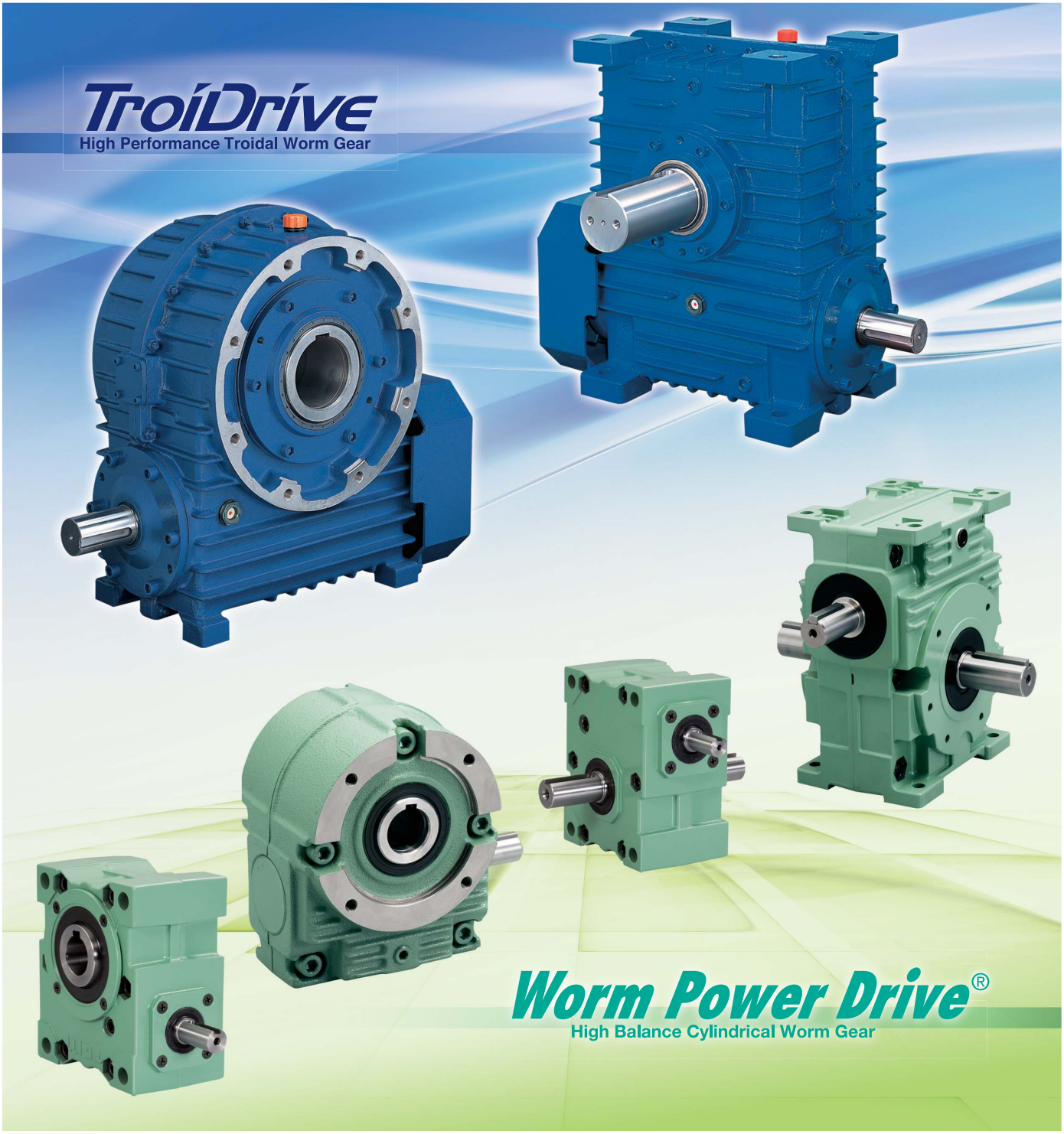
Innovation in Motion
TSUBAKI

Expanded Lineup

TSUBAKI
Troi Drive
Worm Power Drive®



Three C's for three E's

Tsubaki's worm gears, "Troi Drive"and "Worm Power Drive" just got better for people and for the environment.
These high capacity reducers are powerful enough to allow compact machine designs, and can cover a wide range of applications through a full array of options designed to meet every customer's needs.
By focusing on these three C's, we realized there were three E's that only Tsubaki, the industry leader, could achieve.
Introducing our Eco-Worm concept, which embraces Economy and Ecology through efficiently designed reducers that encourage efficient machine designs.
Let Tsubaki's worm gears, "Troi Drive"and "Worm Power Drive" be your next drive solution.

TSUBAKI E&M

Economy

Triple 3E

Eco+worm

Ecology

Three C's Possible Through

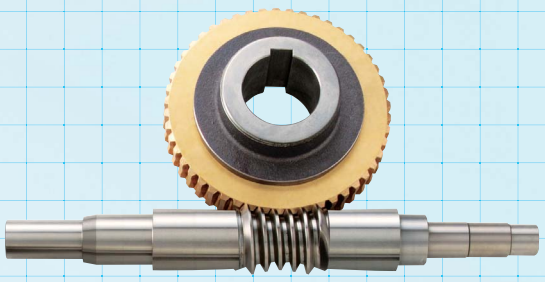
A worm gear differs from other gear transmission systems in the way it transmits power through sliding contact, resulting in extremely low vibration and noise. The worm gear-to-wheel configuration provides very high reduction ratios (generally 1/10 to 1/60) plus the added ability to exhibit anti-reversal (self-locking) properties.

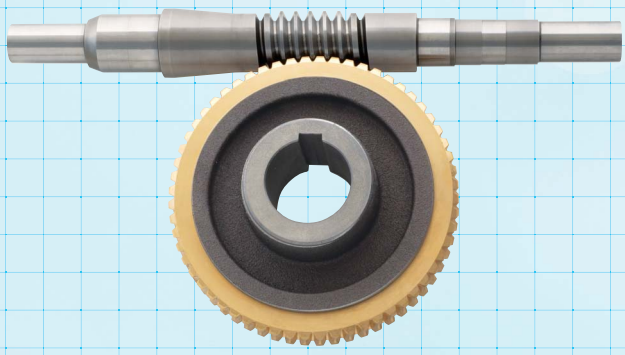
Self-locking

Little backlash

High reduction ratio

Low noise, low vibration





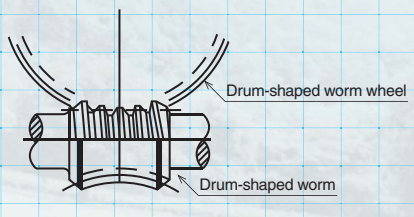
Drum-shaped Worm Gear

TroiDrive

High Performance Troidal Worm Gear

TD series

Troidal Worm Gears are high performance worms that transfer power over their entire drum-shaped surface. This gives them a high transfer capacity and advanced functionality ideal for compact machines.



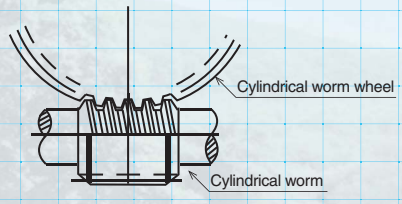
Cylindrical Worm Gear

Worm Power Drive®

High Balance Cylindrical Worm Gear

EWJ/EW/SWJ/SW/TM series

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



Two Types of Worm Gears

High capacity worm gears, “Troi Drive” and “Worm Power Drive” power compact machine designs, and cover a wide range of applications through a full array of options designed to meet every customer’s needs.

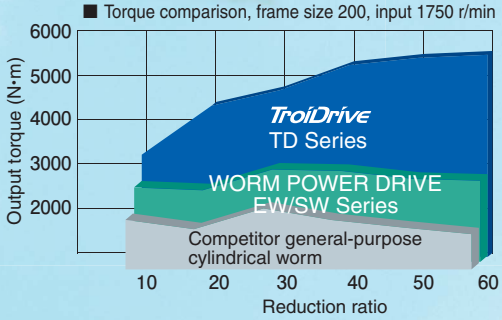
High Capacity **Compact** **Wide Cover**

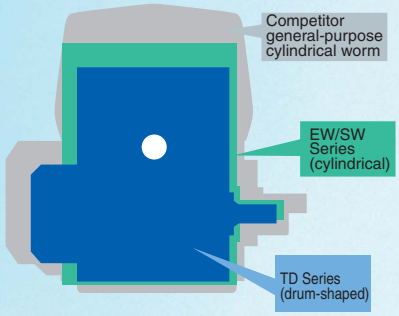
High Capacity *Compact* *Wide Cover*

High-power, lightweight, and compact

Our worm gears, “Troi Drive” and “Worm Power Drive” deliver high transfer capacity in a small footprint. Other right-angle gear reducers are larger for the same load conditions.
Compared to an all-purpose cylindrical worm gear, users can select a cylindrical worm that is one frame size smaller, or a drum-shaped worm two sizes smaller.
Conversely, this means that our drives are 1.5 to 2 times more powerful compared to drives with the same frame size.

■ Torque comparison, frame size 200, input 1750 r/min

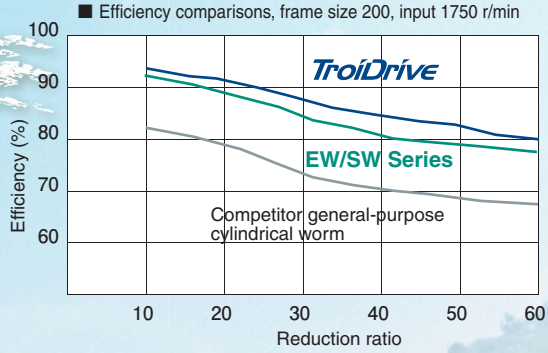




High efficiency, low energy

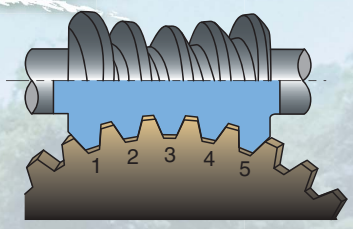
In order to deliver smooth transfer power with emphasis on efficiency, we minimized power transmission loss by optimizing gear teeth geometry.

■ Efficiency comparisons, frame size 200, input 1750 r/min



Silent and smooth operation

By enhancing the precision of the gear teeth profiles, our worm gears, “Troi Drive” and “Worm Power Drive” deliver smooth, silent rotation.
The TD Series based on the Troidal worm has more teeth in contact at the same time for minimal rotation loss.

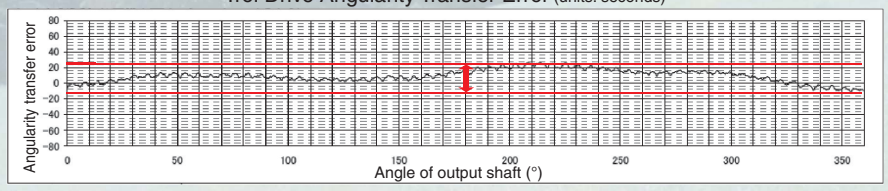


Number of teeth engaged

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

Low rotation loss

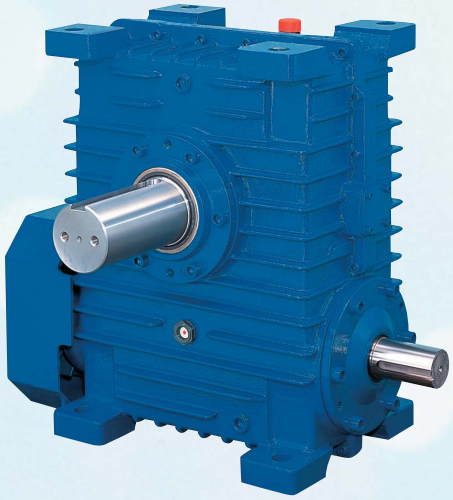
Troi Drive Angularity Transfer Error (units: seconds)



Representative data: Frame size 125, reduction ratio 1/60

Expanded Lineup Embraces

TroiDrive
High Performance Troidal Worm Gear



TD series

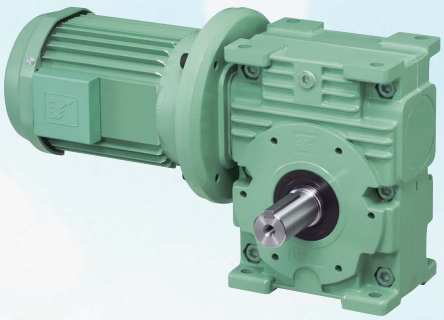
High power and compact worms for premium performance

Available with solid and hollow output shafts

Worm Power Drive®
High Balance Cylindrical Worm Gear

EW/EWM series EWJ/EWJM series

Our line of accurate, compact, and affordable reducers. Basic foot mounting style allows equipment designs with balanced cost and maintenance ease. Machines can be made smaller through a wide array of variations.



Foot mount type

Well-balanced performance, efficiency, and cost

2 output shaft types: solid and hollow

Small to medium sizes (25 to 200)

* EWJ/EWJM Series only available with solid output shaft.

Worm Power Drive®
High Balance Cylindrical Worm Gear

TM series

Small, lightweight aluminum diecast housings further reduce weight. Modular design scheme lends itself to use with compact equipment.

Small to medium sizes (25 to 56)

Modular housing designs available in flange or foot mount styles

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	●	●●	●● *2	●● *3	●●	●●	●●	●●	●●	●●

*1: TD size is 450 *2: TD size is 750 *3: TD size is 900

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

the Three E's.

Eco-worm
Economy
Ecology

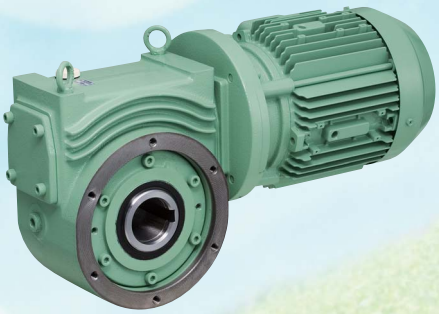
Troi Drives use a drum-shaped troidal worm gear. These high performance worms achieve high transfer capacity and high efficiency. Housings are available in two types: with a solid output shaft in foot style mounting, or a hollow output shaft in flange style mounting. Both models deliver the ultimate in reduced footprint and weight for all mounting layouts.

Medium to large sizes (125 to 315)

Smooth, quiet rotation with little rotation loss

SWJ/SWJM series SW/SWM series

Housings designed exclusively for flange mounting save cost and space. Simplified equipment designs are possible thanks to optimized designs and options such as locking devices "Power-Lock®" and taper bush shafts.



Flange mount type

Well-balanced performance, efficiency, and cost

2 output shaft types: hollow and solid

Small to medium sizes (25 to 200)

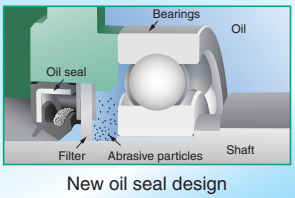
* SWJ/SWJM Series only available with hollow output shaft.

Commitment to oil leakage prevention

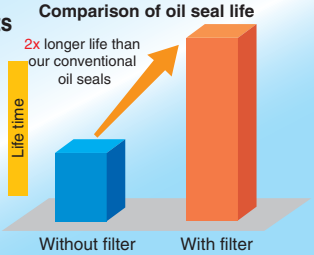
New Longer lasting oil seal

New oil seal design used on both input and output shafts

The new oil seal design comes with a filter that prevents abrasive particles from entering, thus extending the life of the oil seal.



New oil seal design



Conditions: Frame size 50, reduction ratio 1/60, input shaft speed at oil seal 1750 r/min, 50% rated load, 24 hours continuous operation

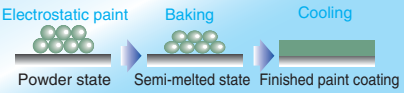
New

Environmentally friendly, strong against scratches and paint chipping

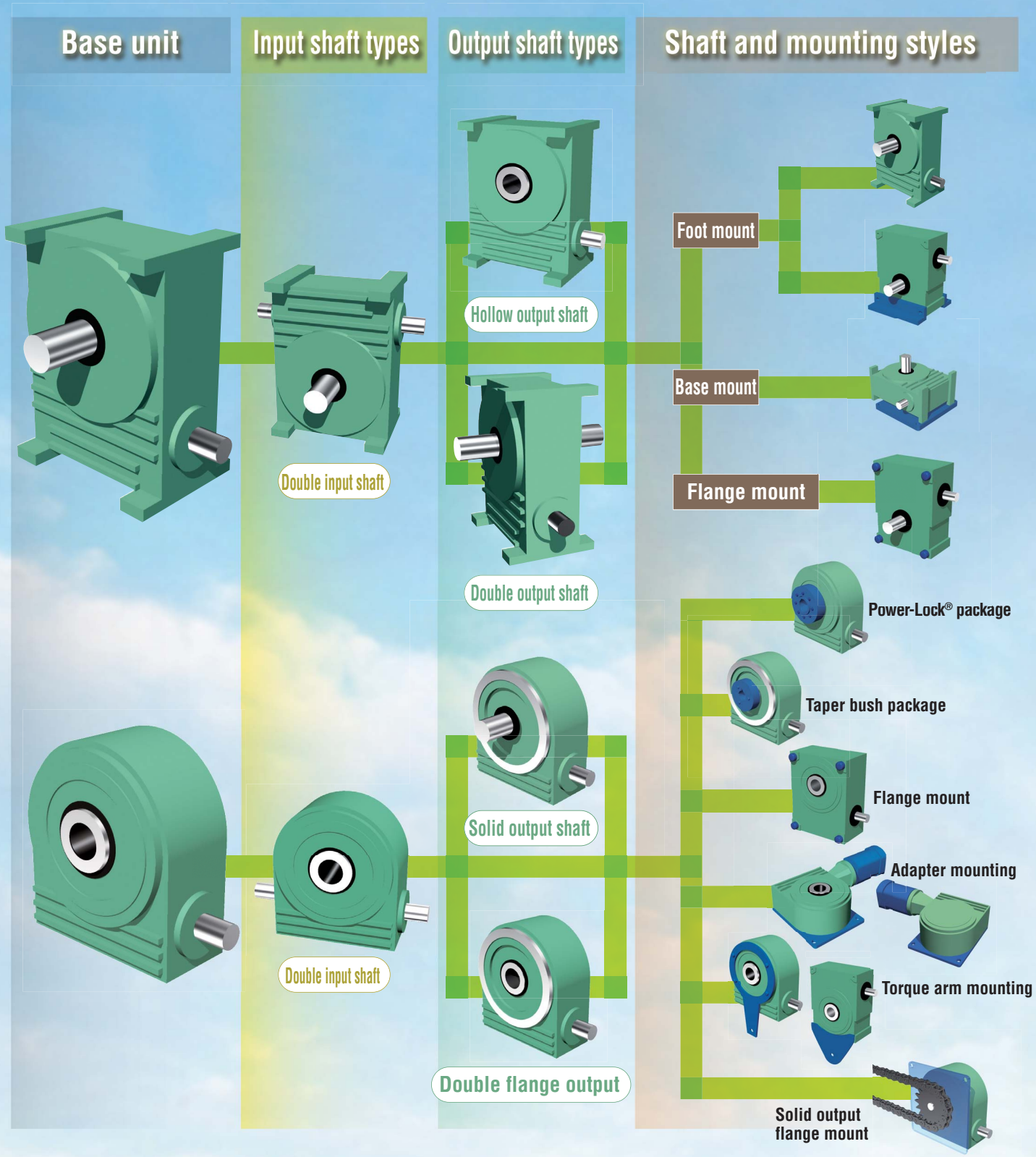
Baked electrostatic powder

- **Improved paint surface quality** (Enhances adhesive properties of paint)
- **Eco-friendly** (Uses no thinner to reduce emissions of volatile organic compounds)

EWJ Series: Sizes 70 or smaller (single reduction)
SWJ Series: Sizes 42 or smaller



Meeting every customer's needs



Mounting methods

Foot mounting

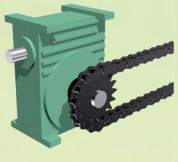
Foot mounting

- Basic foot mounting style allows equipment designs with balanced cost and maintenance ease
- Compact right-angle configuration and easy-to-use foot mounting style for optimum drive unit design
- Foot mount with hollow output shaft turns the reducer into a bearing

Multiple connection support

- Supports connection by coupling, chains, gears, and belts
- Double output shaft can be adapted for 1) power distribution and 2) rotation detection


Foot mounting


Foot mounting

– Wide array of options and extensive variations

Motor

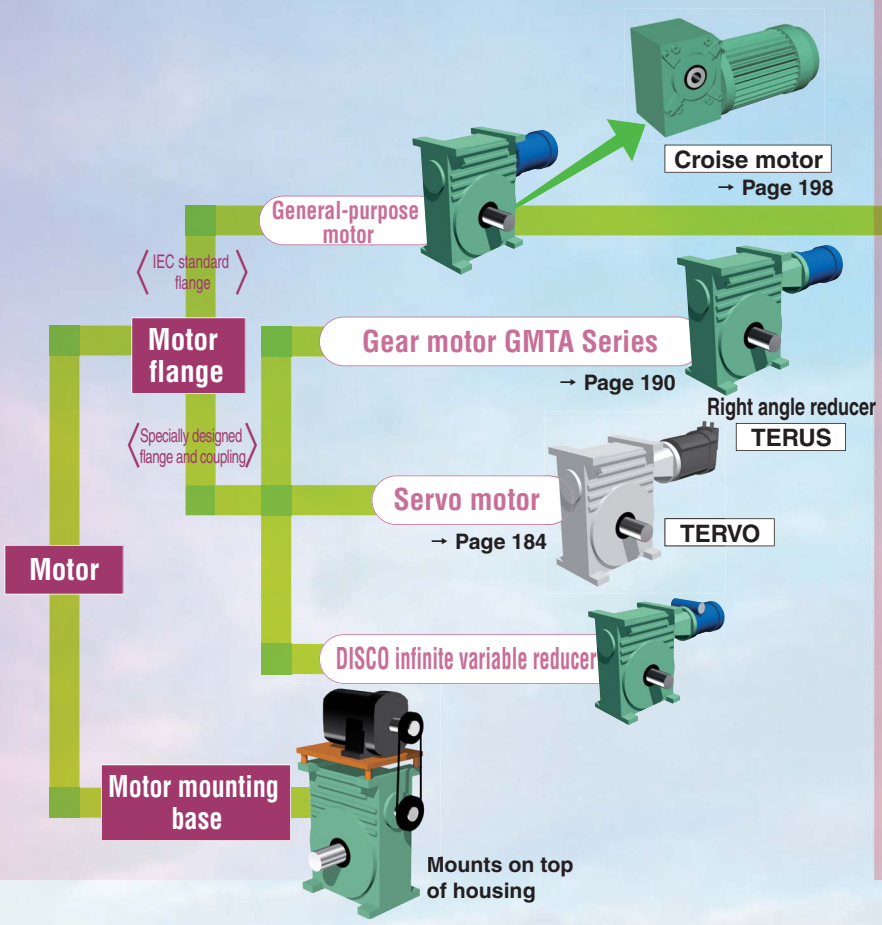
Economy Ecology

Reducers with motors for a new level of cost savings and ecological benefits.

We can provide application-specific solutions.

- Integrating the motor and worm reducer is the first step toward cost savings.
- A wide range of options are available for creating custom-made reducers designed for long-term use.

Better cost savings, always eco-friendly.



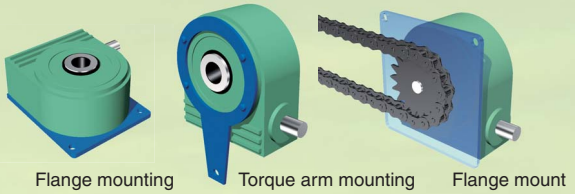
Motor options

- Brake type motors
- International standards (global series)
- Variable frequency motors
- Hard terminal box
- Outdoor models
- Support for different voltages
- Manual quick-release brake
- Manual release shaft
- Encoders

Shaft mounting

Space saving
- Hollow shaft mounts directly on driven shaft for minimal space consumption
- Inherently compact right angle configuration and on-shaft mounting ability for optimum drive unit design

Cost saving
- Greatly reduces assembly time by using 1) torque arm or 2) flange mounting variations
- Eliminates centering by mounting directly on the driven shaft. No more mounting bases, positioning parts, or even protective guards.
- Solid output shaft and flange mount uses spigot facing for quick and easy centering.

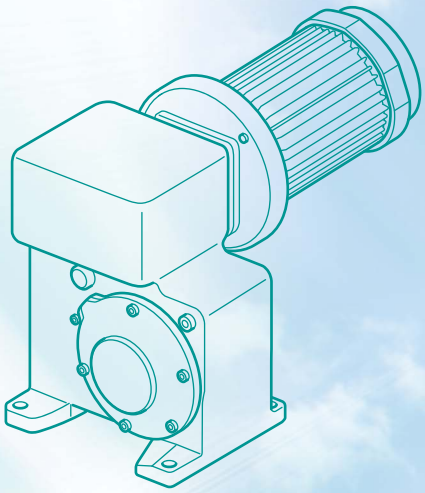


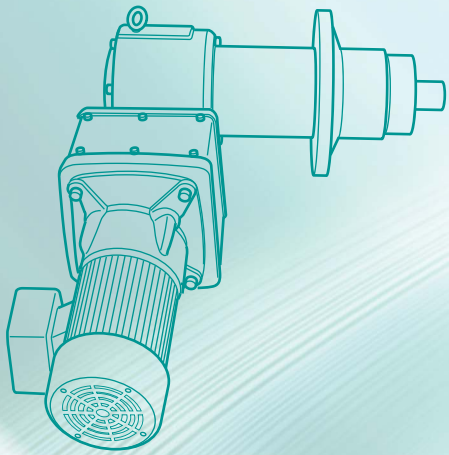
Our extensive knowledge and support

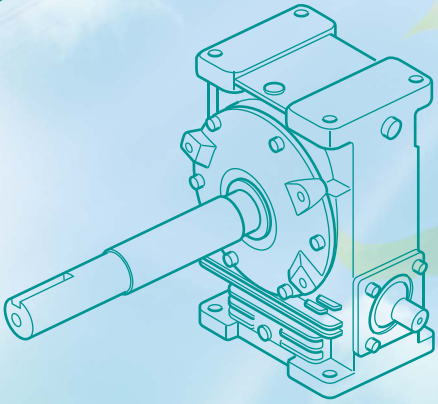
Tsubaki's worm gears, “Troi Drive” and “Worm Power Drive” offer a full range of options designed to meet various situations for detailed customization possibilities.
We can propose a product that meets your requirements most efficiently and then provide comprehensive after-sales support.
Let us help you find the Troi Drive and Worm Power Drive that’s right for you.

- Medical equipment
- Mixers
- Polishers
- Lighting, stage equipment

We deliver specially designed products by tapping our extensive experience in problem-solving.







provides you with the perfect match.

Elevators

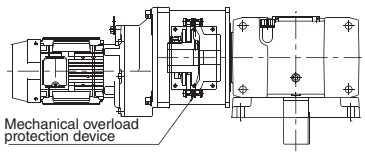
Printing machines

Car washing machines

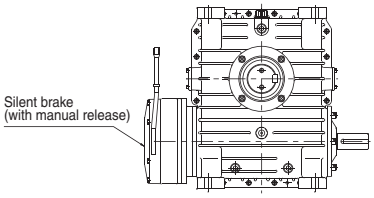
Automated warehouses

Other applications

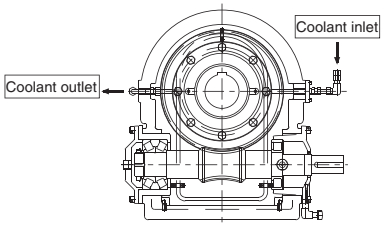
With overload protection



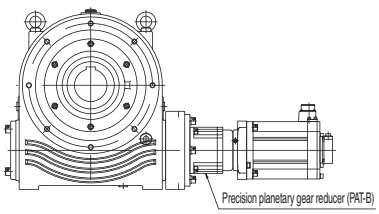
Braked models for lifts



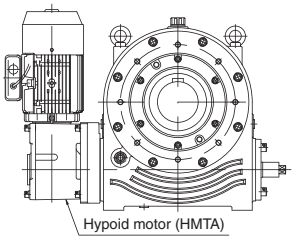
Water cooled design



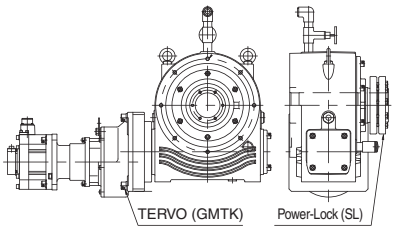
Integrated double reduction unit (TERUS)



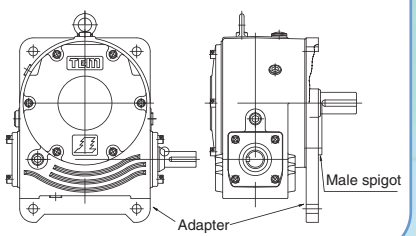
Integrated double reduction unit (TERUS)



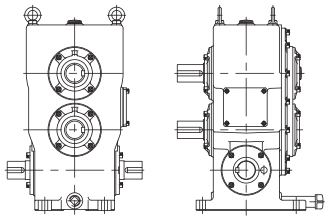
Integrated double reduction unit (TERUS)



With adapter mounting (male spigot)



Parallel output shafts



JFM

Just Fit Model

3 series to match any reducer application.

TERVO Series

See page 184 (also refer to separate brochure for details)

Convert your equipment to servo-drive technology with Tsubaki's TERVO. Comes with standard servo motor mounting flange and input shaft clamp.

General all-around flexibility

Available in right angle drives with solid and hollow output shafts. Supports multiple servo motor manufacturers.

Superior stopping accuracy

Compared with other general purpose gear boxes, worm gears have little backlash for superior stopping accuracy.

Economy

Converts worm gear head to servo drive technology for better economy and shorter delivery.

TERUS Series

See page 190 (also refer to separate brochure for details)

The TERUS Series combines worm reducers with gear motors to give you the best of both worlds: a helical worm motor and helical worm reducer. Each model inherits the features of a worm gear – high durability and silent operation, and adds the high efficiency and silence of a gear motor. These advanced gear motor reducers can be configured for gear ratios that provide self-locking properties and other features to meet a variety of needs.

Excellent characteristics worm

The high durability, quietness, and self-locking properties of worms make them perfect for various applications and purposes.

Compact equipment design

Equipment designed with a smaller footprint will use fewer components and reduce costs.

Wide selection of options

Supports various motor and brake options including variable frequency motors and manual quick-release brake.

JFM Just Fit Model

Just fit models for industry-specific applications.
B: Self-locking model,
C: Eco model

Croise motor

See page 198 (also refer to separate brochure for details)

Croise motors are right angle gear motors designed specifically to offer a compact footprint. Each motor offers excellent features such as self-locking properties, silent operation, and a robust gear train.

Light, compact

All Croise motors are made with aluminum frames for less weight, and feature a simple construction that gives them a short lengthwise profile.

Superior quietness

The sliding contact of a worm gear is what makes it much smoother and quieter than other gear reduction boxes.

Right angle, double reduction

Single reduction offers reduction ratios up to 1/60, while double reduction (helical gear reduction + worm gear reduction) delivers reduction ratios of up to 1/300.

Selection

Worm Power Drive®

P26 /

High Balance Cylindrical Worm Gear

Well Balanced Worms

EWJ/EWJM series
EW/EWM series

Foot mount

SWJ/SWJM series
SW/SWM series

On-shaft and flange mount

Size 25 to 200 | Reduction ratio Single reduction 1/10 to 1/60, Double reduction 1/100 to 1/3600 | Torque 12 to 5300 N·m

With motor 0.1 to 5.5 kW

TroiDrive

P124 /

High Performance Troidal Worm Gear

High Performance Worms

TD series

Foot mount

On-shaft and flange mount

Size 125 to 315 | Reduction ratio Single reduction 1/10 to 1/60, Double reduction 1/100 to 1/3600 | Torque 2700 to 47000 N·m

Worm Power Drive®

P174 /

High Balance Cylindrical Worm Gear

Well Balanced Worms

TM series

Size 10E (25) to 22E (56) | Reduction ratio Single reduction 1/10 to 1/60 | Torque 8 to 1500 N·m

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- Sizing Flowchart
- Procedures · Examples

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SWJ/SWJM/SW/SWM Series 26

Single Reduction (1/10 to 1/60)

- Model Number Designation/Models/ Shaft Arrangement/Mounting Examples
- Motor and Reduction Ratio Combinations
- Sizing Chart (Transfer Capacity Table)
- Technical Data
- Internal Construction
- Dimensional Drawings

Double Reduction (1/100 to 1/3600)

- Model Number Designation/Models/ Shaft Arrangement/Mounting Examples
- Motor and Reduction Ratio Combinations
- Sizing Chart (Transfer Capacity Table)
- Technical Data
- Internal Construction
- Dimensional Drawings

TD Series 124

- Model Number Designation/Models/ Shaft Arrangement/Internal Construction

Single Reduction (1/10 to 1/60)

- Transfer Capacity Table
- Technical Data
- Dimensional Drawings

Double Reduction (1/100 to 1/3600)

- Transfer Capacity Table
- Technical Data
- Dimensional Drawings

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- Model Number Designation/ Specifications/Handling
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Sizing Flowchart for EWJ / EW / SWJ / SW Series
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Load Categories by Machine Type

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 style	Double input	○	△	○	△	○	△	△	△	△	△	△	△
Output shaft style: Solid output	Single output	○	–	○	–	○	–	○	–	○	–	○	–
Output shaft style: Solid output	Double output	○	–	○	–	○	–	○	–	○	–	○	–
Output shaft style: Hollow output	Hollow output	–	○	–	○	–	○	–	○	–	○	–	○
Output shaft style: Hollow output	Power-Lock	–	–	–	–	–	–	–	△	–	△	–	△
Output shaft style: Hollow output	Taper bushing	–	–	–	–	–	–	–	–	–	–	–	△

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

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

Refer to the Table of 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 style	Double input	*	*	□	□	□	□	□	□	□	□	□	□
Output shaft style: Solid output	Single output	*	–	□	–	○	–	○	–	○	–	○	–
Output shaft style: Solid output	Double output	*	–	□	–	○	–	○	–	○	–	○	–
Output shaft style: Hollow output	Hollow output	–	*	–	○	–	○	–	○	–	○	–	○
Output shaft style: Hollow output	Power-Lock	–	–	–	–	–	–	–	△	–	△	–	△
Output shaft style: Hollow output	Taper bushing	–	–	–	–	–	–	–	–	–	–	–	△

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

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

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

○: Standard package △: Semi-standard package □: Made to order *: Design in stock

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 style	Solid output	Single output	–	–	–	–	–	–	○	–	○	–	○	–
		Double output	–	–	–	–	–	–	○	–	○	–	○	–
	Hollow output	Hollow output	–	–	–	–	–	–	–	–	–	–	–	*
		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 style	Solid output	Single output	○	○	○	○	○	○	○	○	○	○	○	○
		Double output	○	□	○	□	○	□	○	□	○	□	○	□
	Hollow output	Hollow output	○	○	○	○	○	○	○	○	○	○	○	○
		Power-Lock	*	△	*	△	*	△	*	△	*	△	*	△
		Taper bushing	*	△	*	△	*	△	*	△	–	–	–	–

EWJM / EWM / SWM Series (With motor)

Refer to the Table of 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 style	Solid output	Single output	–	–	–	–	–	–	○	–	○	–	○	–
		Double output	–	–	–	–	–	–	○	–	○	–	○	–
	Hollow output	Hollow output	–	–	–	–	–	–	–	–	–	–	–	*
		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 style	Solid output	Single output	○	○	○	○	○	○	○	○	○	○	○	○
		Double output	○	□	○	□	○	□	○	□	○	□	○	□
	Hollow output	Hollow output	○	○	○	○	○	○	○	○	○	○	○	○
		Power-Lock	*	△	*	△	*	△	*	△	*	△	*	△
		Taper bushing	*	△	*	△	*	△	*	△	–	–	–	–

TM Series (Without motor)

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

		Size	TM10E	TM13E	TM16E	TM22E
Input shaft style		Double input	○	○	○	○
Output shaft style	Solid output	Single output	○	○	○	○
		Double output	○	○	○	○

Standard package

Standard Gear Reducer Package

EWJ / EWJM / EW / EWM / SWJ / SWJM / SW / SWM, and TD Series

Item			Standard package		
			EWJ / EWJM / SWJ / SWJM Series	EW / EWM / SW / SWM Series	Troi Drive TD Series
Reducer	Reduction method	Single reduction type	Worm gear (single reduction) Reduction ratio: 1/10, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60		Worm gear (single reduction) Nominal reduction ratio: 1/10, 1/20, 1/30, 1/40, 1/50,1/60,
		Double reduction type	Worm gear x worm gear (double reduction) 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 * Excludes models EWJ25 to 42, EWJM42, SWJ25 to 70, and SWJM35 to 70.		Worm gear x worm gear (double reduction) 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 (shipped filled)		
			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 2.5G6/3 (green)		Munsell 5PB2/6 (blue)
			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 specifications		Rust proof effective for 6 months when stored indoors (after shipping).		
			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 installs in any direction)		

Standard Gear Reducer Package

TM Series

Item			TM Series
Reducer	Reduction method		Worm gear (single reduction) reduction ratio: 1/10, 1/20, 1/30, 1/40, 1/50, 1/60
	Lubrication method		Oil bath, shipped filled with Mobile Cylinder oil 600W
	Keyway		Old JIS standard, JIS B1301-1959 (key supplied) *Input and output shafts on TM10 and TM13 are D-cut.
	Paint specifications		Finish coat: lacquer-based paint Paint color: Munsell 2.5G6/3 (green)
	Rust proofing specifications		Rust proof effective for 6 months when stored indoors (after shipping).
			Outside: rust-proofing grease Inside: sealed after filled with lubrication oil
Ambient conditions	Installation		Indoors
	Ambient temperature		5°C to 40°C
	Ambient humidity		95% or less (no condensation)
	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			Installs in any direction

Motor Specifications

Refer to gear reducer specifications for ambient conditions.

Item			Motor Specifications for Models EWJM/EWM/SWJM/SWM
Motor	Output		3 Phase 0.1, 0.2, 0.4, 0.75, 1.5, 2.2, 3.7, 5.5 kW
			With/without brake
	AC source		200/200/220 V 50/60/60 Hz
	Poles		4
	Protection		0.1 kW Totally enclosed (IP44), 0.2 to 5.5 kW totally enclosed fan-cooled (IP44).
	Cooling		0.1 kW air-cooled (IC410), 0.2 to 5.5 kW self-cooled.
	Rating		Continuous (S1)
	Insulation		0.1 to 3.7 kW-E, 5.5 kW-B
	Brake unit	Style	DC electromagnetic brake
		AC source	90 VDC
		Braking system	Engaged when denergized
		Braking torque	150% or higher rated motor torque
		Protection	IP20
		Insulation	0.1 to 2.2 kW-B, 3.7, 5.5 kW-E

Sizing

Sizing Flowchart for EWJ / EW / SWJ / SW Series

Procedures

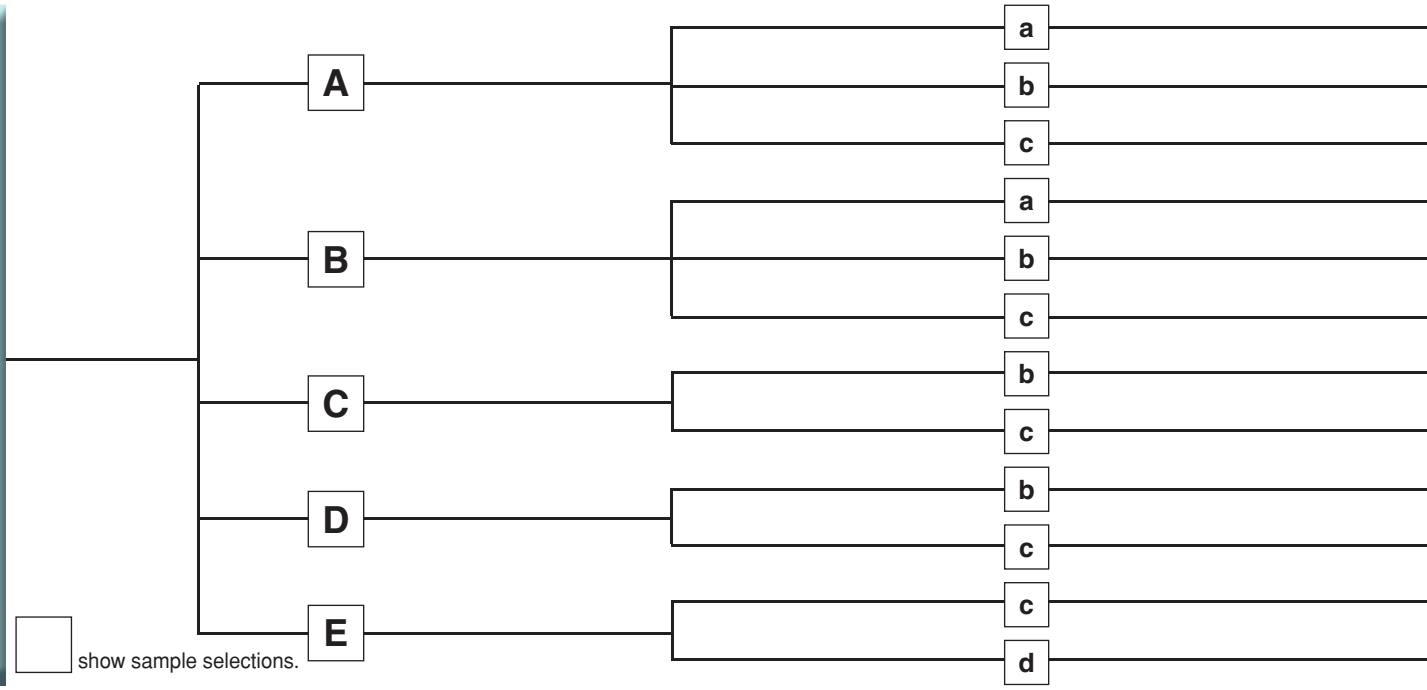
I Determine operating conditions

	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



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 applies.

II Determine total operating time

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

Less than 2 hours/day

b applies.

III Determine sizing table to use

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

2 Gives us table to use.

***For the TD series, refer to the procedures on page 21, for the TM series, refer to page 177.**

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 32	Contact us.	Page 32	Contact us.
2	Page 32		Page 32	
3	Page 33	Pages 83 - 85	Page 33	Pages 84 - 85

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

IV Determine package

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 21)

Sizing table 3

Based on the operating condition, check the capacity by following the steps on page 21 [Procedures] to determine the size and model number.

IV Determine package

(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 number

Apply specifications in section IV to sizing table in section III.
From sizing table 2 (page 32),

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 21,
Allowable radial load = 11505 N
Radial load = 7742 N
Allowable radial load > radial load, and is acceptable.

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 for the load characteristics. If you cannot find your machine, find one that is similar or contact us for assistance.

Table 1. Service factors (Sf)

Load characteristics	Operating hours (per day) 2	10	24
U: Uniform load	1.00 (1.25)	1.00 (1.25)	1.25 (1.50)
M: Loads accompanied by moderate shock	1.00 (1.25)	1.25 (1.50)	1.50 (1.75)
H: Loads accompanied by heavy shock	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 service factor based on actual service 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 hours or more	1.3
	SWJ50 to 70		1.15
1750, 1450	EW80 to 200 SW80 to 200	1/10 to 1/60 Continuous 2 hours or more	1.5
1150, 950	EW80 to 200 SW80 to 200		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 the TD Series are given as nominal reduction ratios. Always check the actual reduction ratio.

4. Determine size and model number

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) x f1 ··· (formula 2)

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

Ambient temperature	Temperature compensation factors
30°C or less	1.0
40°C or less	1.3
50°C or less	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.

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

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

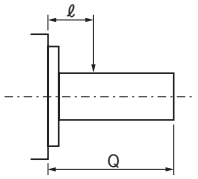
O.H.L. factor (f)	
Chain	1.00
Gears Toothed belt	1.25
V belt Tough toothed belt	1.5

(Solid shaft type)

Point of action factor (Lf)

$\ell \leq \frac{Q}{2}$ ····· Lf = 1

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

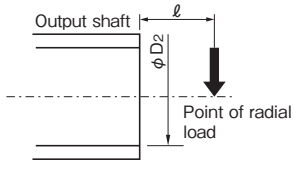


(Hollow shaft type)

Point of action factor (Lf)

$\ell \leq D_2$ ····· Lf = 1

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



(Checking 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)

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

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 drive speeds published in the catalog.

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

*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 39 for single reduction reducers, and page 87 for double reduction reducers.
Contact us for the Troi Drive TD Series.

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

· Motor Sizing

An undersized motor can result in current overloading due to the reducer's no-load loss. Always select a motor with ample 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 that the oil temperature is stabilized.
Efficiencies will be 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.

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

Reduction Ratio	Discount 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.

● Notes about 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 Worm Power Drives with a reduction ratio of 1/50, 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.
Other reduction ratios (1/10 to 1/40) can be expected to exhibit self-locking properties or, the braking effect.

*** Points to keep in mind**

(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 travel or swing), the self-locking effect or properties can be dangerous. For such applications, select a reduction ratio from 1/10 to 1/20.

● Using a servo motor for the input

If a servo motor is used as the input, the motor may be used within the input capacity (kW) rating given for each input speed of the reducer.
Whenever possible, ramp up during acceleration, and ramp down during deceleration.
Contact us if you wish to drive the input faster than 1750 r/min. We also offer “Tsubaki TERVO” (TERVO reducer for servo motor) applications, which can be driven at speeds of up to 3000 r/min. Please see the separate catalog for details.

Sizing

Examples

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.

[Conditions]

- · Machine : 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 load : Axial load only 18000 N
- · Operating hours : 10 hours/day
- · Starts : 1/hour
- · Ambient temperature : 30ºC

[Sizing]

1. Determine compensation factor

From the table of Load Categories by Machine Type, pure liquids have uniform load (U), which gives us a service factor (Table 1), 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)

Note, this example uses the TD series so we must check the rated thermal capacity also.

(Checking the equivalent thermal capacity)

Look up the temperature compensation factor (Table 3) for our ambient temperature of 30°C to 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 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 us 15 kW, and is acceptable.

From vertical mount (V type), hollow (H) we can select **Model: TD175H60VRF (LF)**.

Load Categories by Machine Type (Load characteristics)

Driven machine		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	Escalators, elevators, centrifugal, belt bucket (constant load)	U
	Gravity lifts, flight, chain bucket (constant load), belt bucket (heavy load)	M
	Chain bucket (heavy load)	H
Feeders	Disk, stocker	U
	Belt, apron, cold, screw, dust	M
	Reciprocating	H
Agitators	Pure liquids	U
	Liquids and solids, varying concentration	M
Mixers	Uniform granularity	U
	Varying granularity, mortar mixers, kneaders, ribbon mixers, concrete mixers (constant load)	M
Plastics extruders	Mixing (low viscosity), films, sheets, coatings	U
	Mixing (high viscosity)	M
Rubber extruders	Sheets	M
	Mixing	H

Driven machine		Load category
Pulverizers	Kilns, cement mills, ball mills, rod mills, crushers (for granulating sugar), 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
Steel, non-ferrites	Wire drawing, rolling machines, wire winders, slitters	M
	Forming machines, draw bench (carriage drive)	H
	Pinch rolls, dryers, srubber rolls, roller table	*
Pulp mills, paper making	Concentrate screw conveyor, conveyors, bleachers, suction rolls, presses	U
	Barkers (mechanical, hydraulic), beaters, pulpers, reels (for pulpers), washers, thickeners, agitators, calendars, couch rollers, dryers	M
	Drum barkers, conveyors (for lumber), cutters, platers, super calendars	H

Driven machine		Load category
Textiles	Spinning machines, weaving machines, dying 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 type), clarifiers	U
	Screens 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
Others	Line shafts (light loads), centrifugal fans, centrifugal blowers	U
	Line shafts (heavy loads), winches, cable reels, washing machines, fans, blowers	M
	Printing machines, woodworking machines	*

* These load categories assume the use of a normal motor. Contact us for use with equipment driven by special motors, engines, etc.
The * denotes various load possibilities depending on operating conditions. Contact us for further details.

Memo

Worm Power Drive®
High Balance Cylindrical Worm Gear

EWJ / EW SWJ / SW Series

Single Reduction Gear Reducers

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

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Model Number Designation

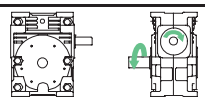
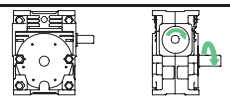
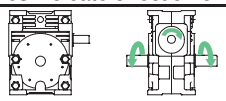
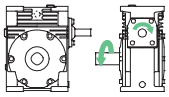
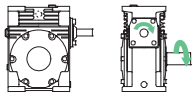
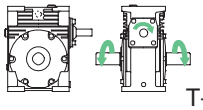
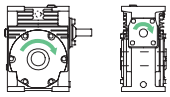
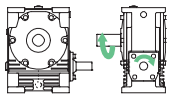
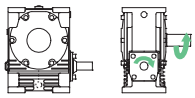
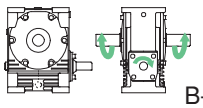
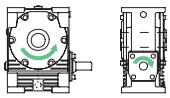
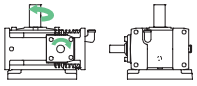
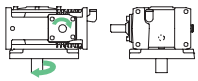
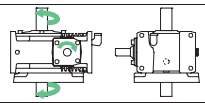
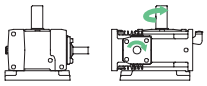
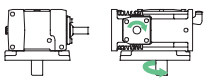
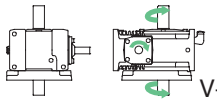
Series		Size	Mounting Position	Reduction Ratio	Shaft Arrangement	Motor Capacity	Motor Specifications	Options
Single Reduction Gear Reducers								
Without motor	EWJ	25	E	10	L			-T2
	SWJ	50	E	20	DF			
	EW	100	B	30	R			
	SW	100	B	40	LF			
With motor	EWJM	42	E	30	LR	040	S	
	SWJM	63	E	40	DF	075	S	H-K
	EWM	100	T	25	H	370	S	
	SWM	100	V	60	SRF	220	SB	V
EWJ EWJM EW EWM SWJ SWJM SW SWM Series		EWJ/SWJ 25/35/42 50/63/70 EWJM 42/50 63/70 SWJM 35/42/50 63/70 EW/SW 80/100 125/150 175/200 EWM/SWM 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	See Page 29	(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	S: Ship with standard motor mounted. SB: Ship with standard motor with brake mounted. SX: Ship with customer-supplied motor mounted. Y: Customer to mount motor	Reducer [1] See pages 225 - 237 Motor [2] See pages 238 - 239

Note 1) Enter a hyphen before the reducer option symbol.
2) Specify the motor option symbol after the motor instruction symbols "S" or "SB".

Shaft Arrangement

EWJ / EW Series

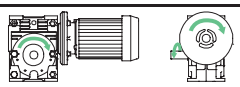
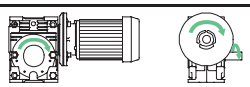
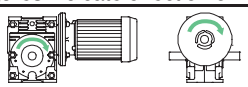
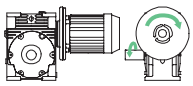
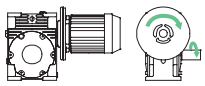
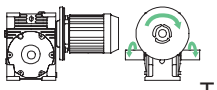
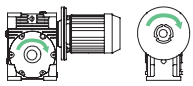
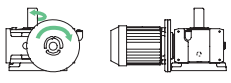
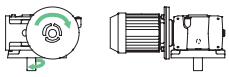
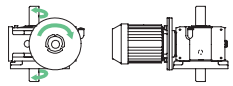
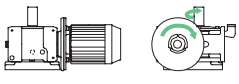
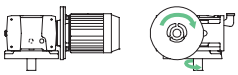
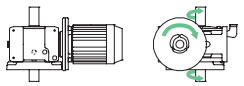
Arrows in figures indicate direction of rotation.

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, and the hollow output shaft type (-H) applies to the EW series.
2) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

EWJM / EWM Series

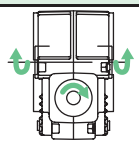
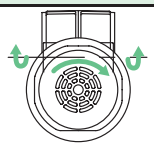
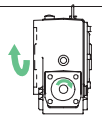
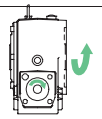
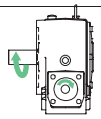
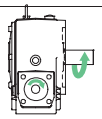
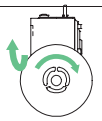
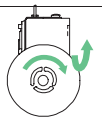
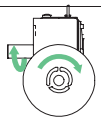
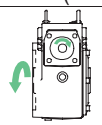
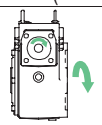
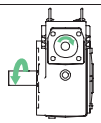
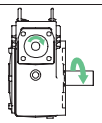
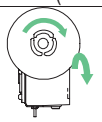
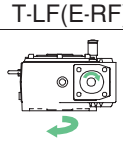
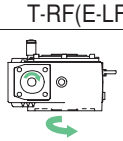
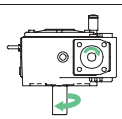
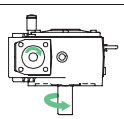
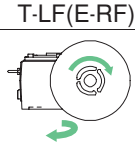
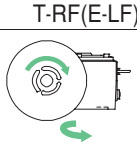
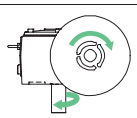
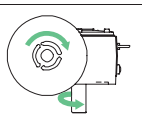
Arrows in figures indicate direction of rotation.

