediate shaft bearing I	2	30309D	30311D	30312	30314D	1	NF314	NF316	NF318	NF320
Intermediate shaft bearing II	-	-	-	-	-	2	30314D	30316D	30318D	31320
Output shaft bearing (solid)	2	32213	32214	32216	32218	2	32022	32024	32026	32030
Output shaft bearing (hollow)	2	32022	32024	32026	32030	2	32030	32034	32040	32044
Input shaft oil seal I	1	D40.72.9	[4] D44.68.12	[4] D54.72.9	[4] D54.72.9	1	[4] D54.72.9	D55.72.9	D58.80.12	D58.80.12
Output shaft oil seal (Solid)	1 (2)	DM63.80.9	DM68.90.12	DM75.100.13	D85.110.13	2 (4)	DM105.135.14	DM115.145.14	D130.160.14	DM145.175.14
Output shaft oil seal (Hollow)	2	DM105.135.9	DM115.145.14	DM125.155.14	DM145.175.14	4	DM150.180.14	D170.200.16	D200.235.18	D220.250.16

Note 1) The input shaft oil seal is made of acrylic rubber.
2) The output shaft oil seal is made of nitrile rubber. Figures in ( ) are for dual shafts.
3) Filters must also be replaced when replacing oil seals. (Excluding size 125 inputs and sizes 225 to 315.) Contact Tsubaki representative for details.
4) Made to order, and not available in general market. Contact Tsubaki representative for more information.

Troi Drive and Worm Power Drive Inquiry Form

Machine or equipment		
Application		
Motor	Type	- General purpose - Inverter motor - Servo motor - Hydraulic motor - Other
	Size (kW)	
	Speed	
	Brake	Yes (torque =) / No
	Other	
Connection	Motor side	- Coupling - Belt - Other
	Driven side	- Coupling - Chain - Gear - Other
Operating conditions	Hours of use	( ) hours/day continuous or intermittent
	Intermittent	Frequency ( ) Running time ( ) / Idle time ( )
	Output shaft speed	r/min
	Start frequency	( ) starts/hour
	Shock environment	Yes/No
	Alternating loads	Yes/No
	Load torque	N·m {kgf·m}
	Peak torque	Yes/No (%) of load Duration ( ) Frequency ( )
	Radial load	Yes/No (N) Point of load (mm from end of shaft)
	Axial loads	Yes/No (N)
Operating environment	Installation	Indoors/Outdoors (simple roof Yes/No, Subject to raindrops)
		Inside refrigerator Near oven
	Ambient temperature	Normal temperature (°C) Tropical areas (°C) Cold areas (°C)
	Atmosphere	Sea or salty air Dust/cement Acid/Alkali
Paint/ Rust-proofing	Paint specifications	Standard Outdoor grade Salt-resistant Chemical-resistant Other
	Color	Munsell ( ) JPMA Standard No. ( )
Other	Accessories	Yes/No
	Spare parts	Yes/No
Outline of equipment		

Safety Precautions

WARNING Observe the items below to prevent danger.

- Do not release the brake when a load is acting on the unit under any circumstances. If the brake is released while a load is acting on the unit, the supported object may fall or the moving sections may suddenly start to move.
- Do not use the unit in an explosive atmosphere. Doing so may cause the unit to become flammable, explode, or catch fire or may result in injury.
- When using the unit in equipment that will transport people, install a protection device on the equipment side to ensure safety. Operating the equipment recklessly may lead to damage to the equipment or accidents resulting in injury or death.
- When using the unit in lifting equipment, install a safety device on the equipment side to prevent sudden drops. Sudden equipment drops may lead to damage to the equipment or accidents resulting in injury or death.
- When using the unit in equipment hung from above, install a safety fence to prevent people from entering the area beneath suspended objects. A safety device must also be installed just in case the gears are damaged.
- Keep all body parts, clothes, and accessories away from movable parts. Otherwise, they may be entangled or trapped in movable parts, which may lead to damage to the equipment or accidents resulting in injury or death.
- If a terminal box is used, do not operate the unit with the terminal box cover removed. Doing so may result in electrical shock. Be sure to replace the cover after performing any work on the terminal box.
- When operating the unit manually from a manual operation shaft, be sure to do so according to the instruction manual and with no load applied.
- Observe the general standards stipulated in Part 2, Chapter 1, Section 1 of the Ordinance on Industrial Safety and Health.
- For attachment to/removal from equipment, transportation, installation, wiring, operation, maintenance, and inspection of the unit:
  - Always perform work according to the instruction manual.
  - Work must be performed by those who have specialized knowledge and skills. Failing to do so may result in explosion, ignition, fire, electrical shock, injury, or equipment damage.
  - During electrical wiring, always observe the precautions listed in the instruction manual as well as the regulations in the electrical equipment standards and indoor wiring regulations. Grounding in particular is important for preventing electrical shock, so always ensure that the product is reliably grounded.
  - Turn off the source power supply in advance and ensure that the switch cannot be unintentionally turned on. In the event of power stoppage, take the same action.
  - Wear clothing suited to the work. Also wear appropriate protective gear (safety goggles, gloves, safety footwear, and other necessary safety equipment).
- Do not attempt to modify the unit.