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 series, and the hollow output shaft type (-H) applies to the EWM series.
2) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

SWJ / SW / SWJM / SWM 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. Shaft arrangements for models SWJ25 to 63 and SWJM35 to 63 are E-DF.
2) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

Models

Series		EWJ	SWJ	EW	SW	EW	SW	EWJ/EW	SW	Reducer Options	EWJ/SWJ	EW/SW	SWJ/SW	SWJ/SW
Mounting Position		E		T		B		V			E	T, B, V	E, T, B, V	E, T, B, V
Shaft Arrangement	Solid output	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 : See page 228 for symbol.	—	—
	Hollow output	—	DF LF RF	H	LF RF	H	LF RF	—	LF RF				Power-Lock specification: K	Taper bushing 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/SWJM42	○	○	–	–	–	–	–	–		○	–	–	–
	EWJM/SWJM50	○	○	–	–	–	–	○	–		△	–	□	–
	EWJM/SWJM63	○	○	–	–	–	–	○	–		△	–	□	–
	EWJM/SWJM70	○	○	–	–	–	–	○	–		△	–	□	△
	EWM/SWM80	–	–	○	○	○	○	○	○		–	□	□	△
	EWM/SWM100	–	–	○	○	○	○	○	○		–	□	□	△
	EWM/SWM125	–	–	○	○	○	○	○	○		–	□	□	△
	EWM/SWM150	–	–	○	○	○	○	○	○		–	□	□	△
	EWM/SWM175	–	–	□	□	□	□	□	□		–	□	□	–
	EWM/SWM200	–	–	□	□	□	□	□	□		–	□	□	–

○: Parts marked with a circle are standard products. △: Semi-standard package □: 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.

Motor Options

These motor options are available and can be specified when indicating motor specifications "S" or "SB".

Option symbol	Description
Z	With variable frequency driven motor
W	Outdoor specification
V	400 V class (400/400/440 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
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 (0.75 kW or smaller)
Q	Quick-release brake
M	Manual release shaft (motor fan cover side) (0.75 kW or smaller)

Contact us about capacities and voltages for global series motors.

(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)

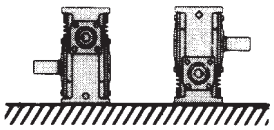
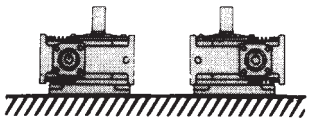
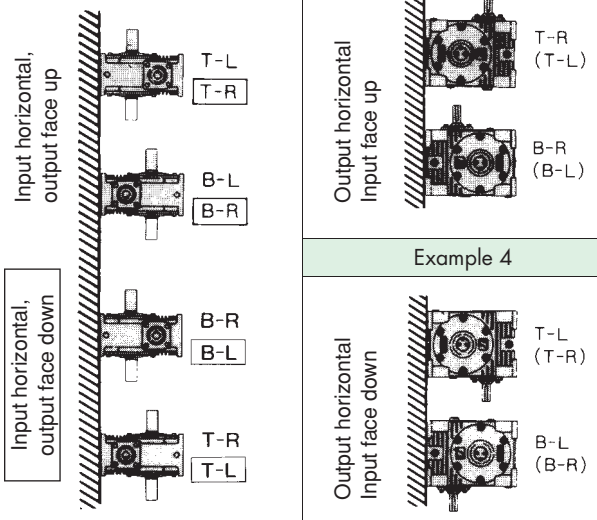
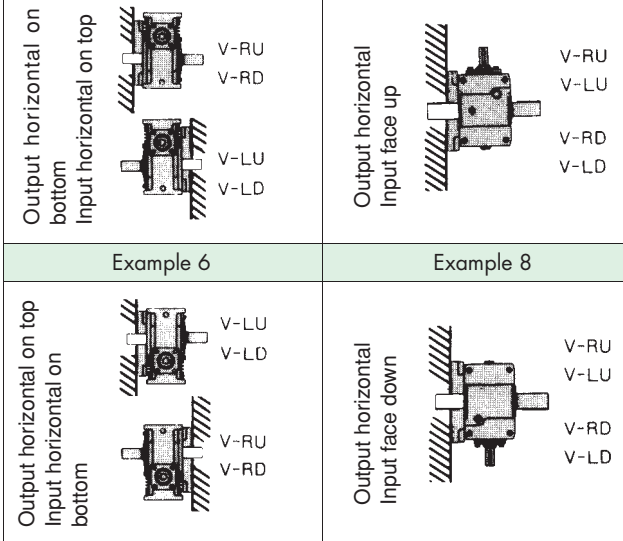
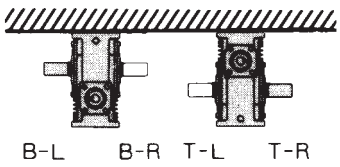
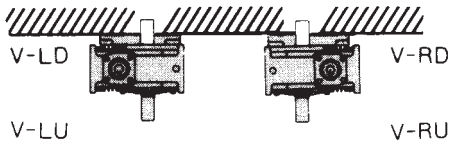
Z	ZV	ZVH		V1	V1H
		ZVQ		V2	V2H
		ZVM		V3	V3H
	ZH	ZHQ		V4	V4H
		ZHM	N		
	ZQ	ZQM	N2		
	ZM		N3		
V	VN		H	HQ	HQM
	VN3			HM	
	VH	VHQ	Q	QM	
		VHM	M		
	VQ	VQM			
	VM				

Note 1) Shaded options are for motor sizes 0.75 kW or smaller.
2) Motors with a brake for outdoor use are made to order. This changes the motor to a non-standard design. Contact us for details.

Mounting Examples

EWJ / EW / EWJM / EWM Series

* EWJ/EWJM series may be mounted on any side.
* Specify mounting position from examples 1 to 10 (shown below) when ordering models EW80 to 200 and EWM80 to 200 with standard mounting.

<table>
<tr><td></td><td>Installation direction T/B type</td><td>Installation direction V type</td></tr>
<tr><td>Standard mounting</td><td>  </td><td>  </td></tr>
<tr><td>Wall mount</td><td>Example 1 Example 2 / Example 3 / Example 4
  </td><td>Example 5 / Example 6 / Example 7 / Example 8
  </td></tr>
<tr><td>Ceiling mount</td><td>Example 9
 
Mount using top of housing.</td><td>Example 10
  </td></tr>
</table>

Note) Contact us about the SW/SWM series.

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 allowable 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. Consult us for further details.
- Refer to pages 21 to 22 for sizing.

EWJM / EWM Series

	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. See Page 198						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 / SWM Series

	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}

* Consult us about non-standard combinations.

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
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) Sizing table 1 is to be used to size from the EWJ/EW/SWJ/SW series. When sizing from the EWJM/EWM/SWJM/SWM series (motor included), the speed ratio and motor kW combinations are standardized. Refer to page 31.

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		70	80	100		100		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) Sizing table 2 is to be used to size from the EWJ/EW/SWJ/SW series. When sizing from the EWJM/EWM/SWJM/SWM series (motor included), the speed ratio and motor kW combinations are standardized. Refer to page 31.

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 21 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 21 to factor this into your selection.

Technical Data

■ Actual Reduction Ratio

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

■ Allowable Loads on Shafts

1. Allowable radial load for Solid output

EWJ / EW / EWJM / EWM 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 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. Allowable radial load for Hollow output

EW / EWM 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. Allowable radial load for Hollow output

SWJ / SWJM / SW / SWM 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. Allowable axial load for Hollow output

EW / EWM 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. Allowable axial load for Hollow output

SWJ / SWJM / SW / SWM 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 continuous efficiency values in the catalog for normal operation. Refer to Page 22 to learn the calculation method.

■ Moment of Inertia on Input Shaft (common for solid and hollow outputs)

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 (common for solid and hollow outputs)

EWJM / EWM 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	1.9 {7.5}	0.75	2.0 {7.8}	1.5	4.2 {17.0}	2.2	4.5 {18.0}	3.7	7.9 {31.4}	5.5	19.7 {78.8}	–		–	
15	0.4	1.0 {4.2}	0.75	2.0 {7.8}	1.5	4.2 {16.9}	2.2	4.5 {17.9}	3.7	7.9 {31.4}	5.5	19.7 {78.8}	–		–	
20	0.4	1.0 {4.2}	0.75	1.9 {7.8}	1.5	4.2 {16.8}	2.2	4.4 {17.7}	3.7	7.9 {31.4}	5.5	19.5 {77.8}	–		–	
25	0.4	1.0 {4.2}	0.75	1.9 {7.8}	1.5	4.2 {16.8}	1.5	4.4 {17.7}	2.2	4.6 {18.4}	3.7	8.9 {35.4}	5.5	21.0 {83.8}	–	
30	0.4	1.0 {4.2}	0.75	2.0 {7.8}	1.5	4.2 {16.9}	1.5	4.5 {17.9}	2.2	4.6 {18.4}	3.7	8.9 {35.4}	5.5	21.5 {85.8}	–	
40	0.2	0.5 {2.0}	0.4	1.1 {4.5}	0.75	2.1 {8.5}	0.75	2.3 {9.4}	1.5	4.5 {18.1}	2.2	5.6 {22.4}	3.7	10.4 {41.4}	5.5	24.0 {95.8}
50	0.2	0.5 {2.0}	0.4	1.1 {4.5}	0.75	2.1 {8.4}	0.75	2.3 {9.3}	1.5	4.5 {18.1}	2.2	5.6 {22.4}	3.7	10.4 {41.4}	5.5	23.5 {93.8}
60	0.2	0.5 {2.0}	0.4	1.1 {4.5}	0.75	2.1 {8.4}	0.75	2.3 {9.3}	1.5	4.5 {18.1}	2.2	5.4 {21.4}	3.7	10.1 {40.4}	5.5	23.2 {92.8}

* For motors with brakes, add the moment of inertia and GD² listed in the Brake Characteristics table on Page 218.

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 / SWM 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	2.2 {8.6}	1.5	4.6 {18.2}	2.2	5.0 {20.0}	3.7	7.9 {31.4}	5.5	19.7 {78.8}	–		–	
15	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.75	2.2 {8.6}	1.5	4.5 {18.2}	1.5	4.5 {17.9}	3.7	7.9 {31.4}	5.5	19.7 {78.8}	–		–	
20	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.4	1.3 {5.3}	0.75	2.4 {9.7}	1.5	4.5 {17.9}	3.7	7.9 {31.4}	5.5	19.5 {77.8}	–		–	
											2.2	4.6 {18.2}						
25	0.2	0.5 {1.9}	0.4	1.0 {4.2}	0.4	1.3 {5.3}	0.75	2.4 {9.6}	1.5	4.4 {17.7}	2.2	4.6 {18.4}	3.7	8.9 {35.4}	5.5	21.0 {83.8}	–	
30	–		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.4 {9.7}	0.75	2.3 {9.4}	2.2	4.6 {18.4}	3.7	8.9 {35.4}	5.5	21.5 {85.8}	–	
40	–		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.4 {9.6}	0.75	2.4 {9.4}	1.5	4.5 {18.1}	2.2	5.6 {22.4}	3.7	10.4 {41.4}	5.5	24.0 {95.8}
50	–		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.4 {9.6}	0.75	2.3 {9.3}	1.5	4.5 {18.1}	2.2	5.6 {22.4}	3.7	10.4 {41.4}	5.5	23.5 {93.8}
60	–		0.2	0.5 {2.0}	0.4	1.3 {5.3}	0.75	2.4 {9.6}	0.75	2.3 {9.2}	1.5	4.5 {18.1}	2.2	5.4 {21.4}	3.7	10.1 {40.4}	5.5	23.2 {92.8}

* For motors with brakes, add the moment of inertia and GD² listed in the Brake Characteristics table on Page 218.

Internal Construction

EWJ / EW Series

■ Reduction Ratio

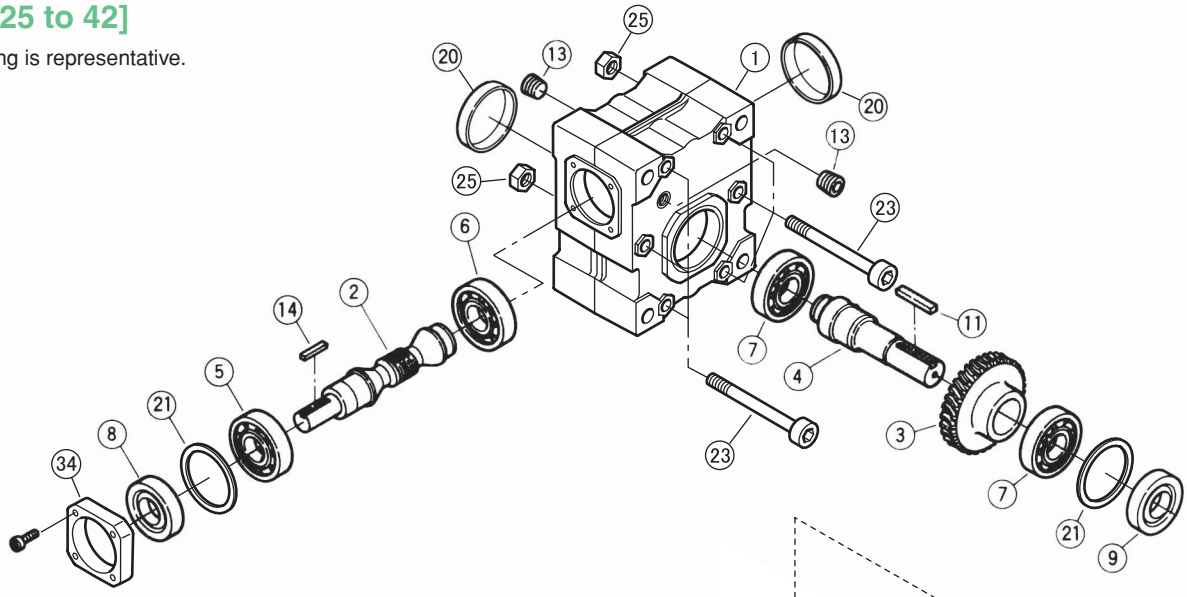
Single stage	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60

■ 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

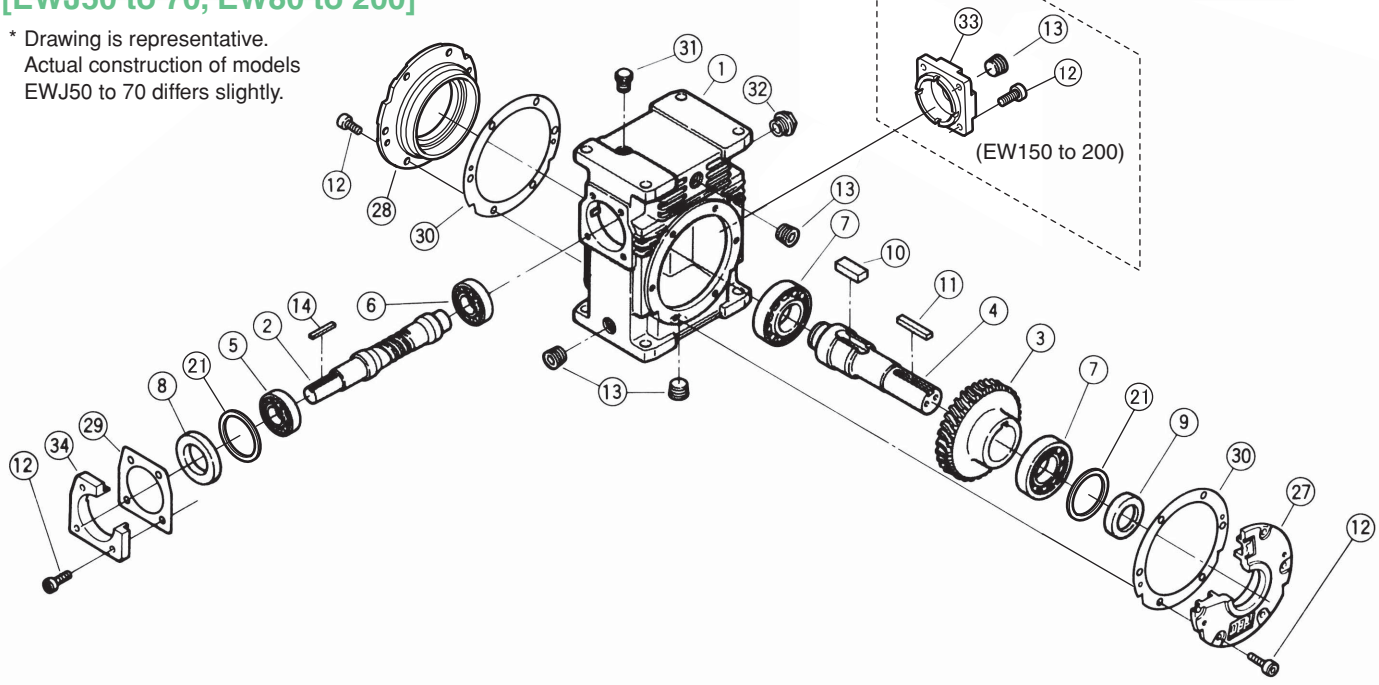
[EWJ25 to 42]

* Drawing is representative.



[EWJ50 to 70, EW80 to 200]

* Drawing is representative.
Actual construction of models EWJ50 to 70 differs slightly.



■ Part Name

For wear parts (bearings, oil seals) for each size, refer to the parts list Pages 252 to 253.

No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Housing	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 A	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 / EWM Series

■ Reduction Ratio

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

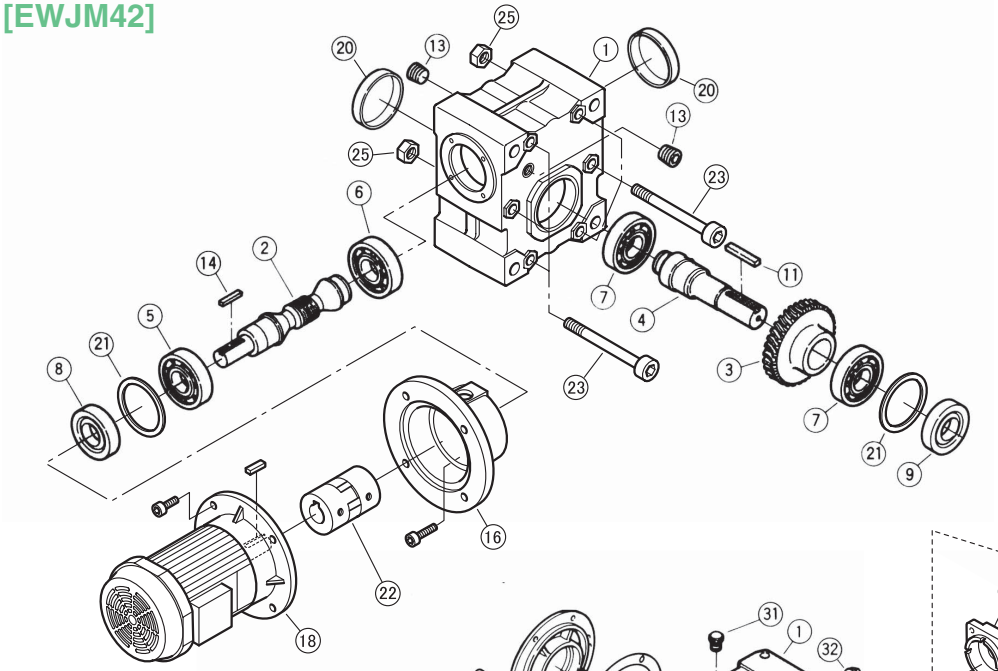
■ Standard Built-in Motor

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

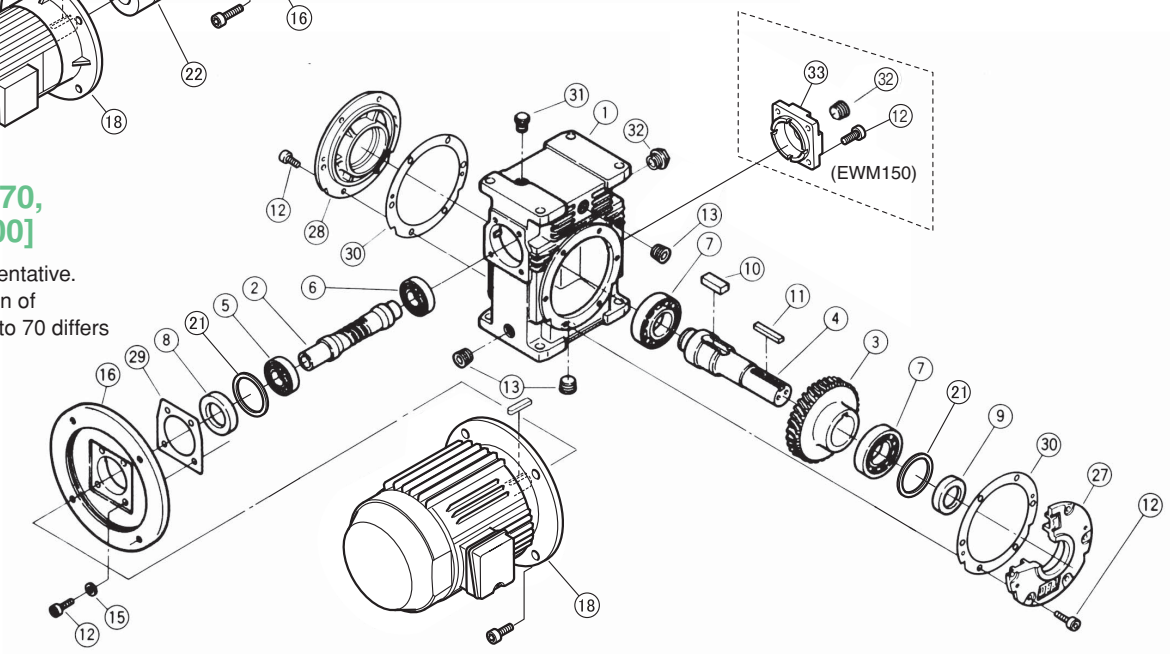
Size	42	50	63	70	80	100	125	150
Center distance	42 mm	50 mm	63 mm	70 mm	80 mm	100 mm	125 mm	150 mm

[EWJM42]



[EWJM50 to 70, EWM80 to 200]

* Drawing is representative. Actual construction of models EWJM50 to 70 differs slightly.



■ Part Name

For wear parts (bearings, oil seals) for each size, refer to the parts list Pages 252 to 253.

No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Housing	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 A	29	Shim I		
6	Input shaft bearing B	12	Hex cap bolt	18	Motor			30	Shim II		

Internal Construction

SWJ / SW Series

■ Reduction Ratio

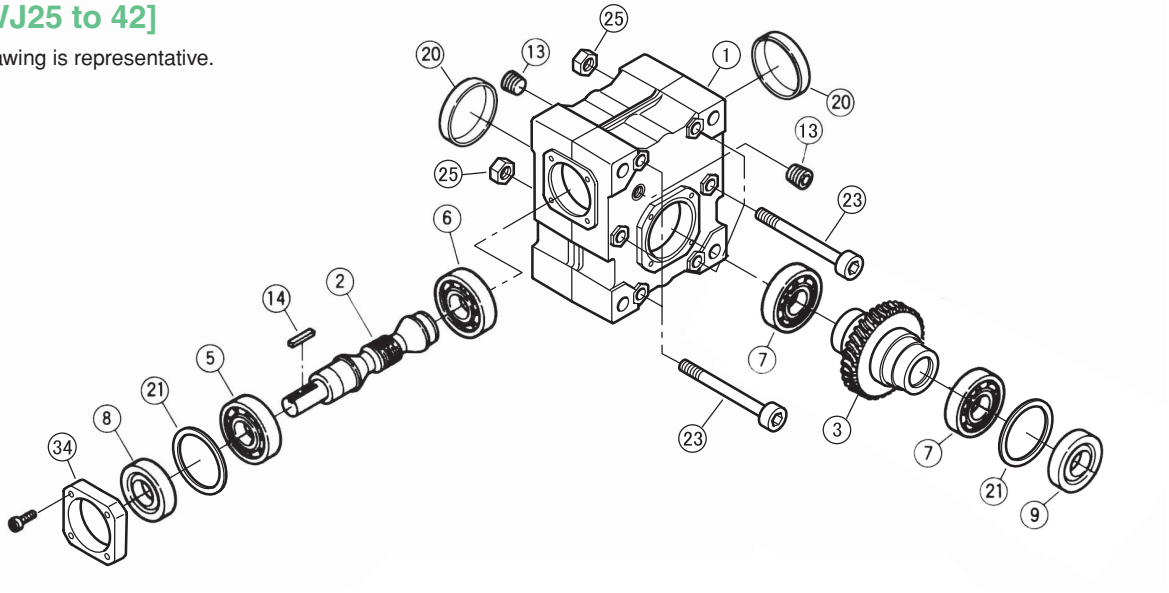
Single stage	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60

■ 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

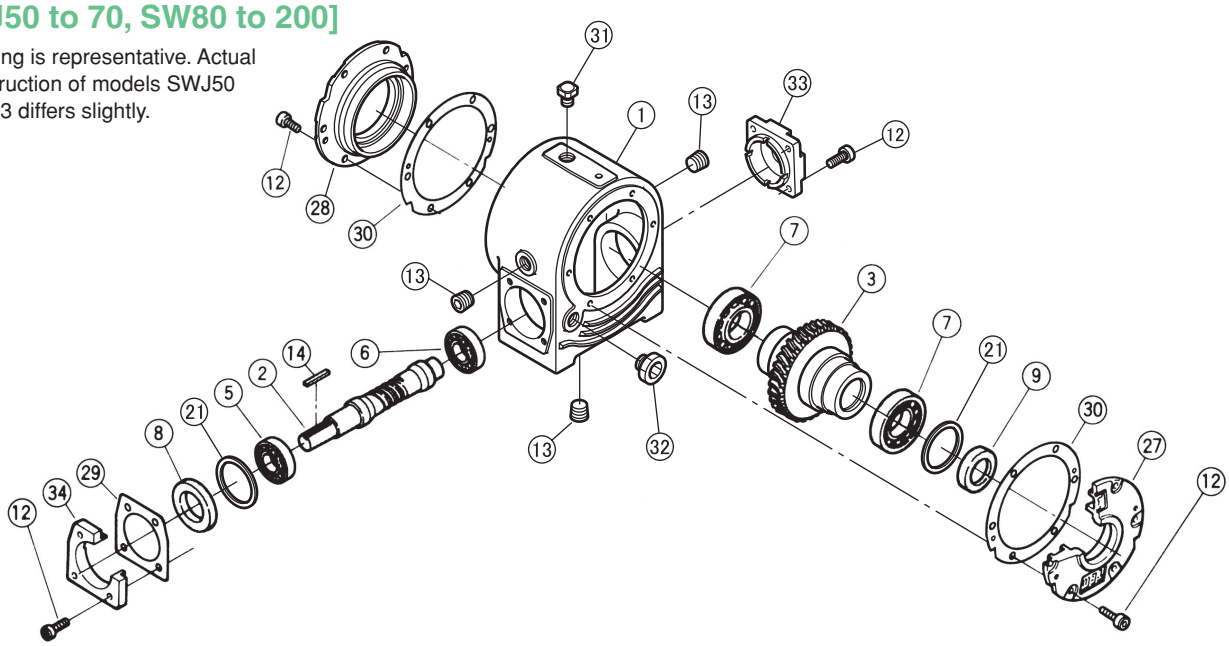
[SWJ25 to 42]

* Drawing is representative.



[SWJ50 to 70, SW80 to 200]

* Drawing is representative. Actual construction of models SWJ50 and 63 differs slightly.



■ Part Name

For wear parts (bearings, oil seals) for each size, refer to the parts list Pages 252 to 253.

No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Housing	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 A			33	Input cap
5	Input shaft bearing A					24	Cross-recessed countersunk flat head screw	29	Shim I	34	Input seal support

SWJM / SWM Series

■ Reduction Ratio

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

■ Standard Built-in Motor

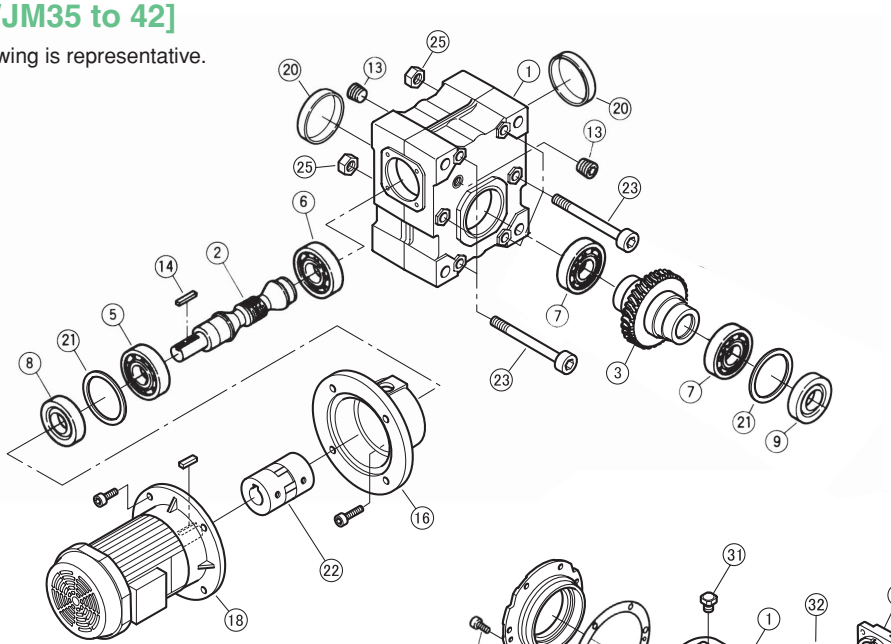
Size	35	42	50	63	70	80	100	125	150
Motor kW	0.2	0.2 to 0.4	0.4 to 0.75	0.75 to 1.5	0.75 to 2.2	1.5 to 3.7	2.2 to 5.5	3.7 to 5.5	5.5

■ 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

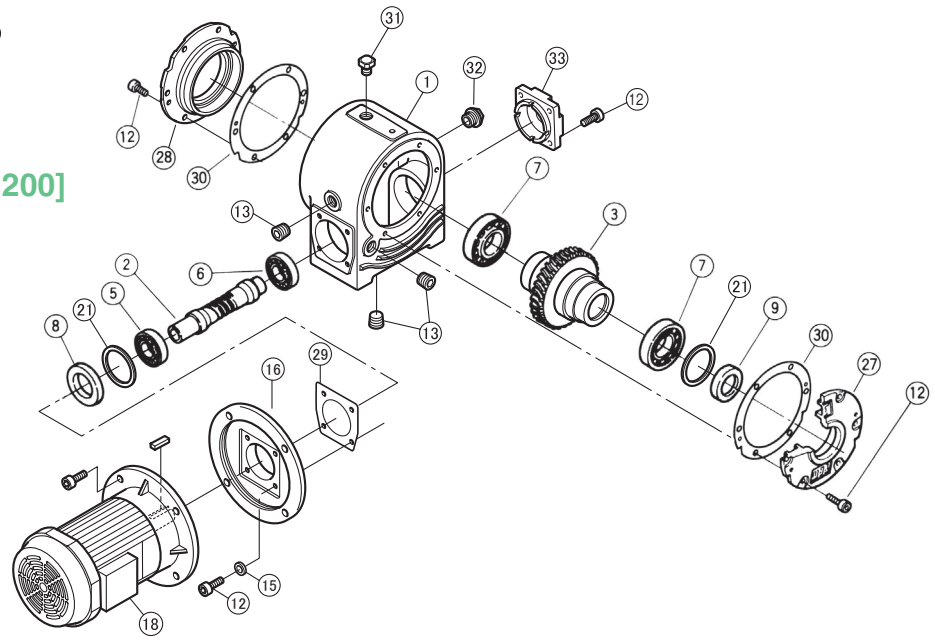
[SWJM35 to 42]

* Drawing is representative.



[SWJM50 to 70, SWM80 to 200]

* Drawing is representative. Actual construction of models SWJM50 and 63 differs slightly.



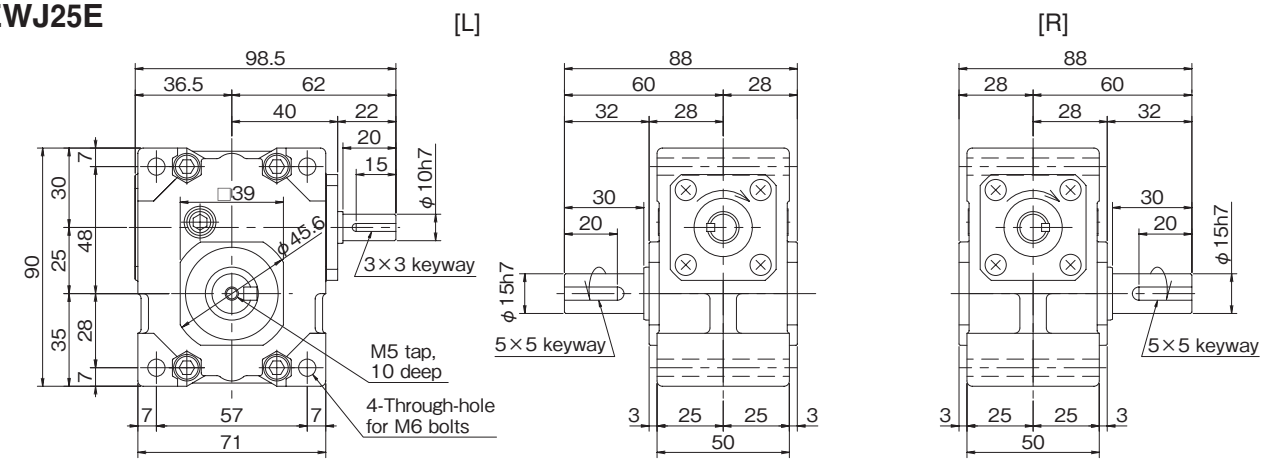
■ Part Name

For wear parts (bearings, oil seals) for each size, refer to the parts list Pages 252 to 253.

No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Housing	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		

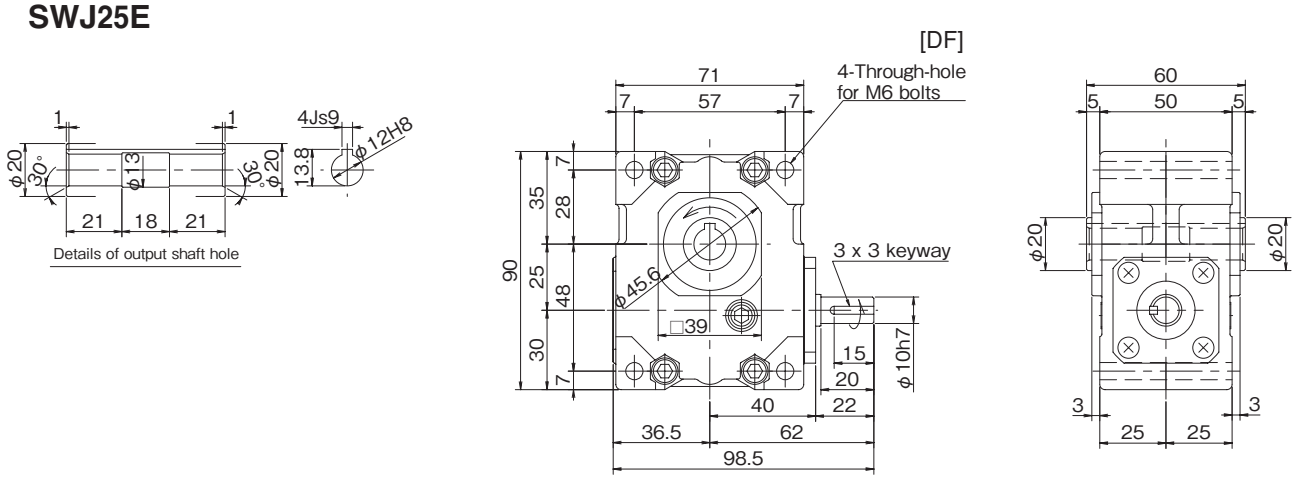
Dimensional Drawings EWJ25E / SWJ25E

EWJ25E



Estimated mass 1.1 kg

SWJ25E



Estimated mass 1.0 kg

*Tsubaki offers optional mounting bolts and mounting feet. Refer to Page 225.

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

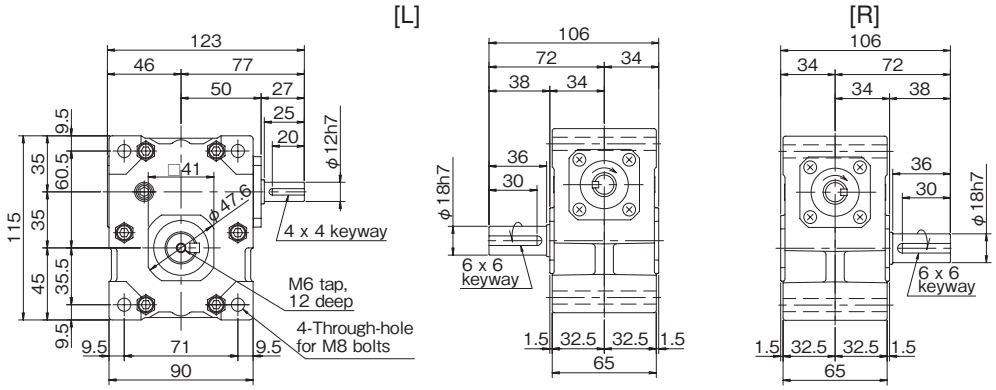
Transfer Capacity Table

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 21 to factor this into your selection.

Dimensional Drawings EWJ35E / SWJ35E / SWJM35E

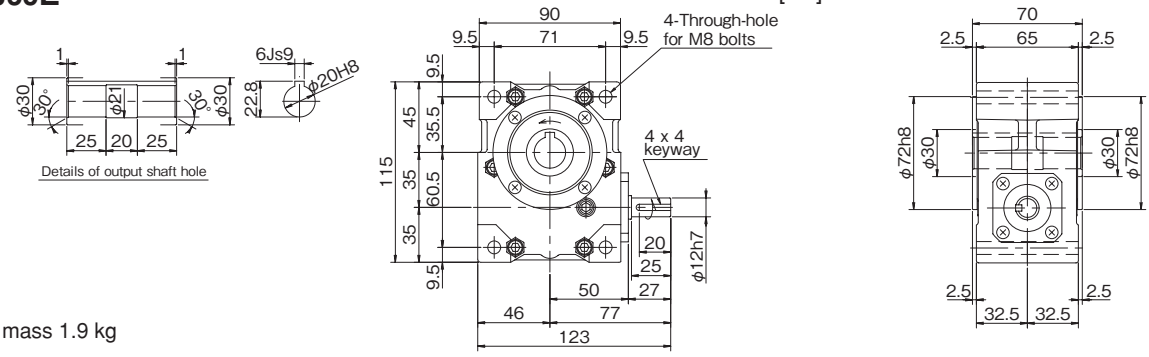
EWJ35E



Estimated mass 1.9 kg

SWJ35E

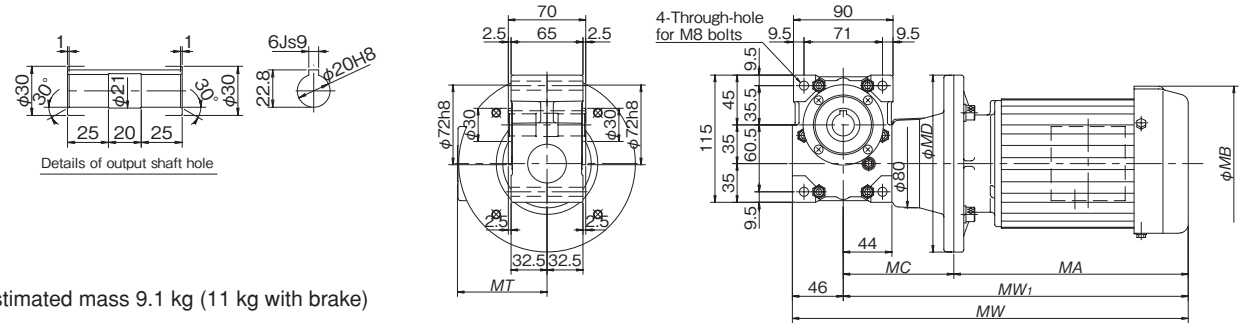
[DF]



Estimated mass 1.9 kg

SWJM35E

[DF]



Estimated mass 9.1 kg (11 kg with brake)

*Tsubaki offers optional mounting bolts and mounting feet. Refer to Page 225.

*Refer to Page 29 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}
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 21 to factor this into your selection.

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
SWJM35	0.2	10	9.3 {0.95}	11.2 {1.14}	212 (229)	100 (100)	312 (329)	358 (375)	140 (140)	160 (160)	81 (104.5)	9.1 (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}								

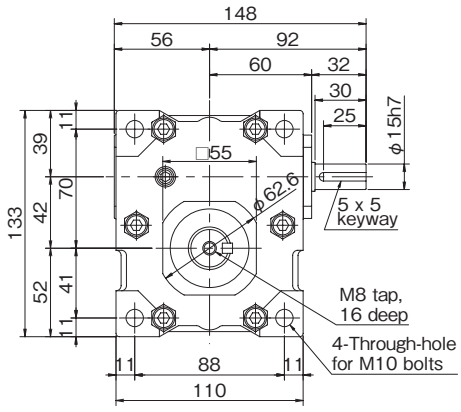
* Motor/reducer combinations shown are standard.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

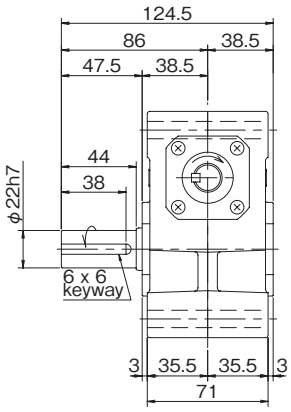
Dimensional Drawings EWJ42E / SWJ42E

See next page for reducers with motors

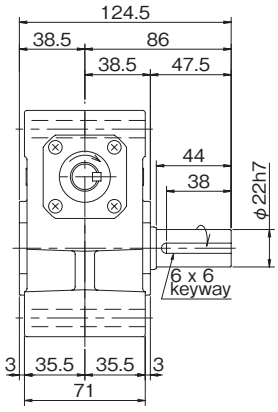
EWJ42E

[L]





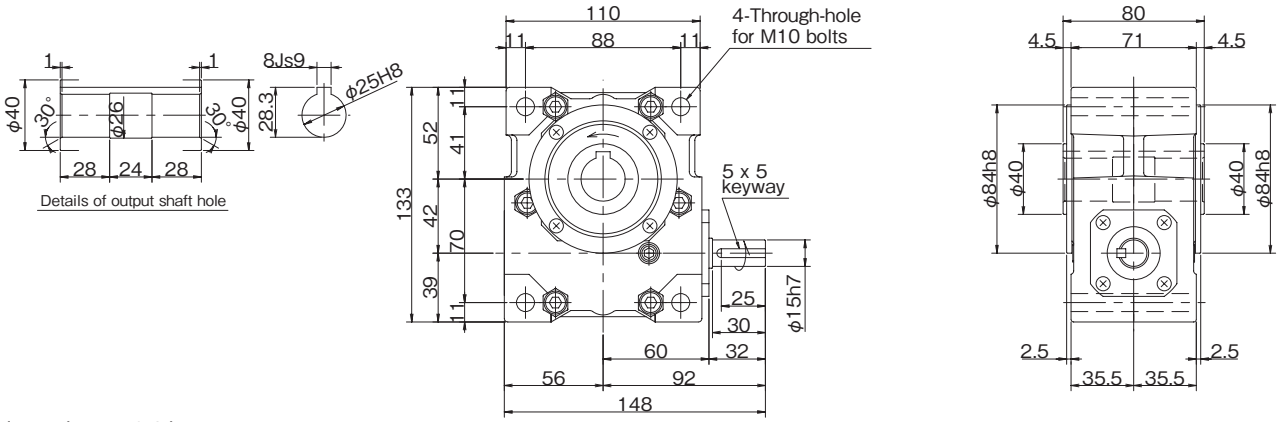
[R]



Estimated mass 3.2 kg

SWJ42E

[DF]



Estimated mass 3.2 kg

*Tsubaki offers optional mounting bolts and mounting feet. Refer to Page 225.

*Refer to Page 29 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}

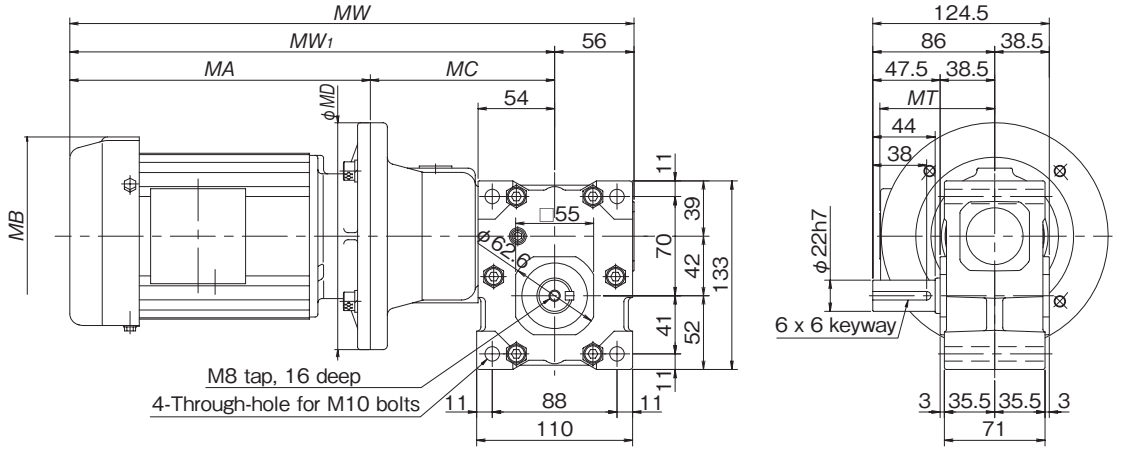
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on Page 21 to factor this into your selection.

Dimensional Drawings EWJM42E / SWJM42E

See previous page for reducers without motors

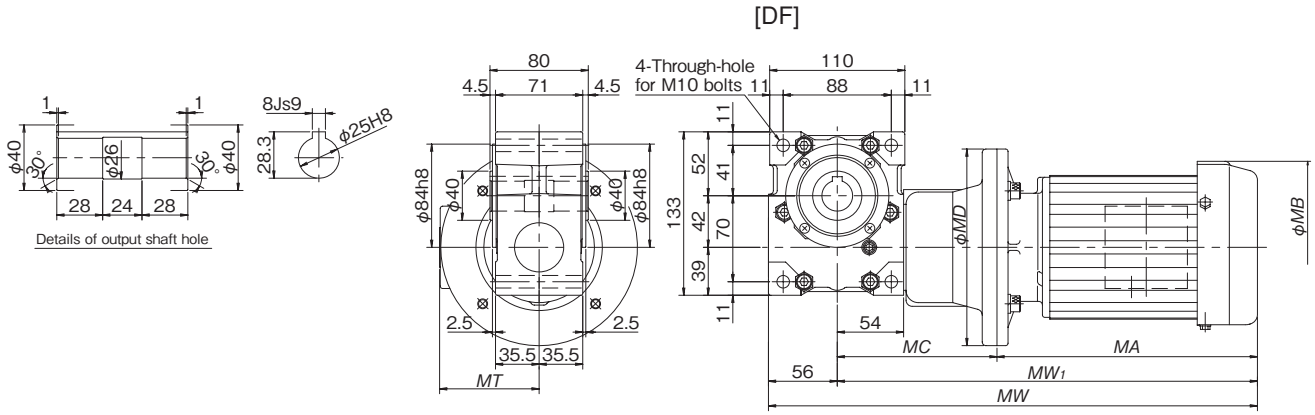
EWJM42E

[R]



SWJM42E

[DF]



*Tsubaki offers optional mounting bolts and mounting feet. Refer to Page 225.

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

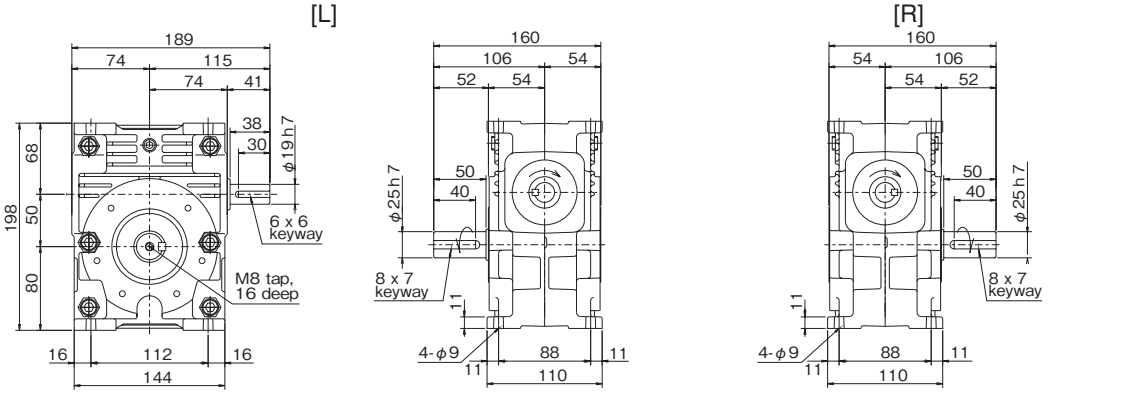
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.							
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	MW	MB	MD	MT	Estimated mass kg
EWJM42	0.2	60	38.8 {3.96}	45.2 {4.62}	212 (229)	130 (130)	342 (359)	398 (415)	140 (140)	160 (160)	81 (104.5)	11 (13)
		50	34.2 {3.49}	40.0 {4.08}								
		40	29.0 {2.96}	34.1 {3.48}								
	0.4	30	47.3 {4.83}	51.1 {5.21}	224 (241)	130 (130)	354 (371)	410 (427)	140 (140)	160 (160)	81 (104.5)	12 (14)
		25	41.5 {4.23}	49.2 {5.02}								
		20	34.4 {3.51}	40.8 {4.17}								
		15	27.0 {2.76}	32.2 {3.29}								
	0.75	10	35.3 {3.60}	42.4 {4.30}	235 (262)	140 (140)	375 (402)	431 (458)	158 (158)	200 (200)	90 (113.5)	18 (21)
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 (14)
		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 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EWJ50E / EWJ50V / SWJ50E

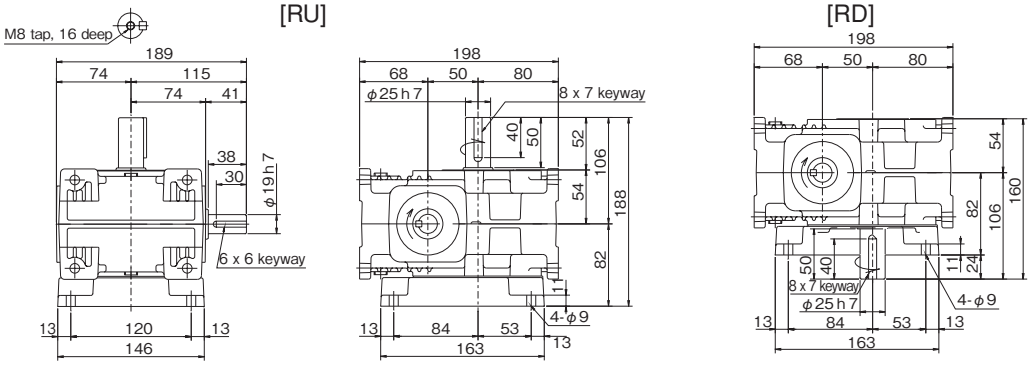
See next page for reducers with motors

EWJ50E



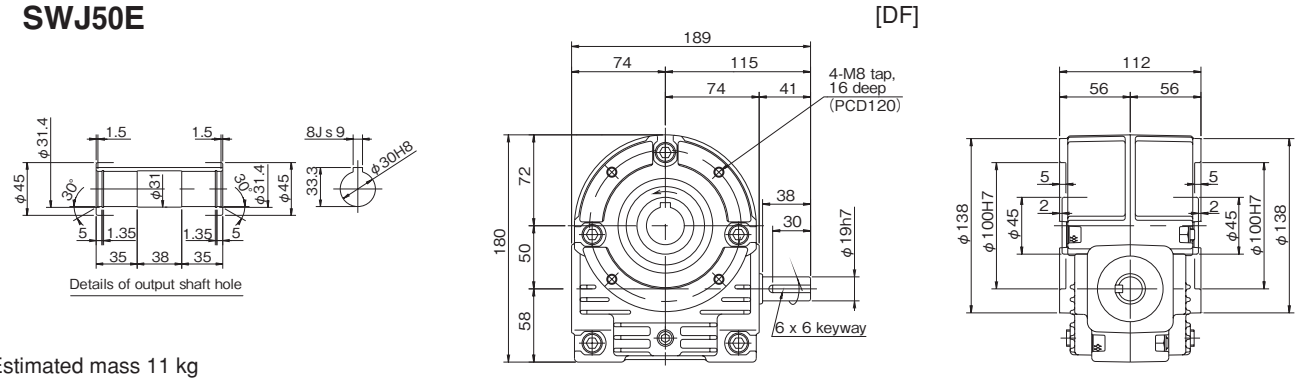
Estimated mass 7.0 kg

EWJ50V



Estimated mass 7.6 kg

SWJ50E



Estimated mass 11 kg

*Refer to Page 29 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}

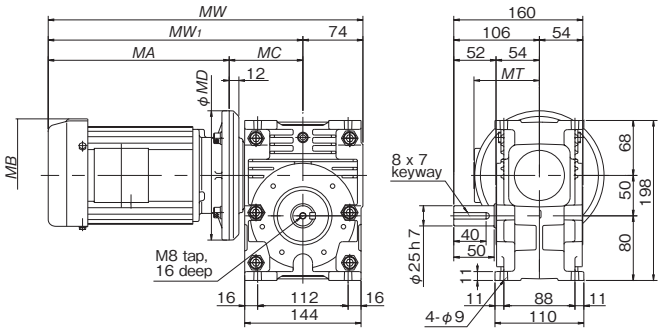
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on Page 21 to factor this into your selection.

Dimensional Drawings EWJM50E / EWJM50V / SWJM50E

See previous page for reducers without motors

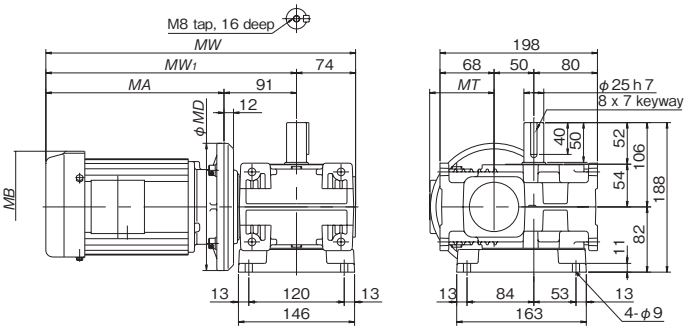
EWJM50E

[R]



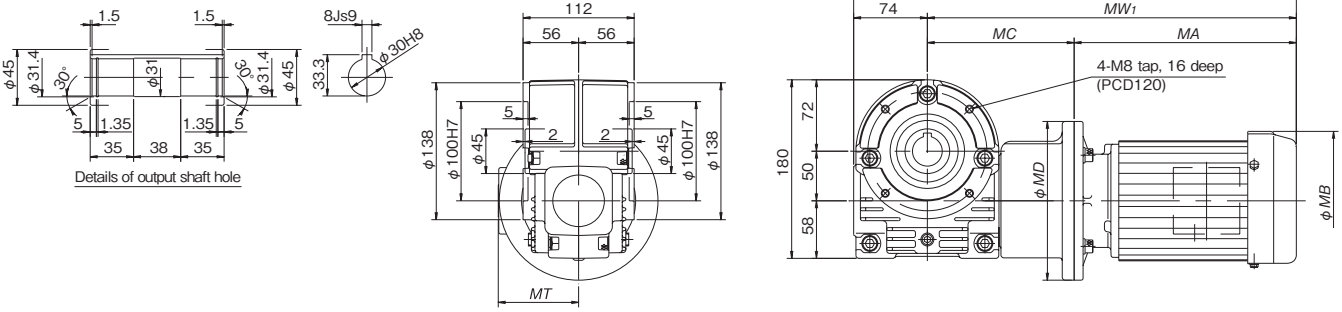
EWJM50V

[LU]



SWJM50E

[DF]



*Refer to Page 29 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	315 (332)	389 (406)	140 (140)	160 (160)	81 (104.5)	15 (17)	15 (17)
		50	76 {7.8}	90 { 9.2}									
		60	86 {8.8}	92 { 9.4}									
	0.75	10	37 {3.8}	44 { 4.5}	235 (262)	93	328 (355)	402 (429)	158 (158)	200 (200)	90 (113.5)	19 (22)	19 (22)
		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 (23)	–
		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}									
	0.75	10	37 {3.8}	44 { 4.5}	235 (262)	158 (158)	393 (420)	467 (494)	158 (158)	200 (200)	90 (113.5)	25 (28)	–
		15	53 {5.5}	64 { 6.5}									

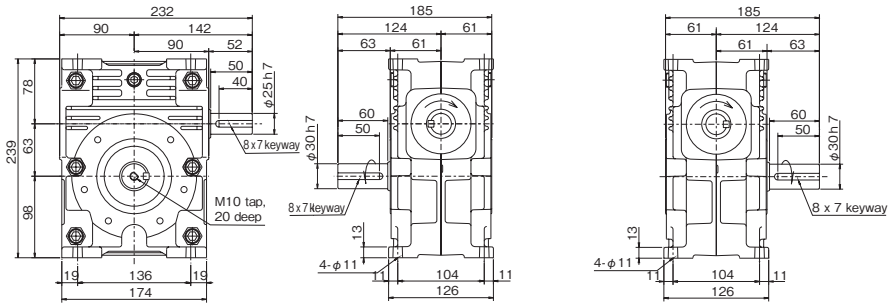
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EWJ63E / EWJ63V / SWJ63E

See next page for reducers with motors

EWJ63E

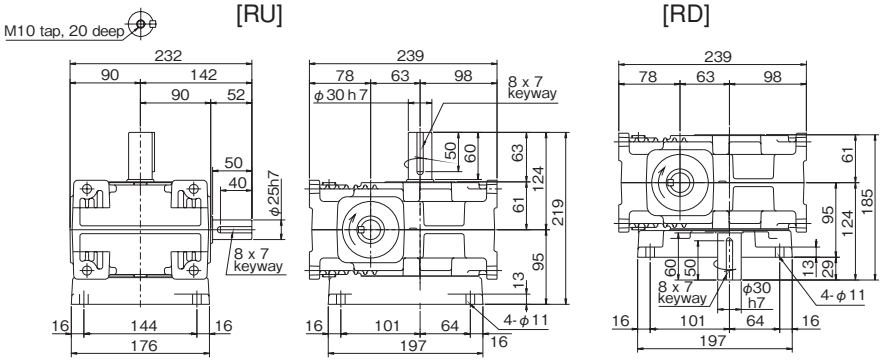
[L] [R]



Estimated mass 11 kg

EWJ63V

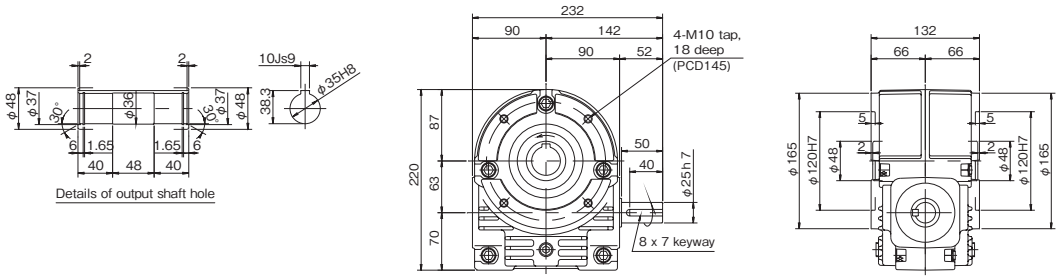
[RU] [RD]



Estimated mass 12 kg

SWJ63E

[DF]



Estimated mass 16 kg

*Refer to Page 29 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}

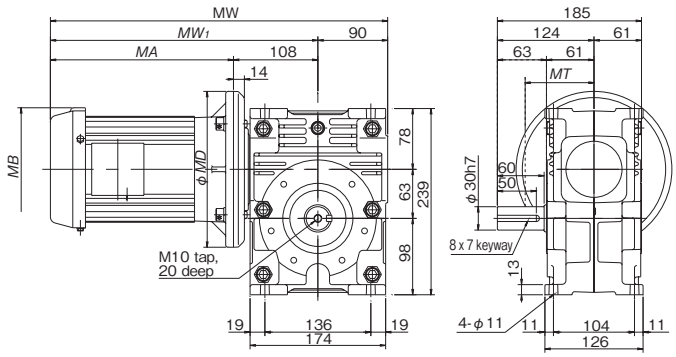
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on Page 21 to factor this into your selection.

Dimensional Drawings EWJM63E / EWJM63V / SWJM63E

See previous page for reducers without motors

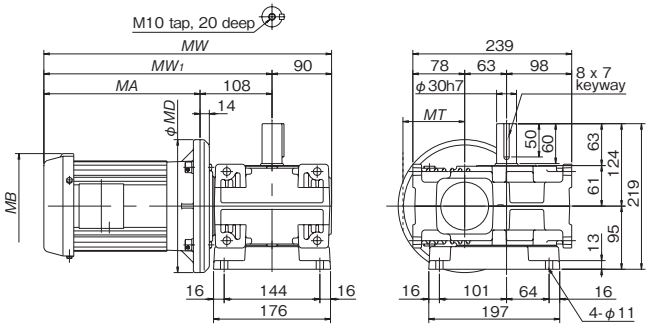
EWJM63E

[R]



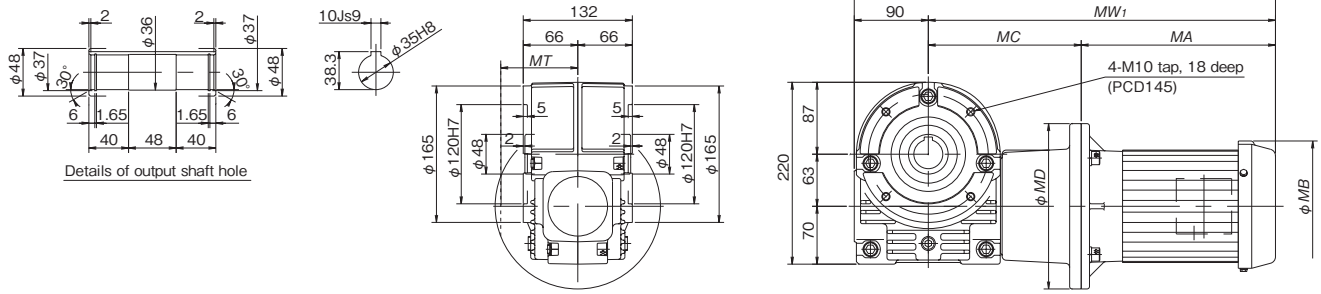
EWJM63V

[LU]



SWJM63E

[DF]



*Refer to Page 29 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
EWJM63	0.75	40	123 {12.6}	145 {14.8}	235 (262)	–	343 (370)	433 (460)	158 (158)	200 (200)	90 (113.5)	23 (26)	24 (27)
		50	147 {15.0}	174 {17.7}									
		60	163 {16.7}	177 {18.1}									
	1.5	10	75 { 7.6}	90 { 9.1}	274 (328)	–	382 (436)	472 (526)	198 (198)	200 (200)	151 (149)	31 (36)	32 (37)
		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}									
SWJM63	0.75	20	70 { 7.1}	83 { 8.5}	235 (262)	185 (185)	420 (447)	510 (537)	158 (158)	200 (200)	90 (113.5)	31 (34)	–
		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}	274 (328)	185 (185)	459 (513)	549 (603)	198 (198)	200 (200)	151 (149)	39 (44)	–
		15	108 {11.0}	129 {13.2}									

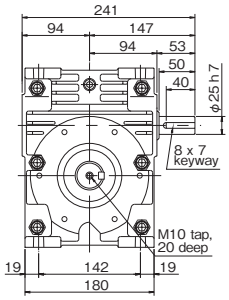
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

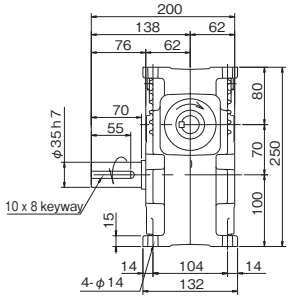
Dimensional Drawings EWJ70E / EWJ70V / SWJ70E

See next page for reducers with motors

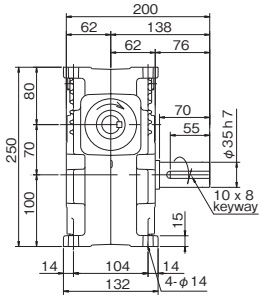
EWJ70E

[L]





[R]

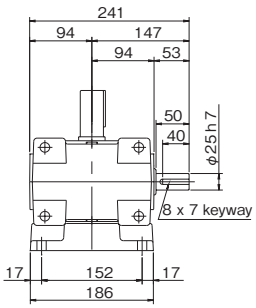


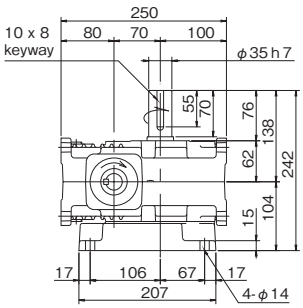
Estimated mass 13 kg

EWJ70V

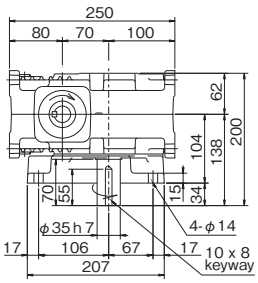
M10 tap, 20 deep

[RU]





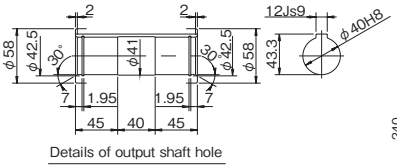
[RD]



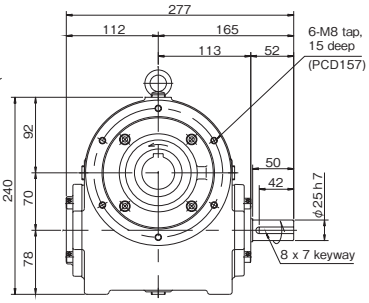
Estimated mass 14.6 kg

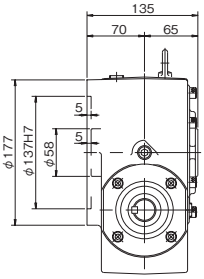
SWJ70E

[LF]



Details of output shaft hole





Estimated mass 21 kg

*Refer to Page 29 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}

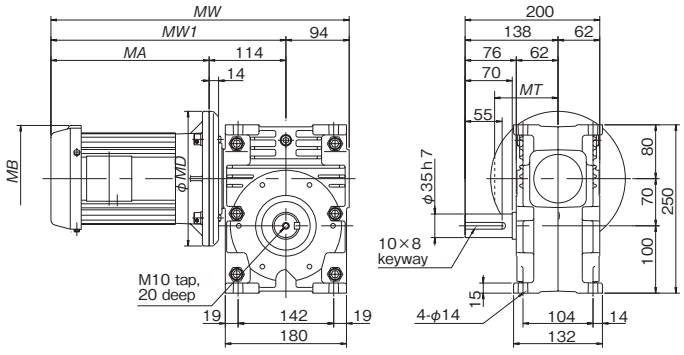
When running a speed within the shaded boxes , and also continuously for more than one hour, refer to the thermal rating factor on Page 21 to factor this into your selection.

Dimensional Drawings EWJM70E / EWJM70V / SWJM70E

See previous page for reducers without motors

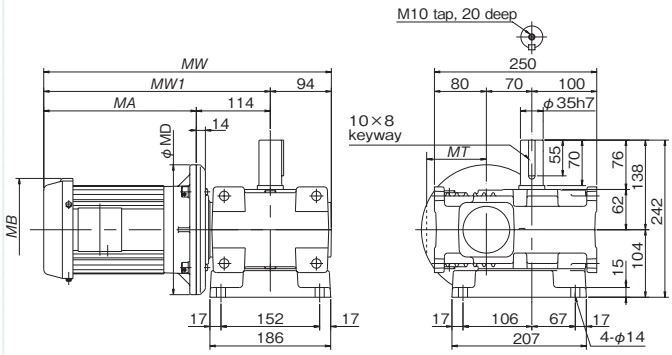
EWJM70E

[R]

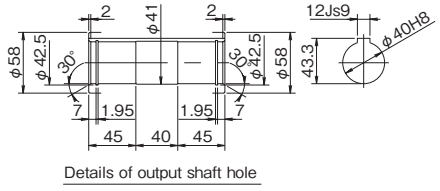


EWJM70V

[LU]

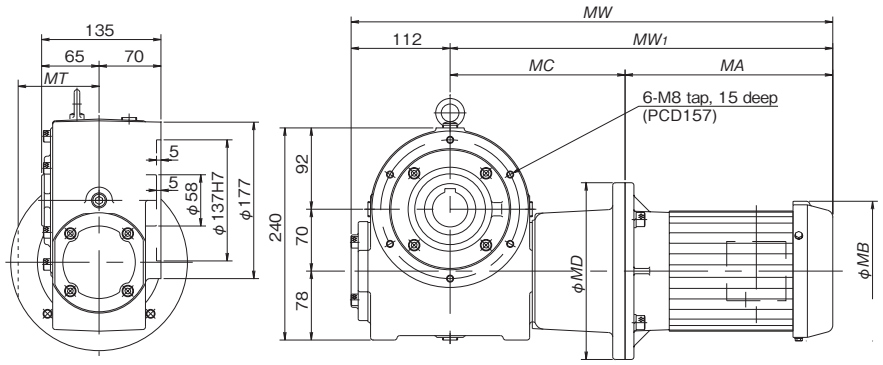


SWJM70E



Details of output shaft hole

[LF]



*Refer to Page 29 for shaft arrangements and relative direction of rotation.

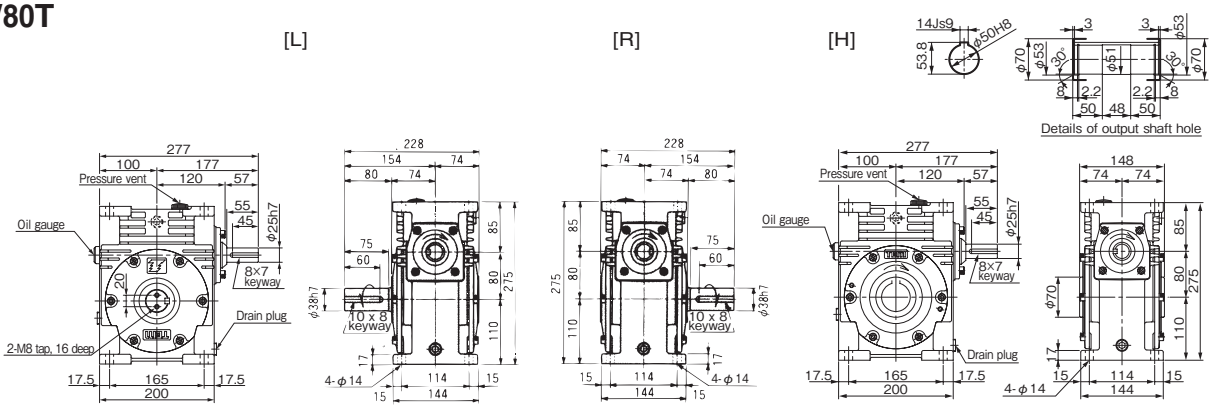
Transfer Capacity Table

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
EWJM70	0.75	40	125 {12.7}	148 {15.1}	235 (262)	–	349 (376)	443 (470)	158 (158)	200 (200)	90 (113.5)	25 (28)	26 (29)
		50	150 {15.3}	176 {18.0}									
		60	172 {17.6}	203 {20.7}									
	1.5	25	172 {17.6}	205 {20.9}	274 (328)	–	388 (442)	482 (536)	198 (198)	200 (200)	151 (149)	33 (38)	34 (39)
		30	197 {20.1}	233 {23.8}									
	2.2	10	110 {11.2}	132 {13.5}	278 (332)	–	392 (446)	486 (540)	198 (198)	250 (250)	143 (141)	38 (43)	40 (45)
		15	160 {16.3}	191 {19.4}									
		20	207 {21.1}	247 {25.2}									
SWJM70	0.75	30	98 {10.0}	116 {11.9}	235 (262)	198 (198)	433 (460)	545 (572)	158 (158)	200 (200)	90 (113.5)	39 (42)	–
		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}	274 (328)	198 (198)	472 (526)	584 (638)	198 (198)	200 (200)	151 (149)	47 (52)	–
		20	141 {14.4}	168 {17.2}									
		25	172 {17.6}	205 {20.9}									
	2.2	10	110 {11.2}	132 {13.5}	278 (332)	222 (222)	500 (554)	612 (666)	198 (198)	250 (250)	143 (141)	52 (57)	–

* 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 21 for sizing. * Thermal rating factor is 1.0.

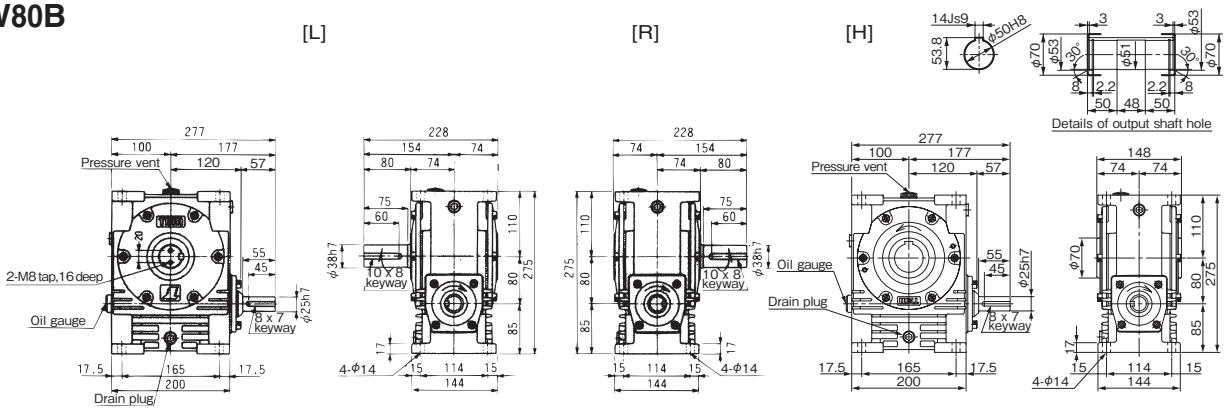
Dimensional Drawings EW80T / EW80B / EW80V

EW80T



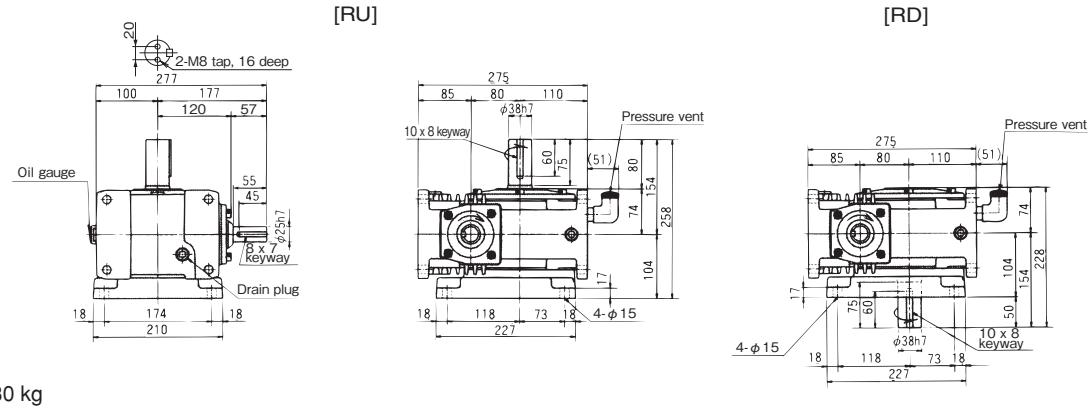
Estimated mass 28 kg

EW80B



Estimated mass 27 kg

EW80V



Estimated mass 30 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

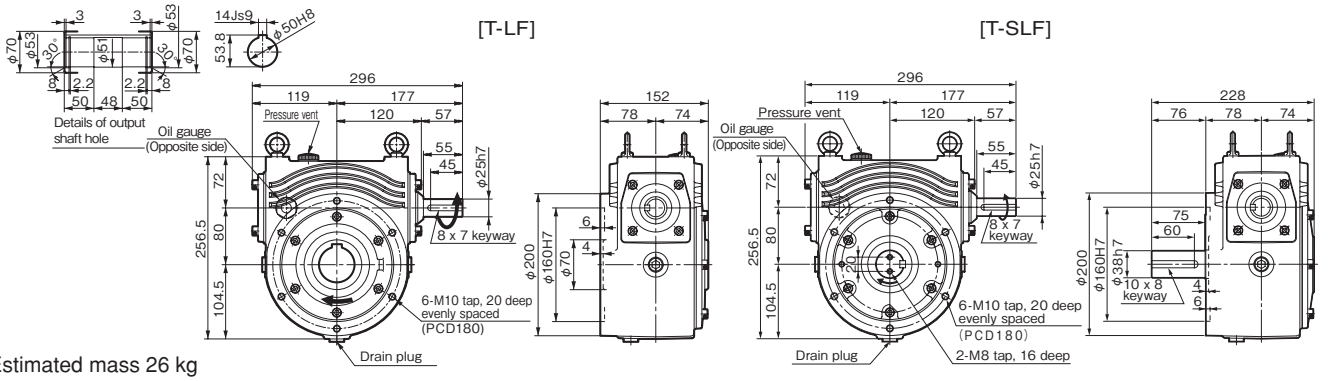
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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 21 to factor this into your selection.

Dimensional Drawings SW80T / SW80B / SW80V

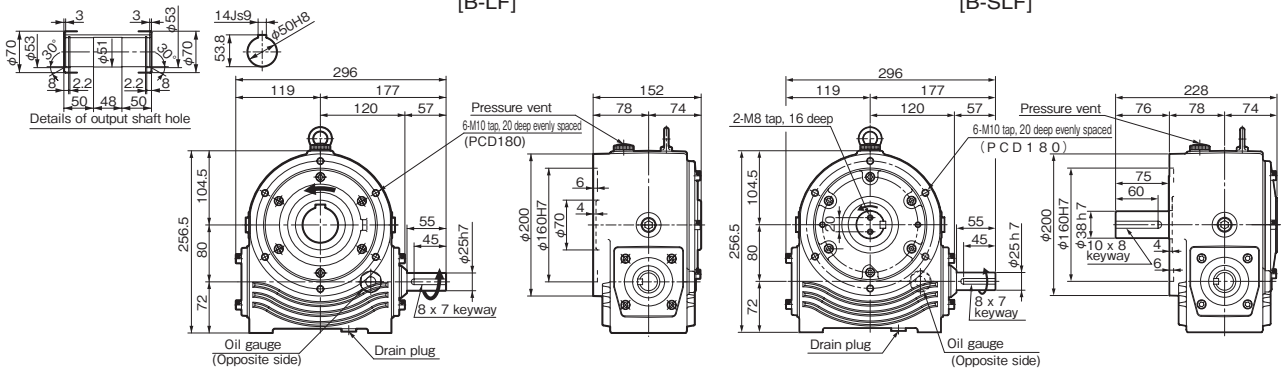
See next page for reducers with motors

SW80T



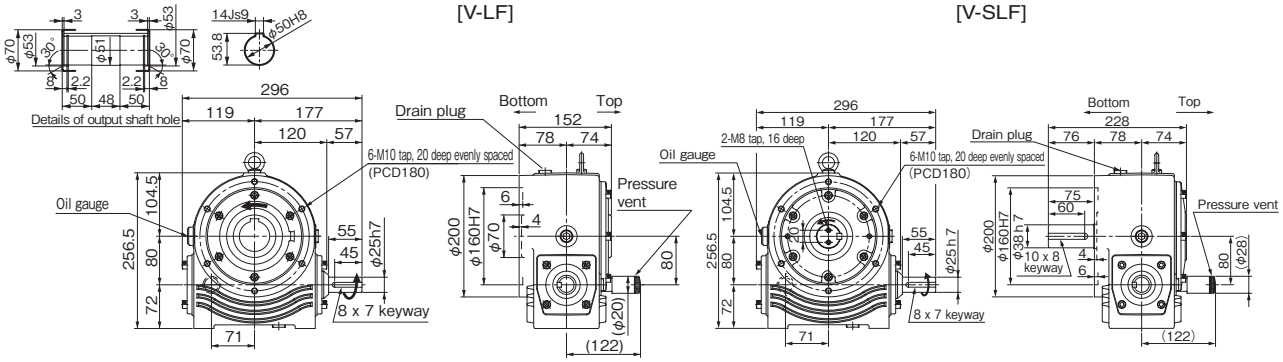
Estimated mass 26 kg

SW80B



Estimated mass 26 kg

SW80V



Estimated mass 26 kg

*Refer to Page 29 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}

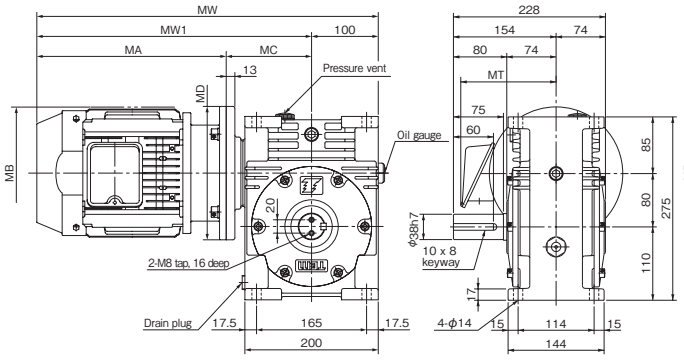
When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on Page 21 to factor this into your selection.

Dimensional Drawings EWM80T / EWM80V

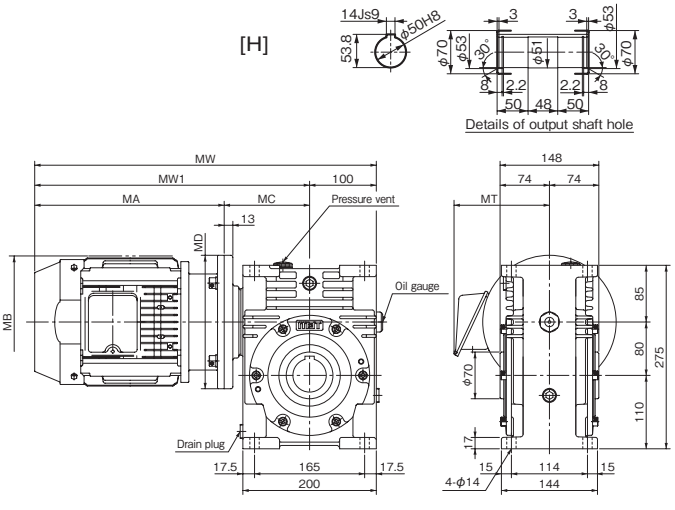
See previous page for reducers without motors

EWM80T

[R]

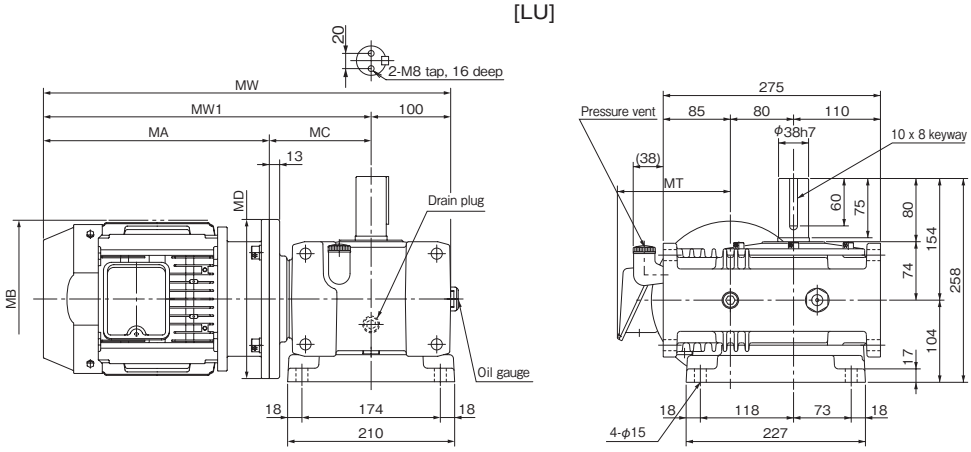


[H]



EWM80V

[LU]



Transfer Capacity Table

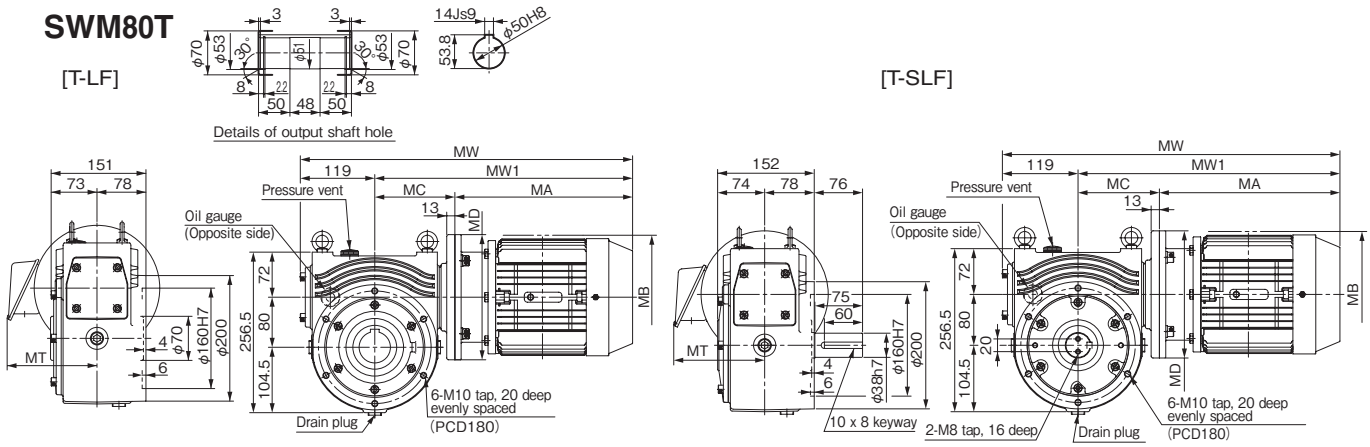
*Refer to Page 29 for shaft arrangements and relative direction of rotation.

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
EWM80	1.5	40	256 {26.1}	302 {30.8}	274 (328)	128 (128)	402 (456)	502 (556)	198 (198)	200 (200)	150.5 (149)	54 (57)	56 (59)
		50	307 {31.3}	362 {36.9}									
		60	342 {34.9}	376 {38.4}									
	2.2	25	256 {26.2}	305 {31.2}	278 (322)	128 (128)	406 (460)	506 (560)	198 (198)	250 (250)	143 (141)	63 (66)	65 (68)
		30	295 {30.1}	350 {35.7}									
	3.7	10	187 {19.1}	224 {22.8}	326 (400)	128 (128)	454 (528)	554 (628)	214 (214)	250 (250)	158 (159)	72 (77)	74 (79)
		15	272 {27.7}	325 {33.1}									
		20	353 {36.0}	412 {42.0}									

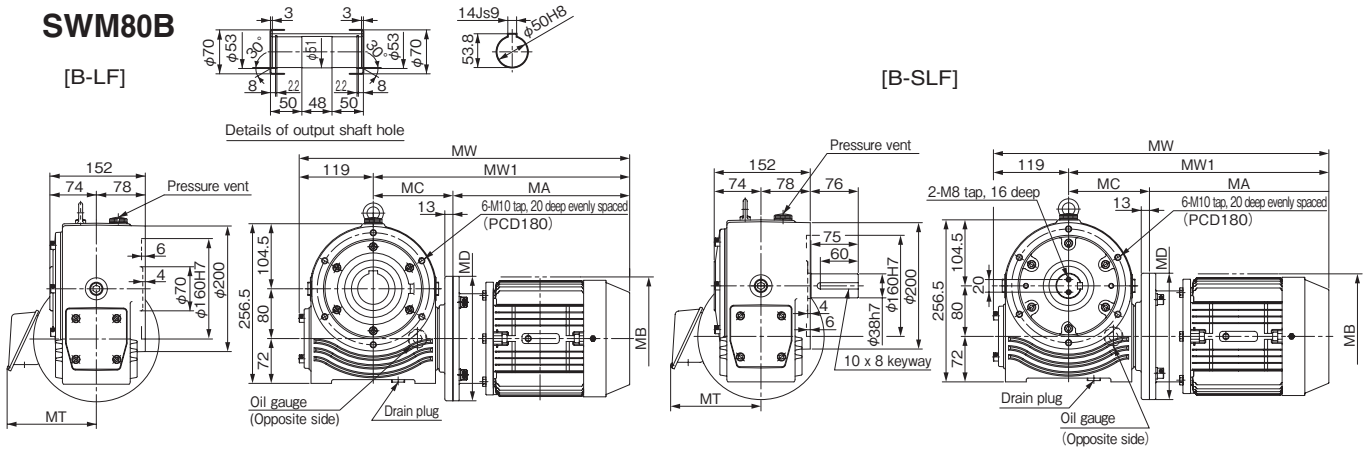
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWM80T / SWM80B / SWM80V

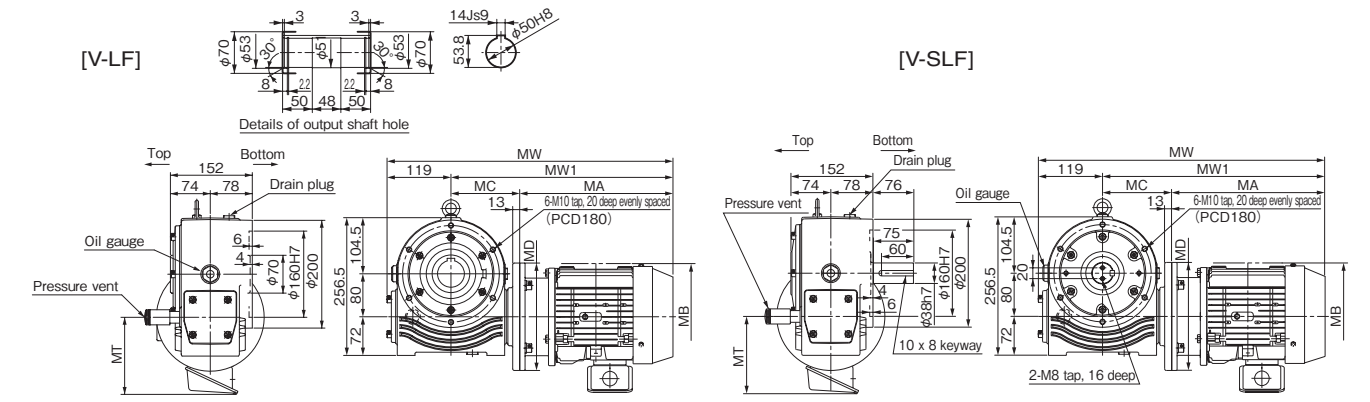
SWM80T



SWM80B



SWM80V



*Refer to Page 29 for shaft arrangements and relative direction of rotation.

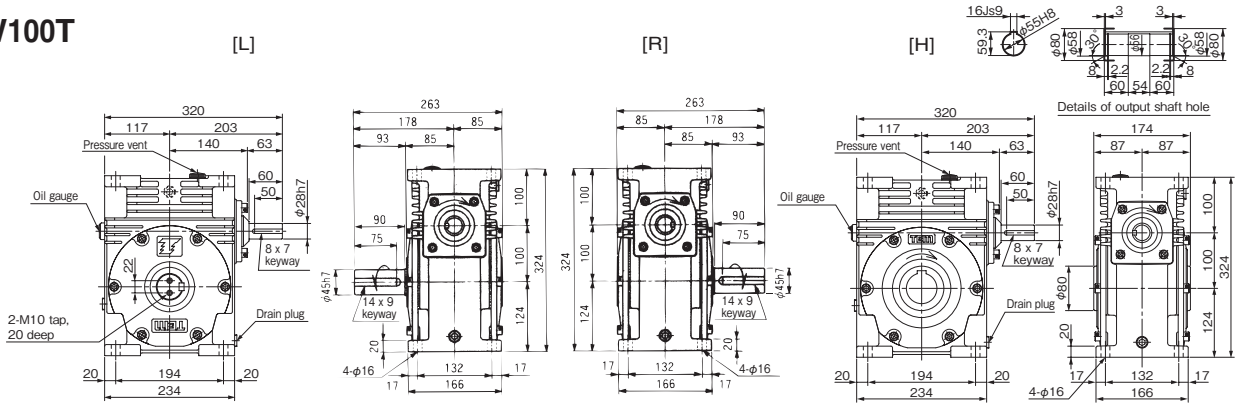
Transfer Capacity Table

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
SWM80	1.5	40	256 {26.1}	302 {30.8}	274 (328)	128 (128)	402 (456)	521 (575)	198 (198)	200 (200)	150.5 (149)	49 (52)
		50	307 {31.3}	362 {36.9}								
		60	342 {34.9}	376 {38.4}								
	2.2	20	210 {21.4}	250 {25.5}	278 (332)	128 (128)	406 (460)	525 (579)	198 (198)	250 (250)	143 (141)	58 (61)
		25	256 {26.2}	305 {31.2}								
		30	295 {30.1}	350 {35.7}								
	3.7	10	187 {19.1}	224 {22.8}	326 (400)	128 (128)	454 (528)	573 (647)	214 (214)	250 (250)	158 (159)	66 (72)
		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 21 for sizing. * Thermal rating factor is 1.0.

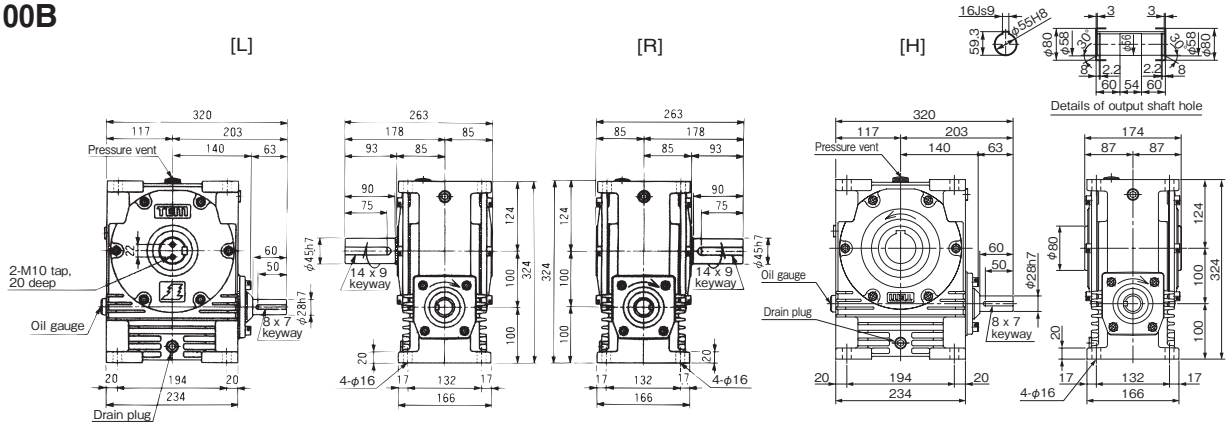
Dimensional Drawings EW100T / EW100B / EW100V

EW100T



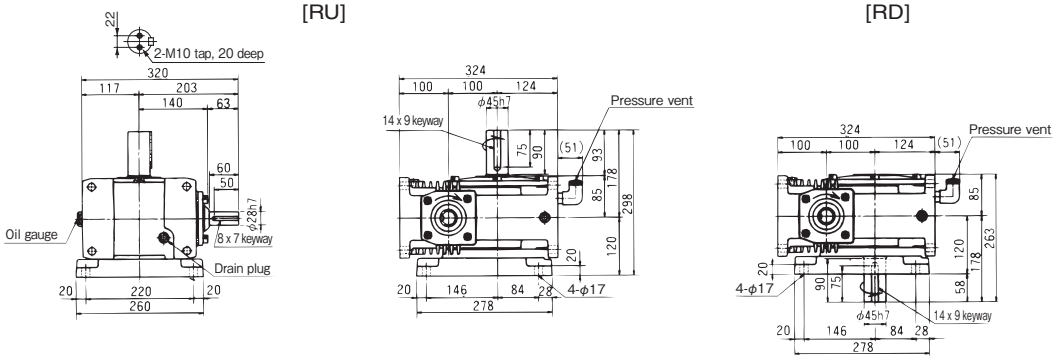
Estimated mass 43 kg

EW100B



Estimated mass 41 kg

EW100V



Estimated mass 47 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

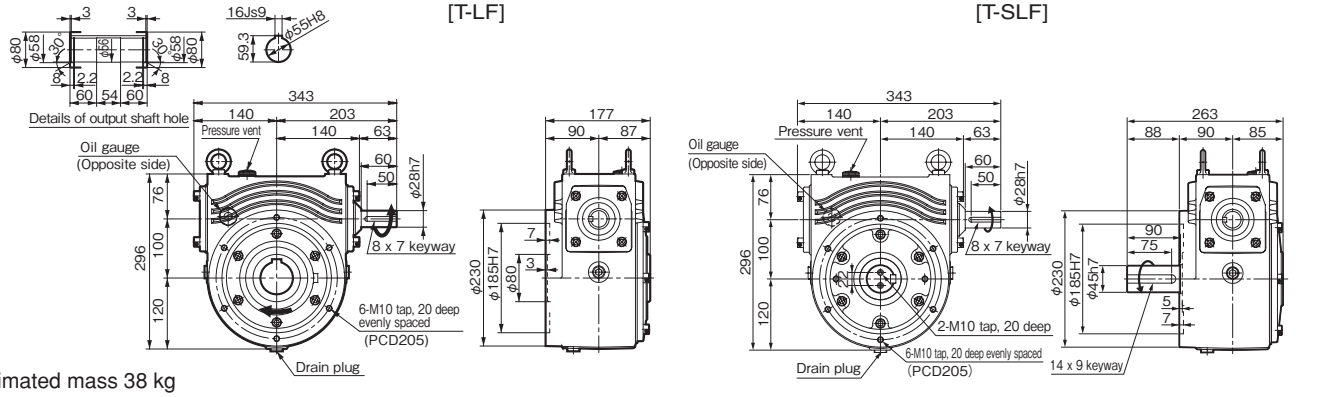
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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 21 to factor this into your selection.

Dimensional Drawings SW100T / SW100B / SW100V

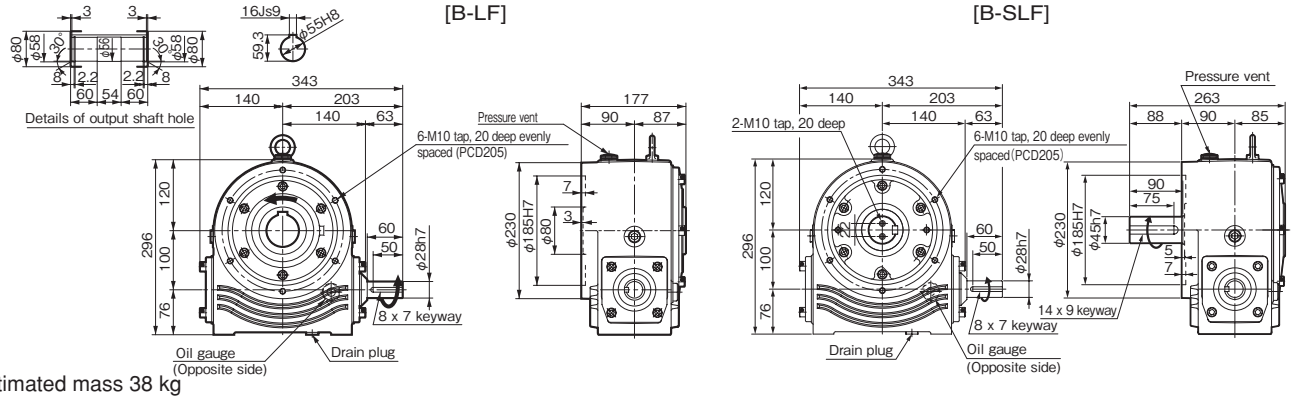
See next page for reducers with motors

SW100T



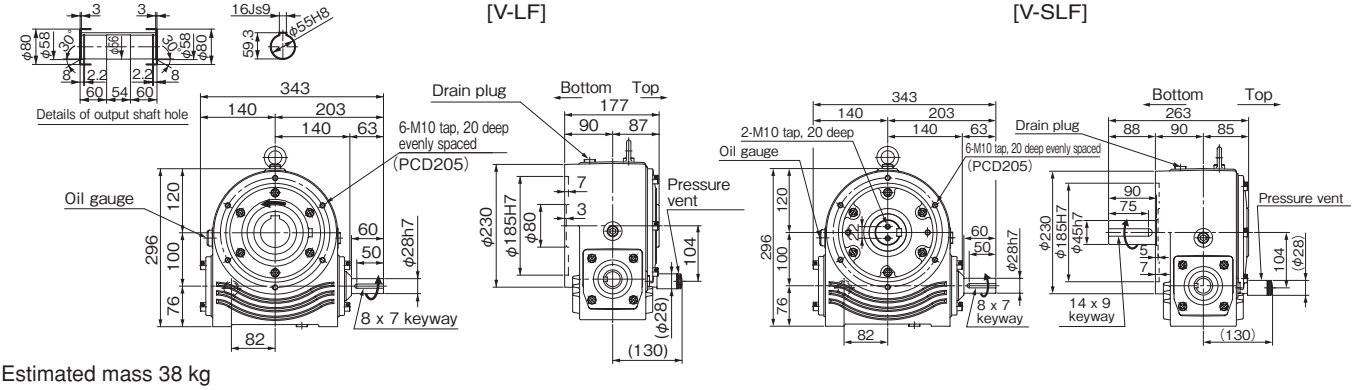
Estimated mass 38 kg

SW100B



Estimated mass 38 kg

SW100V



Estimated mass 38 kg

*Refer to Page 29 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}

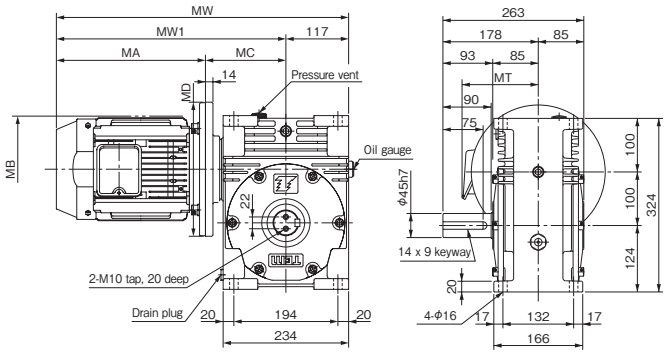
When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on Page 21 to factor this into your selection.

Dimensional Drawings EWM100T / EWM100V

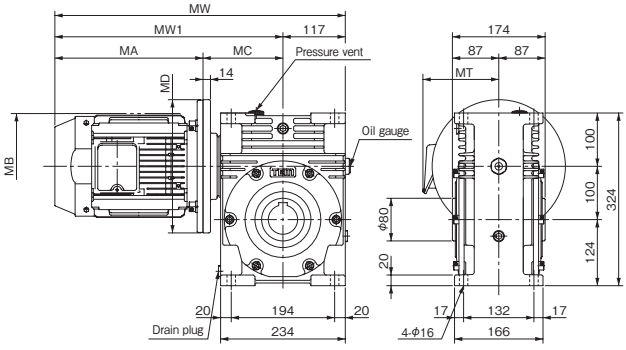
See previous page for reducers without motors

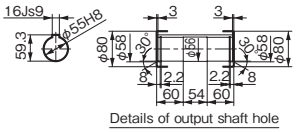
EWM100T

[R]



[H]

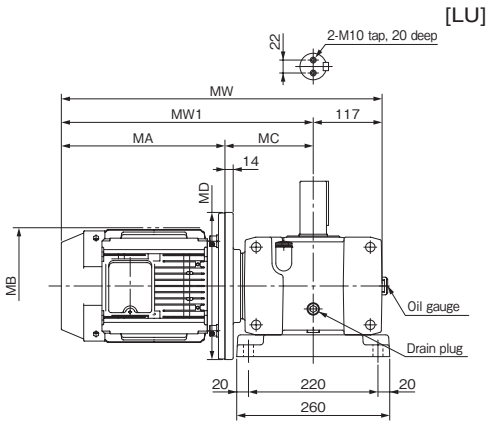


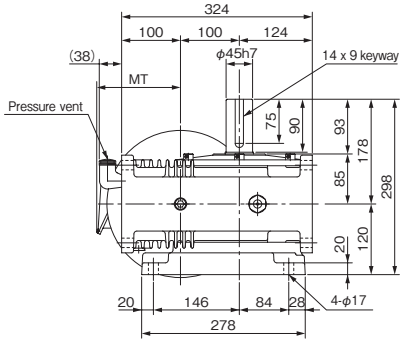


Details of output shaft hole

EWM100V

[LU]





*Refer to Page 29 for shaft arrangements and relative direction of rotation.