CAUTION Observe the items below to prevent accidents.

Product details described in this catalog are primarily intended to aid product selection. Always read the instruction manual before using any product to ensure correct use.

- Do not use the unit outside of the specified ranges listed on the nameplate and external diagrams and in the catalog. Doing so may result in injury and/or damage to the equipment.
- Use the unit within the appropriate power supply voltage range. There is a risk of burning out the motor and of fire when using the unit outside this range.
- Check the rotational direction before incorporating the unit into any other equipment. Mounting the unit against the correct rotational direction may result in injury and/or damage to the equipment.
- Do not insert your fingers or objects into any opening on the unit. Doing so may result in injury and/or damage to the equipment.
- Functionality and performance may decrease because of part wear and the lifespan of parts. Perform periodic inspections according to the instruction manual. If the unit shows degraded functionality and performance or is damaged, immediately stop operation and contact your local supplier. Failing to do so may result in electrical shock, injury, or fire.
- During operation, the unit, motor, or gear reducer may heat up to a high temperature. Keep hands and other body parts from coming into contact with these devices. Failing to do so may result in burns.
- Do not operate the unit with an applied load that is higher than the rated load. Doing so may result in injury and/or damage to the unit.
- Do not remove the nameplate.
- Customer alterations of the unit are not covered by the Tsubaki warranty. Therefore, Tsubaki assumes no responsibility for such alterations.
- Before using the unit, thoroughly read its included instruction manual and ensure the unit is used correctly. If no instruction manual is available, use the unit name, series name, and model number to request an instruction manual from the distributor where the unit was purchased or from a Tsubaki sales office.
- Be sure to give the instruction manual to the end user.

Limited Warranty

1. Warranty period without charge

18 months effective the date of shipment or 12 months effective the first use of Goods, including installation of Goods to Buyer's equipment or machine - whichever comes first. However, the warranty period may vary, depending on the usage conditions.

2. Warranty coverage

During the limited warranty period, a failure in a Tsubaki product installed, used, and maintained according to the catalog, instruction manual, or other appropriate documents can be returned to Tsubaki for replacement or repair free of charge.

However, please note that the limited warranty covers only Tsubaki products. The following expenses will not be covered by the warranty. (Instruction manuals and other appropriate documents include any documents specially submitted to the customer.)

(1) Any costs related to the removal or re-installation of Goods from the Buyer's equipment or machine to repair or replace parts.
(2) Cost to transport Buyer's equipment or machines to replace or repair.
(3) Costs to reimburse any profit loss due to any repair or damage and consequential losses caused by the Buyer.

3. Warranty with charge

Seller will charge for any investigation and repair of Goods (even during the warranty period without charge) caused by:

(1) Improper installation by failing to follow the instruction manual.
(2) Insufficient maintenance or improper operation by the Buyer.
(3) Incorrect installation of Goods onto other equipment or machines.
(4) Structure change of the Goods by any modifications or alterations by the Buyer.
(5) Any repair by engineers other than the Seller or those designated by the Seller.
(6) Operation in an inappropriate environment not specified in the manual.
(7) Force Majeure or forces beyond the Seller's control such as a natural disaster and injustices committed by a third party.
(8) Secondary damage or problems incurred by the Buyer's equipment or machines.
(9) Defective parts supplied or specified by the Buyer.
(10) Product failures due to wiring failures caused by the Buyer.
(11) The product reaching the end of its normal service life according to the operating conditions.
(12) Loss or damage not liable to the Seller.

4. Dispatching of Tsubaki engineers

Service expenses such as those incurred when dispatching engineers to perform an investigation, adjustment, or trial operation of a Tsubaki product will be charged separately.

CAUTION **Product details described in this catalog are primarily intended to aid product selection. Always read the instruction manual before using any product to ensure correct use.**

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