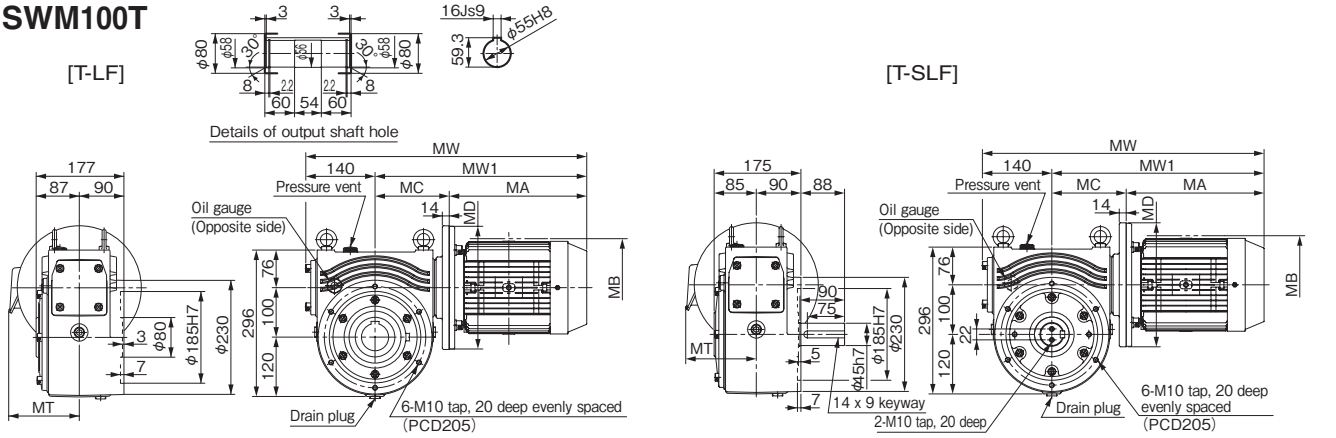
Transfer Capacity Table

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	T type Estimated mass kg	V type Estimated mass kg
EWM100	2.2	40	386 {39.4}	457 {46.7}	278 (332)	150 (150)	428 (482)	545 (599)	198 (198)	250 (250)	143 (143)	78 (81)	82 (85)
		50	467 {47.6}	552 {56.3}									
		60	543 {55.4}	628 {64.1}									
	3.7	25	440 {44.9}	525 {53.6}	326 (400)	150 (150)	476 (550)	593 (667)	214 (214)	250 (250)	158 (159)	86 (92)	90 (96)
		30	510 {52.1}	607 {61.9}									
	5.5	10	281 {28.6}	337 {34.3}	413 (511)	157 (157)	570 (668)	687 (785)	252 (252)	300 (300)	190 (193)	104 (120)	108 (124)
		15	410 {41.8}	491 {50.1}									
		20	533 {54.4}	637 {65.0}									

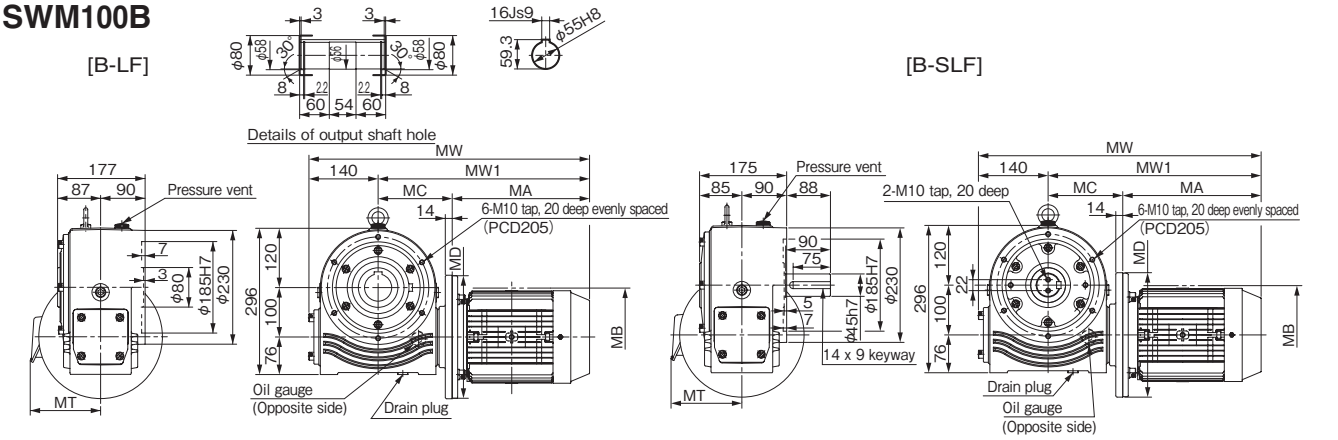
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWM100T / SWM100B / SWM100V

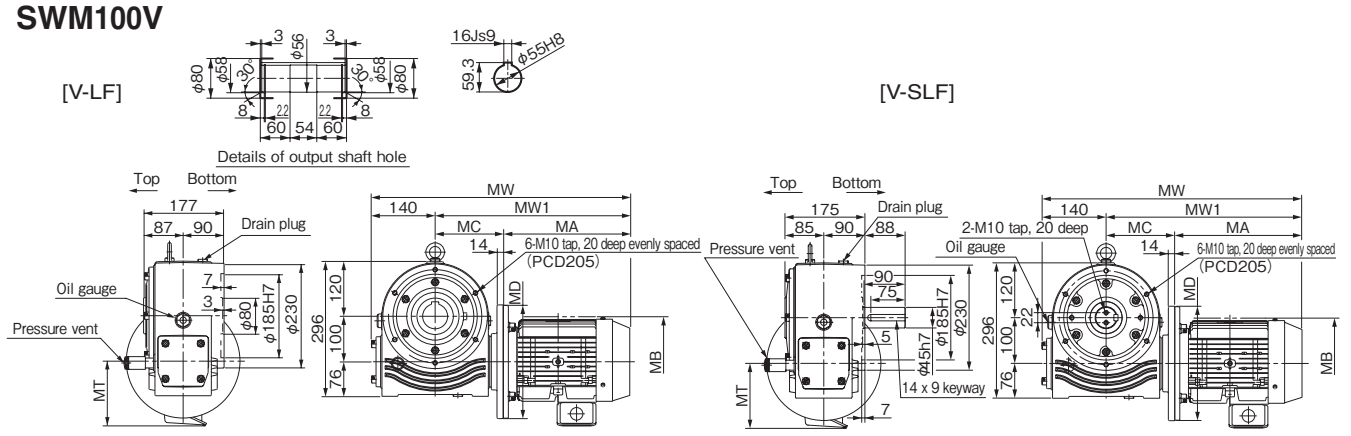
SWM100T



SWM100B



SWM100V



*Refer to Page 29 for shaft arrangements and relative direction of rotation.

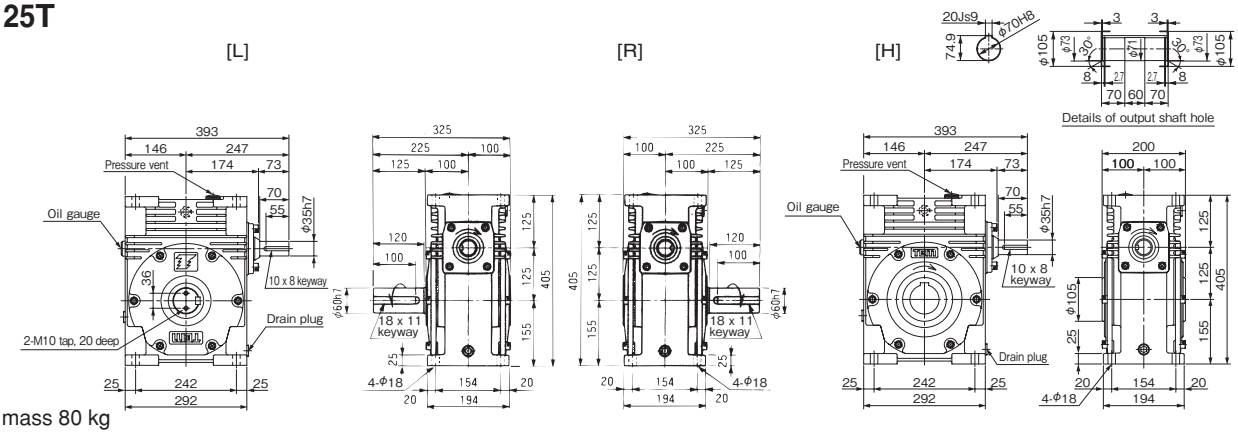
Transfer Capacity Table

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
SWM100	2.2	40	386 {39.4}	457 {46.7}	278 (332)	150 (150)	428 (482)	568 (622)	198 (198)	250 (250)	143 (141)	71 (74)
		50	467 {47.6}	552 {56.3}								
		60	543 {55.4}	628 {64.1}								
	3.7	25	440 {44.9}	525 {53.6}	326 (400)	150 (150)	476 (550)	616 (690)	214 (214)	250 (250)	158 (159)	79 (85)
		30	510 {52.1}	607 {61.9}								
	5.5	10	281 {28.6}	337 {34.3}	413 (511)	157 (157)	570 (668)	710 (808)	252 (252)	300 (300)	190 (193)	92 (108)
		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 21 for sizing. * Thermal rating factor is 1.0.

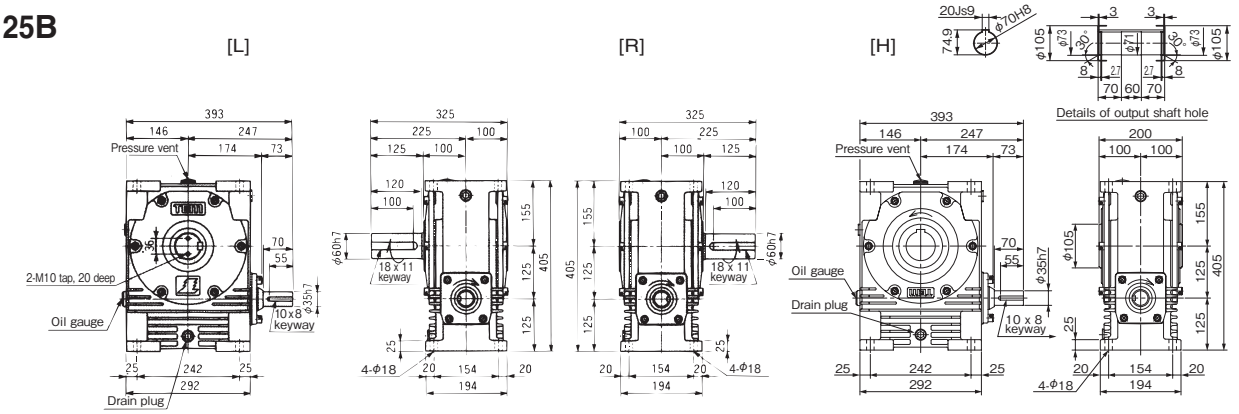
Dimensional Drawings EW125T / EW125B / EW125V

EW125T



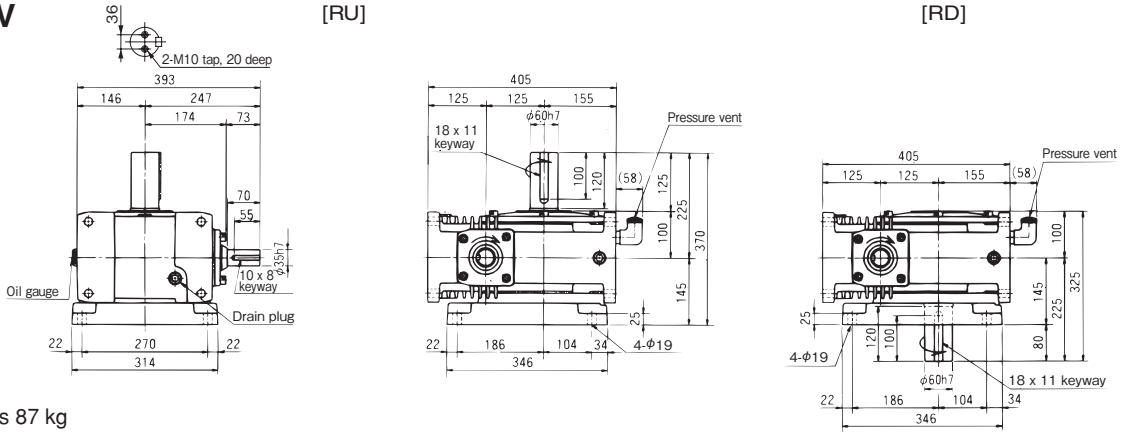
Estimated mass 80 kg

EW125B



Estimated mass 77 kg

EW125V



Estimated mass 87 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

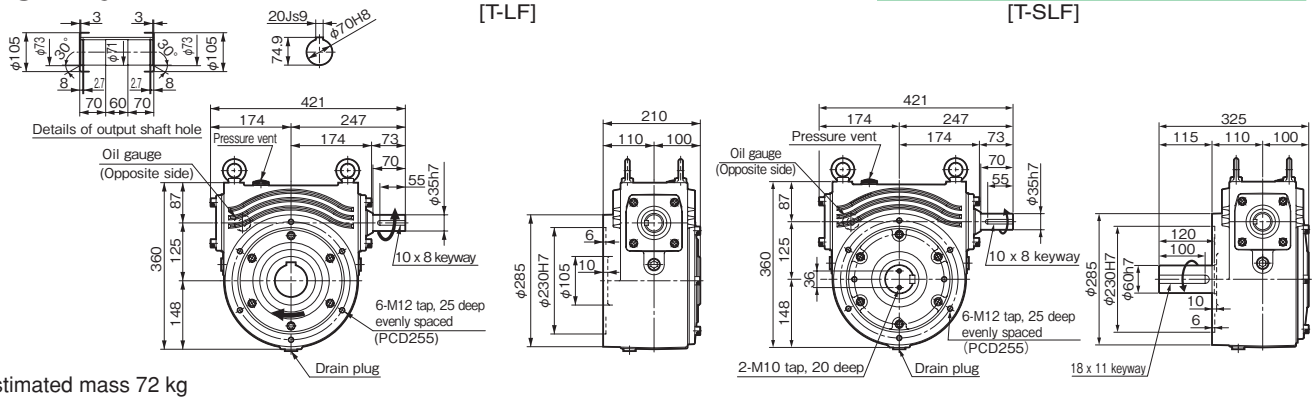
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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 21 to factor this into your selection.

Dimensional Drawings SW125T / SW125B / SW125V

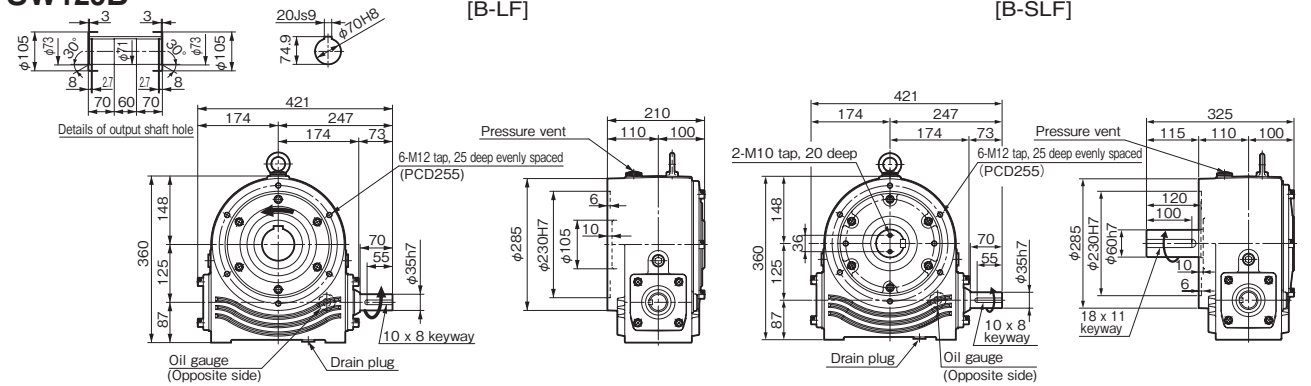
See next page for reducers with motors

SW125T



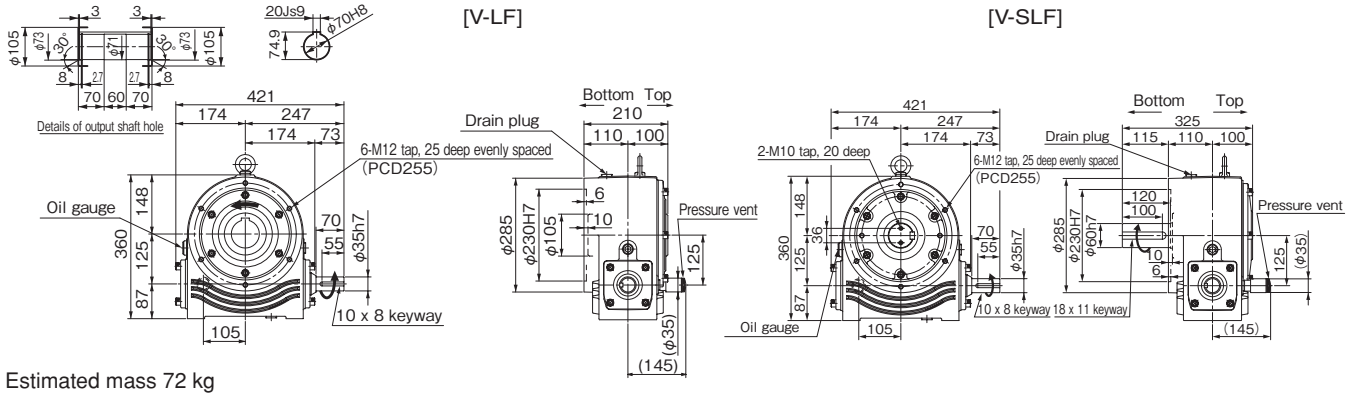
Estimated mass 72 kg

SW125B



Estimated mass 72 kg

SW125V



Estimated mass 72 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

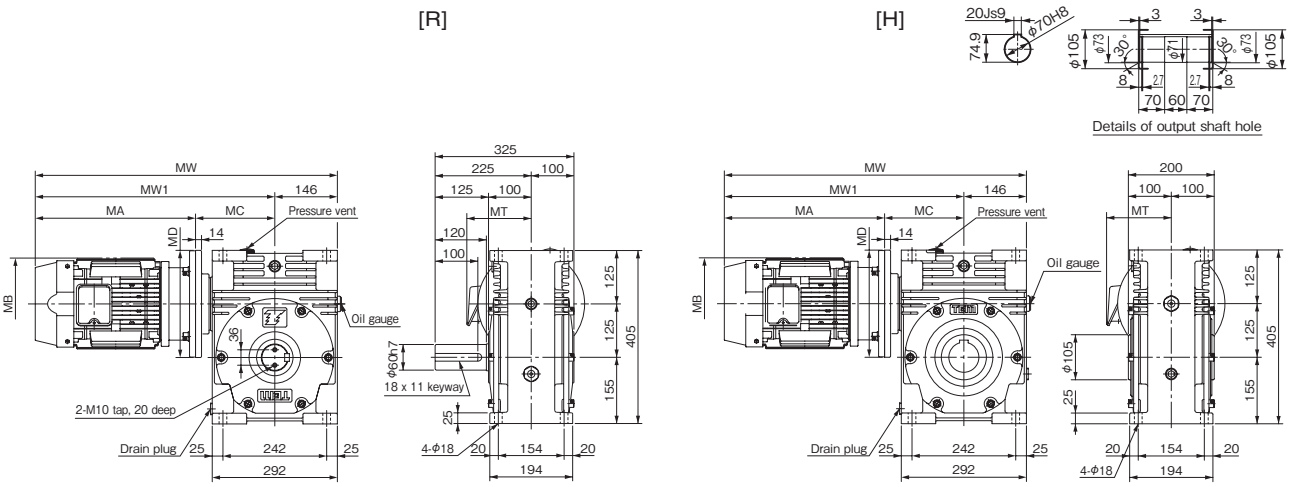
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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 21 to factor this into your selection.

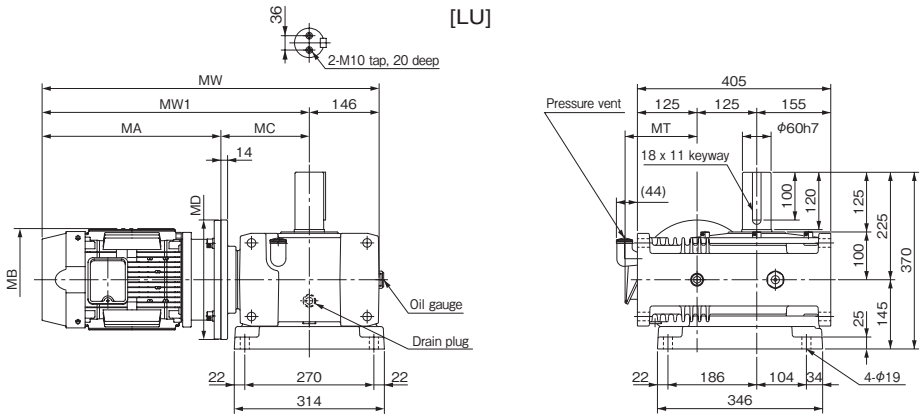
Dimensional Drawings EWM125T / EWM125V

See previous page for reducers without motors

EWM125T



EWM125V



*Refer to Page 29 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

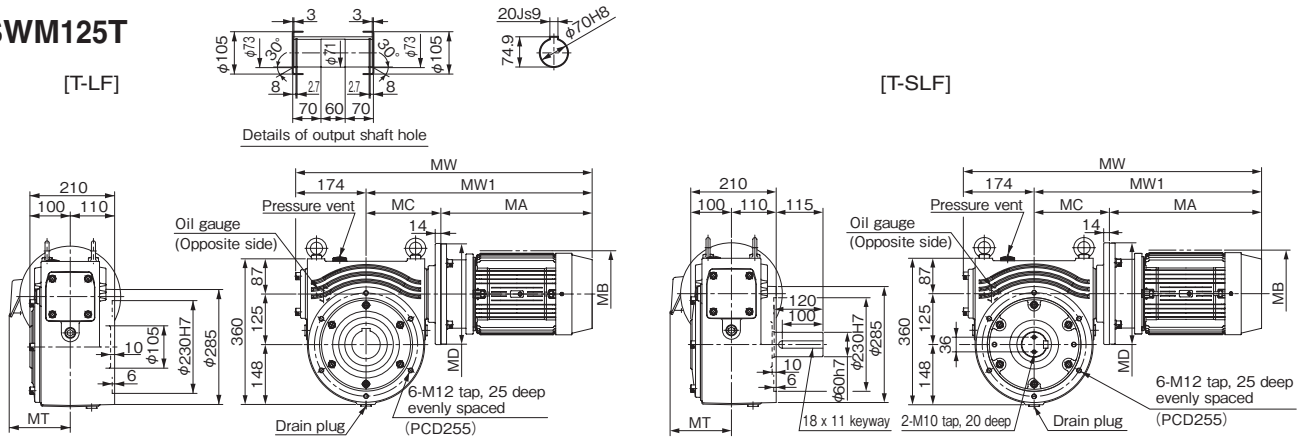
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	MW	MB	MD	MT	T type Estimated mass kg	V type Estimated mass kg
EWM125	3.7	40	667 {68.0}	792 { 80.8}	326 (400)	185 (185)	511 (585)	657 (731)	214 (214)	250 (250)	158 (159)	123 (129)	130 (136)
		50	802 {81.8}	949 { 96.8}									
		60	931 {95.0}	1017 {104 }									
	5.5	25	662 {67.6}	791 { 80.7}	413 (511)	185 (185)	598 (696)	744 (842)	252 (252)	300 (300)	190 (193)	141 (157)	148 (164)
		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 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWM125T / SWM125B / SWM125V

SWM125T

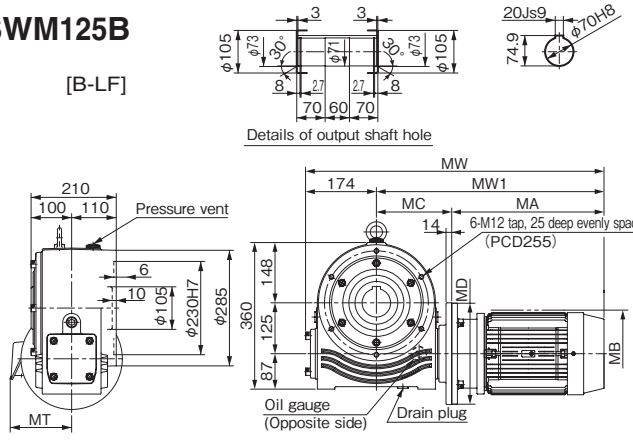
[T-LF]



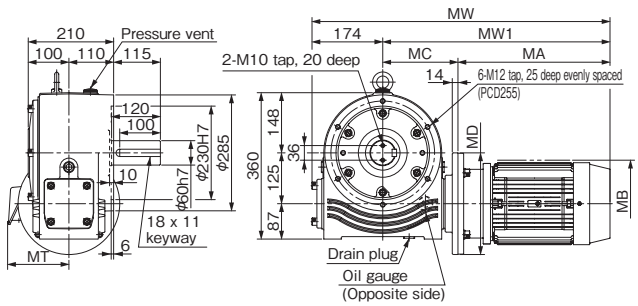
[T-SLF]

SWM125B

[B-LF]

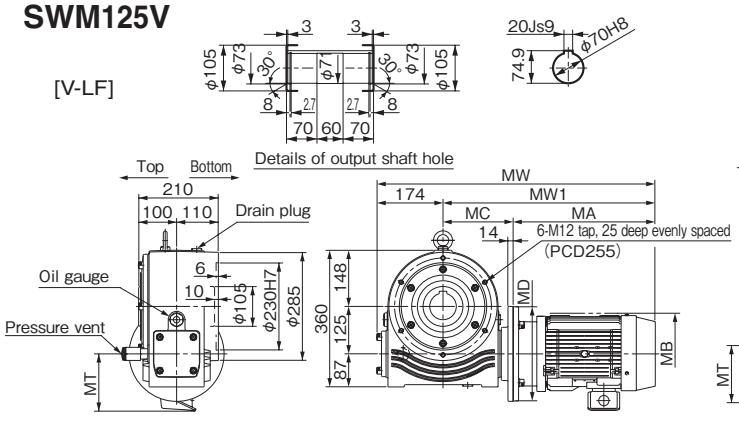


[B-SLF]

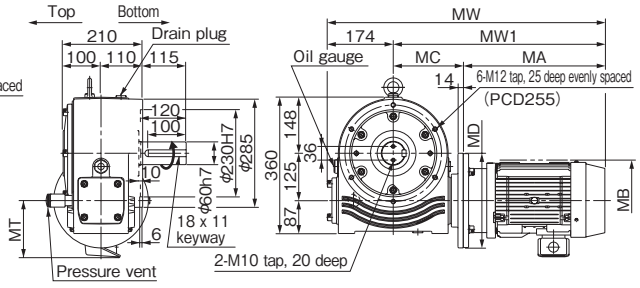


SWM125V

[V-LF]



[V-SLF]



*Refer to Page 29 for shaft arrangements and relative direction of rotation.

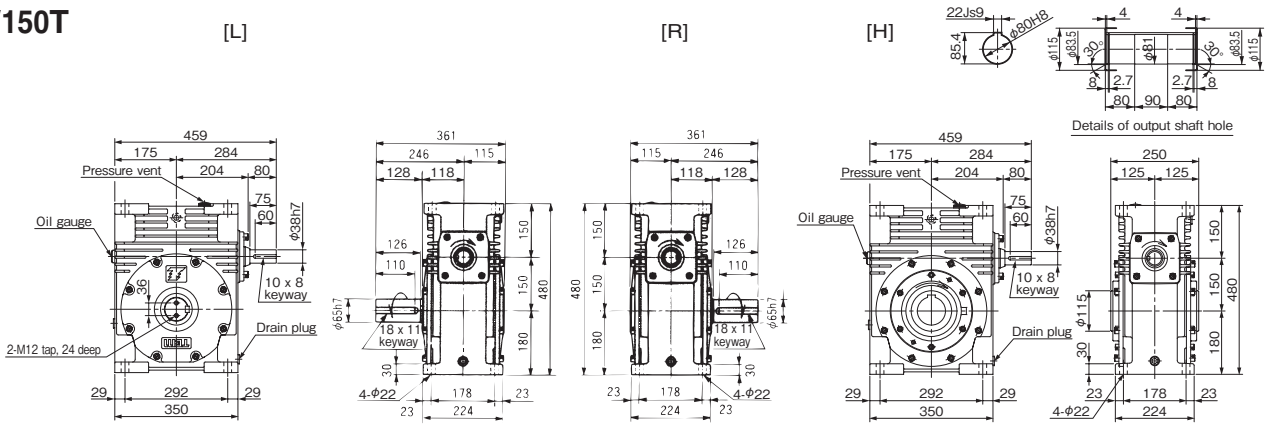
Transfer Capacity Table

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
SWM125	3.7	40	667 {68.0}	792 {80.8}	326 (400)	185 (185)	511 (585)	685 (759)	214 (214)	250 (250)	158 (159)	112 (118)
		50	802 {81.8}	949 {96.8}								
		60	931 {95.0}	1017 {104}								
	5.5	25	662 {67.6}	791 {80.7}	413 (511)	185 (185)	598 (696)	772 (870)	252 (252)	300 (300)	190 (193)	126 (142)
		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 21 for sizing. * Thermal rating factor is 1.0.

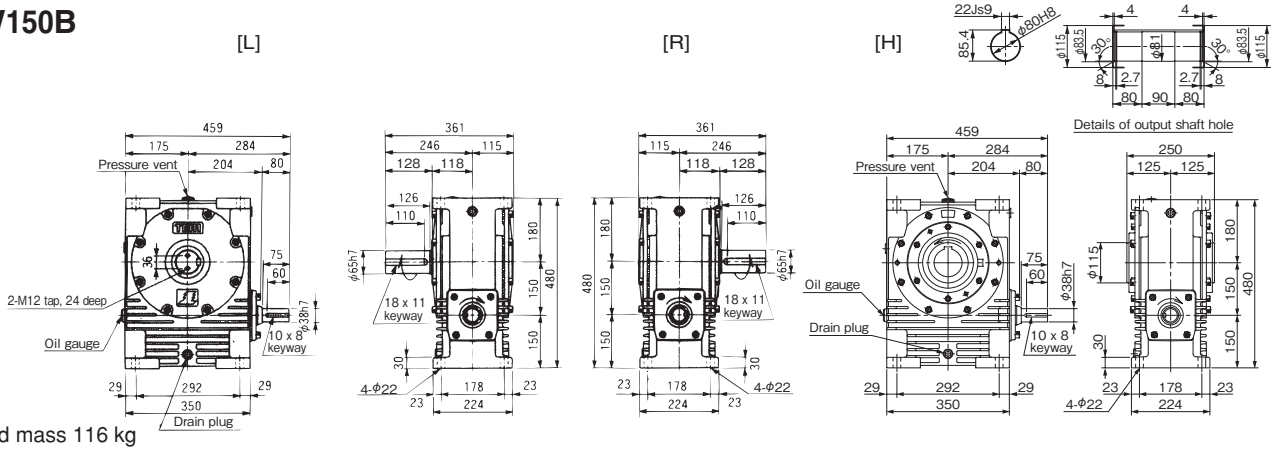
Dimensional Drawings EW150T / EW150B / EW150V

EW150T



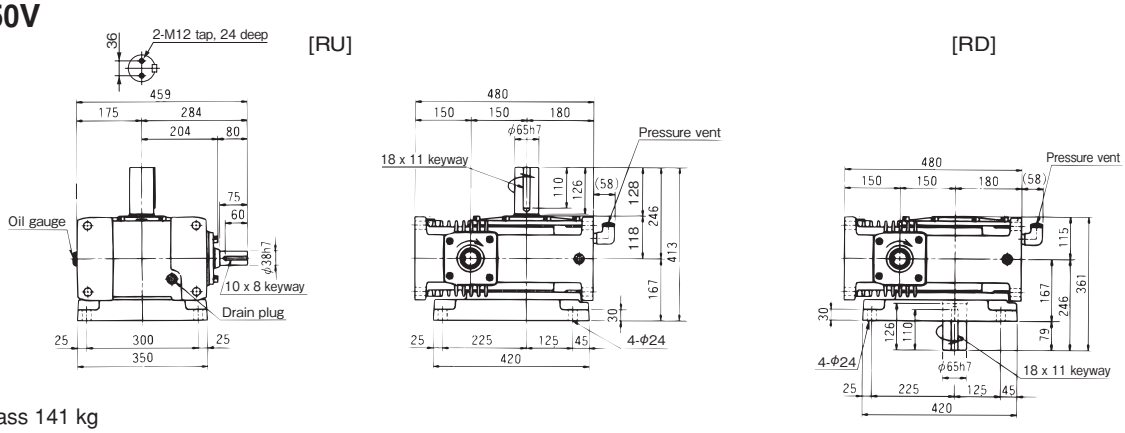
Estimated mass 122 kg

EW150B



Estimated mass 116 kg

EW150V



Estimated mass 141 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

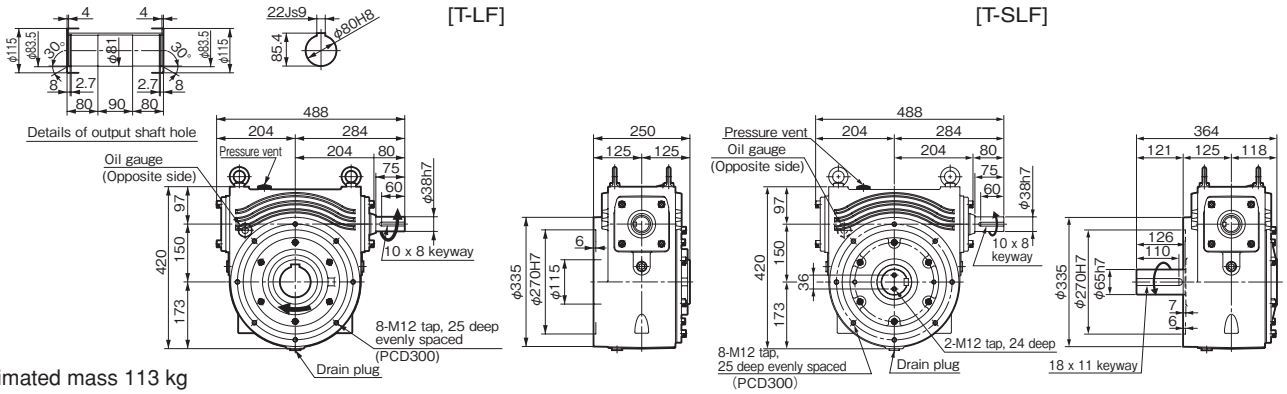
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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 21 to factor this into your selection.

Dimensional Drawings SW150T / SW150B / SW150V

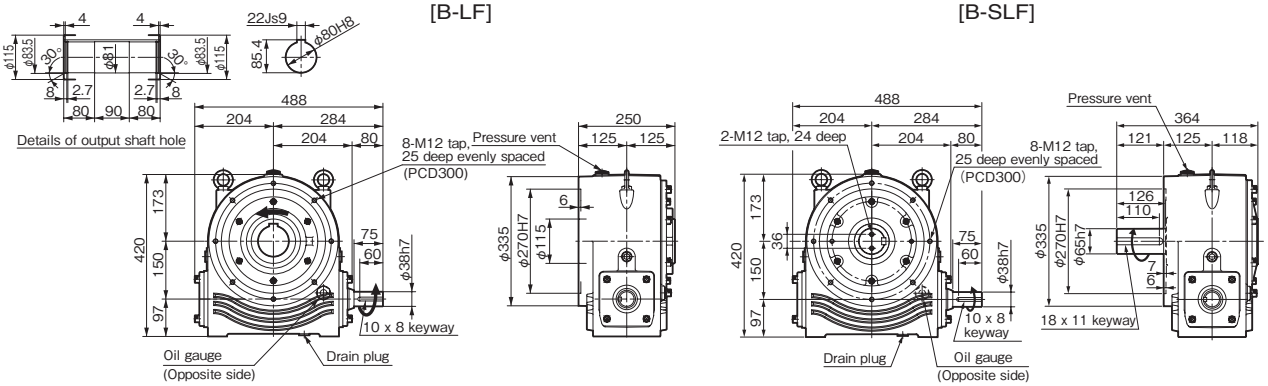
See next page for reducers with motors

SW150T



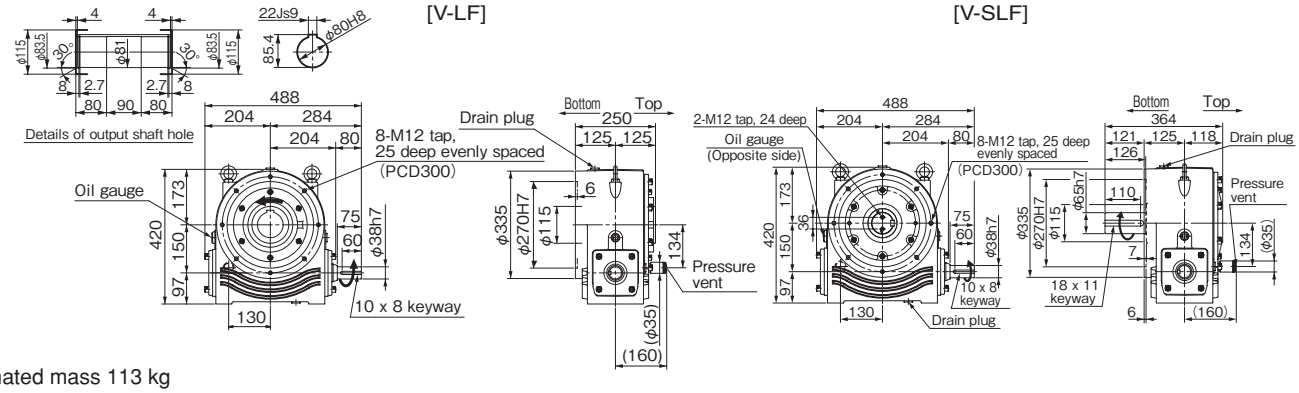
Estimated mass 113 kg

SW150B



Estimated mass 113 kg

SW150V



Estimated mass 113 kg

*Refer to Page 29 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}

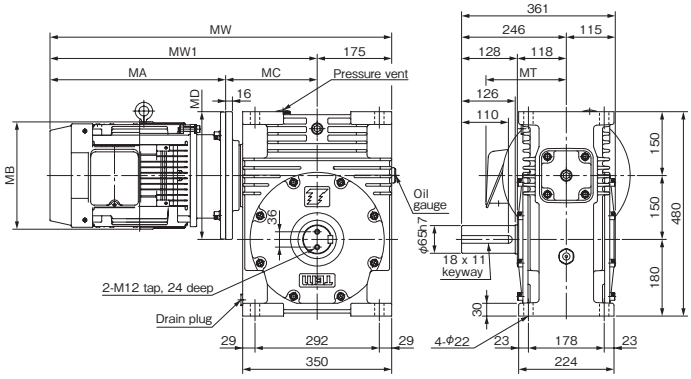
When running a speed within the shaded boxes , and also continuously for more than two hours, refer to the thermal rating factor on Page 21 to factor this into your selection.

Dimensional Drawings EWM150T / EWM150V

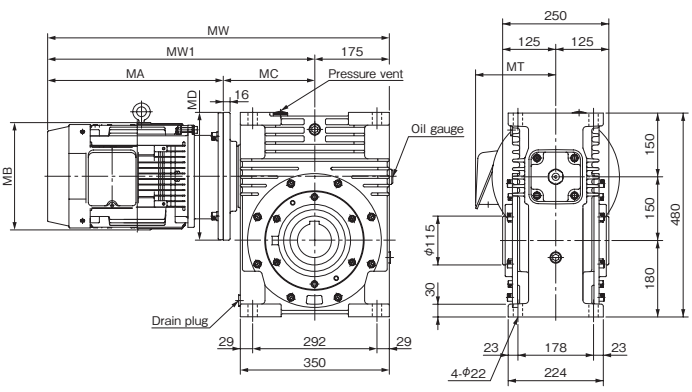
See previous page for reducers without motors

EWM150T

[R]



[H]

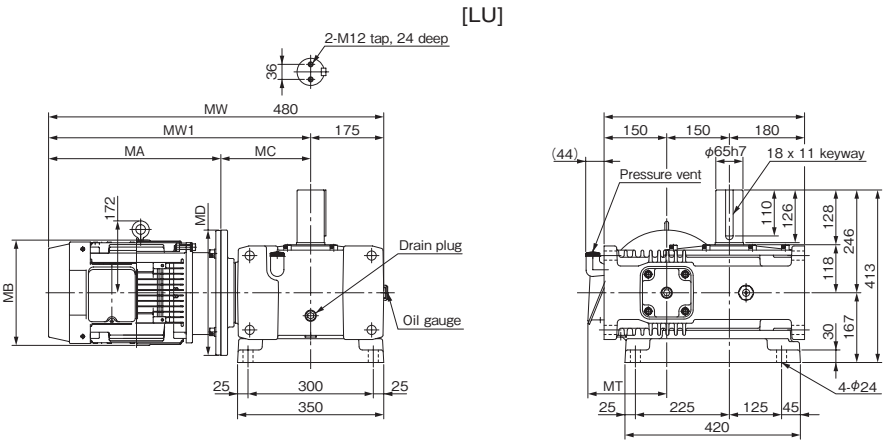


22Js9
Φ80H8
85.4
Φ115
Φ83.5
30°
Φ81
4
4
2.7
2.7
8
80
90
80

Details of output shaft hole

EWM150V

[LU]



Transfer Capacity Table

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

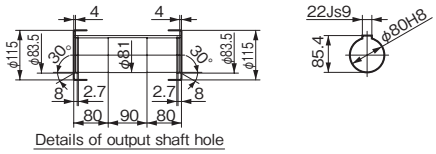
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	MW	MB	MD	MT	T type Estimated mass kg	V type Estimated mass kg
EWM150	5.5	40	1003 {102}	1193 {122}	413 (511)	215 (215)	628 (726)	803 (901)	252 (252)	300 (300)	190 (193)	182 (198)	202 (218)
		50	1225 {125}	1453 {148}									
		60	1401 {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 21 for sizing. * Thermal rating factor is 1.0.

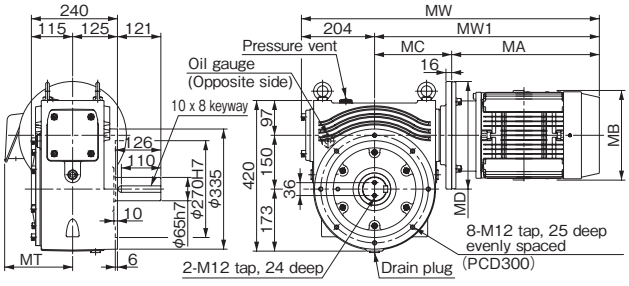
Dimensional Drawings SWM150T / SWM150B / SWM150V

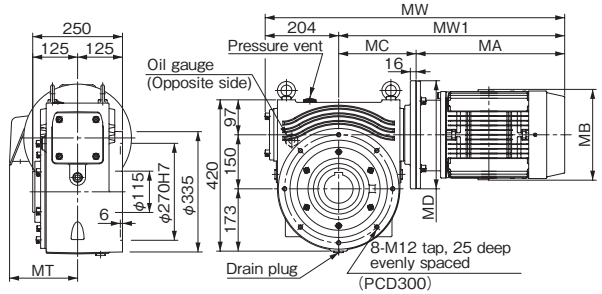
SWM150T

[T-LF]



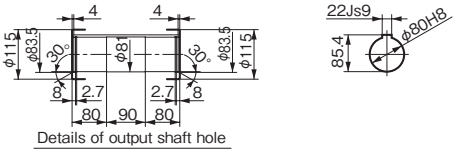
[T-SLF]



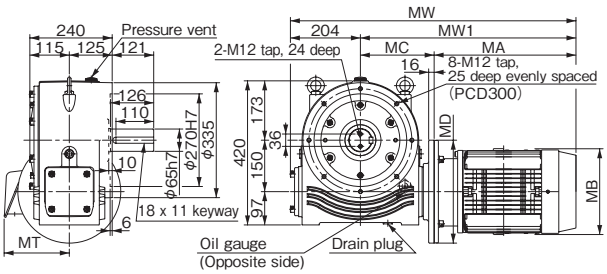


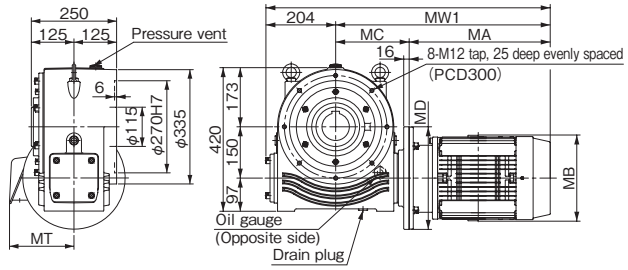
SWM150B

[B-LF]



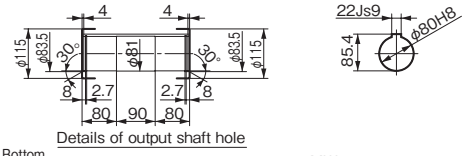
[B-SLF]



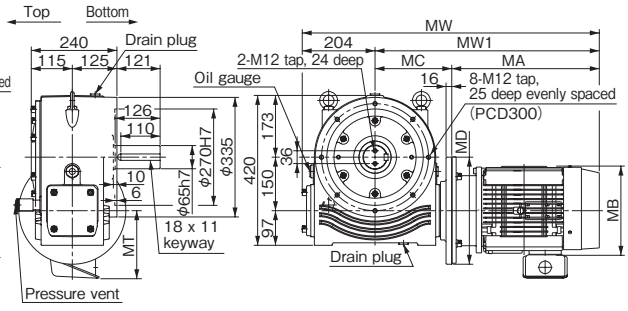


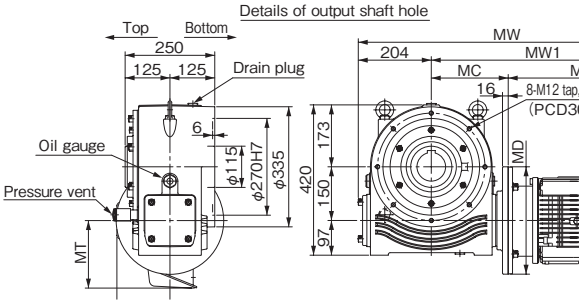
SWM150V

[V-LF]



[V-SLF]





*Refer to Page 29 for shaft arrangements and relative direction of rotation.

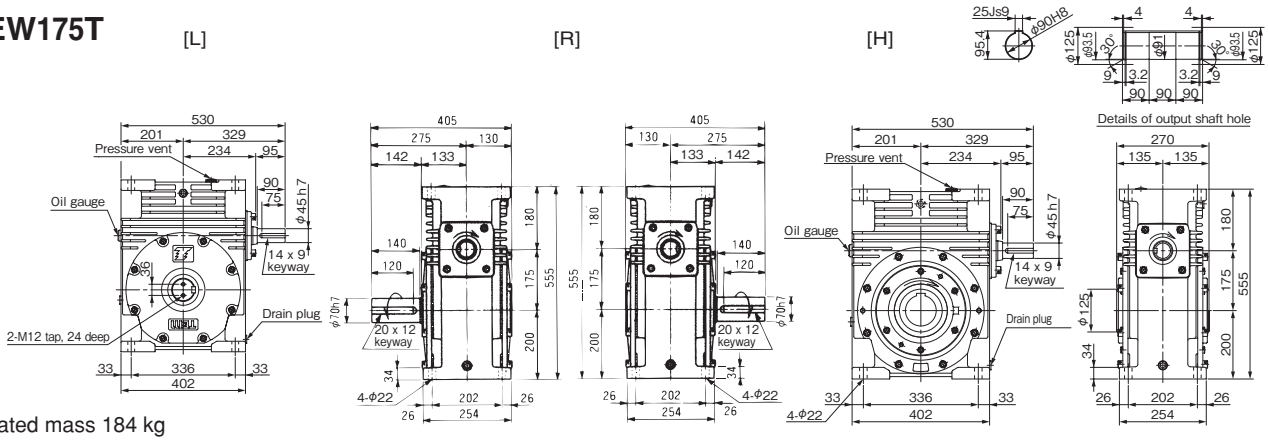
Transfer Capacity Table

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
SWM150	5.5	40	1003 {102}	1193 {122}	413 (511)	215 (215)	628 (726)	832 (930)	252 (252)	300 (300)	190 (193)	166 (182)
		50	1225 {125}	1453 {148}								
		60	1401 {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 21 for sizing. * Thermal rating factor is 1.0.

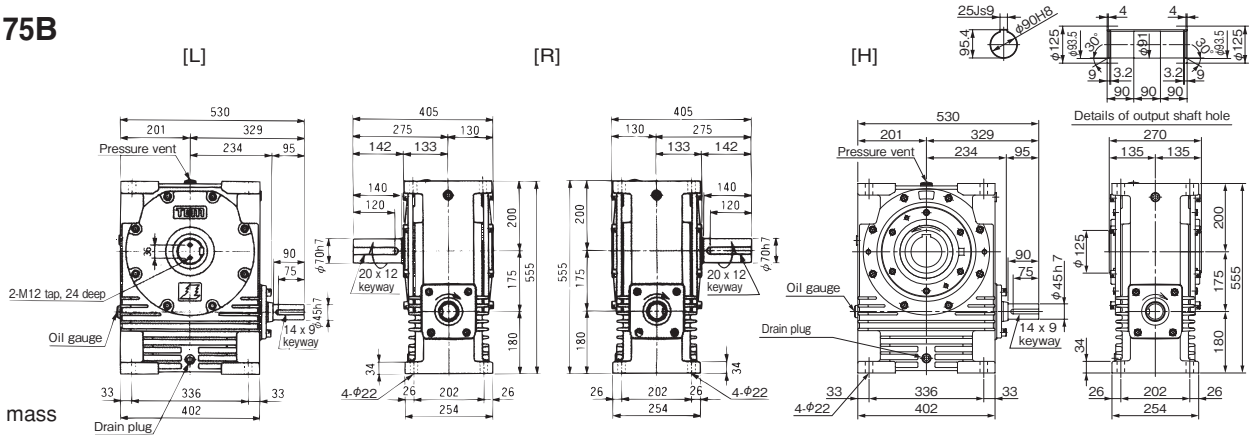
Dimensional Drawings EW175T / EW175B / EW175V

EW175T



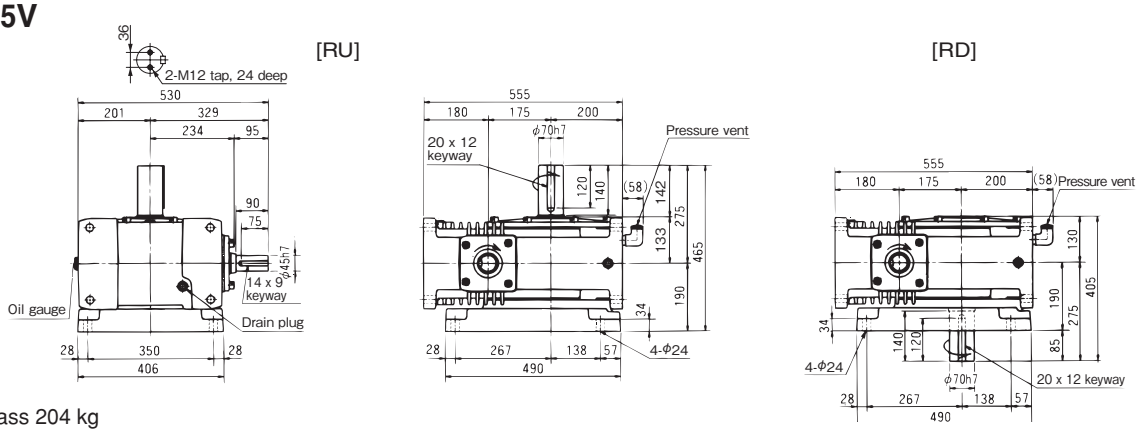
Estimated mass 184 kg

EW175B



Estimated mass 177 kg

EW175V



Estimated mass 204 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

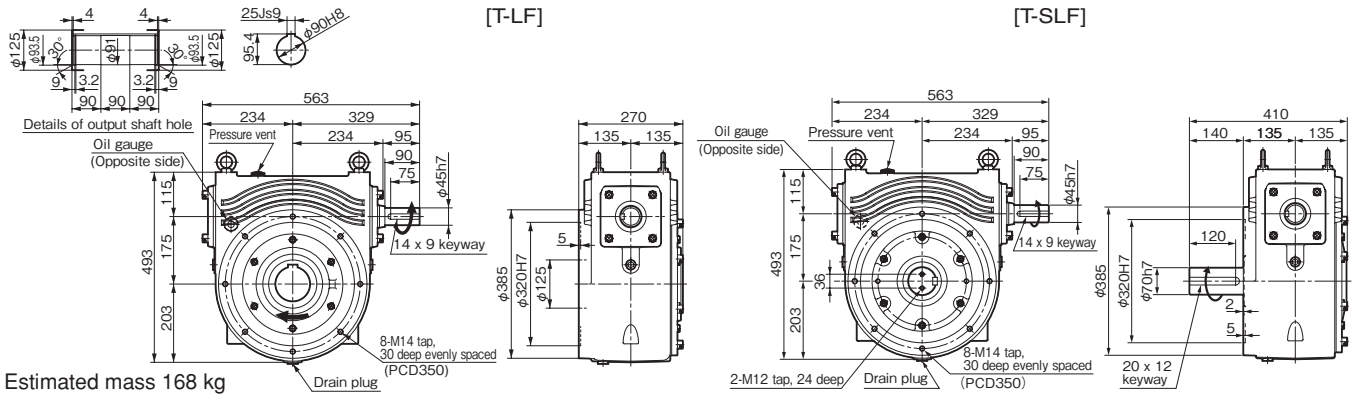
Transfer Capacity Table

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 21 to factor this into your selection.

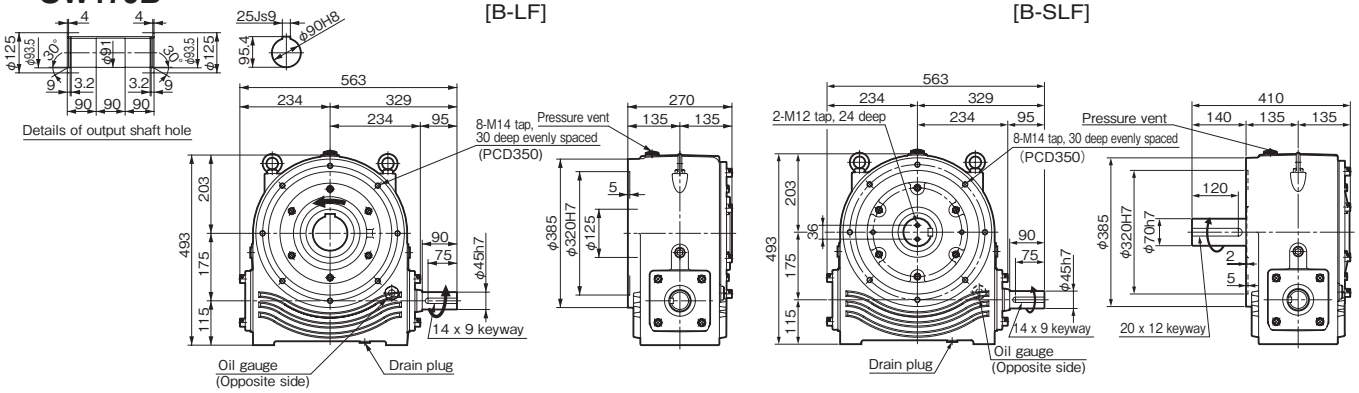
Dimensional Drawings SW175T / SW175B / SW175V

SW175T



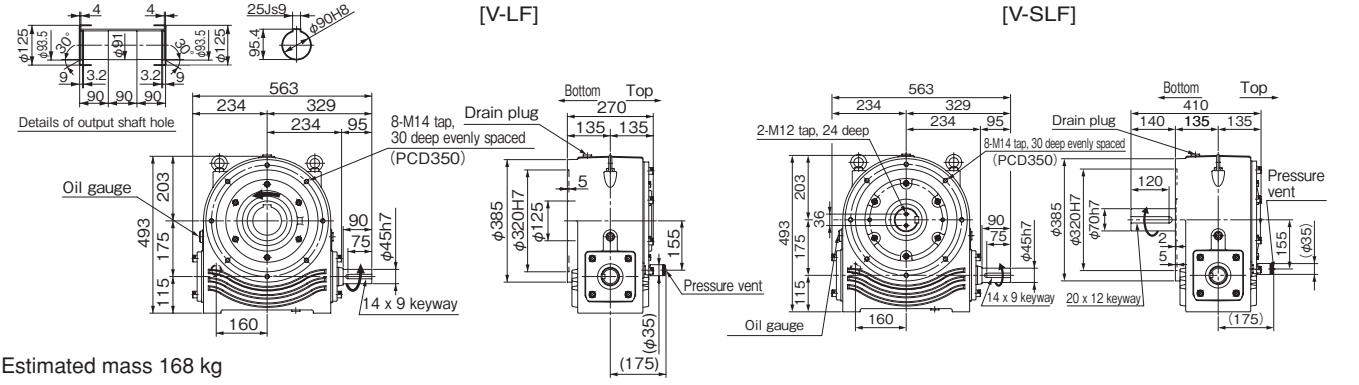
Estimated mass 168 kg

SW175B



Estimated mass 168 kg

SW175V



Estimated mass 168 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

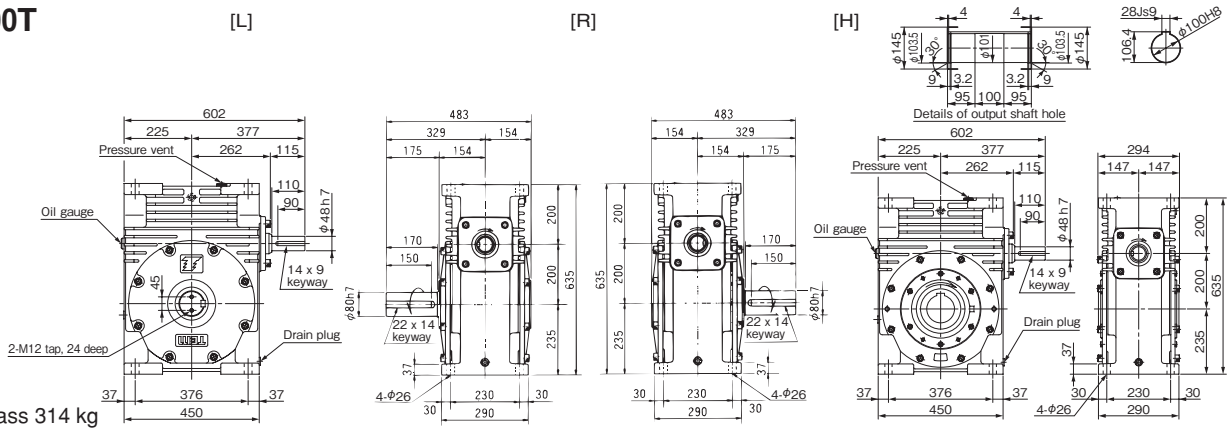
Transfer Capacity Table

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 21 to factor this into your selection.

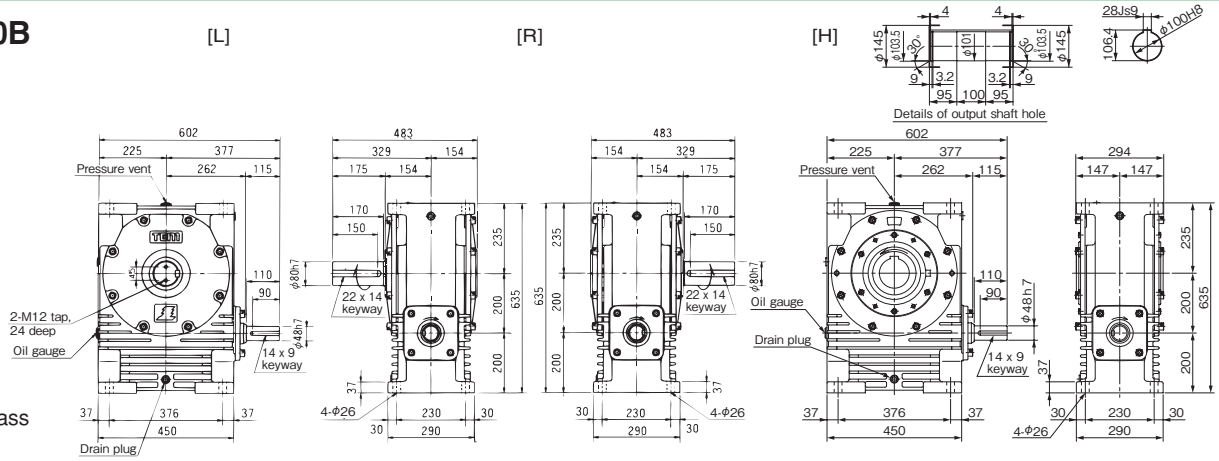
Dimensional Drawings EW200T / EW200B / EW200V

EW200T



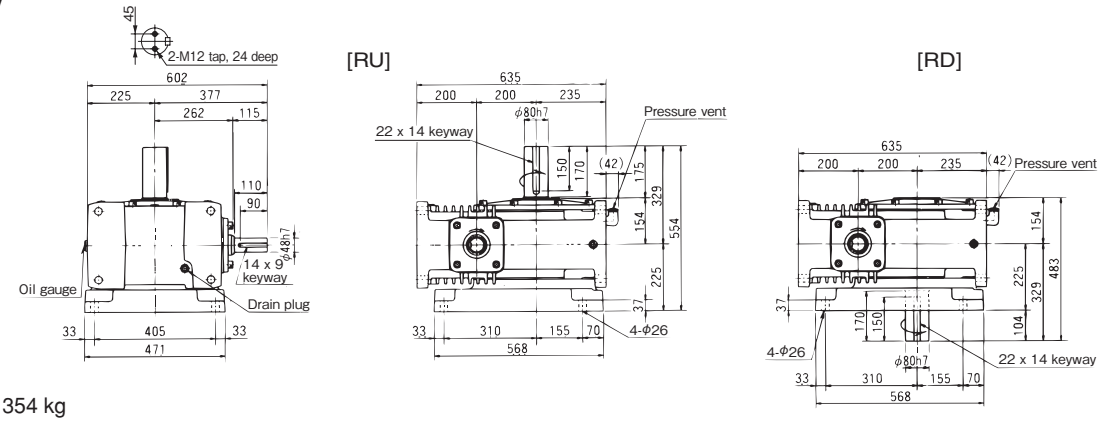
Estimated mass 314 kg

EW200B



Estimated mass 304 kg

EW200V



Estimated mass 354 kg

*Refer to Page 29 for shaft arrangements and relative direction of rotation.

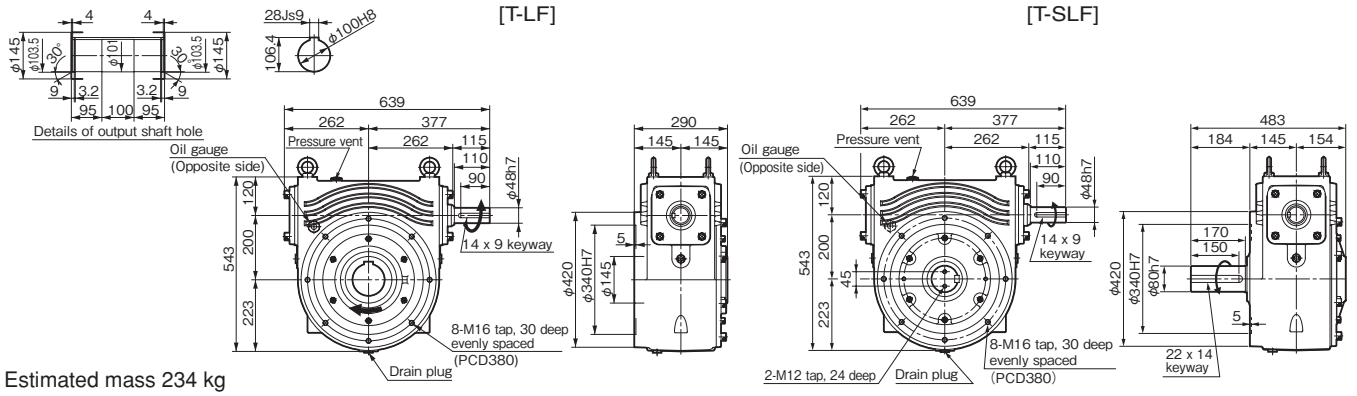
Transfer Capacity Table

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 21 to factor this into your selection.

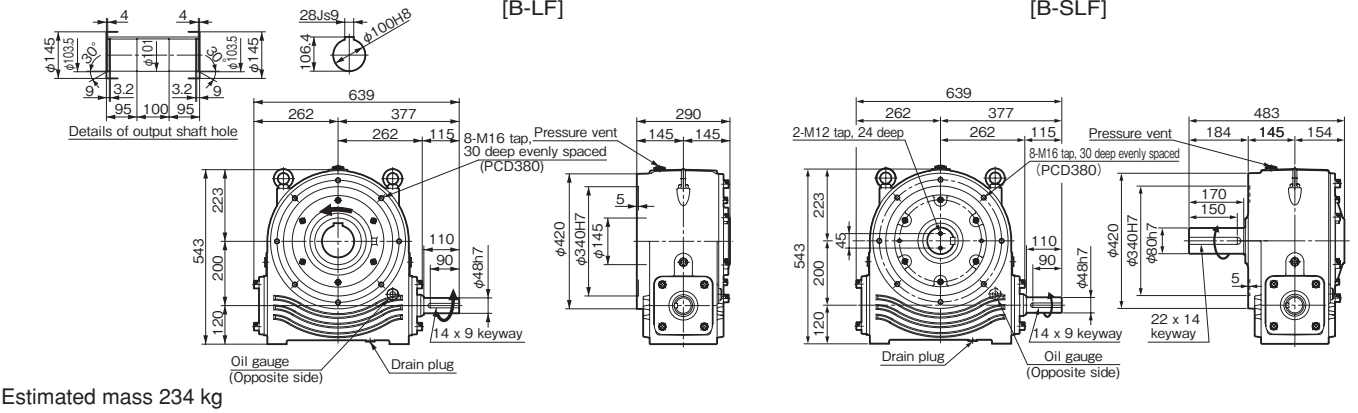
Dimensional Drawings SW200T / SW200B / SW200V

SW200T



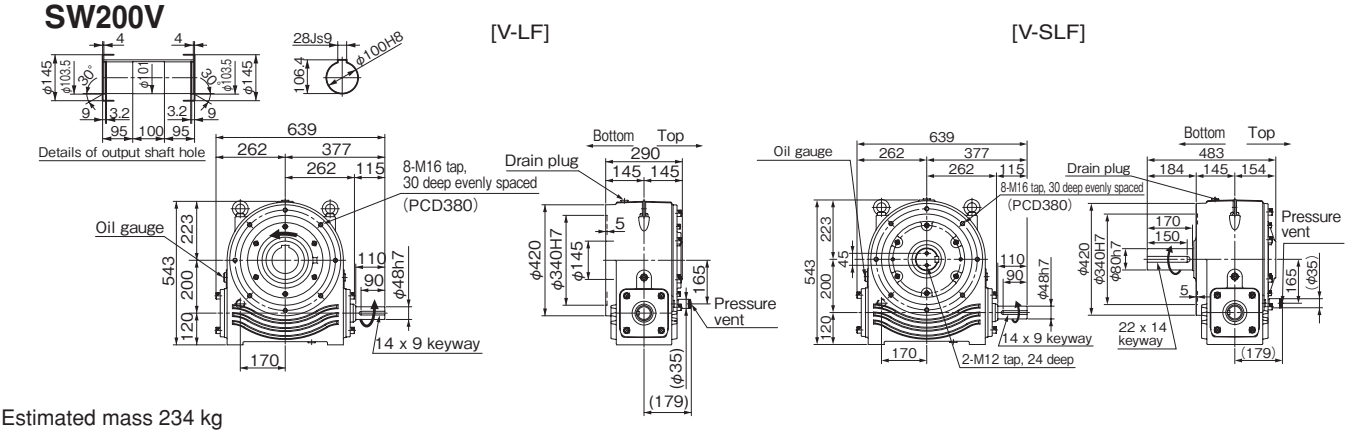
Estimated mass 234 kg

SW200B



Estimated mass 234 kg

SW200V



Estimated mass 234 kg

*Refer to Page 29 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}
	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 21 to factor this into your selection.

Memo

Worm Power Drive®

High Balance Cylindrical Worm Gear

EWJ / EW SW Series

Double Reduction Gear Reducers

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

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Model Number Designation

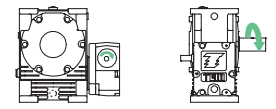
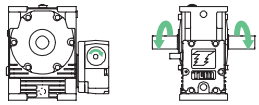
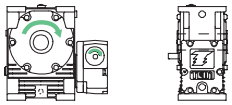
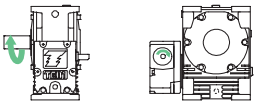
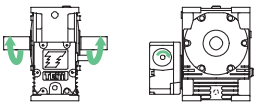
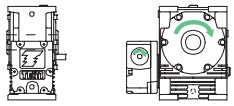
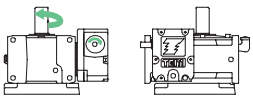
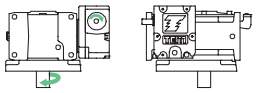
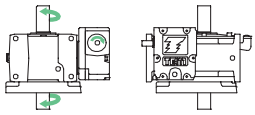
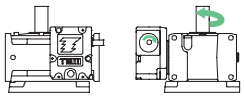
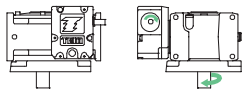
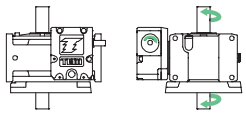
Series		Size	Mounting Position	Reduction Ratio	Shaft Arrangement	Motor Capacity	Motor Specifications	Options
Double Reduction Gear Reducers								
Without motor	**EWJ**	**50**	**T**	**100**	**R-L**			
	EW	**100**	**B**	**300**	**L-R**			
	SW	**100**	**B**	**1200**	**R-LF**			**-K**
With motor	**EWJM**	**70**	**B**	**500**	**R-L**	**020**	**S**	
	EWM	**100**	**V**	**300**	**R-LUD**	**075**	**S**	**V**
	SWM	**150**	**B**	**300**	**L-RF**	**370**	**SB**	**V**
EWJ EWJM EW EWM SW SWM Series		EWJ EWJM 50/63/70 . . . . . . EW/EWM SW/SWM 80/100 125/150 175/200	EWJ50/63 EWJM50/63 T: T type V: V type . . . . . . EWJ70 EWJM70 EW/EWM 80 to 200 SW/SWM 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	See Page 79	(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	S: Ship with standard motor mounted. SB: Ship with standard motor with brake mounted. SX: Ship with customer-supplied motor mounted. Y: Customer to mount motor.	Reducer [1] See pages 225 - 237 . . . . . . Motor [2] See pages 238 - 239

Note 1) Enter a hyphen before the reducer option symbol.
2) Specify the motor option symbol after the motor instruction symbols "S" or "SB".

Shaft Arrangement

EWJ / EW Series

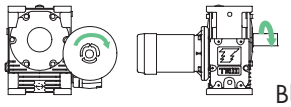
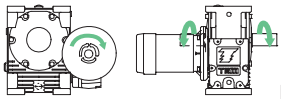
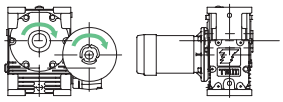
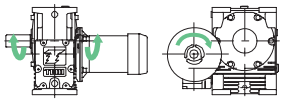
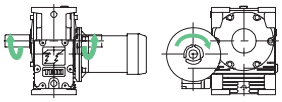
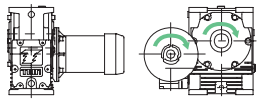
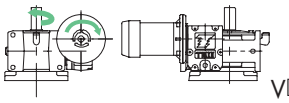
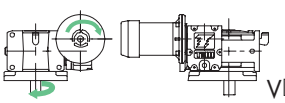
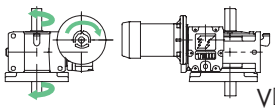
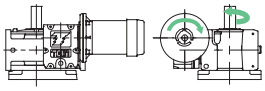
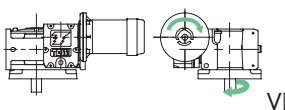
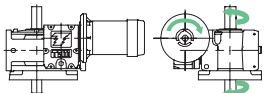
Arrows in figures indicate direction of rotation.

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) Double reduction models EWJ50 and EWJ63 come with the T type shaft arrangement instead of the B type.
(Example: EWJ50T100L-R)
2) Hollow output shaft type (-H) applies to the EW series.
3) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

EWJM / EWM Series

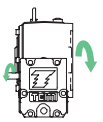
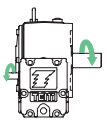
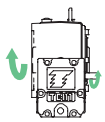
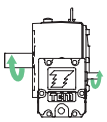
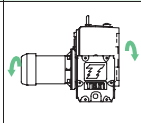
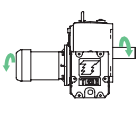
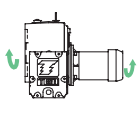
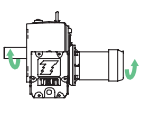
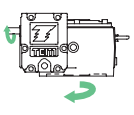
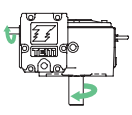
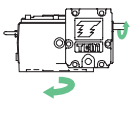
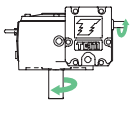
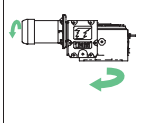
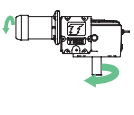
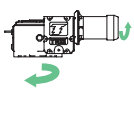
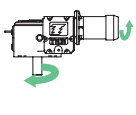
Arrows in figures indicate direction of rotation.

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) Double reduction models EWJM50 and EWJM63 come with the T type shaft arrangement instead of the B type.
(Example: EWJM50T100L-R020S)
2) Hollow output shaft type (-H) applies to the EWM series.
3) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

SW / SWM 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) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

Models

Series			EWJ	EWJ / EW	SW	EWJ / EW	SW	Reducer Options	SW	SW
Mounting Position			T	B	B	V	V		B, V	B, V
Shaft Arrangement		Solid output	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	—	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/SW100		–	○	○	○	○		□	□
	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		–	○	○	○	○		□	–

○: Parts marked with a circle are standard products. Delivery 1 week. □: 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) Models EWJ70 and EWJM70 are only available with a solid output shaft.
2) Inquire about shaft arrangements L-RUD and R-LUD.
3) Model EWJM50 is limited to a reduction ratio of 1/600.

Motor Options

These motor options are available and can be specified when indicating motor specifications "S" or "SB".

Option symbol	Description
Z	With variable frequency driven motor
W	Outdoor specification
V	400 V class (400/400/440 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
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 (0.75 kW or smaller)
Q	Quick-release brake
M	Manual release shaft (motor fan cover side) (0.75 kW or smaller)

Contact us about capacities and voltages for global series motors.

(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)

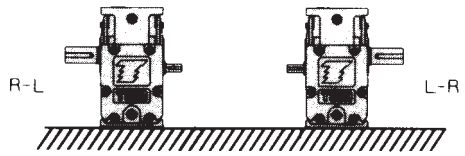
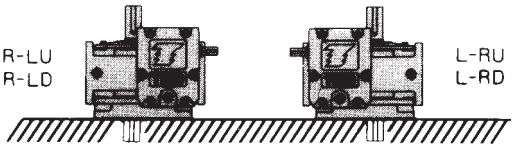
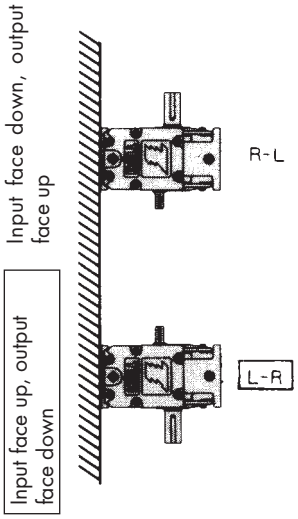
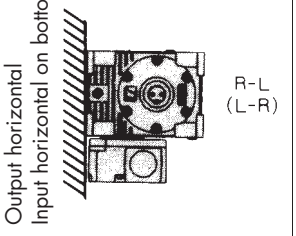
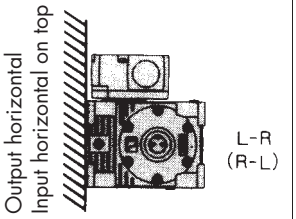
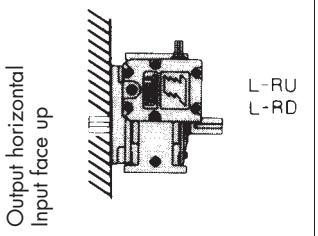
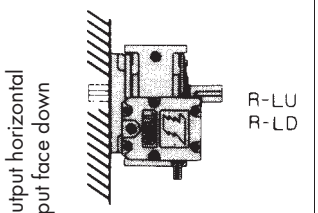
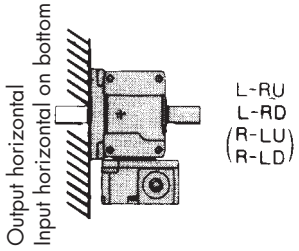
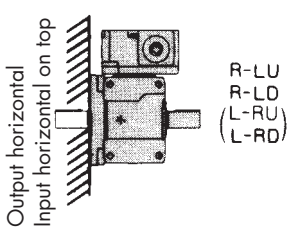
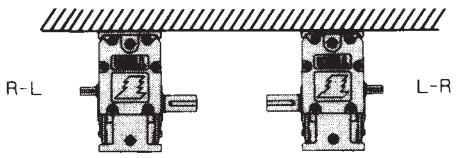
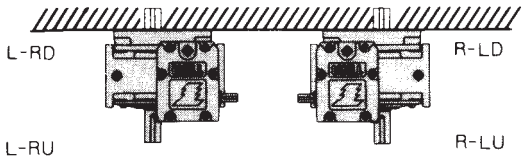
Z	ZV	ZVH		V1	V1H
		ZVQ		V2	V2H
		ZVM		V3	V3H
	ZH	ZHQ		V4	V4H
		ZHM	N		
	ZQ	ZQM	N2		
	ZM		N3		
V	VN		H	HQ	HQM
	VN3			HM	
	VH	VHQ	Q	QM	
		VHM	M		
	VQ	VQM			
	VM				

Note 1) Shaded options are for motor sizes 0.75 kW or smaller.
2) Motors with a brake for outdoor use are made to order. Specifications vary by motor capacity. Please contact us for details.

Mounting Examples

EWJ / EW / EWJM / EWM Series

* EWJ/EWJM series may be mounted on any side.
* Specify mounting position from examples 1 to 10 (shown below) when ordering models EW80 to 200 and EWM80 to 200 with standard mounting.

	Installation direction B type	Installation direction V type
Standard mounting		
Wall mount	Example 1 Example 2  Example 3  Example 4 	Example 5  Example 6  Example 7  Example 8 
Ceiling mount	Example 9 	Example 10 

Note) Contact us about the SW/SWM series.

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 allowable 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. Consult us for further details.
- Refer to pages 21 to 22 for sizing.

EWJM / EWM Series

	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	Select from the Croise motor series. See page 198			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}									
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}				Refer to the TERUS Series. See page 190								
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}													–	–	–
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 of 1450 r/min, 1750 r/min (50/60 Hz).
- Motor/reducer combinations shown are standard.
- Shaded boxes indicate the motor capacity exceeds the allowable 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. Consult us for further details.
- Refer to pages 21 to 22 for sizing.

SWM Series

	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	Select from the Croise motor series. See page 198						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 the TERUS Series. See page 190			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}									
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}				Refer to the TERUS Series. See page 190								
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}													–	–	–
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/SW/SWM series are all actual.

■ Allowable Loads on Shafts

1. Allowable radial load for Solid output

EWJ / EW / EWJM / EWM 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 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. Allowable radial load for Hollow output

EW / EWM 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 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. Allowable axial load for Hollow output

EW / EWM 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 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 continuous efficiency values in the catalog for normal operation. Refer to Page 22 to learn the calculation method.

■ Moment of Inertia on Input Shaft (common for solid and hollow outputs)

EWJ / EW / SW Series

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

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 / SWM Series

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

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	EWM80 SWM80		EWM100 SWM100		EWM125 SWM125		EWM150 SWM150		EWM175 SWM175		EWM200 SWM200	
	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	2.0 {7.8}	0.75	2.0 {7.9}	1.5	4.3 {17.2}	2.2	4.8 {19.2}	5.5	19.9 {79.4}	5.5	21.7 {86.8}
	–		–		–		3.7	8.0 {32.0}	–		–	
150	0.75	2.0 {7.8}	0.75	2.0 {7.9}	1.5	4.3 {17.1}	2.2	4.7 {18.9}	5.5	19.7 {78.6}	5.5	21.1 {84.5}
	–		–		–		3.7	7.9 {31.7}	–		–	
200	0.4	1.1 {4.5}	0.75	2.0 {7.9}	1.5	4.3 {17.0}	2.2	4.6 {18.5}	3.7	8.9 {35.6}	5.5	20.8 {83.3}
250	0.4	1.1 {4.5}	0.75	2.0 {7.9}	1.5	4.3 {17.0}	2.2	4.6 {18.4}	3.7	8.8 {35.1}	5.5	20.7 {82.8}
300	0.4	1.1 {4.5}	0.75	2.0 {7.9}	1.5	4.3 {17.0}	2.2	4.7 {18.8}	3.7	9.0 {36.1}	5.5	21.1 {84.4}
400	0.4	1.1 {4.5}	0.75	2.0 {7.9}	1.5	4.3 {17.0}	2.2	4.6 {18.5}	2.2	5.7 {22.7}	3.7	10.2 {40.8}
500	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.2 { 8.6}	1.5	4.6 {18.3}	2.2	5.6 {22.3}	3.7	10.1 {40.4}
600	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.2 { 8.6}	1.5	4.7 {18.6}	2.2	5.7 {22.9}	3.7	10.2 {40.7}
800	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.2 { 8.6}	0.75	2.5 {10.0}	1.5	5.6 {22.4}	2.2	6.8 {27.3}
1000	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.75	2.2 { 8.6}	0.75	2.5 { 9.9}	1.5	5.5 {22.1}	2.2	6.8 {27.1}
1200	0.2	0.6 {2.3}	0.4	1.2 {4.6}	0.4	1.3 { 5.3}	0.75	2.4 { 9.7}	0.75	3.4 {13.4}	1.5	6.8 {27.0}
1500	–		0.2	0.6 {2.4}	0.4	1.3 { 5.3}	0.75	2.5 { 9.9}	0.75	3.5 {13.9}	1.5	6.9 {27.6}
1800	–		0.2	0.6 {2.4}	0.4	1.3 { 5.3}	0.4	1.7 { 6.9}	0.75	3.6 {14.5}	–	
2400	–		0.2	0.6 {2.4}	0.4	1.3 { 5.3}	0.4	1.7 { 6.7}	0.75	3.5 {14.0}	–	
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 GD^2 listed in the Brake Characteristics table on Page 218.
2) indicate non-standard combinations.

Internal Construction

EWJ / EW Series

■ Reduction Ratio

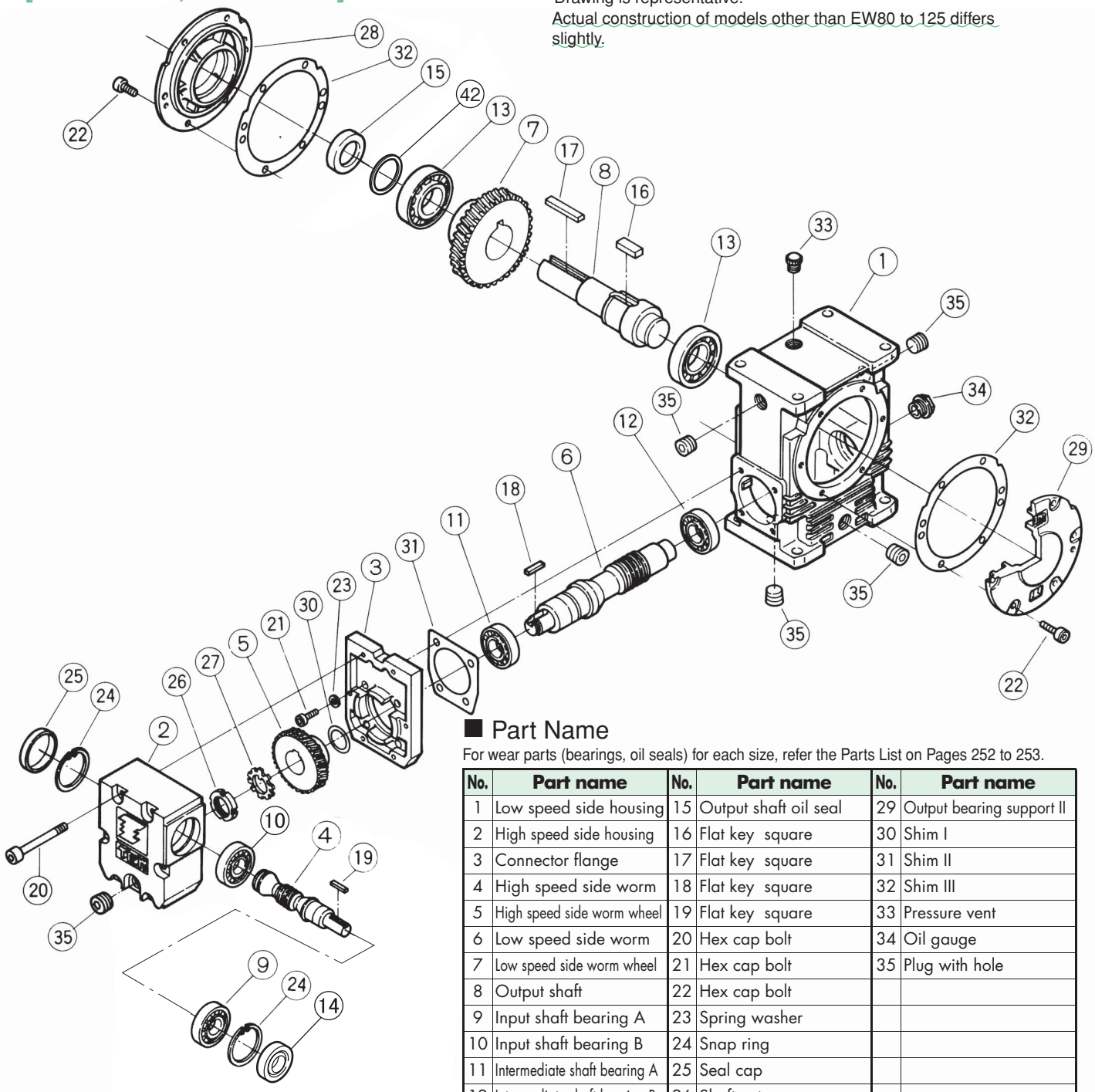
Double reduction	1/100	1/150	1/200	1/250	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200	1/1500	1/1800	1/2400	1/3000	1/3600

■ Center Distance (low 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 is representative.
Actual construction of models other than EW80 to 125 differs slightly.



■ Part Name

For wear parts (bearings, oil seals) for each size, refer the Parts List on Pages 252 to 253.

No.	Part name	No.	Part name	No.	Part name
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: Filter sets are used on the oil seal portions of the input shafts of models EWJ50 to 70 and EW150 to 200, and the output shafts of models EWJ50 to 70 and EW80 to 200.

EWJM / EWM 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

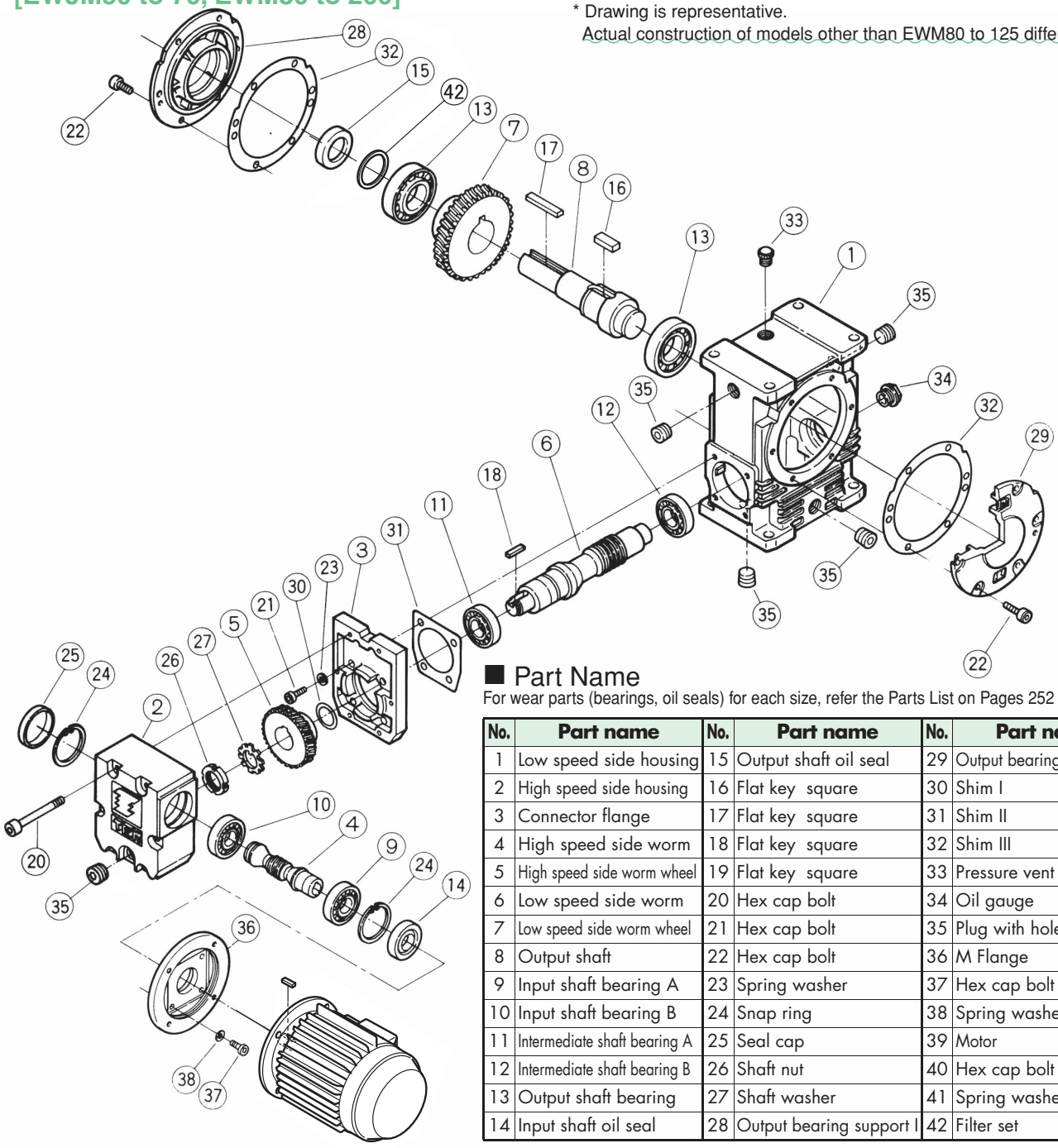
Size	50	63	70	80	100	125	150	175	200
Motor kW	0.1 to 0.2	0.1 to 0.4	0.1 to 0.4	0.2 to 0.75	0.2 to 0.75	0.2 to 1.5	0.4 to 3.7	0.75 to 3.7	1.5 to 5.5

■ Center Distance (low 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, EWM80 to 200]

* Drawing is representative.
Actual construction of models other than EWM80 to 125 differs slightly.



■ Part Name

For wear parts (bearings, oil seals) for each size, refer the Parts List on Pages 252 to 253.

No.	Part name	No.	Part name	No.	Part name
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	M 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: Filter sets are used on the oil seal portions of the input shafts of models EWJM50 to 70 and EWM150 to 200, and the output shafts of models EWJM50 to 70 and EWM80 to 200.

Internal Construction

SW Series

■ Reduction Ratio

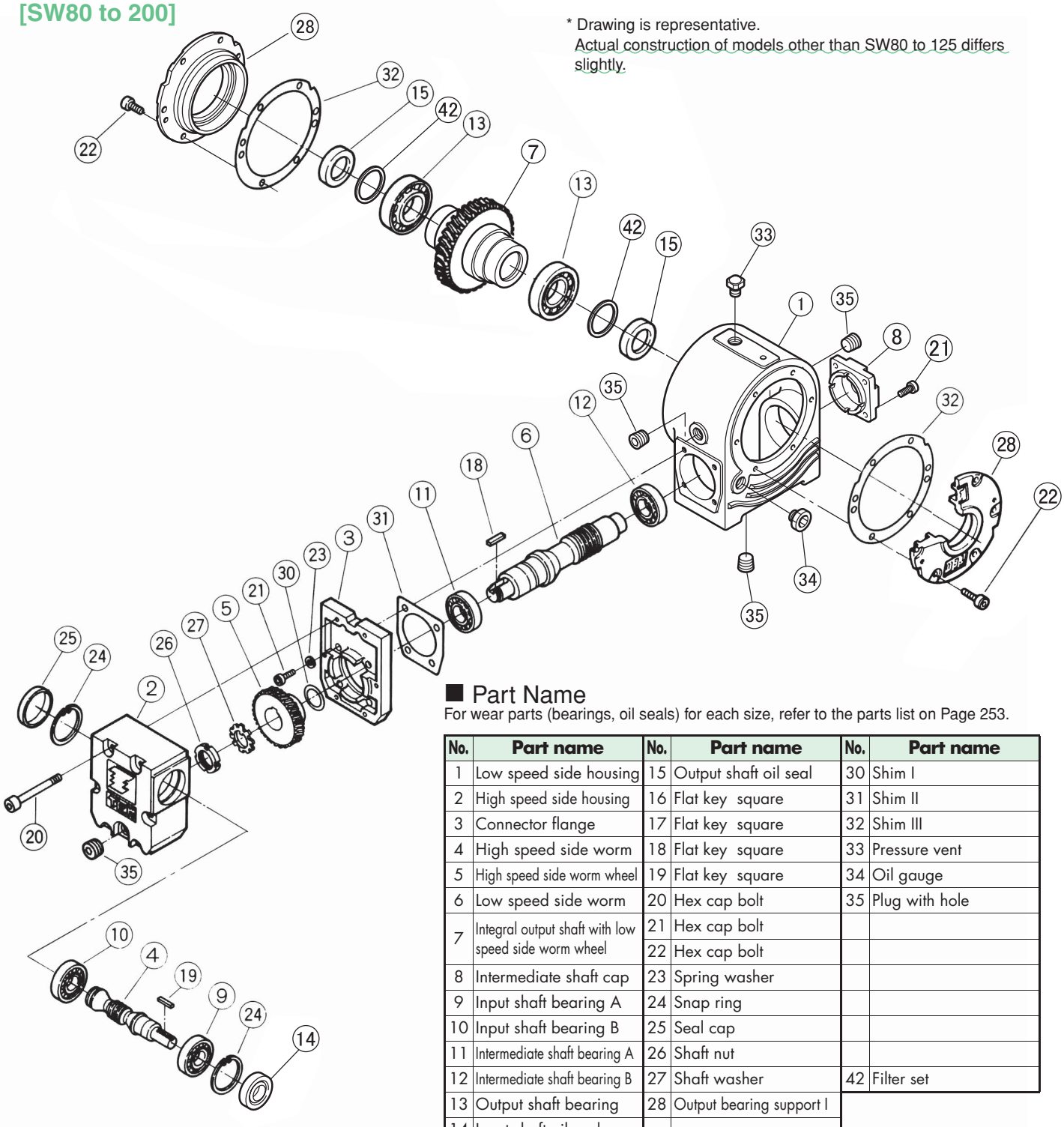
Double reduction	1/100	1/150	1/200	1/250	1/300	1/400	1/500	1/600	1/800	1/1000	1/1200	1/1500	1/1800	1/2400	1/3000	1/3600

■ Center Distance (low 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 is representative.
Actual construction of models other than SW80 to 125 differs slightly.



■ Part Name

For wear parts (bearings, oil seals) for each size, refer to the parts list on Page 253.

No.	Part name	No.	Part name	No.	Part name
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: Filter sets are used on the oil seal portions of the input shafts of models SW150 to 200, and the output shafts of models SW80 to 200.

SWM 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

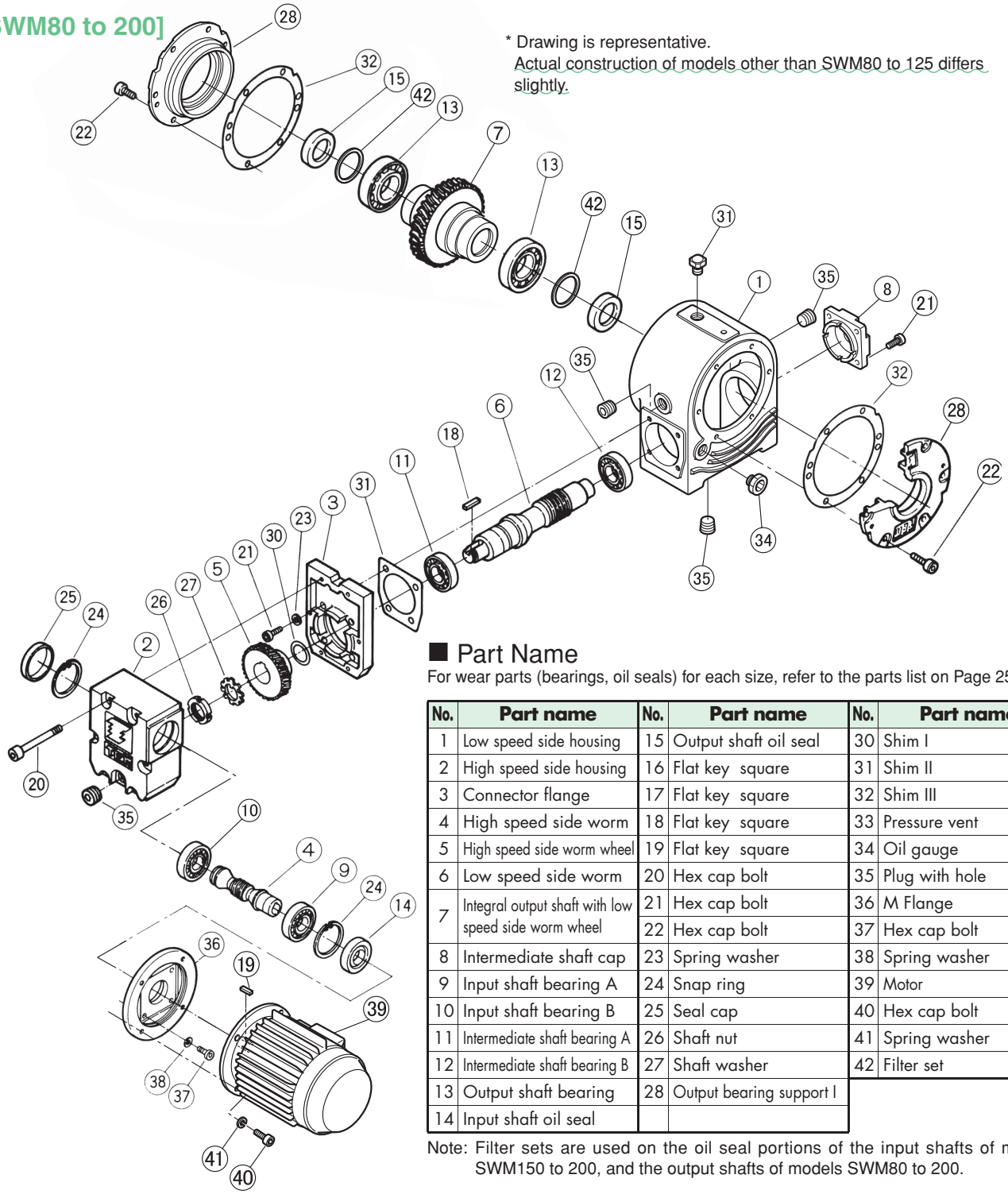
Size	80	100	125	150	175	200
Motor kW	0.2 to 0.75	0.2 to 0.75	0.2 to 1.5	0.4 to 3.7	0.75 to 3.7	1.5 to 5.5

■ Center Distance (low 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

[SWM80 to 200]

* Drawing is representative.
Actual construction of models other than SWM80 to 125 differs slightly.



■ Part Name

For wear parts (bearings, oil seals) for each size, refer to the parts list on Page 253.

No.	Part name	No.	Part name	No.	Part name
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	M 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				

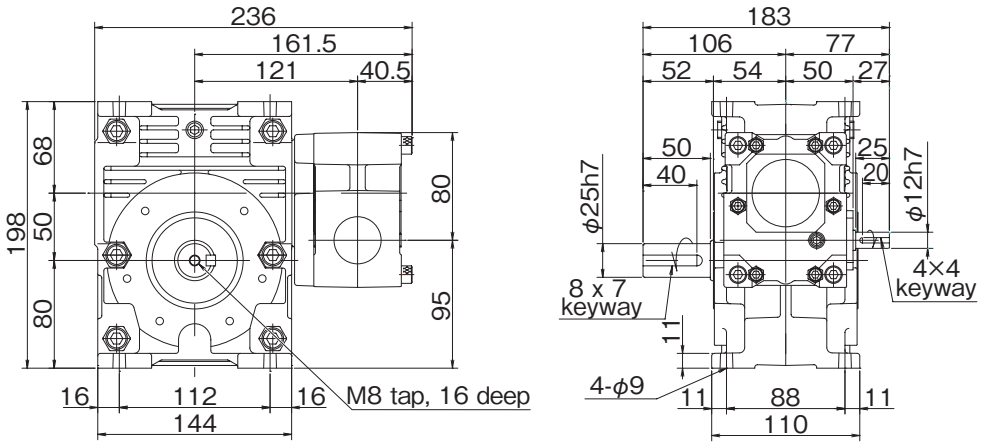
Note: Filter sets are used on the oil seal portions of the input shafts of models SWM150 to 200, and the output shafts of models SWM80 to 200.

Dimensional Drawings EWJ50T / EWJ50V

See next page for reducers with motors

EWJ50T

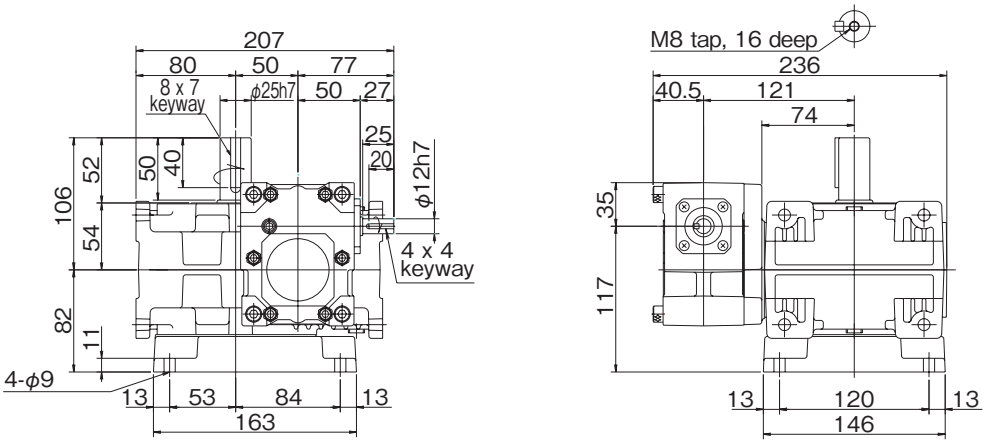
[R–L]



Estimated mass 11 kg

EWJ50V

[R–LU]



Estimated mass 11 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

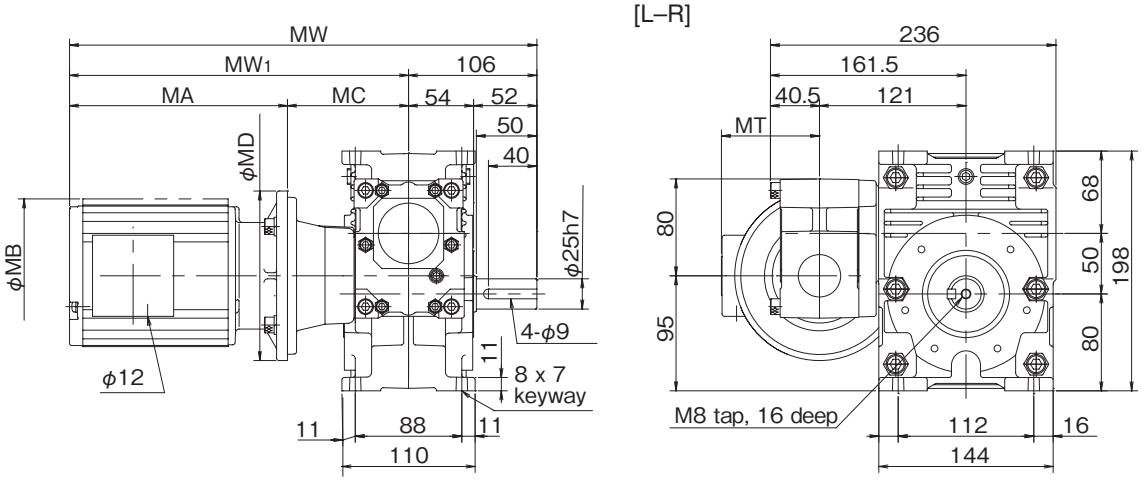
Transfer Capacity Table

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}

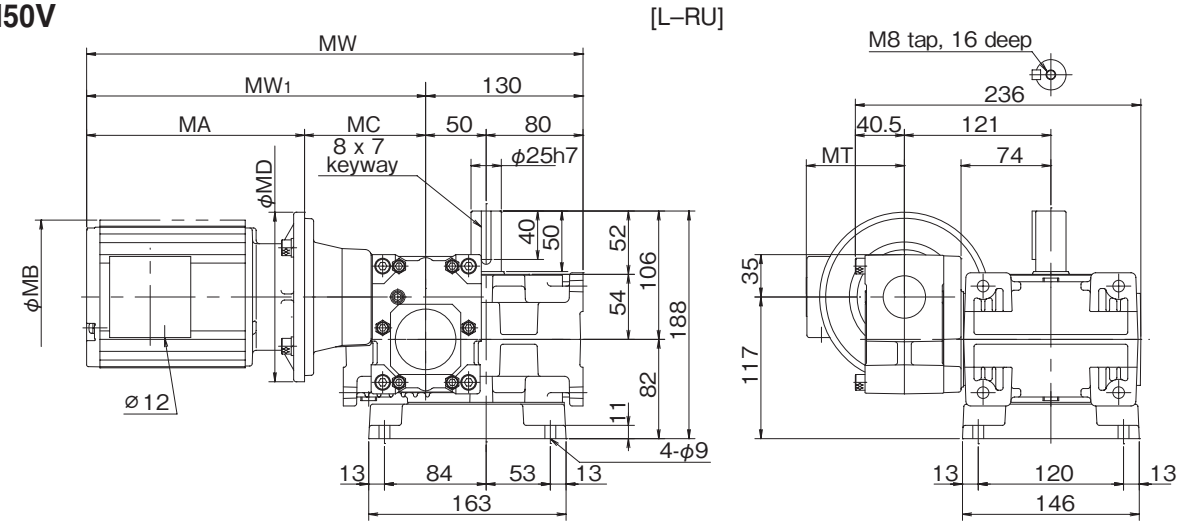
Dimensional Drawings EWJM50T / EWJM50V

See previous page for reducers without motors

EWJM50T



EWJM50V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

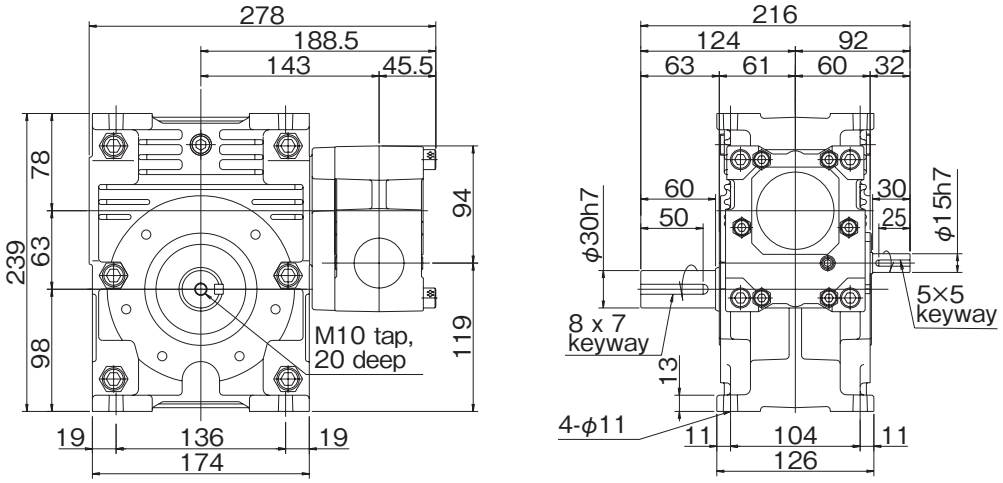
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation T type MW	Installation V type MW	MB	MD	MT	Installation T type Estimated 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}	103.9 {10.6}										
		400	103.9 {10.6}	103.9 {10.6}										
		500	104.9 {10.7}	104.9 {10.7}										
		600	104.9 {10.7}	104.9 {10.7}										
	0.2	100	76.4 {7.8}	91.1 {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}	100.0 {10.2}										
		200	100.9 {10.3}	100.9 {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 21 for sizing. * Thermal rating factor is 1.0.
* Drawing shows a 0.1 kW motor without brake. The 0.1 kW motor without brake and the 0.2 kW motor comes with a fan.

Dimensional Drawings EWJ63T / EWJ63V

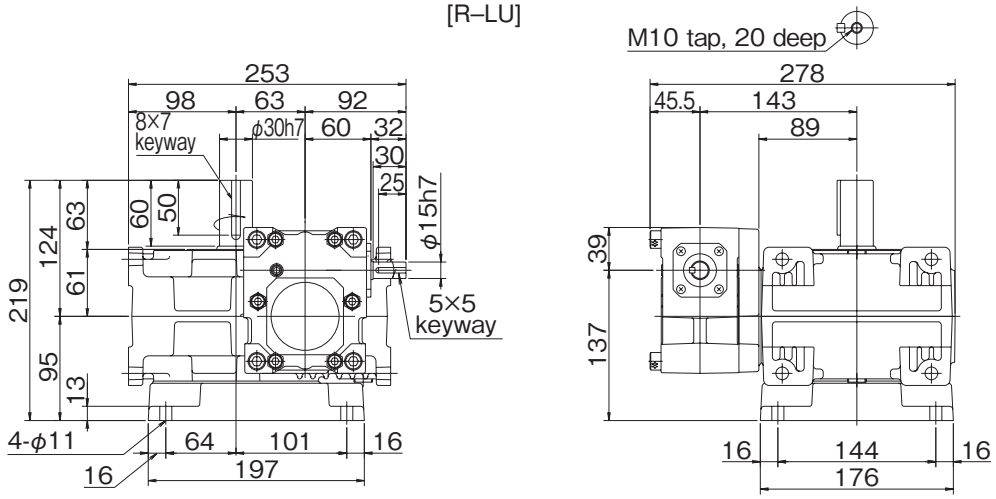
See next page for reducers with motors

EWJ63T



Estimated mass 16 kg

EWJ63V



Estimated mass 17 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

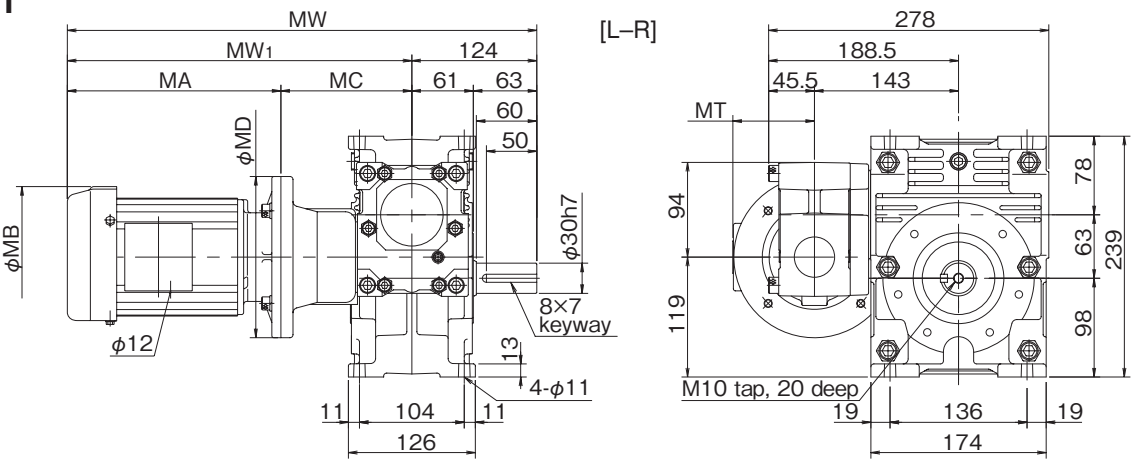
Transfer Capacity Table

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}

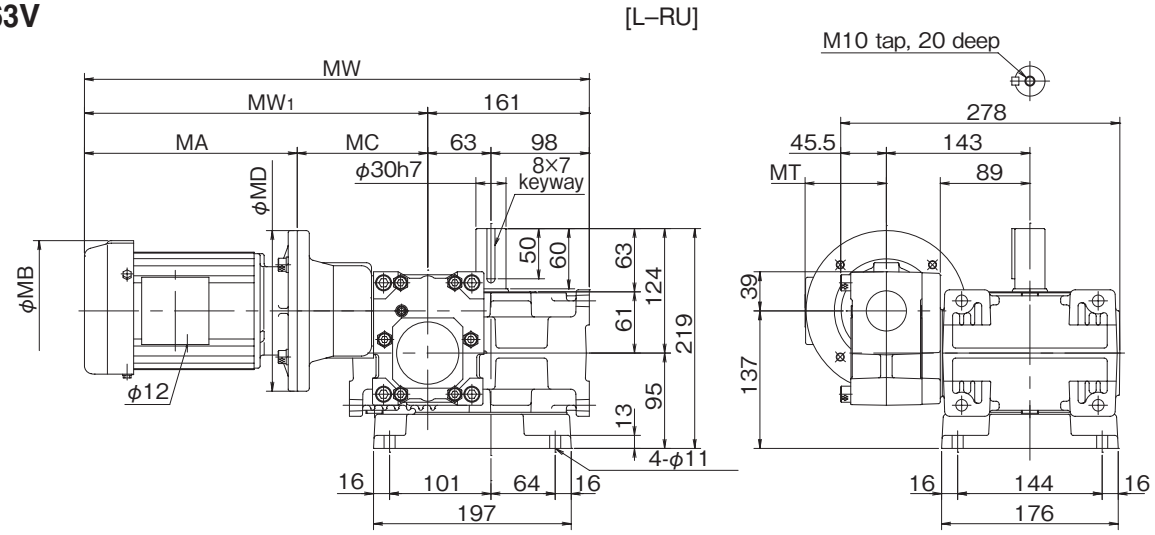
Dimensional Drawings EWJM63T / EWJM63V

See previous page for reducers without motors

EWJM63T



EWJM63V



*Refer to Page 79 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	142.9{14.6}	167.3{17.1}	180 (218)	130 (130)	310 (348)	434 (472)	471 (509)	127 (140)	140 (140)	81 (104.5)	23 (25)	24 (26)
		600	157.7{16.1}	184.5{18.8}										
		800	194.0{19.8}	222.5{22.7}										
		1000	222.5{22.7}	222.5{22.7}										
		1200	222.5{22.7}	222.5{22.7}										
		1500	187.2{19.1}	188.2{19.2}										
		1800	188.2{19.2}	188.2{19.2}										
		2400	188.2{19.2}	189.1{19.3}										
		3000	189.1{19.3}	189.1{19.3}										
		3600	189.1{19.3}	189.1{19.3}										
	0.2	200	139.0{14.2}	163.3{16.7}	212 (229)	130 (130)	342 (359)	466 (483)	503 (520)	140 (140)	160 (160)	81 (104.5)	24 (26)	25 (27)
		250	165.6{16.9}	195.0{19.9}										
		300	189.1{19.3}	218.5{22.3}										
		400	218.5{22.3}	219.5{22.4}										
	0.4	100	155.8{15.9}	185.2{18.9}	224 (241)	130 (130)	354 (371)	478 (495)	515 (532)	140 (140)	160 (160)	81 (104.5)	25 (27)	26 (28)
		150	204.8{20.9}	206.8{21.1}										

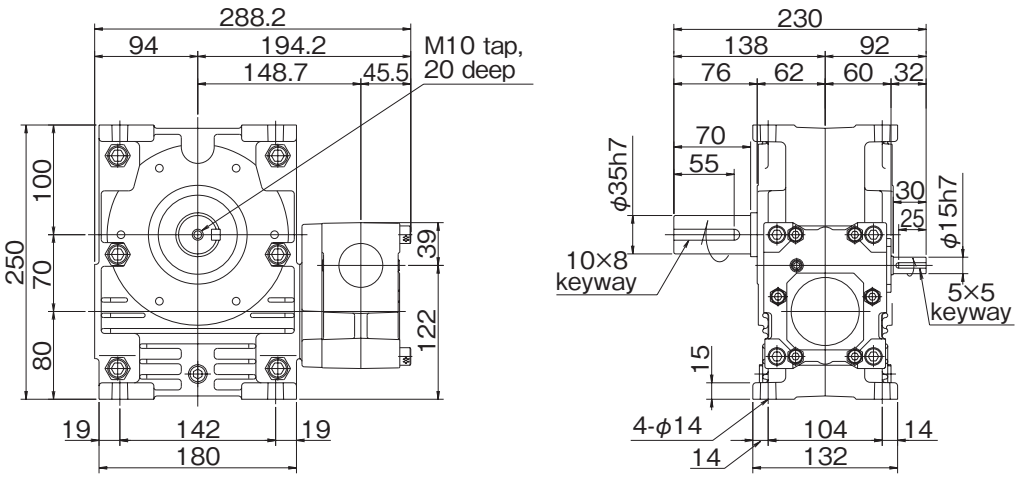
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.
* 0.1 kW motors without brake do not come with a fan.

Dimensional Drawings EWJ70B / EWJ70V

See next page for reducers with motors

EWJ70B

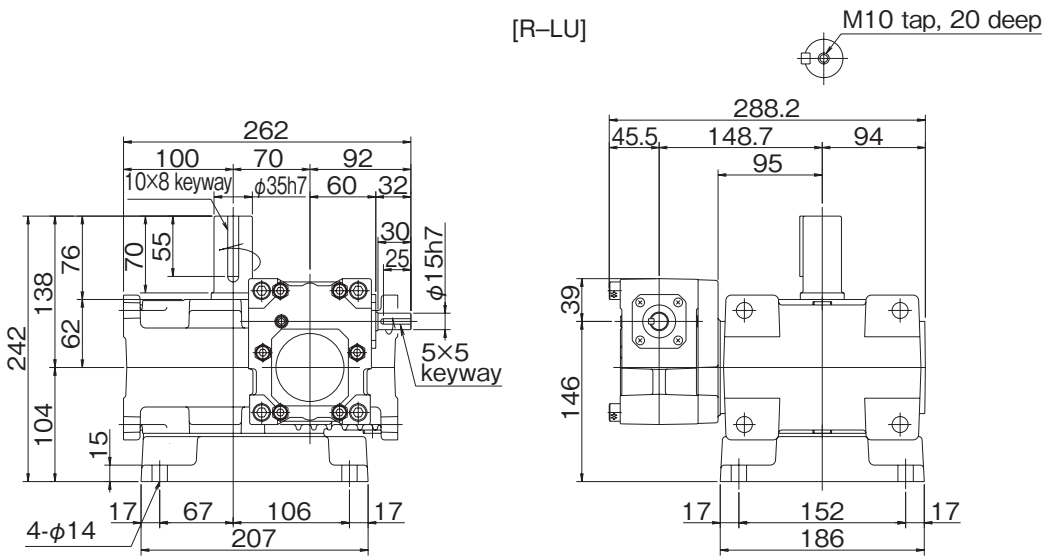
[R–L]



Estimated mass 18 kg

EWJ70V

[R–LU]



Estimated mass 19 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

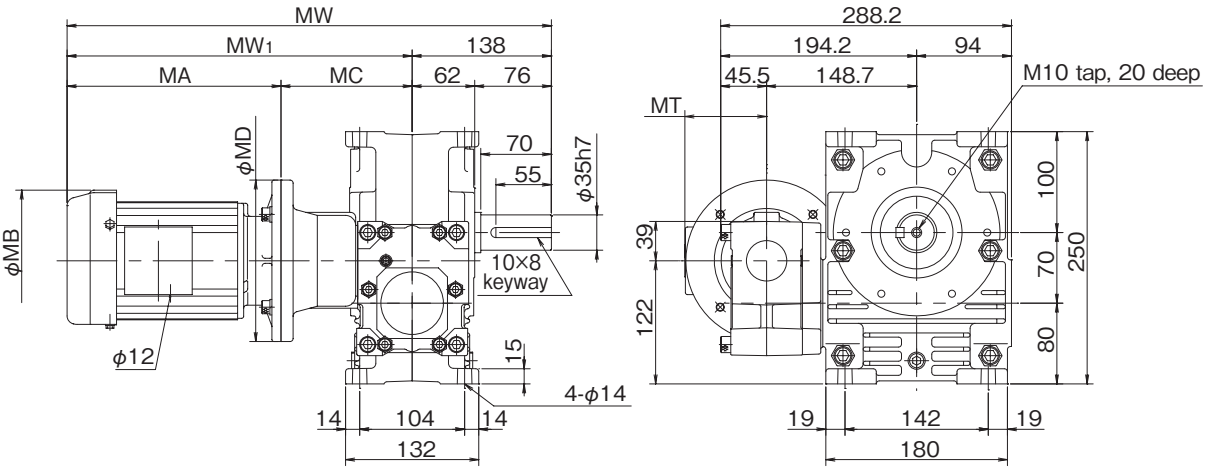
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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

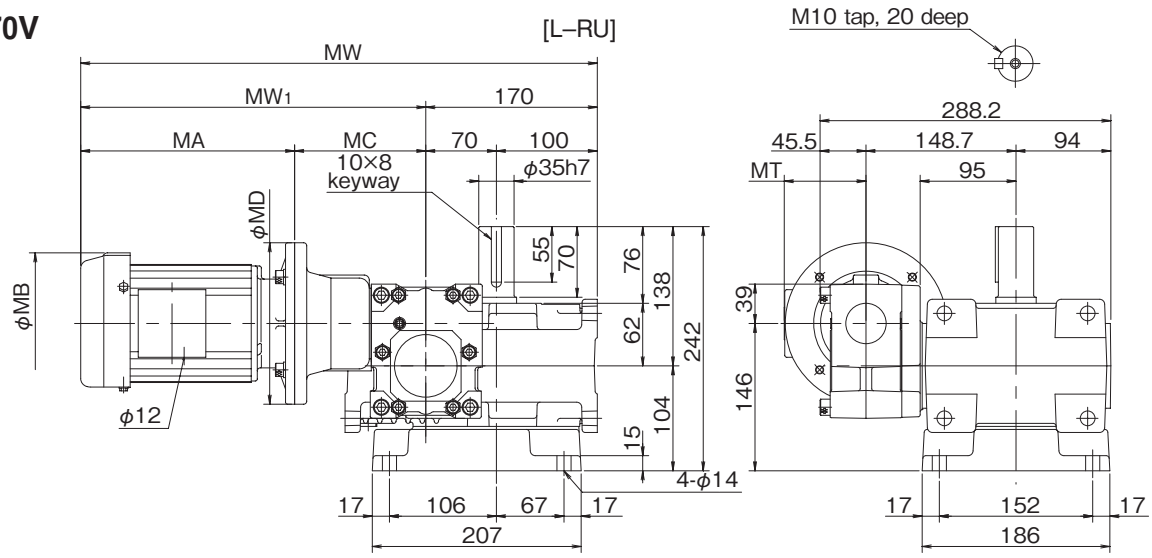
EWJM70B

[L–R]



EWJM70V

[L–RU]



Transfer Capacity Table

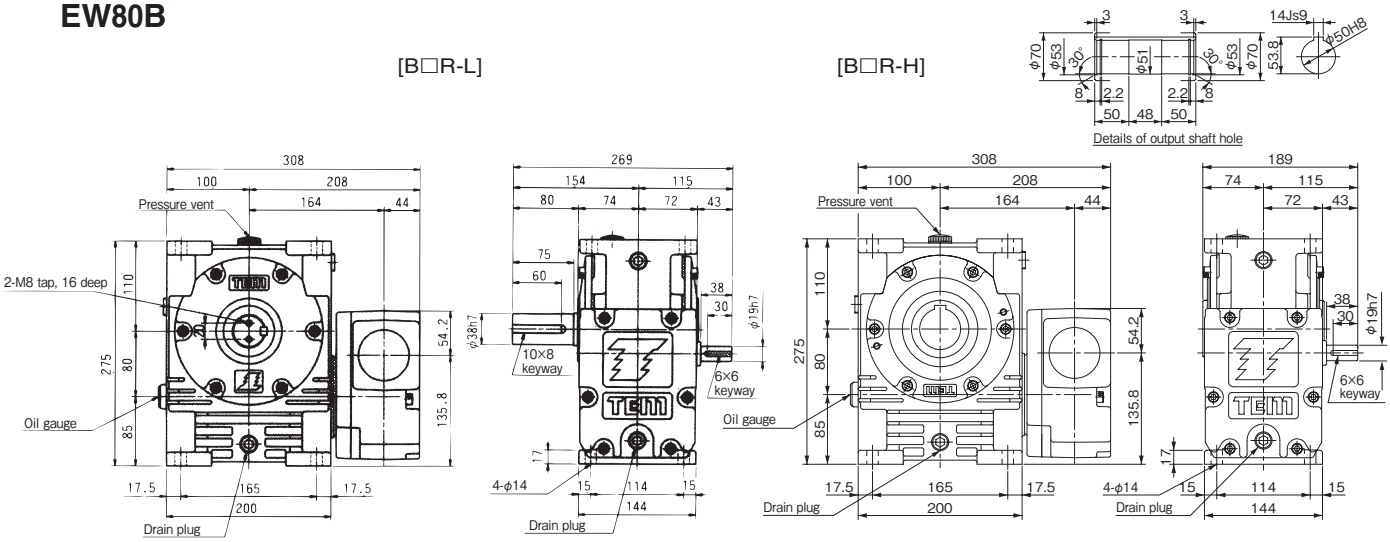
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWJM70	0.1	1000	228.3 {23.3}	261.7 {26.7}	180 (218)	130 (130)	310 (348)	448 (486)	480 (518)	127 (140)	140 (140)	81 (104.5)	25 (27)	26 (28)
		1200	254.8 {26.0}	295.0 {30.1}										
		1500	262.0 {26.7}	263.0 {26.8}										
		1800	263.0 {26.8}	264.0 {26.9}										
		2400	264.0 {26.9}	265.0 {27.0}										
		3000	265.0 {27.0}	265.0 {27.0}										
		3600	265.0 {27.0}	265.0 {27.0}										
	0.2	300	191.0 {19.5}	225.3 {23.0}	212 (229)	130 (130)	342 (359)	480 (497)	512 (529)	140 (140)	160 (160)	81 (104.5)	26 (28)	27 (29)
		400	241.3 {24.6}	283.5 {28.9}										
		500	304.8 {31.1}	305.8 {31.2}										
		600	305.8 {31.2}	306.7 {31.3}										
		800	307.7 {31.4}	308.7 {31.5}										
	0.4	100	156.5 {16.0}	185.1 {18.9}	224 (241)	130 (130)	354 (371)	492 (509)	524 (541)	140 (140)	160 (160)	81 (104.5)	27 (29)	28 (30)
		150	219.5 {22.4}	258.4 {26.4}										
		200	291.1 {29.7}	293.0 {29.9}										
		250	293.0 {29.9}	294.0 {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 21 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

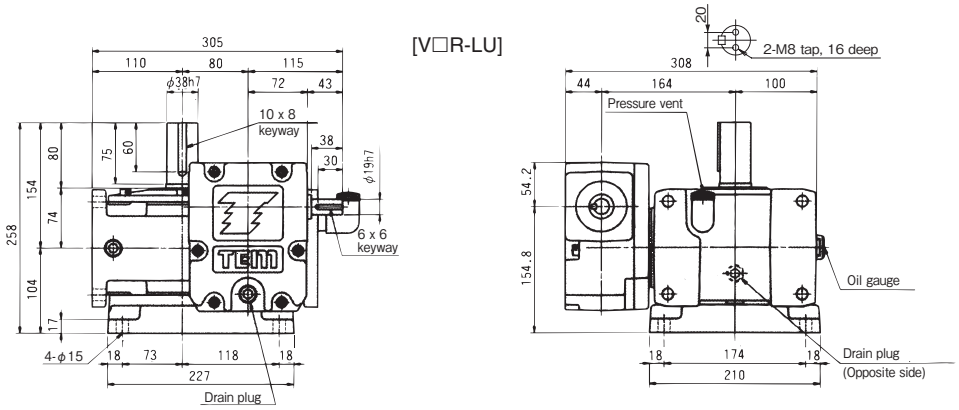
[B□R-L] [B□R-H]



Estimated mass 39 kg

EW80V

[V□R-LU]



Estimated mass 42 kg

Transfer Capacity Table

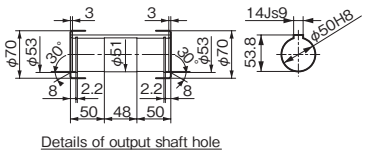
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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

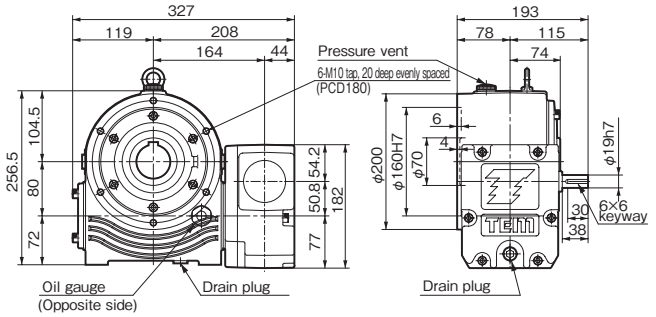
SW80B

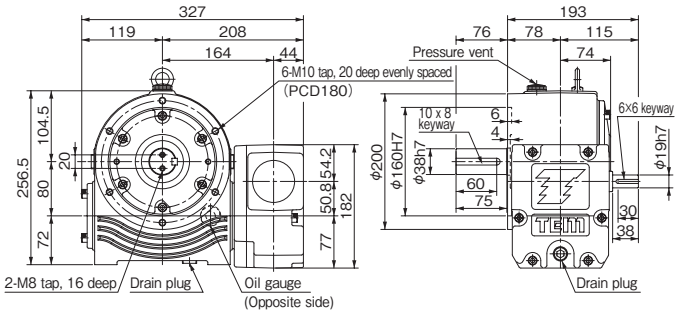
[B□R-LF]



Details of output shaft hole

[B□R-SLF]

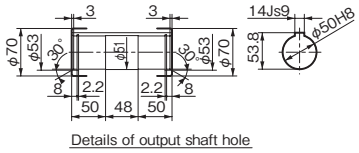




Estimated mass 38 kg

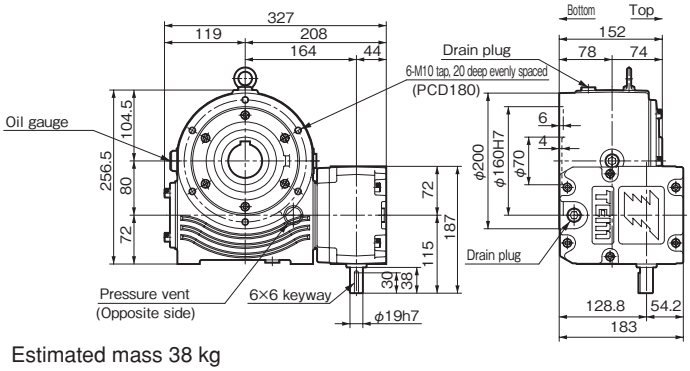
SW80V

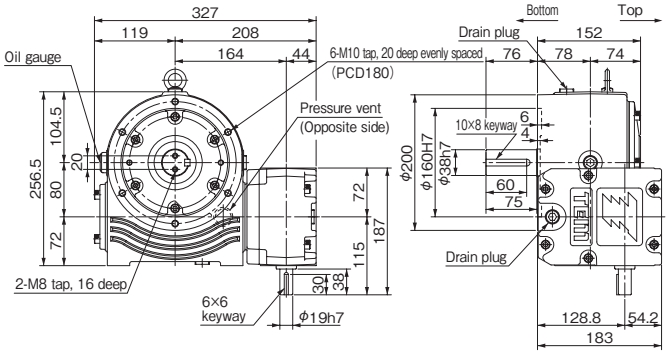
[V□R-LF]



Details of output shaft hole

[V□R-SLF]





Estimated mass 38 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

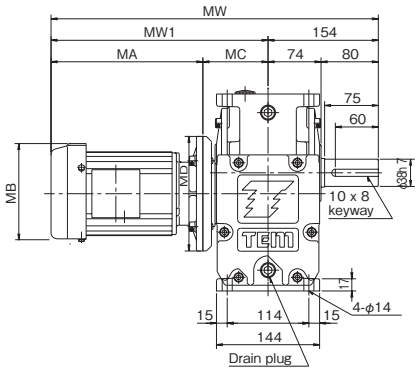
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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 {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}

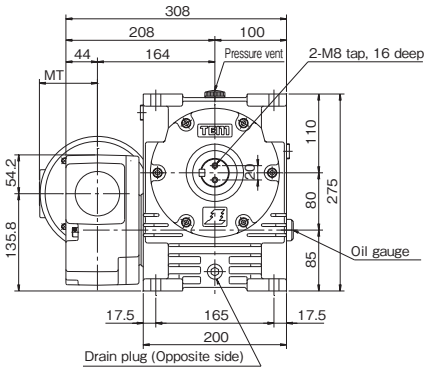
Dimensional Drawings EWM80B / EWM80V

See previous page for reducers without motors

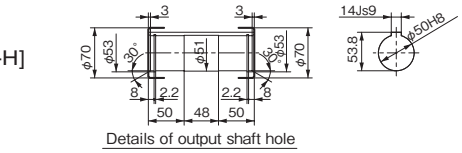
EWM80B

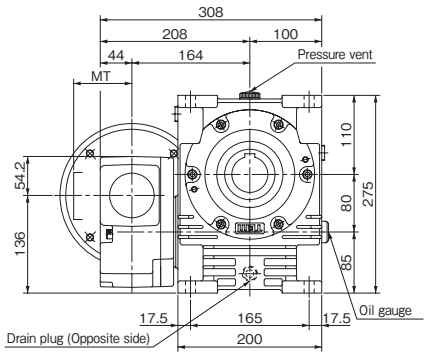
[L-R]





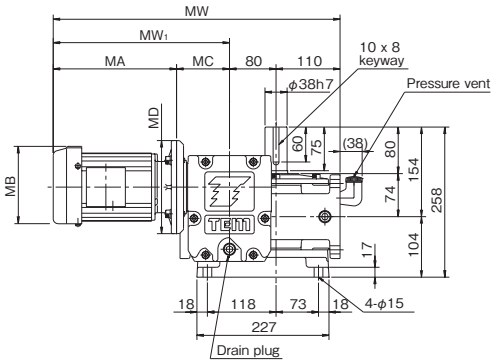
[L-H]

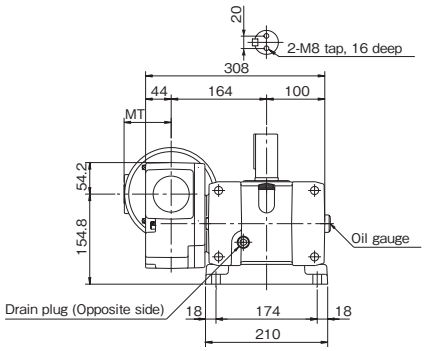




EWM80V

[L-RU]





*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

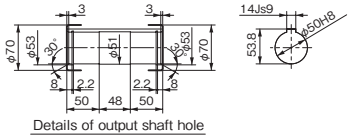
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM80	0.2	500	307.4 {31.4}	362.0 {36.9}	212 (229)	91 (91)	303 (320)	157 (474)	493 (510)	140 (140)	160 (160)	81 (104.5)	45 (47)	48 (50)
		600	345.8 {35.8}	404.8 {41.3}										
		800	431.2 {44.0}	466.0 {47.5}										
		1000	466.0 {47.5}	466.0 {47.5}										
		1200	466.5 {47.6}	467.5 {47.7}										
	0.4	200	294.5 {30.1}	348.4 {35.5}	224 (241)	91 (91)	315 (332)	464 (512)	505 (522)	140 (140)	160 (160)	81 (104.5)	48 (52)	51 (55)
		250	353.3 {36.0}	416.1 {42.5}										
		300	403.8 {41.2}	454.7 {46.4}										
		400	456.7 {46.6}	458.6 {46.8}										
	0.75	100	304.8 {31.1}	361.6 {36.9}	235 (262)	93 (93)	328 (355)	482 (509)	518 (545)	158 (158)	200 (200)	81 (104.5)	56 (58)	59 (61)
		150	429.2 {43.8}	433.2 {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 21 for sizing. * Thermal rating factor is 1.0.

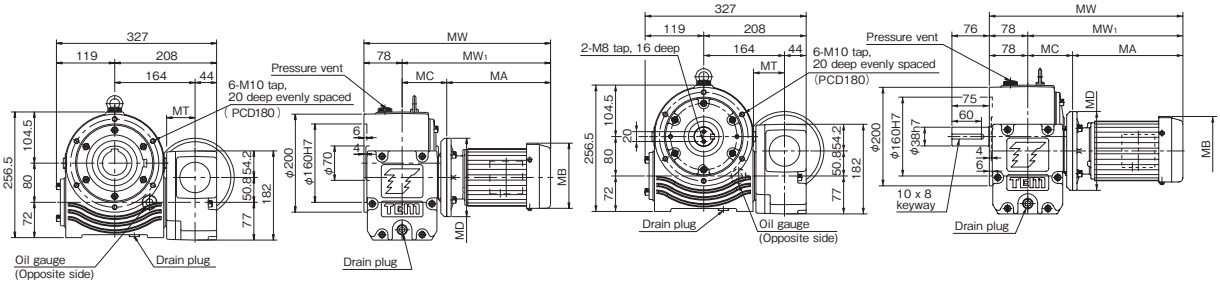
Dimensional Drawings SWM80B / SWM80V

SWM80B

[B□R-LF]

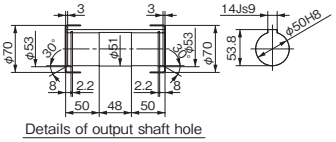


[B□R-SLF]

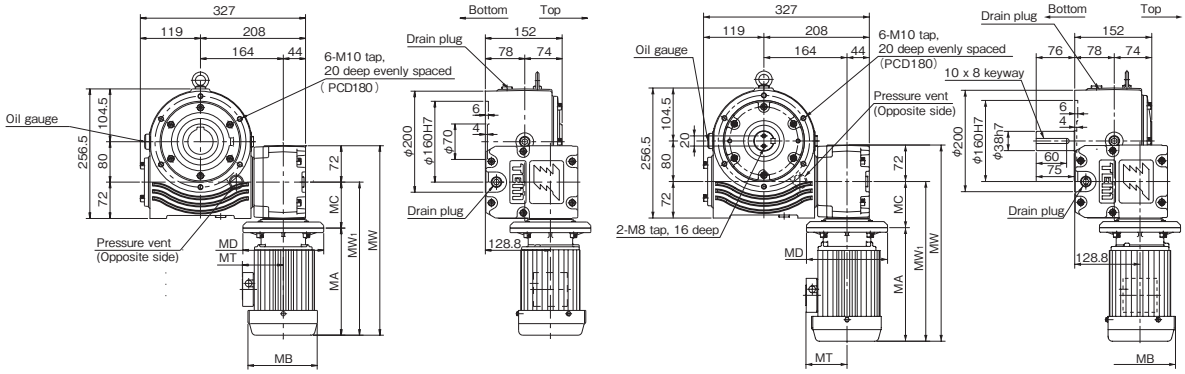


SWM80V

[V□R-LF]



[V□R-SLF]



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

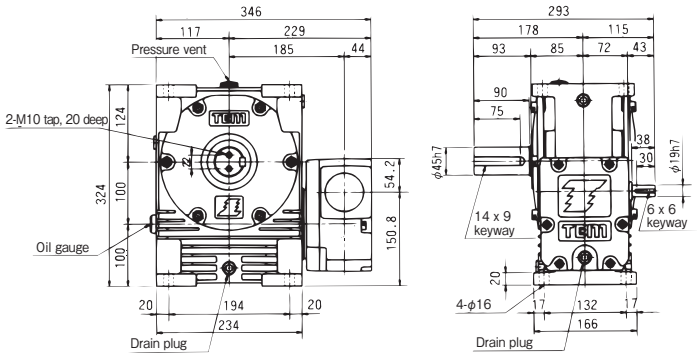
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Estimated mass kg
SWM80	0.2	500	308 { 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	345 { 35.2}	405 { 41.3}									
		800	430 { 43.9}	466 { 47.5}									
		1000	466 { 47.5}	466 { 47.5}									
		1200	466 { 47.5}	467 { 47.7}									
	0.4	200	294 { 30.0}	348 { 35.5}	224 (241)	91 (91)	315 (331)	393 (409)	387 (403)	140 (140)	160 (160)	81 (104.5)	47 (51)
		250	353 { 36.0}	417 { 42.5}									
		300	404 { 41.2}	455 { 46.4}									
		400	457 { 46.6}	459 { 46.8}									
	0.75	100	305 { 31.1}	362 { 36.9}	235 (262)	93 (93)	328 (355)	406 (437)	400 (427)	158 (158)	200 (200)	90 (113.5)	55 (57)
		150	429 { 43.8}	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 21 for sizing. * Thermal rating factor is 1.0.

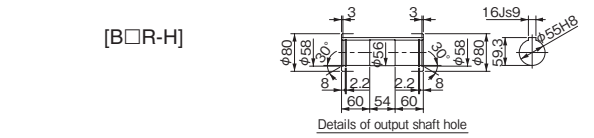
Dimensional Drawings EW100B / EW100V

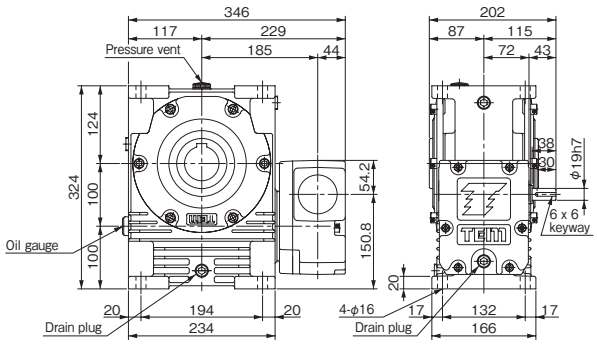
EW100B

[B□R-L]



[B□R-H]

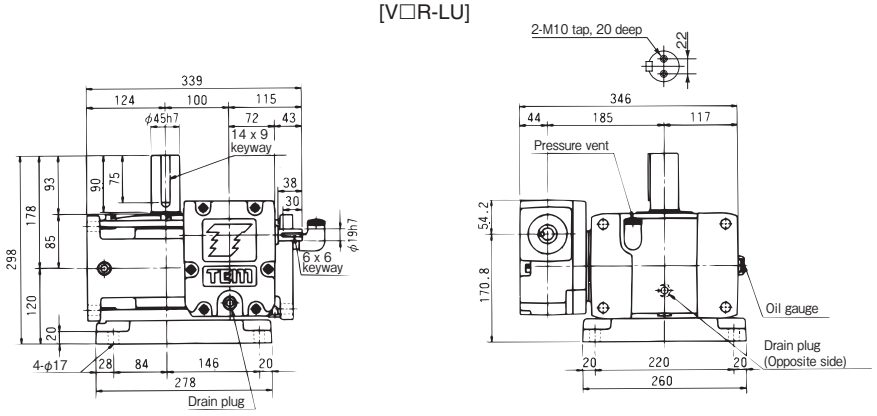




Estimated mass 53 kg

EW100V

[V□R-LU]



Estimated mass 59 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

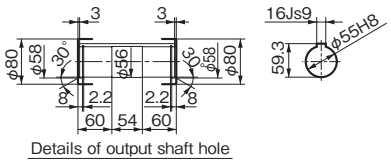
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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

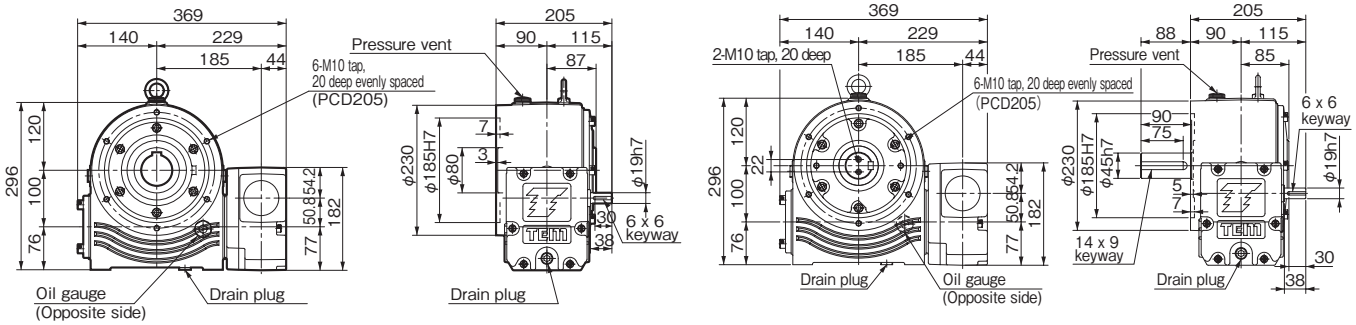
See next page for reducers with motors

SW100B

[B□R-LF]



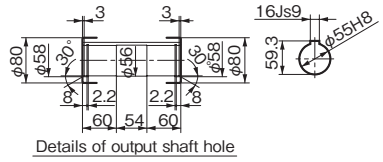
[B□R-SLF]



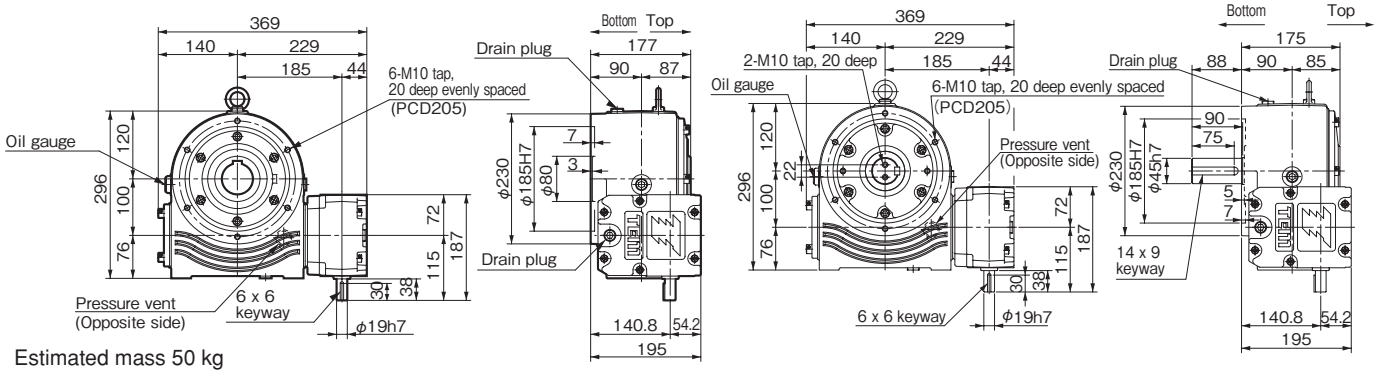
Estimated mass 50 kg

SW100V

[V□R-LF]



[V□R-SLF]



Estimated mass 50 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

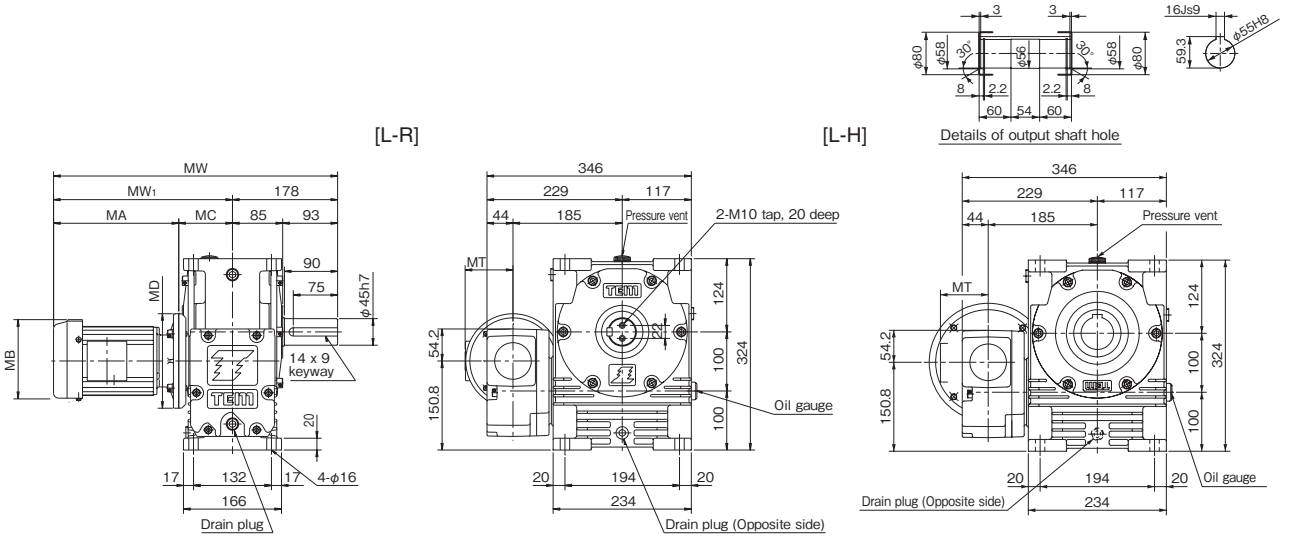
Transfer Capacity Table

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}

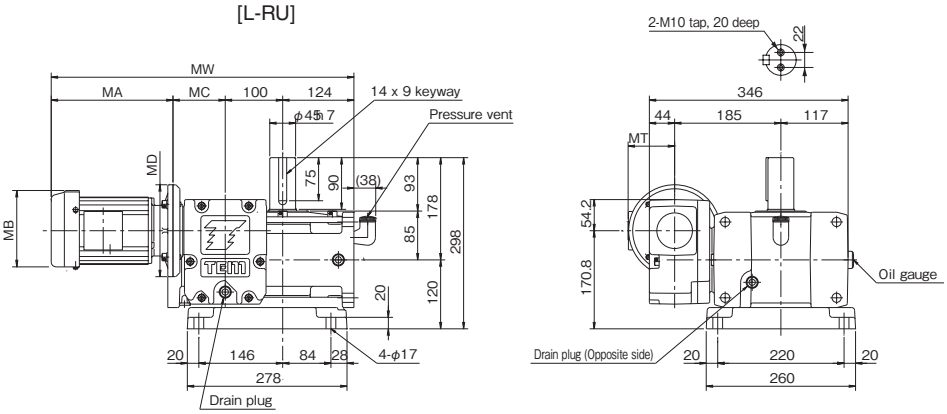
Dimensional Drawings EWM100B / EWM100V

See previous page for reducers without motors

EWM100B



EWM100V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

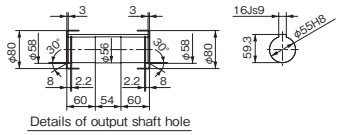
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM100	0.2	1500	651.7 {66.5}	721.3 {73.6}	212 (229)	91 (91)	303 (320)	481 (498)	527 (544)	140 (140)	160 (160)	81 (104.5)	59 (61)	65 (67)
		1800	721.3 {73.6}	723.2 {73.8}										
		2400	727.2 {74.2}	727.2 {74.2}										
	0.4	500	625.2 {63.8}	736.0 {75.1}	224 (241)	91 (91)	315 (332)	493 (510)	539 (556)	140 (140)	160 (160)	81 (104.5)	62 (66)	68 (72)
		600	702.6 {71.7}	823.2 {84.0}										
		800	870.2 {88.8}	873.2 {89.1}										
		1000	872.2 {89.0}	875.1 {89.3}										
		1200	859.5 {87.7}	861.4 {87.9}										
	0.75	200	560.6 {57.2}	663.5 {67.7}	235 (262)	93 (93)	328 (355)	506 (537)	552 (579)	158 (158)	200 (200)	90 (113.5)	70 (72)	76 (78)
		250	673.3 {68.7}	787.9 {80.4}										
		300	772.2 {78.8}	853.6 {87.1}										
		400	855.5 {87.3}	862.4 {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 21 for sizing. * Thermal rating factor is 1.0.

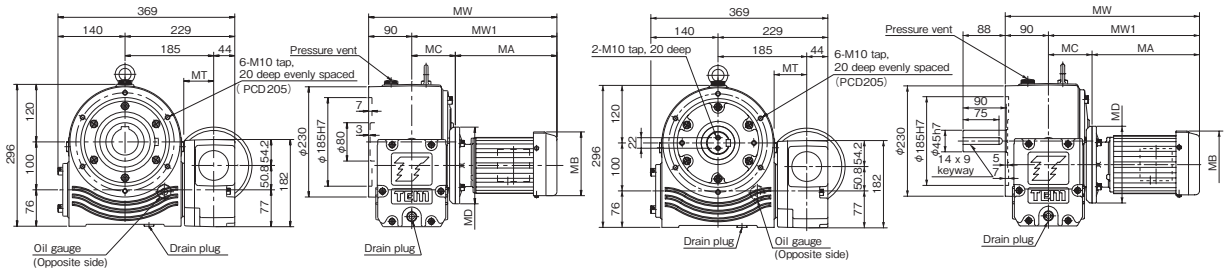
Dimensional Drawings SWM100B / SWM100V

SWM100B

[B□R-LF]

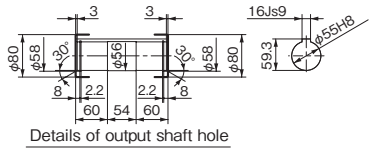


[B□R-SLF]

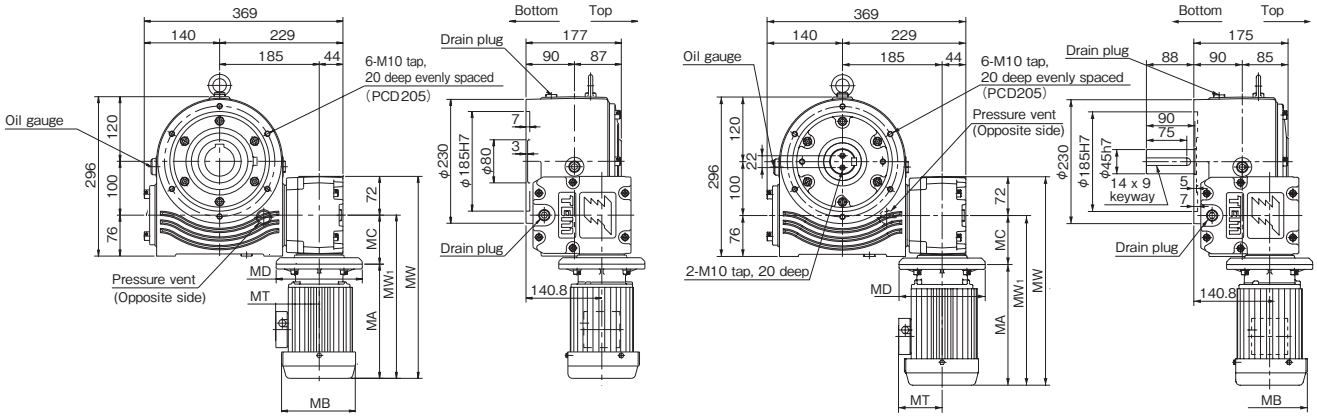


SWM100V

[V□R-LF]



[V□R-SLF]



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

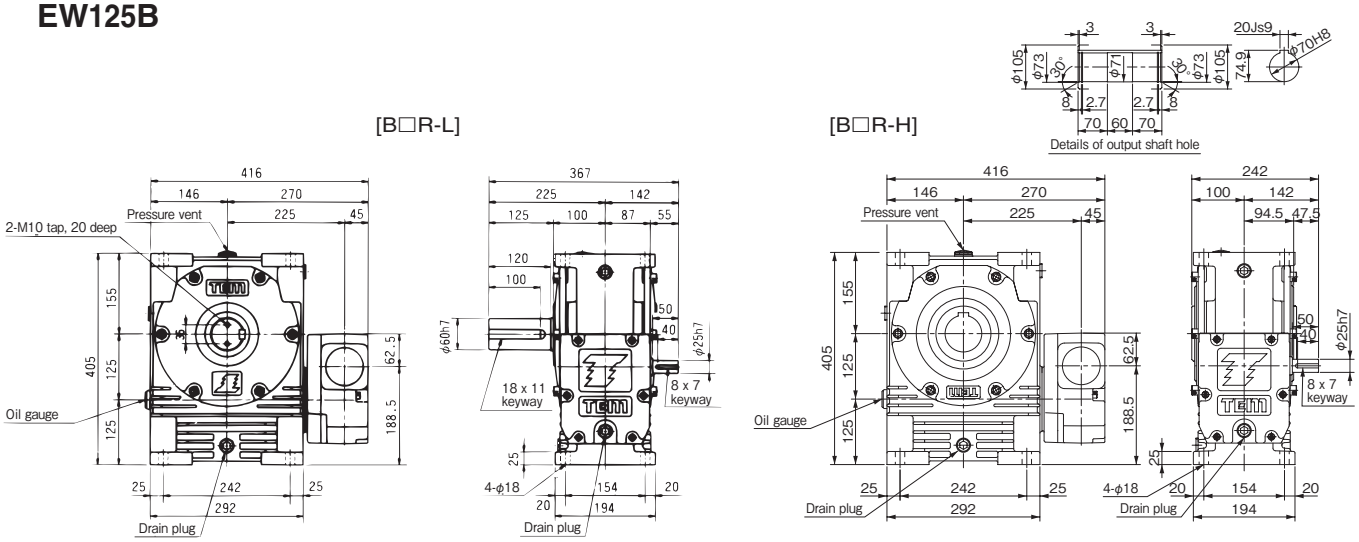
Transfer Capacity Table

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 (331)	405 (422)	387 (404)	140 (140)	160 (160)	81 (104.5)	59 (63)
		600	703 { 71.7}	823 { 84.0}									
		800	870 { 88.8}	873 { 89.1}									
		1000	872 { 89.0}	875 { 89.3}									
		1200	860 { 87.7}	861 { 87.9}									
	0.75	200	561 { 57.2}	664 { 67.7}	235 (262)	93 (93)	328 (355)	418 (445)	400 (427)	158 (158)	200 (200)	90 (113.5)	67 (69)
		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 21 for sizing. * Thermal rating factor is 1.0.

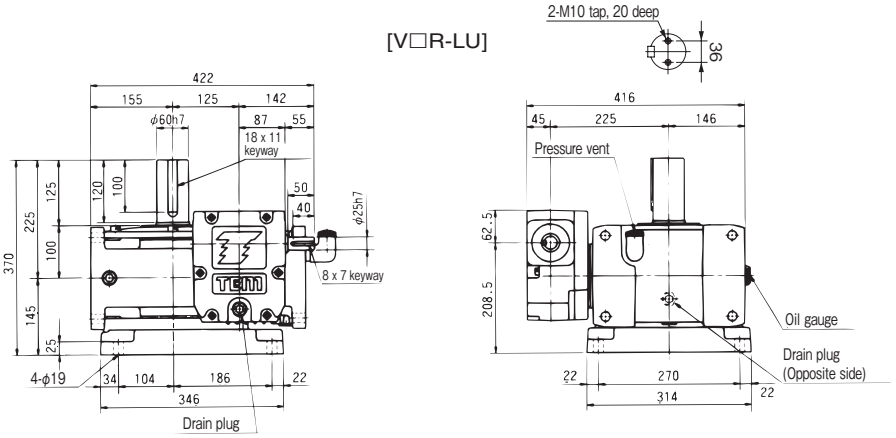
Dimensional Drawings EW125B / EW125V

EW125B



Estimated mass 96 kg

EW125V



Estimated mass 106 kg

Transfer Capacity Table

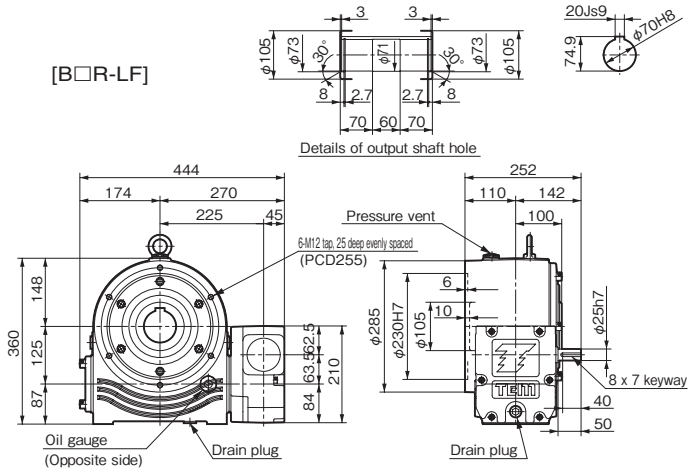
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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

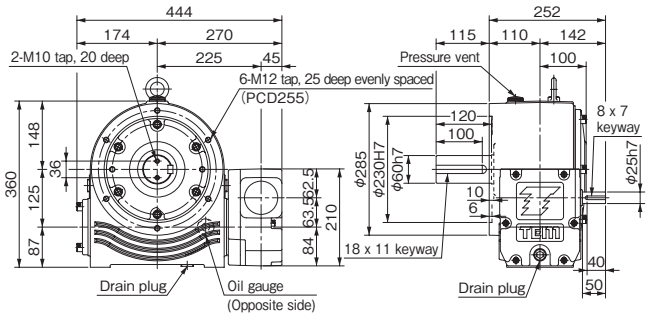
See next page for reducers with motors

SW125B

[B□R-LF]



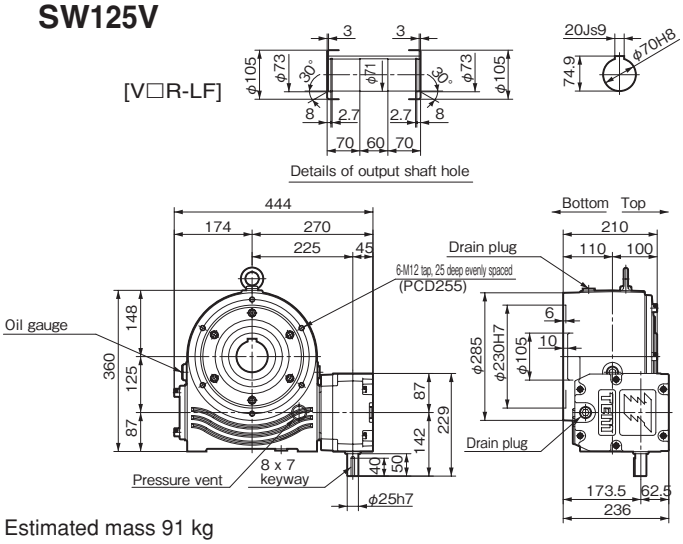
[B□R-SLF]



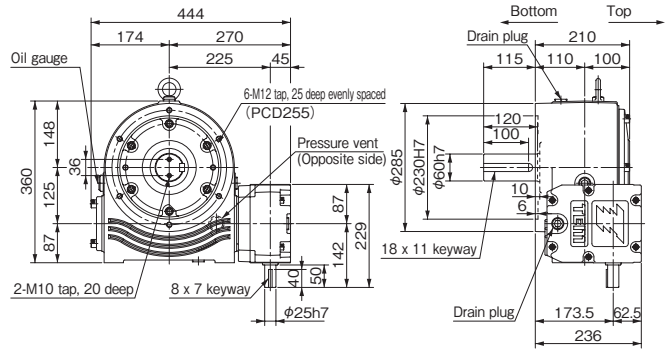
Estimated mass 91 kg

SW125V

[V□R-LF]



[V□R-SLF]



Estimated mass 91 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

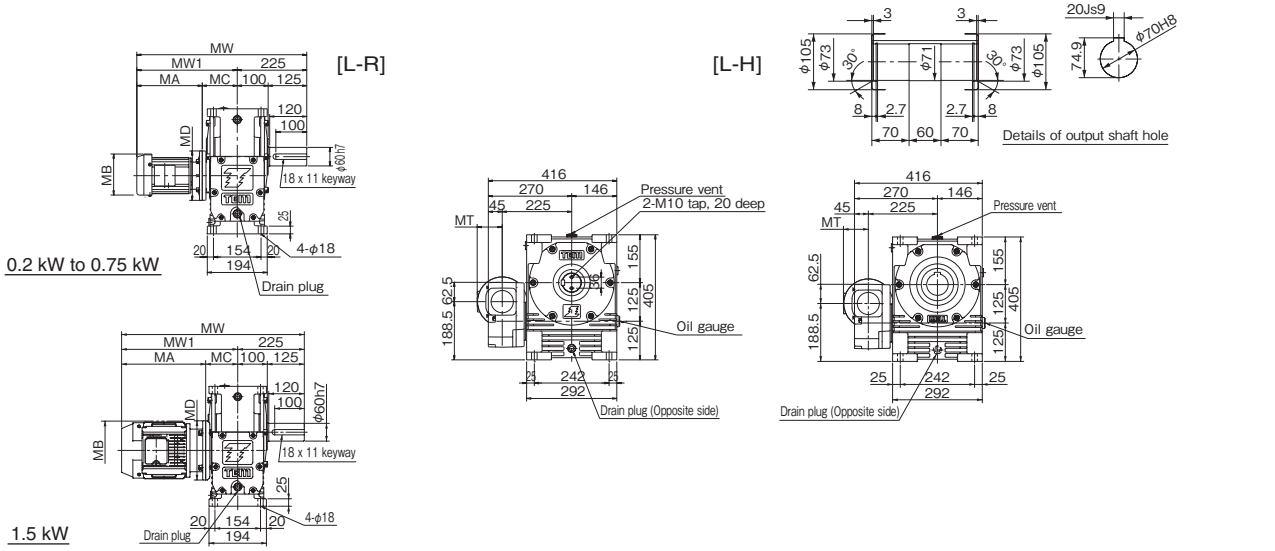
Transfer Capacity Table

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 {141.0}	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}

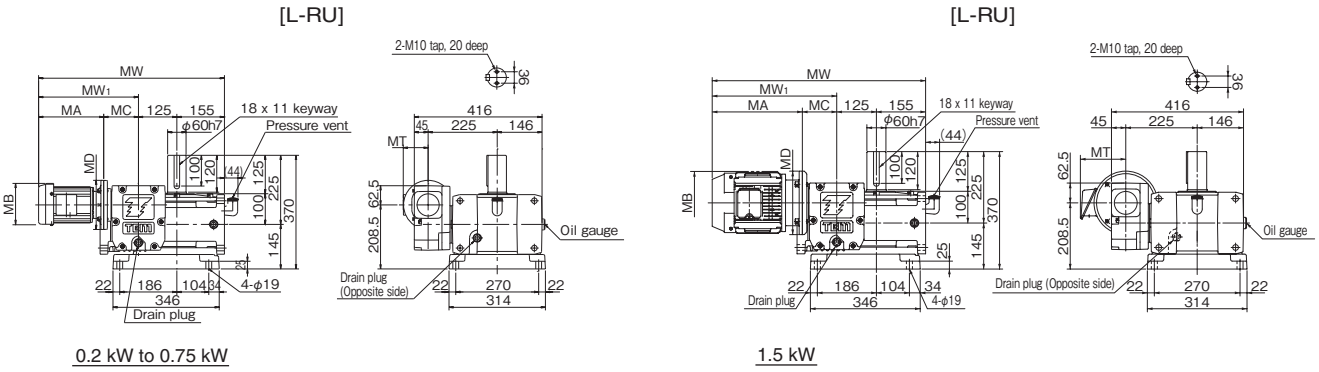
Dimensional Drawings EWM125B / EWM125V

See previous page for reducers without motors

EWM125B



EWM125V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

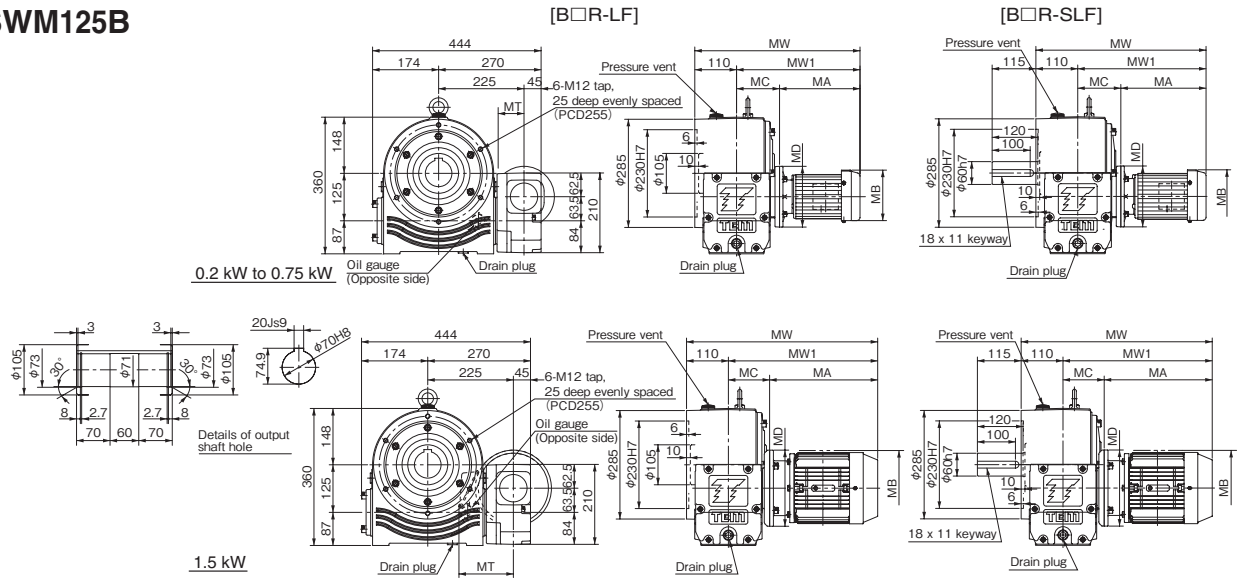
Transfer Capacity Table

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)	335 (354)	562 (579)	617 (634)	140 (140)	160 (160)	81 (104.5)	105 (109)	115 (119)
		1800	1372{140 }	1372{140 }										
		2400	1382{141 }	1382{141 }										
	0.75	500	1186{121 }	1392{142 }	235 (262)	108 (108)	343 (370)	568 (595)	623 (650)	158 (158)	200 (200)	90 (113.5)	113 (115)	125 (125)
		600	1333{136 }	1558{159 }										
		800	1568{160 }	1578{161 }										
		1000	1548{158 }	1558{159 }										
	1.5	100	631{ 64.4}	749{ 76.4}	274 (328)	108 (108)	382 (436)	607 (661)	662 (716)	198 (198)	200 (200)	150.5 (149)	122 (125)	132 (135)
		150	894{ 91.2}	1058{108 }										
		200	1137{116 }	1343{137 }										
		250	1382{141 }	1499{153 }										
		300	1548{158 }	1568{160 }										
		400	1578{162 }	1578{162 }										

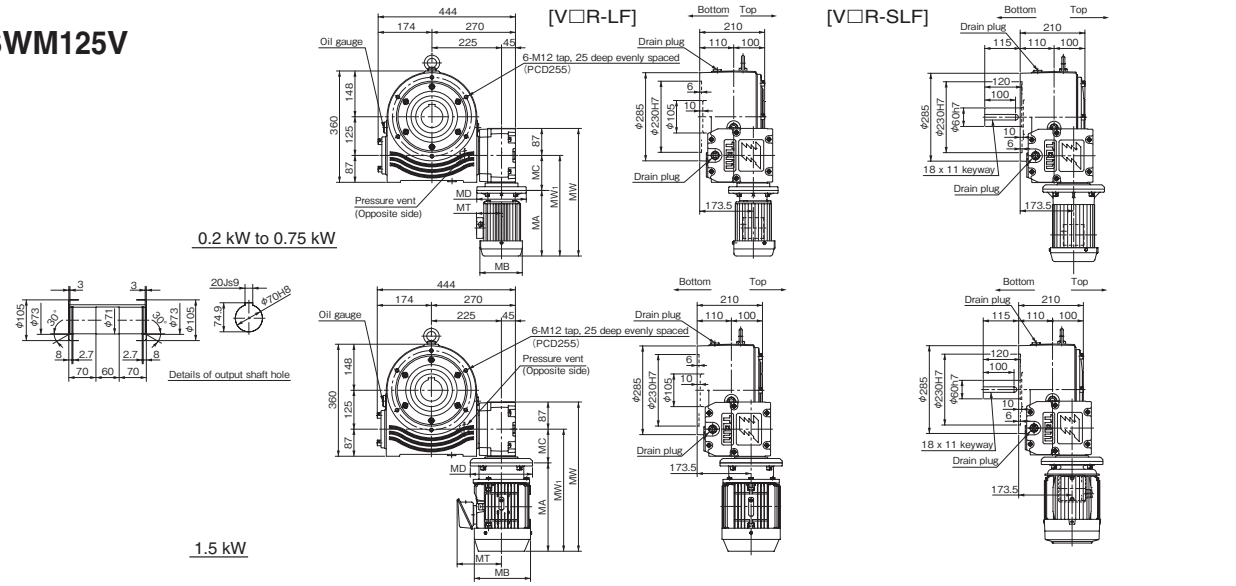
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWM125B / SWM125V

SWM125B



SWM125V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

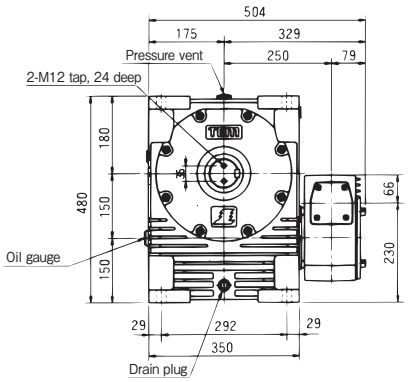
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Estimated mass kg
SWM125	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 (104)
		1800	1372 {140 }	1372 {140 }									
		2400	1382 {141 }	1382 {141 }									
	0.75	500	1186 {121 }	1392 {142 }	235 (262)	108 (108)	343 (370)	453 (480)	430 (457)	158 (158)	200 (200)	90 (113.5)	108 (110)
		600	1333 {136 }	1558 {159 }									
		800	1568 {160 }	1578 {161 }									
		1000	1548 {158 }	1558 {159 }									
	1.5	100	631 { 64.4}	749 { 76.4}	274 (328)	108 (108)	382 (436)	492 (546)	469 (523)	198 (198)	200 (200)	150.5 (149)	116 (120)
		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 }									

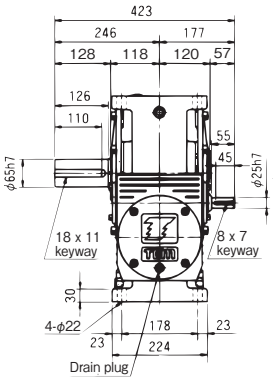
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EW150B / EW150V

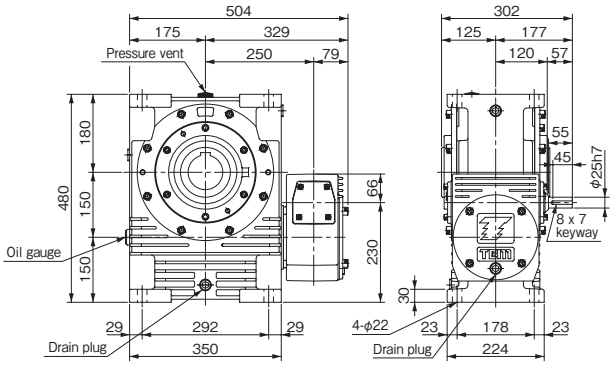
EW150B

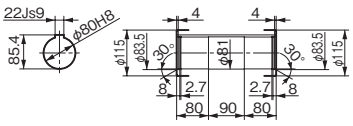
[B□R-L]





[B□R-H]



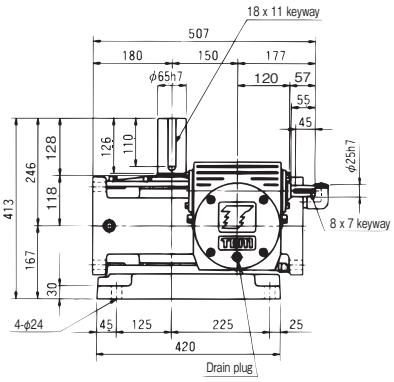


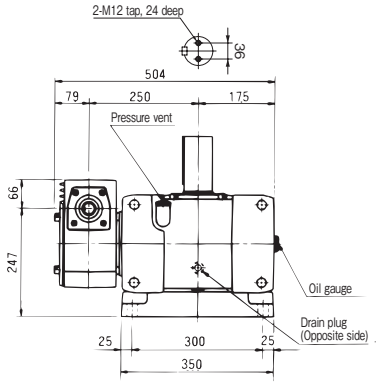
Details of output shaft hole

Estimated mass 142 kg

EW150V

[V□R-LU]





Estimated mass 167 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

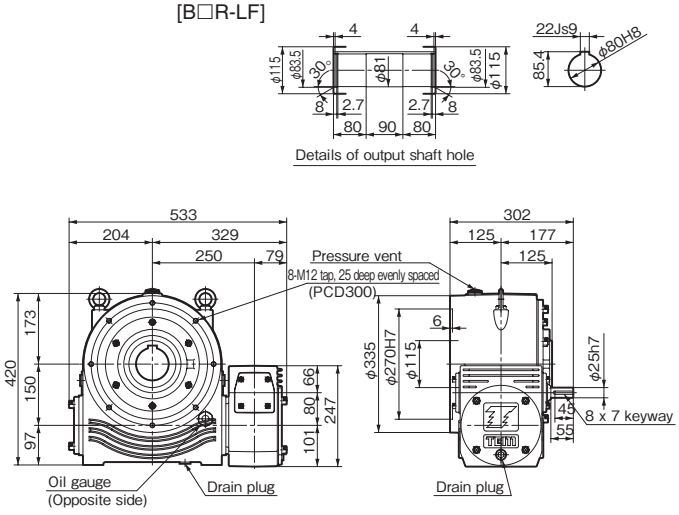
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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

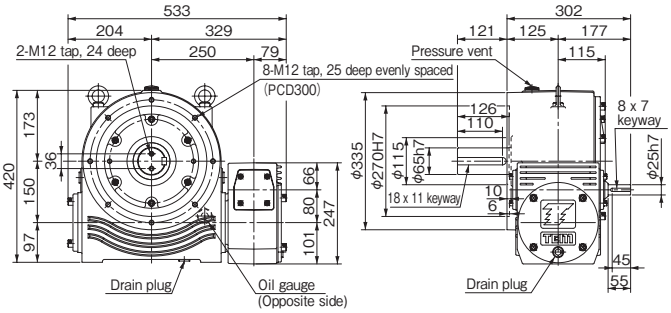
See next page for reducers with motors

SW150B

[B□R-LF]



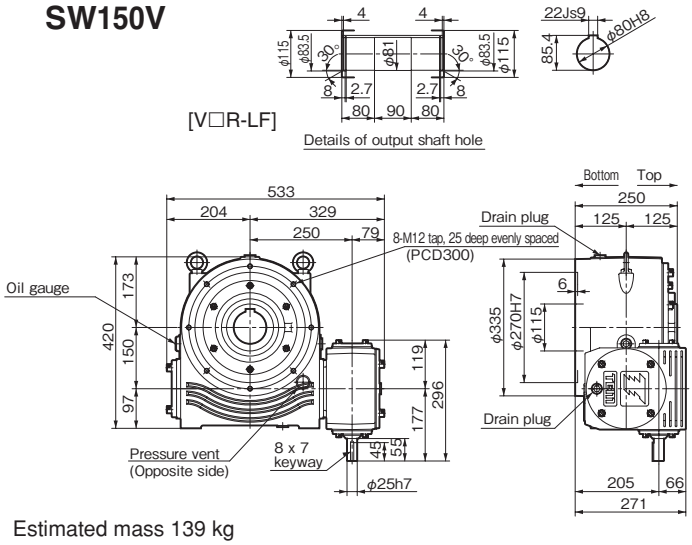
[B□R-SLF]



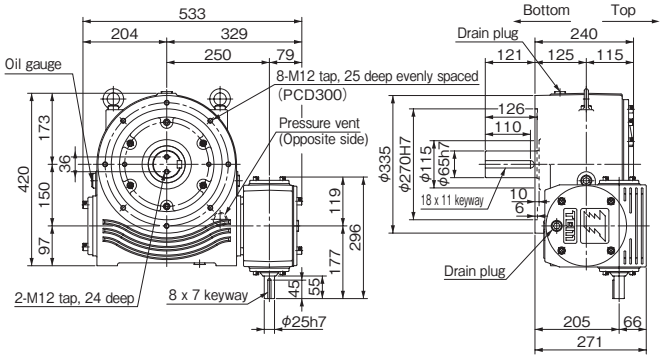
Estimated mass 139 kg

SW150V

[V□R-LF]



[V□R-SLF]



Estimated mass 139 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

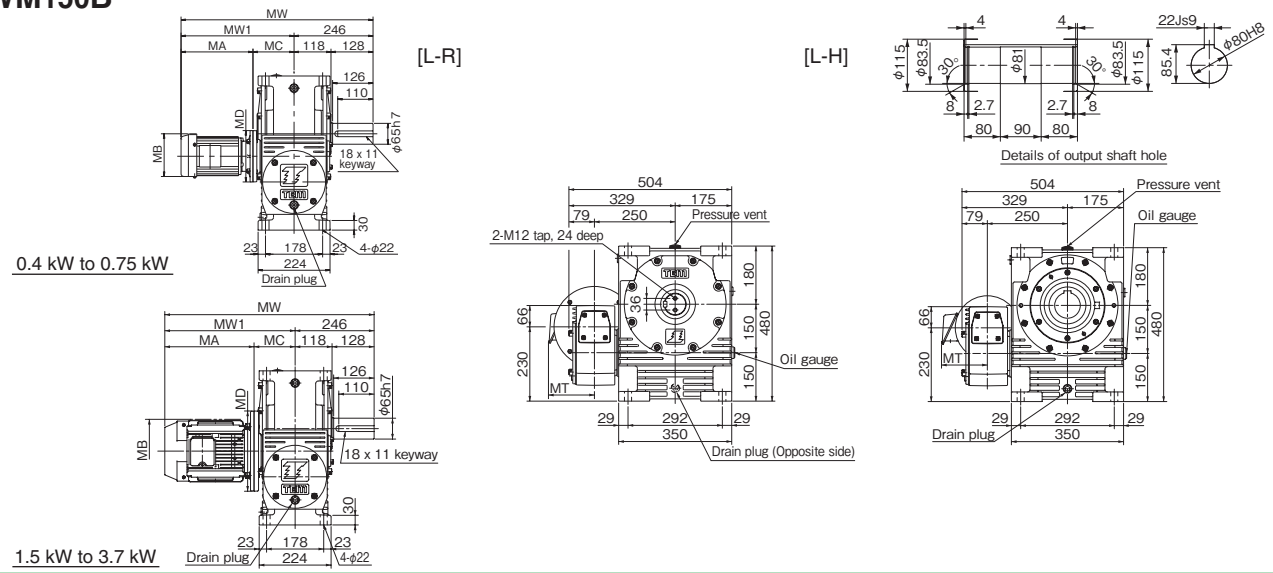
Transfer Capacity Table

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}

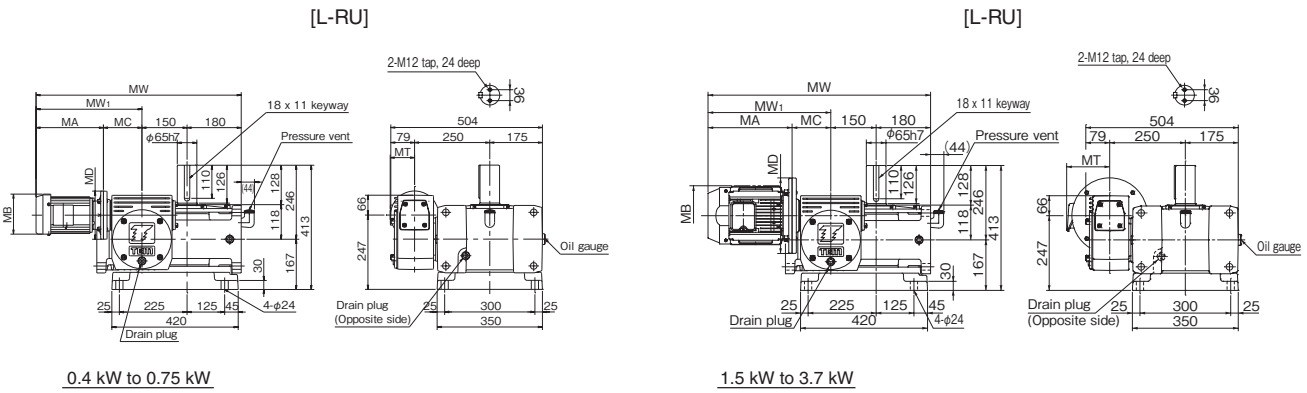
Dimensional Drawings EWM150B / EWM150V

See previous page for reducers without motors

EWM150B



EWM150V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

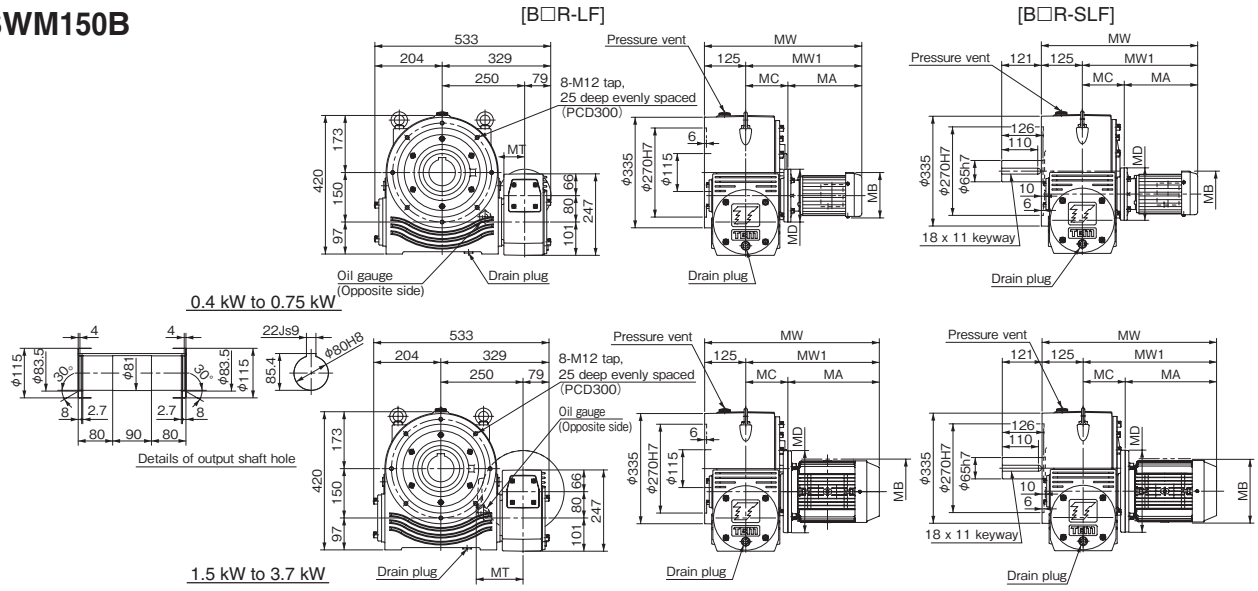
Transfer Capacity Table

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 (157)	178 (182)
		3600	2264{231 }	2264{231}										
	0.75	1200	2421{247 }	2617{267}	235 (262)	128 (128)	363 (390)	609 (636)	693 (720)	158 (158)	200 (200)	90 (113.5)	161 (163)	186 (188)
		1500	2145{226 }	2234{228}										
	1.5	500	2460{251 }	2656{271}	274 (328)	128 (128)	402 (456)	648 (702)	732 (786)	198 (198)	200 (200)	150.5 (149)	170 (173)	195 (198)
		600	2656{271 }	2666{272}										
	2.2	100	944{ 96.3}	1117{114}	278 (332)	128 (128)	406 (460)	652 (706)	736 (790)	198 (198)	250 (250)	143 (141)	180 (183)	205 (208)
		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}	326 (400)	128 (128)	454 (528)	700 (774)	784 (858)	214 (214)	250 (250)	158 (159)	186 (192)	211 (217)
		150	2264{231 }	2381{243}										

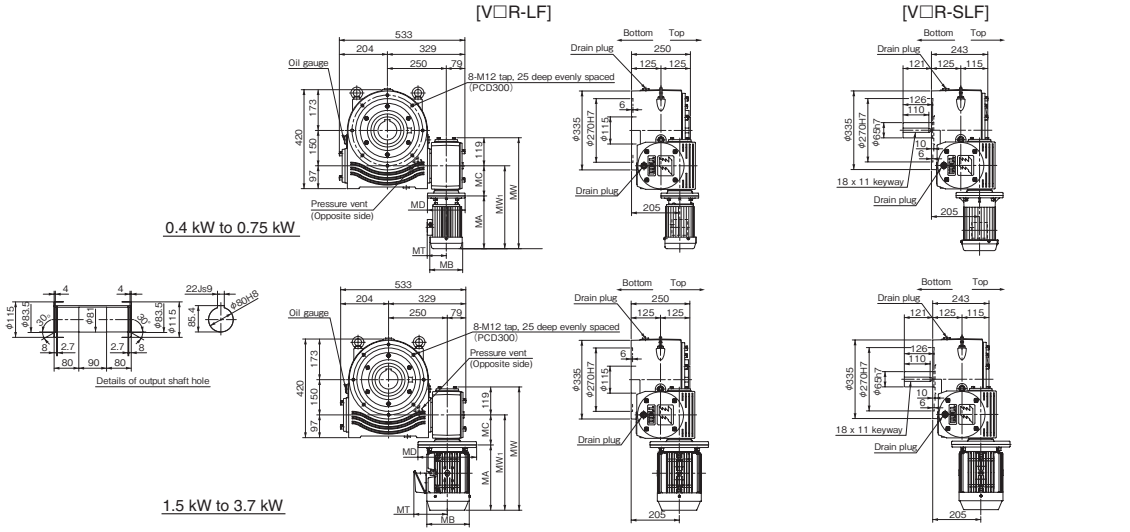
* Motor/reducer combinations shown are standard.
* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings SWM150B / SWM150V

SWM150B



SWM150V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

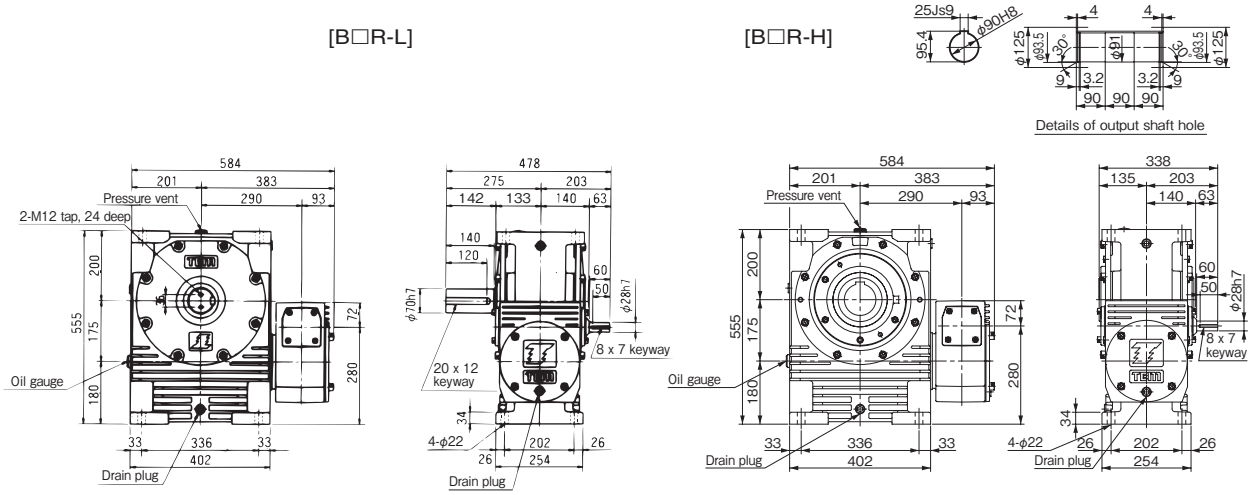
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Estimated mass kg
SWM150	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 (154)
		3600	2264 {231 }	2264 {231}									
	0.75	1200	2421 {247 }	2617 {267}	235 (262)	128 (128)	363 (390)	488 (515)	482 (509)	158 (158)	200 (200)	90 (113.5)	158 (160)
		1500	2145 {226 }	2234 {228}									
	1.5	500	2460 {251 }	2656 {271}	274 (328)	128 (128)	402 (456)	527 (581)	521 (575)	198 (198)	200 (200)	150.5 (149)	166 (170)
		600	2656 {271 }	2666 {272}									
	2.2	100	944 { 96.3}	1117 {114}	278 (332)	128 (128)	406 (460)	531 (585)	525 (579)	198 (198)	250 (250)	143 (141)	177 (180)
		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}	326 (400)	128 (128)	454 (528)	579 (653)	573 (647)	214 (214)	250 (250)	158 (159)	183 (189)
		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 21 for sizing. * Thermal rating factor is 1.0.

Dimensional Drawings EW175B / EW175V

EW175B

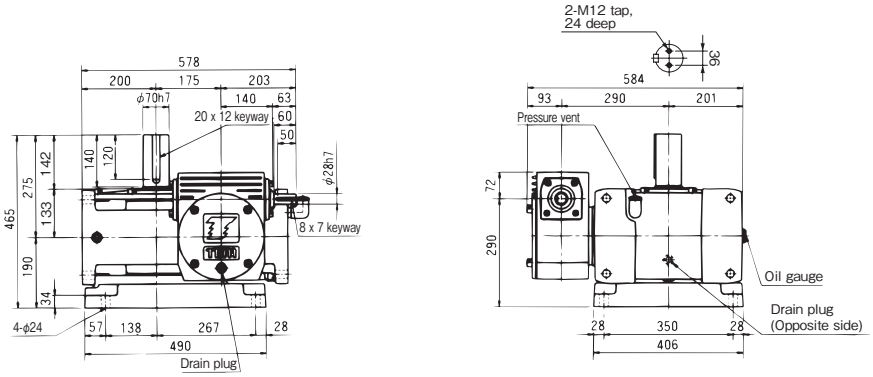
[B□R-L] [B□R-H]



Estimated mass 215 kg

EW175V

[V□R-LU]



Estimated mass 242 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

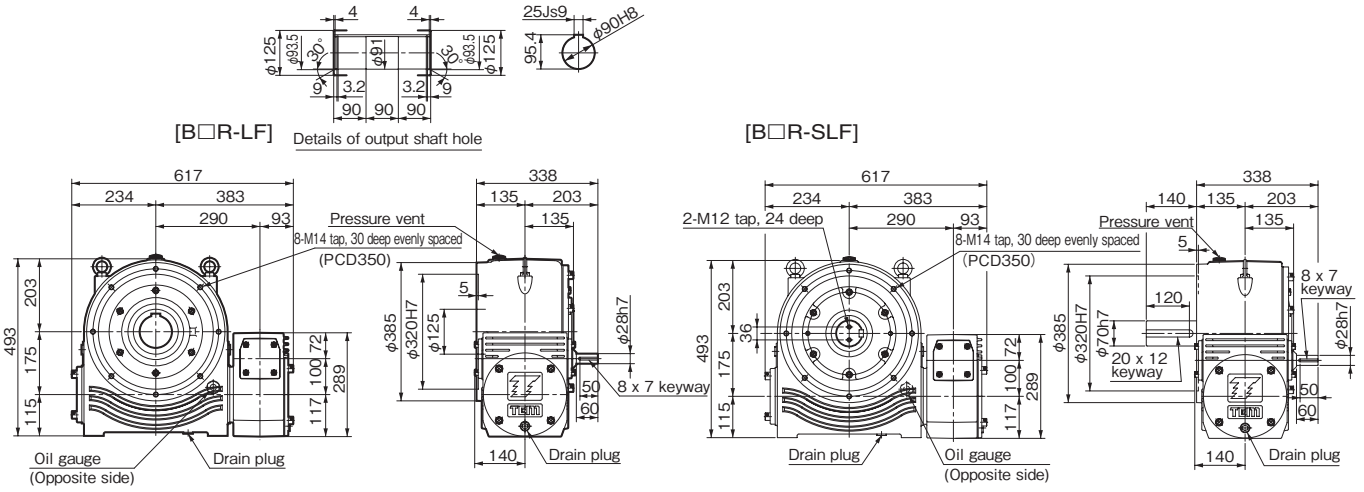
Transfer Capacity Table

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

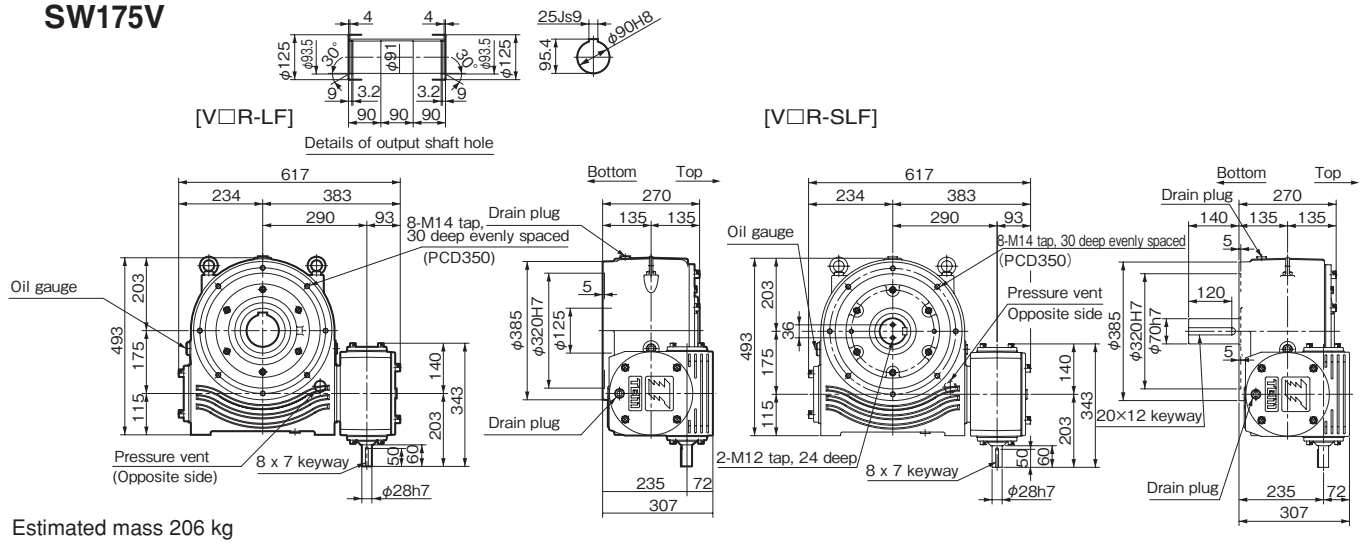
See next page for reducers with motors

SW175B



Estimated mass 206 kg

SW175V



Estimated mass 206 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

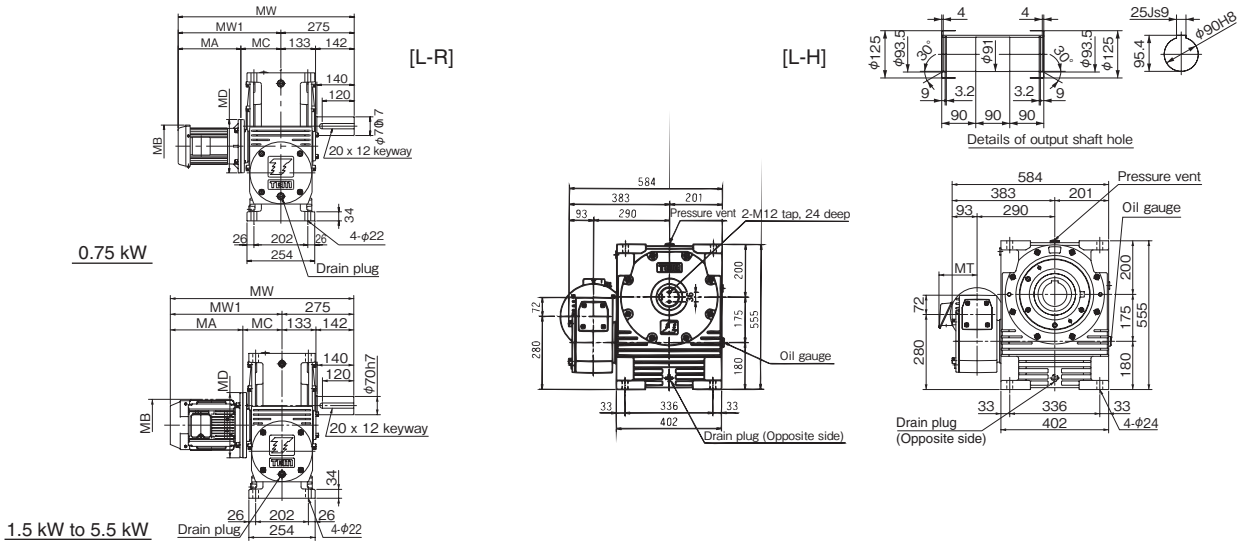
Transfer Capacity Table

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}

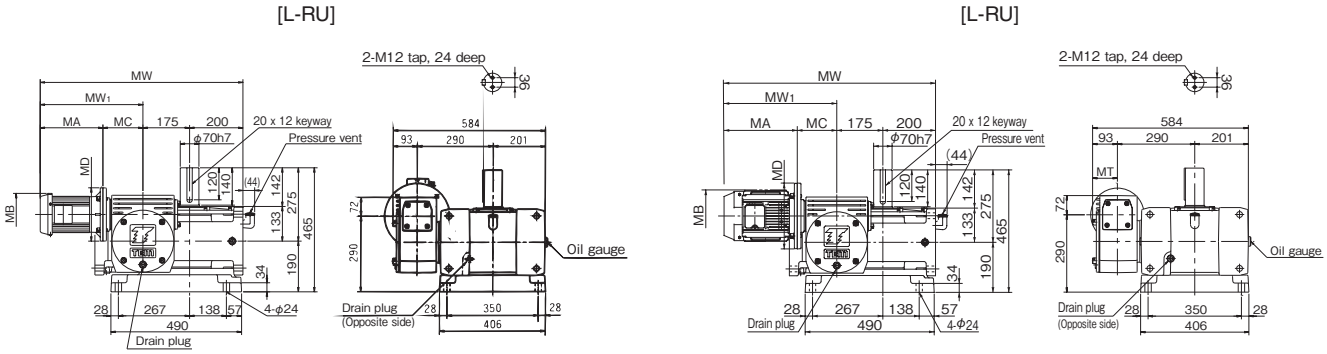
Dimensional Drawings EWM175B / EWM175V

See previous page for reducers without motors

EWM175B



EWM175V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

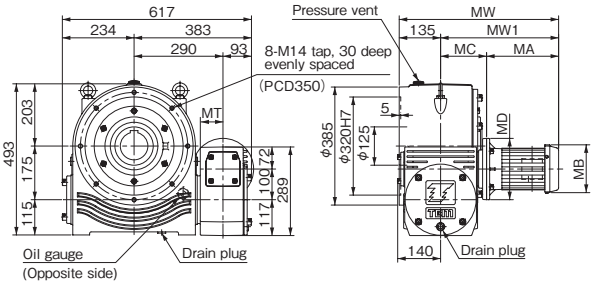
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM175	0.75	1800	3136 {320}	3381 {345}	235 (262)	150 (150)	385 (412)	660 (687)	760 (787)	158 (158)	200 (200)	90 (113.5)	236 (238)	263 (265)
		2400	3410 {348}	3420 {349}										
	1.5	800	3459 {353}	3459 {353}	274 (328)	150 (150)	424 (478)	699 (753)	799 (850)	198 (198)	200 (200)	150.5 (149)	245 (248)	272 (275)
		1000	3459 {353}	3459 {353}										
	2.2	500	3459 {353}	3459 {353}	278 (332)	150 (150)	428 (482)	703 (757)	803 (857)	198 (198)	250 (250)	143 (141)	255 (258)	282 (285)
		600	3459 {353}	3459 {353}										
	3.7	200	2969 {303}	3459 {353}										
		250	3459 {353}	3459 {353}	326 (400)	150 (150)	476 (550)	751 (825)	851 (925)	214 (214)	250 (250)	158 (159)	261 (267)	288 (294)
		300	3459 {353}	3459 {353}										
	5.5	100	2407 {246}	2862 {292}	413 (511)	157 (157)	570 (668)	845 (943)	945 (1043)	252 (252)	300 (300)	190 (193)	276 (292)	303 (319)
		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 21 for sizing. * Thermal rating factor is 1.0.

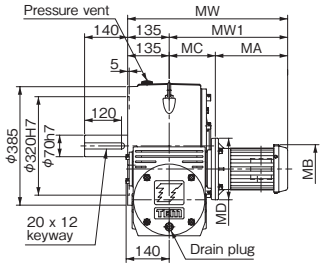
Dimensional Drawings SWM175B / SWM175V

SWM175B

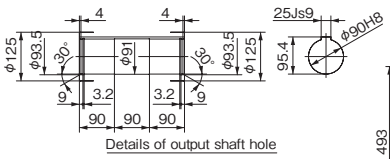
[B□R-LF]

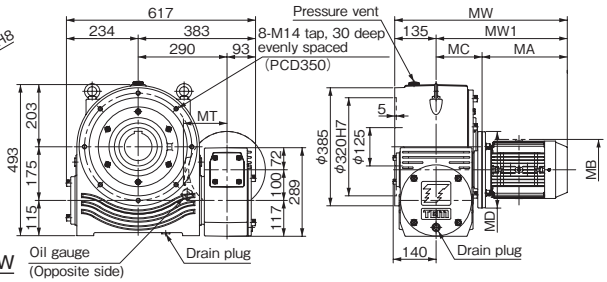


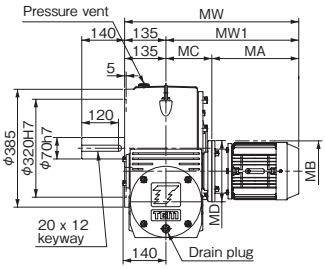
[B□R-SLF]



0.75 kW



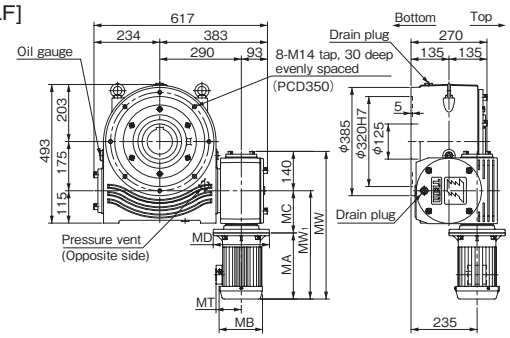




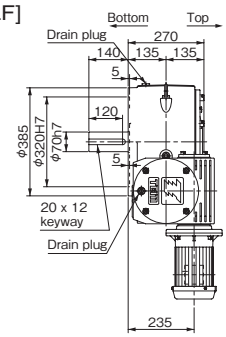
1.5 kW to 3.7 kW

SWM175V

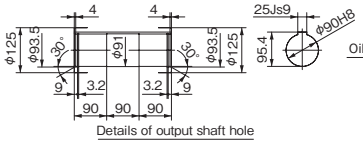
[V□R-LF]

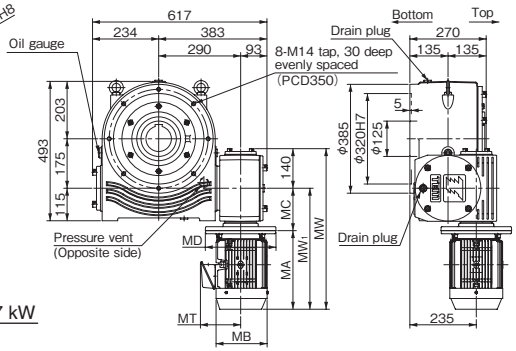


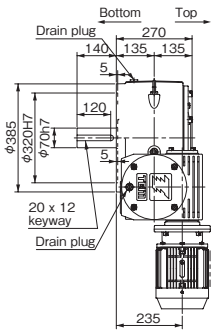
[V□R-SLF]



0.75 kW







1.5 kW to 3.7 kW

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

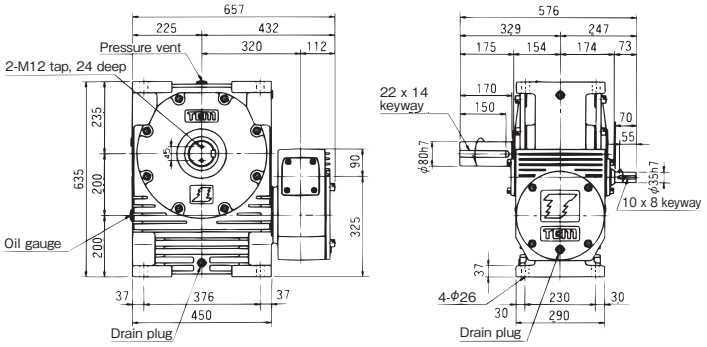
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Estimated mass kg
SWM175	0.75	1800	3136 {320}	3381 {345}	235 (262)	150 (150)	385 (412)	520 (547)	525 (552)	158 (158)	200 (200)	90 (103.5)	227 (229)
		2400	3410 {348}	3420 {349}									
	1.5	800	3459 {353}	3459 {353}	274 (328)	150 (150)	424 (478)	559 (613)	564 (618)	198 (198)	200 (200)	150.5 (149)	235 (239)
		1000	3459 {353}	3459 {353}									
	2.2	500	3459 {353}	3459 {353}	278 (332)	150 (150)	428 (482)	563 (617)	568 (622)	198 (198)	250 (250)	143 (141)	246 (249)
		600	3459 {353}	3459 {353}									
	3.7	200	2969 {303}	3459 {353}	326 (400)	150 (150)	476 (550)	611 (685)	616 (690)	214 (214)	250 (250)	158 (159)	252 (258)
		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 21 for sizing. * Thermal rating factor is 1.0.

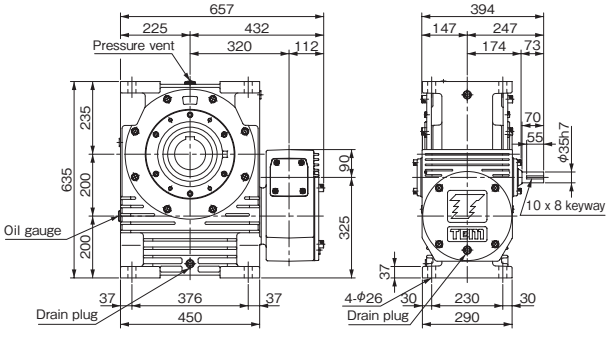
Dimensional Drawings EW200B / EW200V

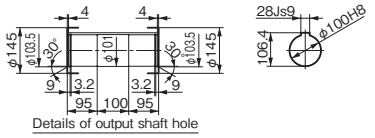
EW200B

[B□R-L]



[B□R-H]

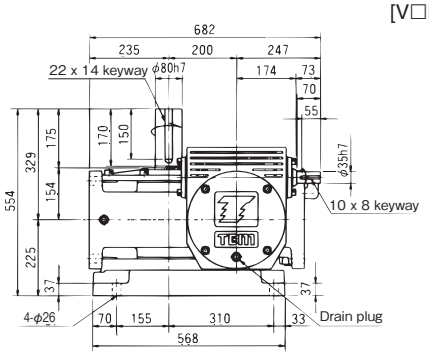


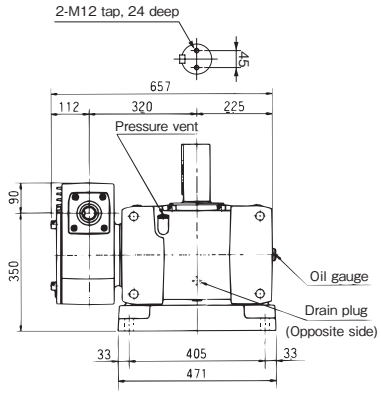


Estimated mass 364 kg

EW200V

[V□R-LU]





Estimated mass 414 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

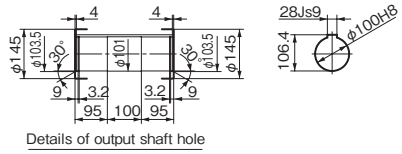
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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

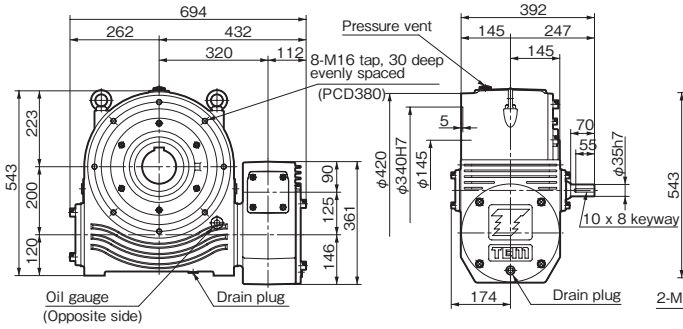
See next page for reducers with motors

SW200B

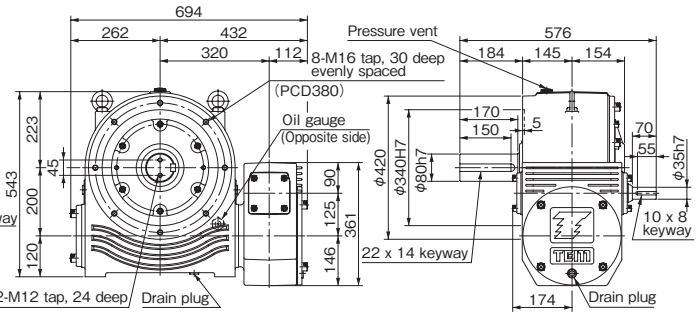
[B□R-LF]



Details of output shaft hole



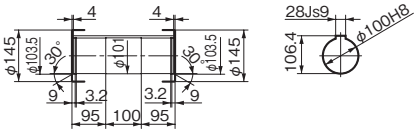
[B□R-SLF]



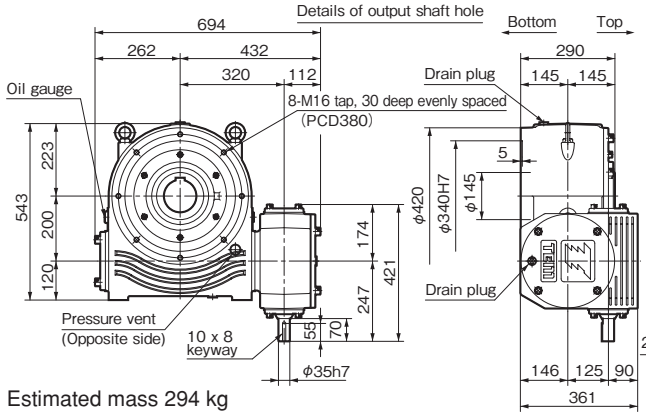
Estimated mass 294 kg

SW200V

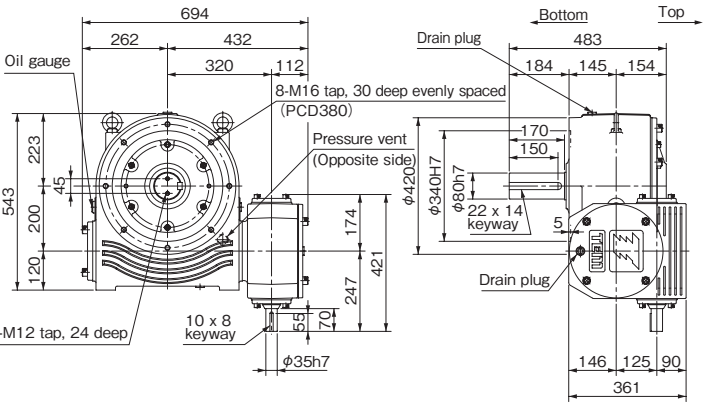
[V□R-LF]



Details of output shaft hole



[V□R-SLF]



Estimated mass 294 kg

*Refer to Page 79 for shaft arrangements and relative direction of rotation.

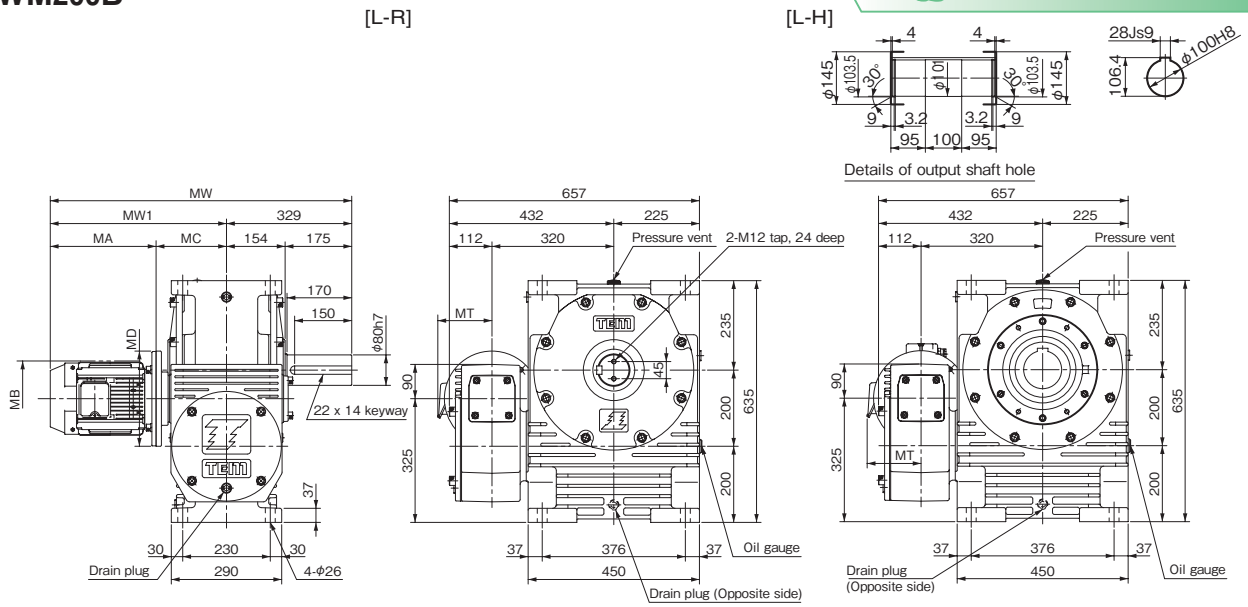
Transfer Capacity Table

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}

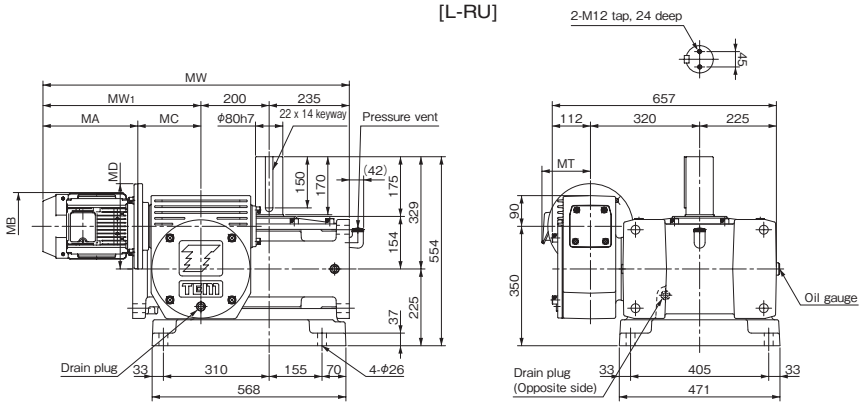
Dimensional Drawings EWM200B / EWM200V

See previous page for reducers without motors

EWM200B



EWM200V



*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

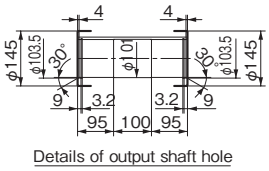
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.									
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Installation B type Estimated mass kg	Installation V type Estimated mass kg
EWM200	1.5	1200	5116 {522}	5704 {582}	274 (328)	185 (185)	459 (513)	788 (842)	894 (948)	198 (198)	200 (200)	150.5 (149)	390 (393)	440 (443)
		1500	5067 {517}	5116 {522}										
	2.2	800	5527 {564}	5704 {582}	278 (332)	185 (185)	463 (517)	792 (846)	898 (952)	198 (198)	250 (250)	143 (141)	398 (401)	449 (452)
		1000	5704 {582}	5704 {582}										
	3.7	400	5351 {546}	5704 {582}	326 (400)	185 (185)	511 (585)	840 (914)	946 (1020)	214 (214)	250 (250)	158 (159)	407 (412)	457 (463)
		500	5704 {582}	5704 {582}										
		600	5704 {582}	5704 {582}										
	5.5	200	4469 {456}	5292 {540}	413 (511)	185 (185)	598 (696)	927 (1025)	1033 (1131)	252 (252)	300 (300)	190 (193)	427 (443)	478 (494)
		250	5240 {535}	5488 {560}										
		300	5537 {565}	5645 {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 21 for sizing. * Thermal rating factor is 1.0.

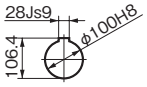
Dimensional Drawings SWM200B / SWM200V

SWM200B

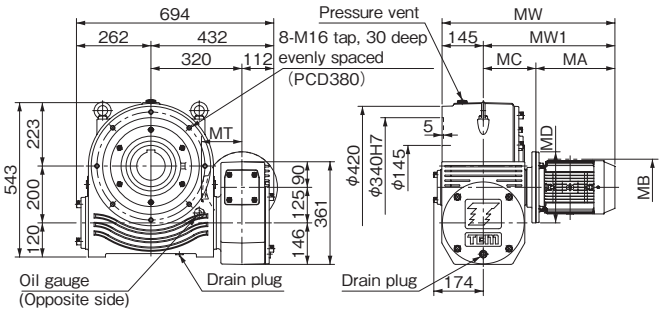
[B□R-LF]

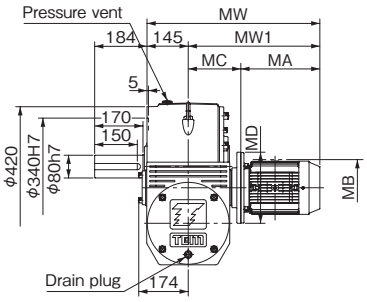


Details of output shaft hole



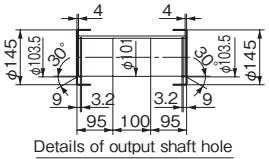
[B□R-SLF]



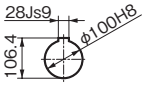


SWM200V

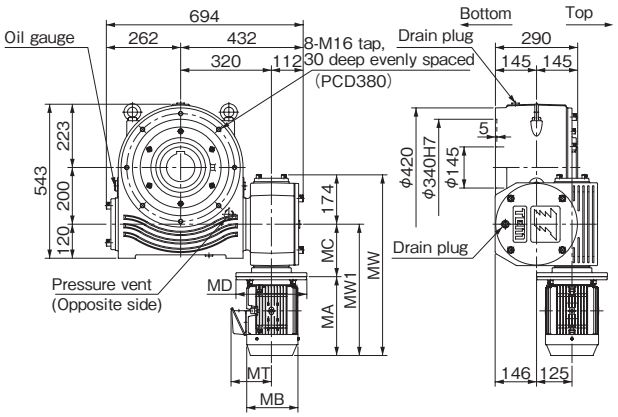
[V□R-LF]

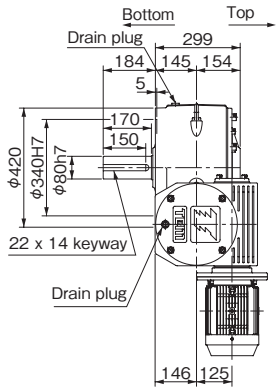


Details of output shaft hole



[V□R-SLF]





*Refer to Page 79 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

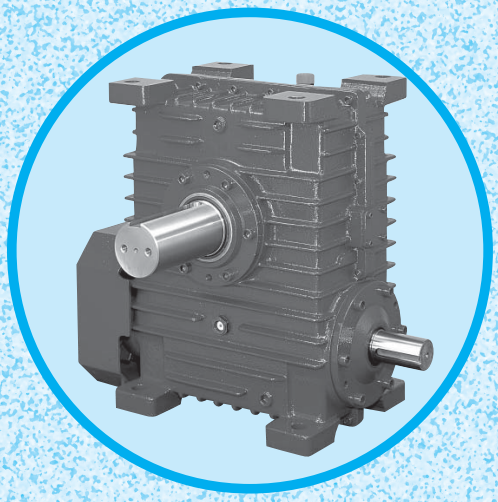
Size	Standard combination		1750 r/min	1450 r/min	Values in ( ) for the motor indicates dimensions for a motor with a brake.								
	Motor kW	Reduction Ratio	Output torque N·m {kgf·m}	Output torque N·m {kgf·m}	MA	MC	MW_1	Installation B type MW	Installation V type MW	MB	MD	MT	Estimated mass kg
SWM200	1.5	1200	5116 { 522}	5704 { 582}	274 (328)	185 (185)	461 (515)	606 (660)	635 (689)	198 (198)	200 (200)	150.5 (149)	320 (323)
		1500	5067 { 517}	5116 { 522}									
	2.2	800	5527 { 564}	5704 { 582}	278 (332)	185 (185)	463 (517)	608 (662)	637 (691)	198 (198)	250 (250)	143 (141)	328 (331)
		1000	5704 { 582}	5704 { 582}									
	3.7	400	5351 { 546}	5704 { 582}	326 (400)	185 (185)	511 (585)	656 (730)	685 (759)	214 (214)	250 (250)	158 (159)	337 (342)
		500	5704 { 582}	5704 { 582}									
		600	5704 { 582}	5704 { 582}									
	5.5	200	4469 { 456}	5292 { 540}	413 (511)	185 (185)	598 (696)	743 (841)	772 (870)	252 (252)	300 (300)	190 (193)	357 (373)
		250	5243 { 535}	5488 { 560}									
		300	5537 { 565}	5645 { 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 21 for sizing. * Thermal rating factor is 1.0.

Memo

TroiDrive
High Performance Troidal Worm Gear

TD Series



Model Number Designation .....125 - 127

Model Number Designation
Models
Shaft Arrangement
Internal Construction

Single Reduction (1/10 to 1/60) .....128 - 148

Transfer Capacity Table
Technical Data (Allowable Loads on Shafts, Actual Reduction Ratio, Moment of Inertia on Input Shaft)
Dimensional Drawings (Sizes 125 to 315)

Double Reduction (1/100 to 1/3600).....150 - 172

Transfer Capacity Table
Technical Data (Allowable Loads on Shafts, Actual Reduction Ratio, Moment of Inertia on Input Shaft)
Dimensional Drawings (Sizes 125 to 315)

Model Number Designation

Series		Size	Output shaft style	Nominal Reduction Ratio	Mounting Position	Shaft Arrangement	Options
TD Series	Single Reduction Gear Reducers						
	Output Solid shaft **TD**	**280**	**S**	**30**	**B**	**R**	
	Output Hollow shaft **TD**	**250**	**H**	**60**	**T**	**DF**	**-K**
	Double Reduction Gear Reducers						
	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 the B and V type.	(Single reduction) **- Solid output -** Single output shaft: L, R, LU, RU, LD, RD Double output shaft: LR, LUD, RUD **- Hollow output -** LF, RF, DF See Table on page 126 (Double reduction) **- Solid output -** 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 -** L-RF, R-LF, L-DF, R-DF See Table on page 126	Reducer 1) See page 225 - 237

Note 1) Enter a hyphen before the reducer option symbol.

Models

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									
Size	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, VR-LD	Double output shaft	Hollow shaft	Power-Lock specification: K
TD125	○	○	△	○	△	○	○	△	○	△
TD150	○	○	△	○	△	○	○	△	○	△
TD175	○	○	△	○	△	○	○	△	○	△
TD200	○	○	△	○	△	○	○	△	○	△
TD225	○	○	△	○	△	○	○	△	○	△
TD250	○	○	△	○	△	○	○	△	○	△
TD280	○	○	△	○	△	○	○	△	○	△
TD315	○	○	△	○	△	○	○	△	○	△

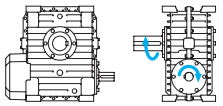
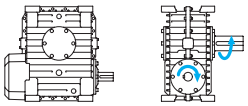
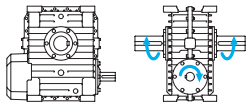
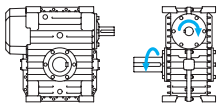
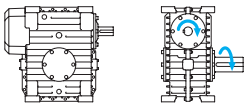
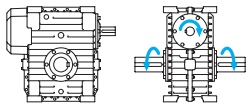
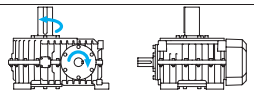
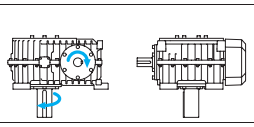
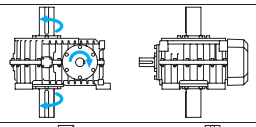
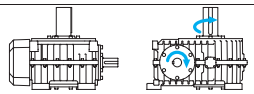
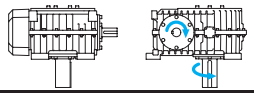
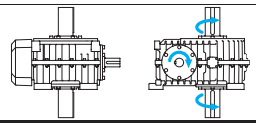
Note 1) ○: Standard package
2) △: Semi-standard package
3) Applicable models correspond to all standard reduction ratios.
4) Contact us for double intput shafts.
5) Contact us for details on models TD400 and TD500.

Shaft Arrangements (Relative Direction of Rotation)

Single Reduction Gear Reducers

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

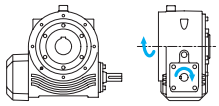
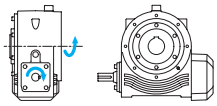
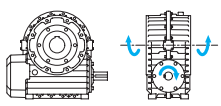
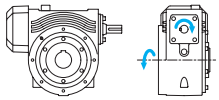
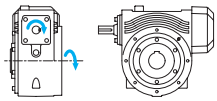
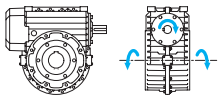
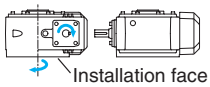
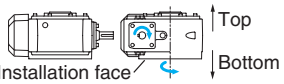
Arrows indicate direction of rotation.

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

Note) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

■ Hollow Output Shaft (H Type)

Arrows indicate direction of rotation.

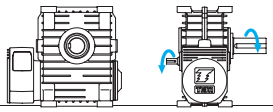
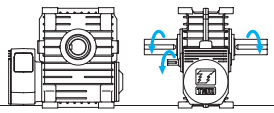
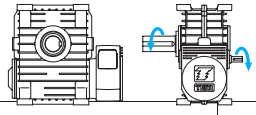
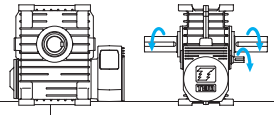
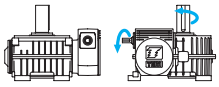
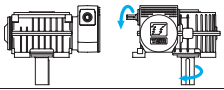
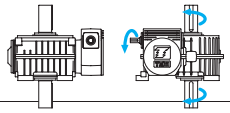
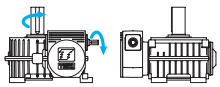
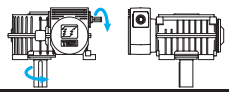
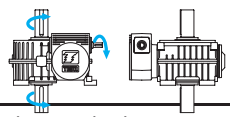
B type	BLF (TD125 to TD200) 	BRF (TD125 to TD200) 	BDF (TD225 to TD315) 
T type	TLF (TD125 to TD200) 	TRF (TD125 to TD200) 	TDF (TD225 to TD315) 
V type	VLF (TD125 to TD315) Top Bottom  Installation face	VRF (TD125 to TD315)  Top Bottom Installation face	

Note) Standard mounting for Installation direction V type is on the ground.

Double Reduction Gear Reducers

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

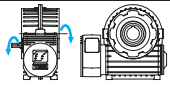
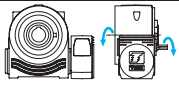
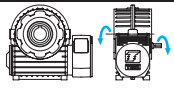
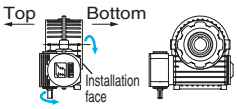
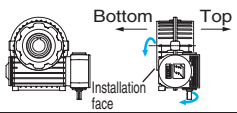
Arrows indicate direction of rotation.

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) If the shaft type is double output, the keyway may not be in the same phase. Contact us if the phases must be matched.

■ Hollow Output Shaft (H Type)

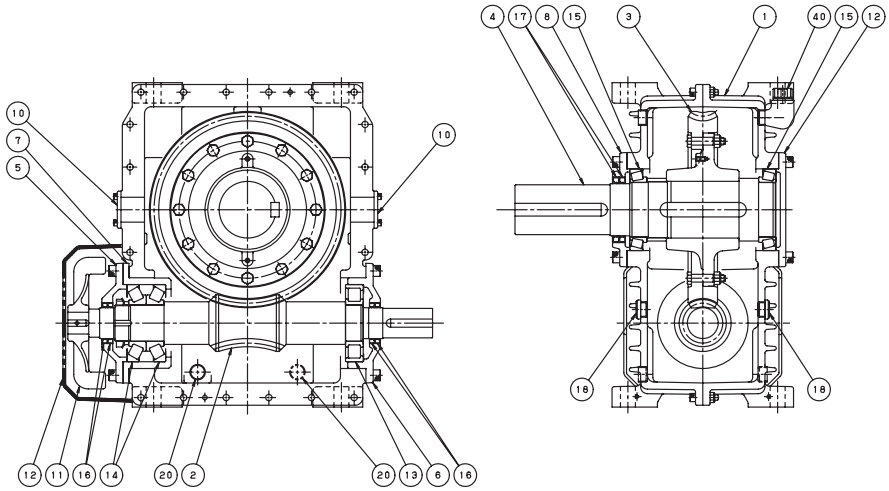
Arrows indicate direction of rotation.

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) Top Bottom  Installation face		V R-LF (TD125 to TD315) Bottom Top  Installation face	

Note) Standard mounting for Installation direction V type is on the ground.

Internal Construction

Single Reduction Gear Reducers

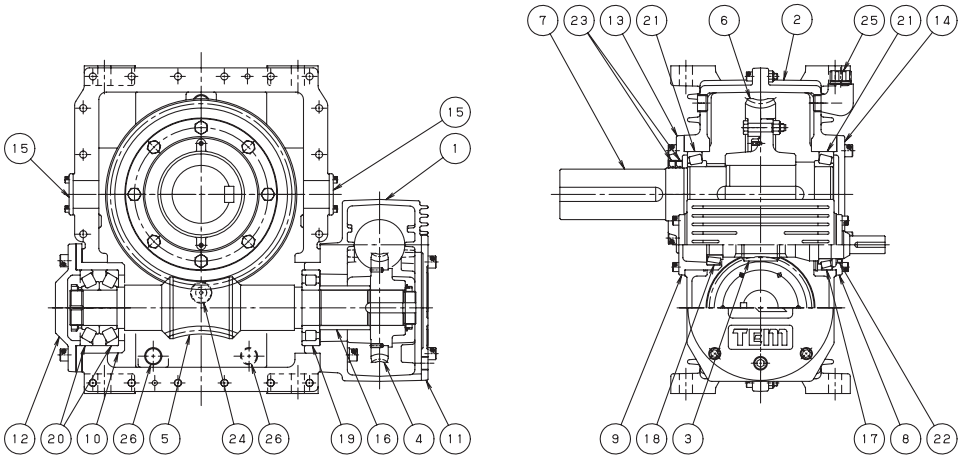


・Figure shows the internal construction of model TD250S (single reduction).
・This drawing is representative and may differ slightly depending on the model and size.
(Filter sets are used on the oil seal portions of the input/output shafts of models TD125 to TD200.)

■ Major Parts List

No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Housing	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 gage
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 Gear Reducers



・Figure shows the internal construction of model TD225S (double reduction).
・This drawing is representative and may differ slightly depending on the model and size.
(Filter sets are used on the oil seal portions of the input shafts of models TD150 to TD200, and the output shafts of models TD125 to TD200.)

■ Major Parts List

No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Input housing	8	Input seal support	15	Inspection cap	22	Input shaft oil seal
2	Housing	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 gage
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 Gear Reducers

(Nominal reduction ratio: 1/10 to 1/60)

Transfer Capacity Table ..... 129 to 130

Technical Data ..... 131 to 132

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

Dimensional Drawings ..... 133 to 148

Transfer Capacity Table

Refer to Page 131 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 131 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 {GD²}: kg·m² {kgf·m²}

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}

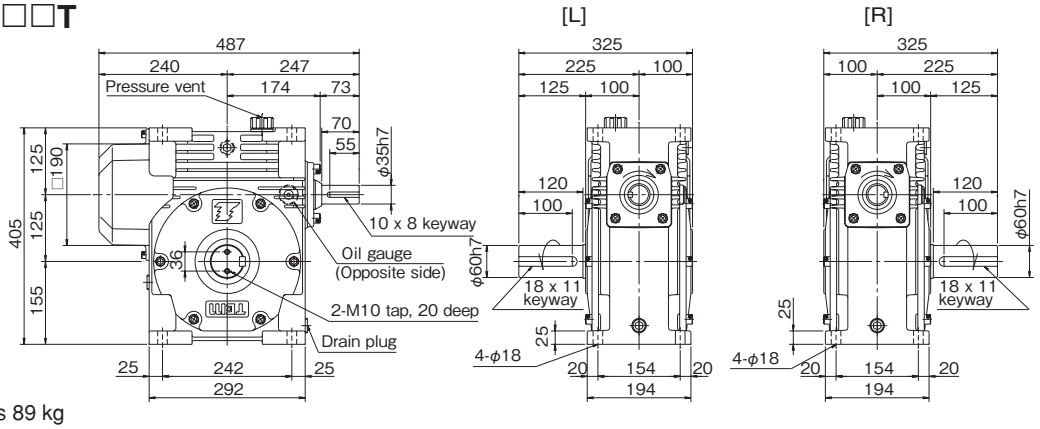
Hollow Output Shaft (H Type)

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

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}

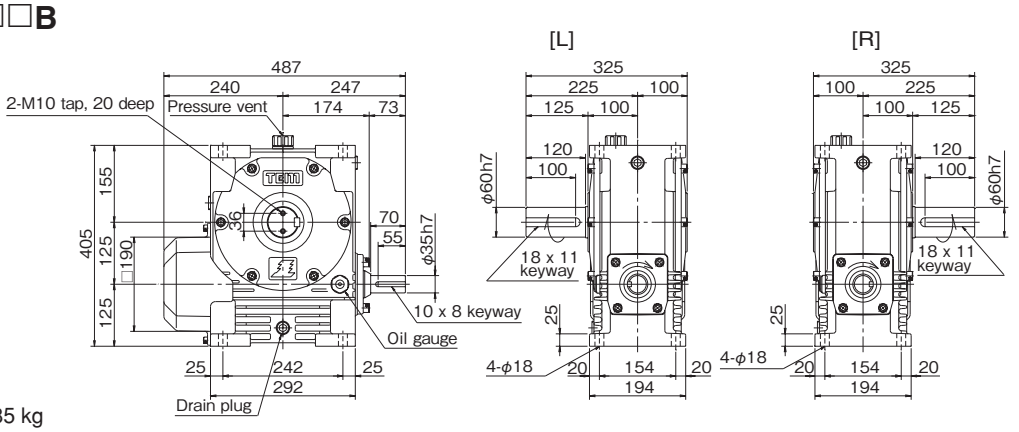
Dimensional Drawings TD125S

TD125S□□T



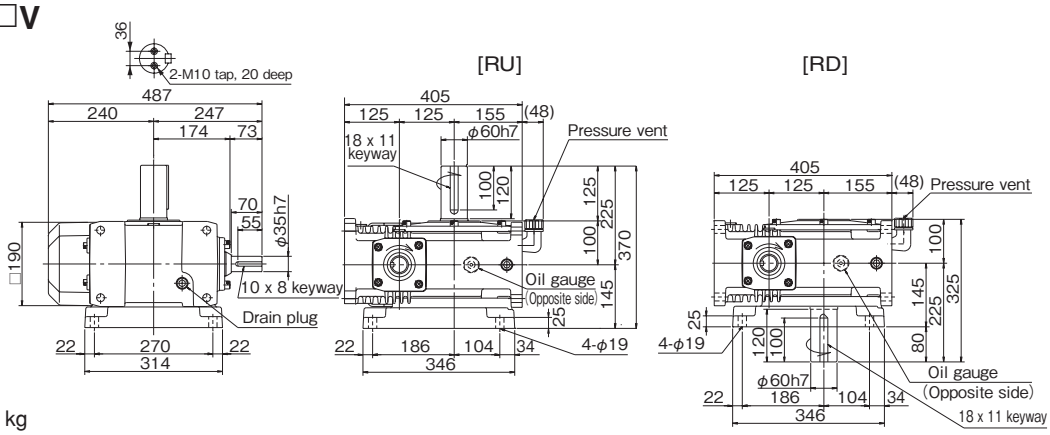
Estimated mass 89 kg

TD125S□□B



Estimated mass 85 kg

TD125S□□V



Estimated mass 97 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

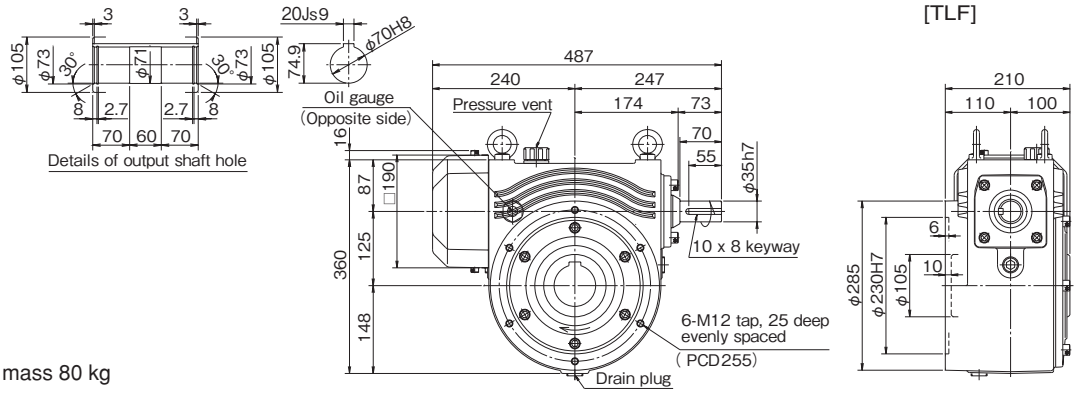
Refer to Page 131 for actual reduction ratios.

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 their thermal rating. Consult us if your application runs for short periods.

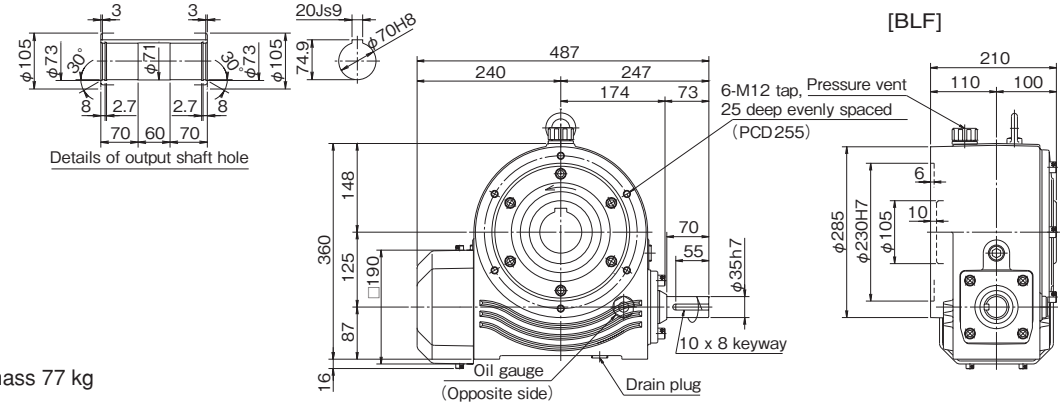
Dimensional Drawings TD125H

TD125H□□T



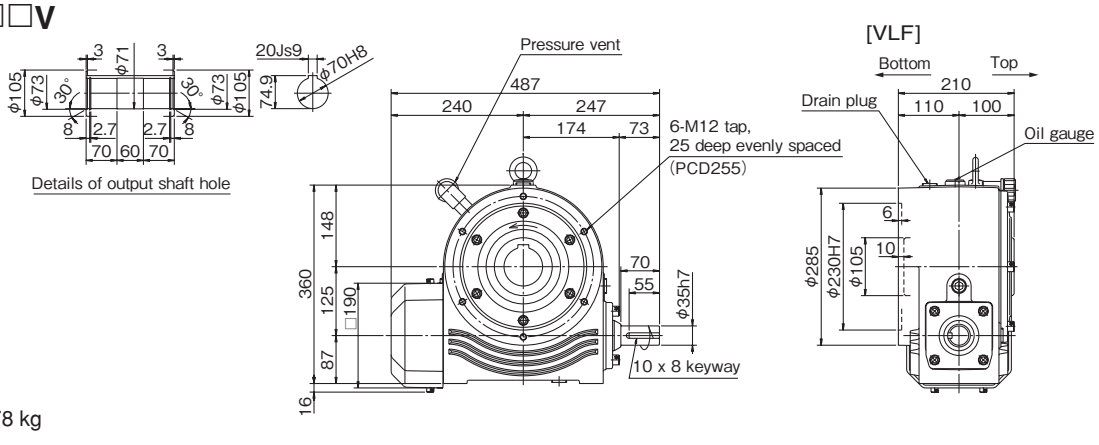
Estimated mass 80 kg

TD125H□□B



Estimated mass 77 kg

TD125H□□V



Estimated mass 78 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

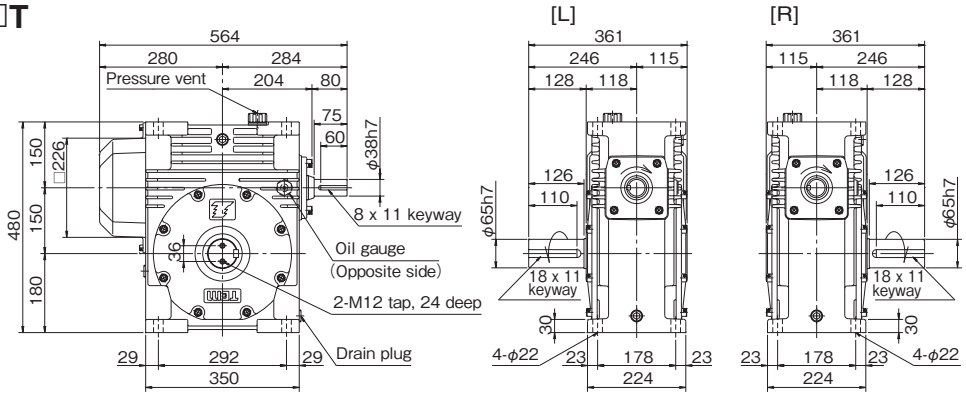
Refer to Page 131 for actual reduction ratios.

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}
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.

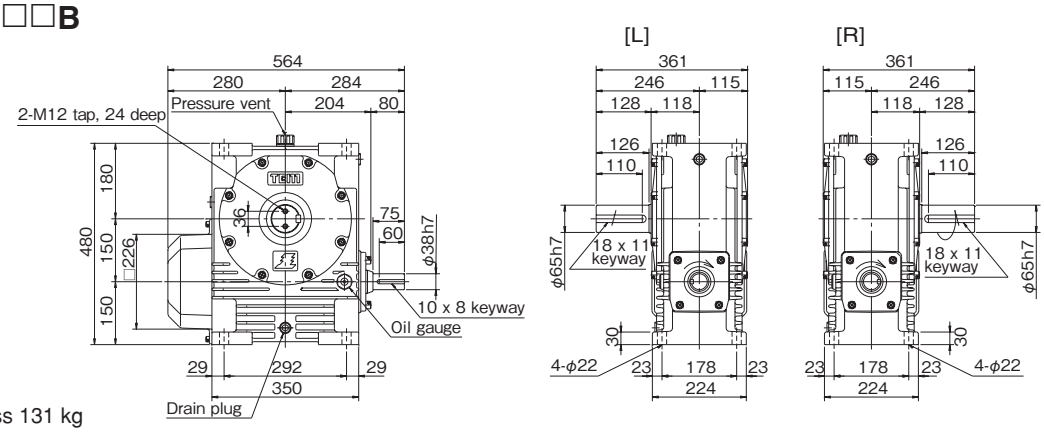
Dimensional Drawings TD150S

TD150S□□T



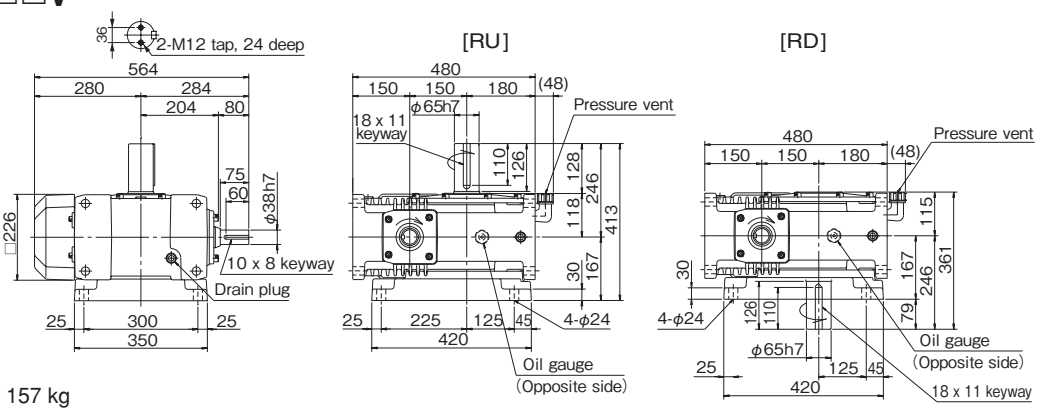
Estimated mass 137 kg

TD150S□□B



Estimated mass 131 kg

TD150S□□V



Estimated mass 157 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

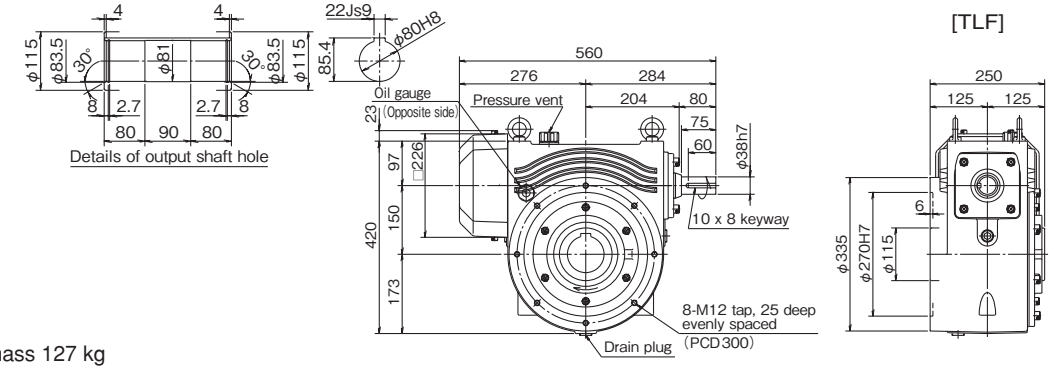
Refer to Page 131 for actual reduction ratios.

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.

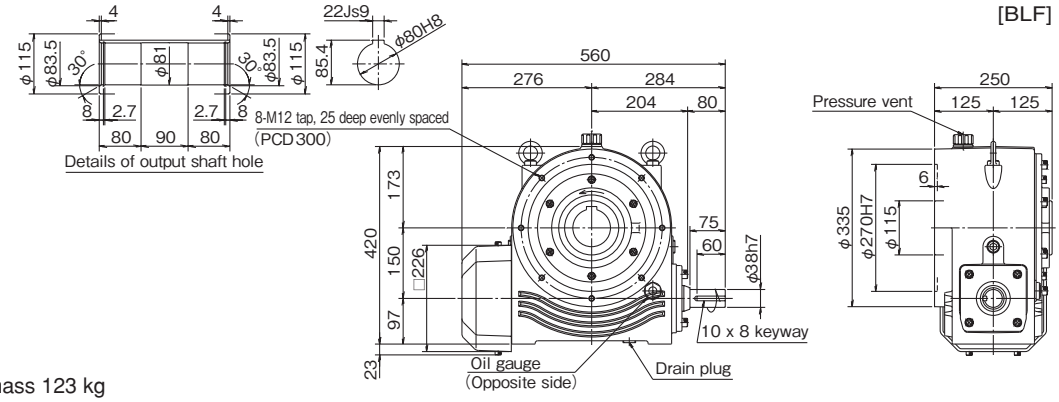
Dimensional Drawings TD150H

TD150H□□T



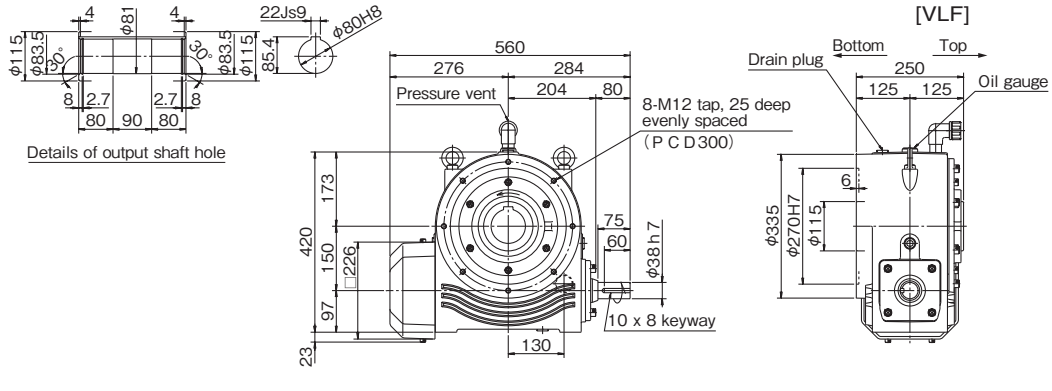
Estimated mass 127 kg

TD150H□□B



Estimated mass 123 kg

TD150H□□V



Estimated mass 125 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

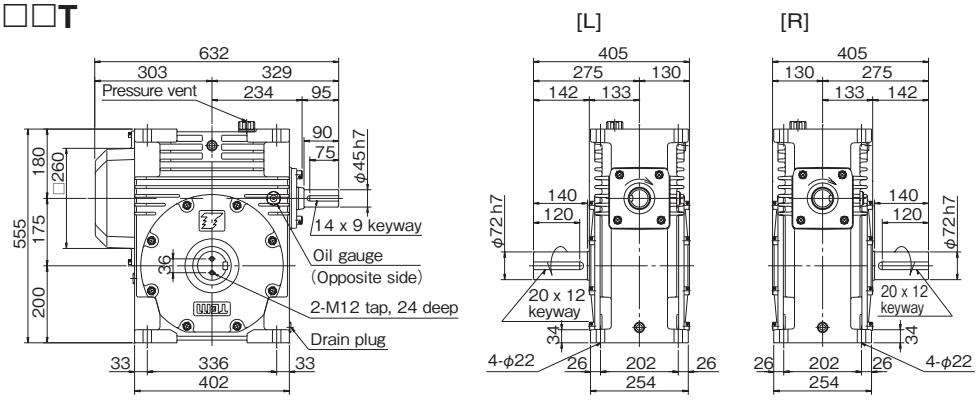
Refer to Page 131 for actual reduction ratios.

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.

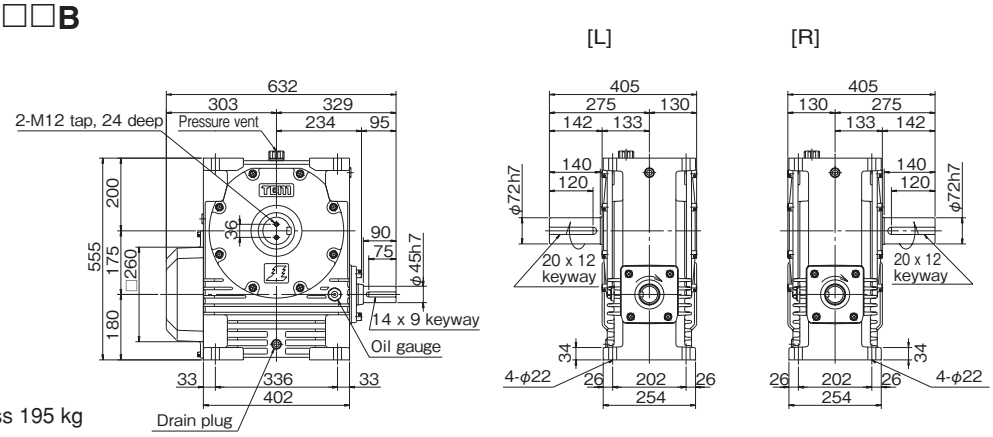
Dimensional Drawings TD175S

TD175S□□T



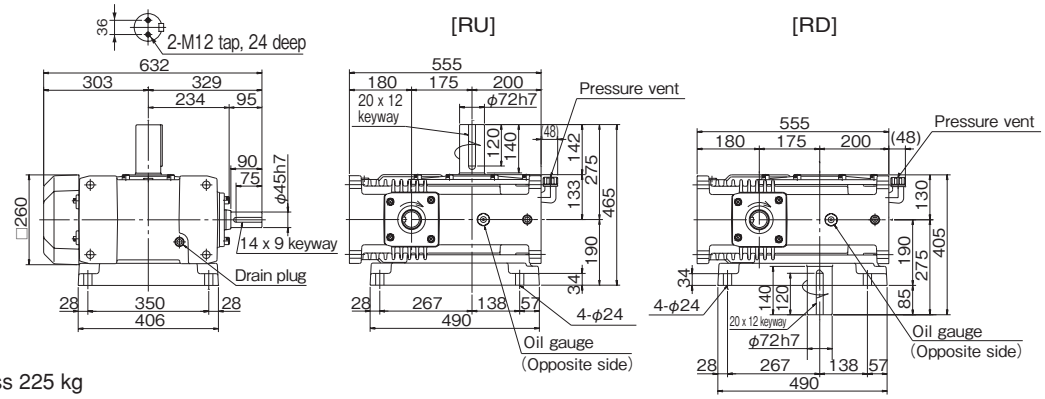
Estimated mass 201 kg

TD175S□□B



Estimated mass 195 kg

TD175S□□V



Estimated mass 225 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

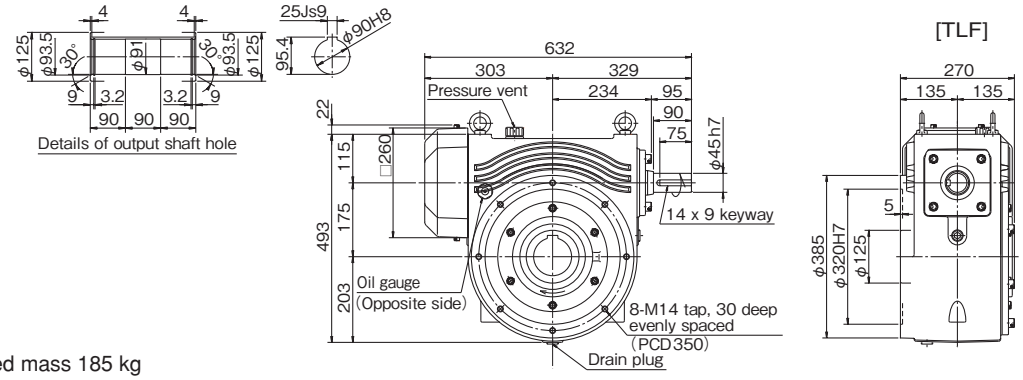
Refer to Page 131 for actual reduction ratios.

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.

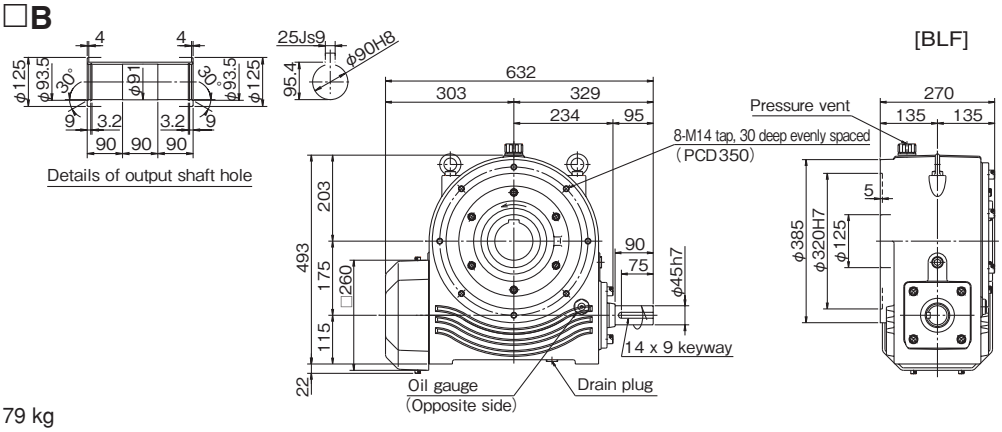
Dimensional Drawings TD175H

TD175H□□T



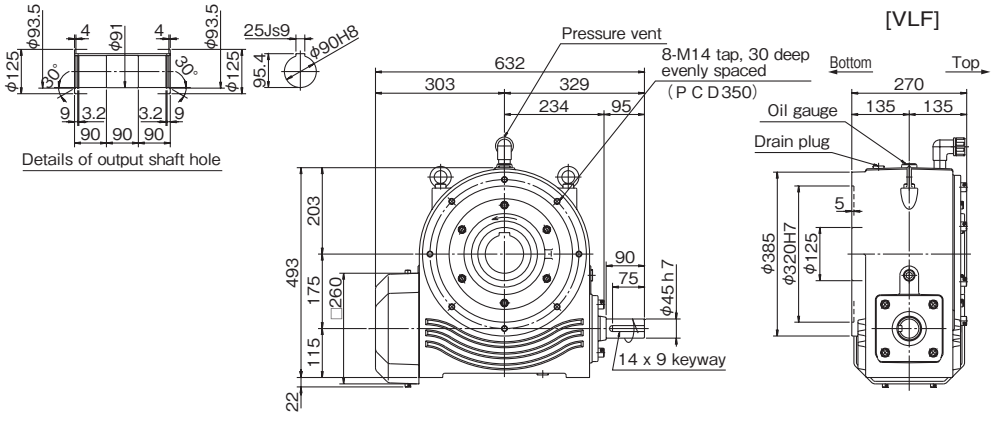
Estimated mass 185 kg

TD175H□□B



Estimated mass 179 kg

TD175H□□V



Estimated mass 182 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

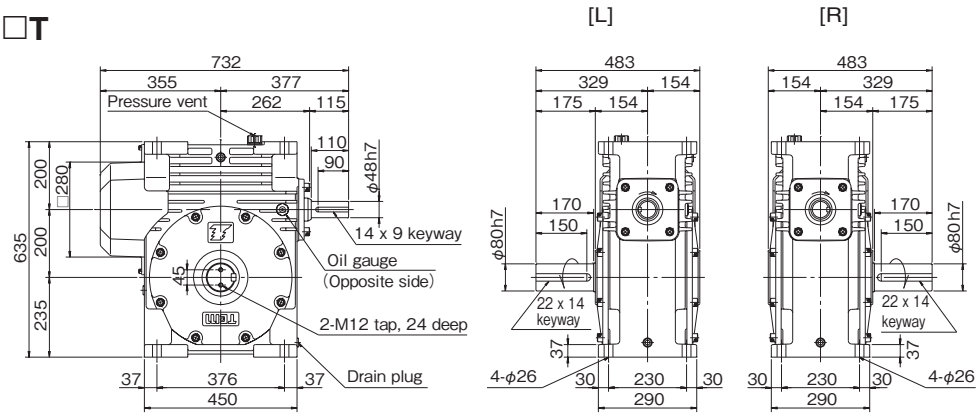
Refer to Page 131 for actual reduction ratios.

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.

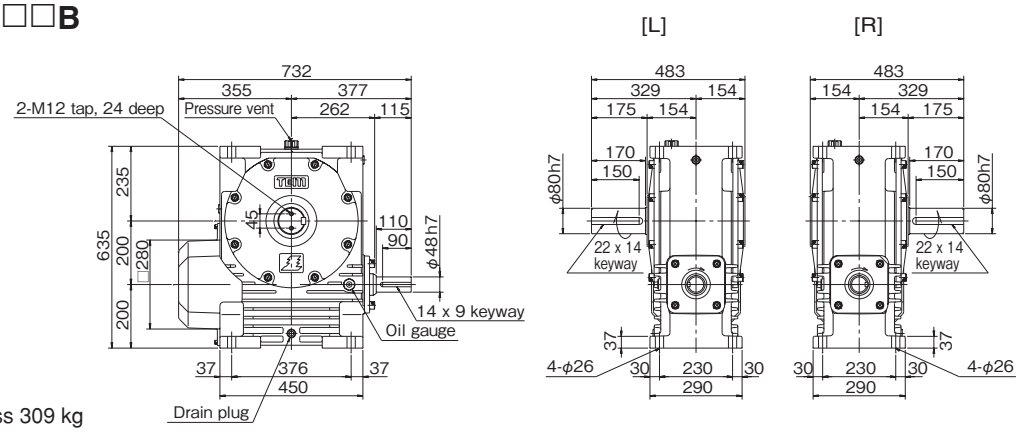
Dimensional Drawings TD200S

TD200S□□T



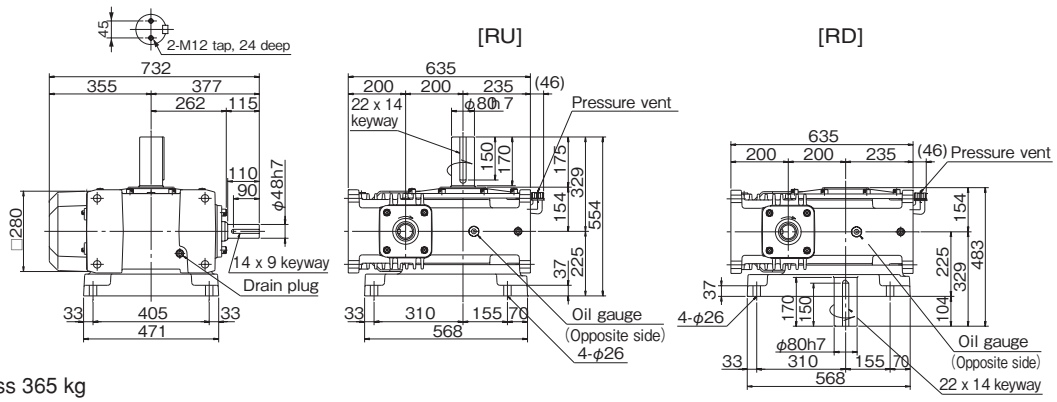
Estimated mass 321 kg

TD200S□□B



Estimated mass 309 kg

TD200S□□V



Estimated mass 365 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

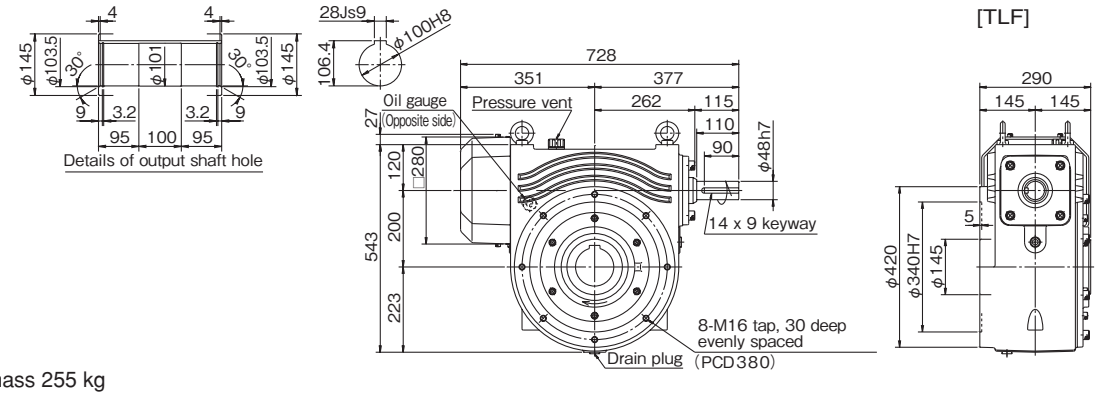
Refer to Page 131 for actual reduction ratios.

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.

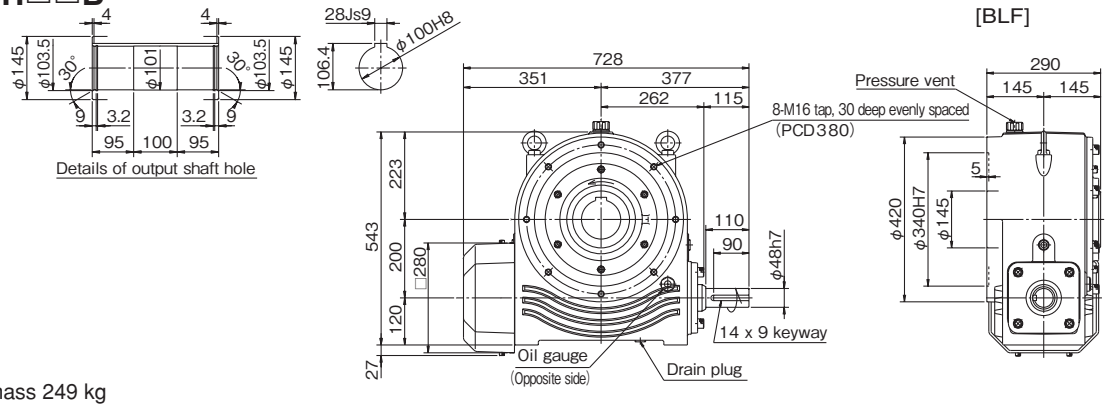
Dimensional Drawings TD200H

TD200H□□T



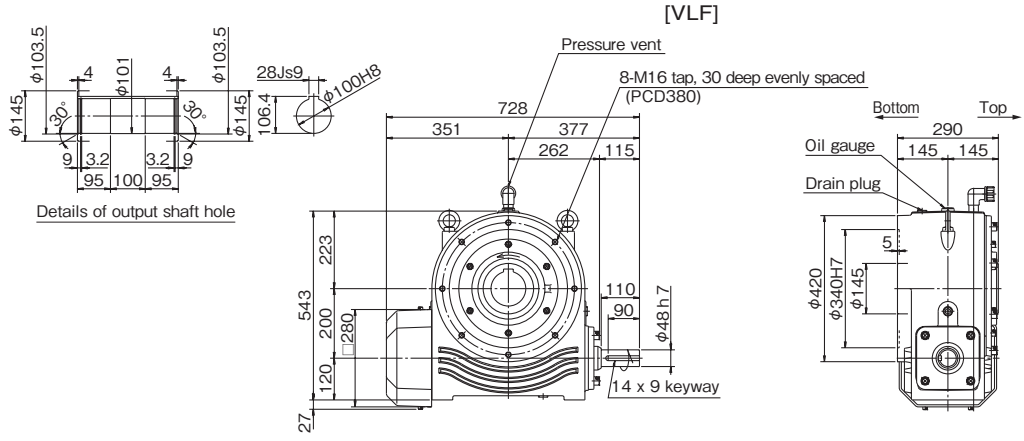
Estimated mass 255 kg

TD200H□□B



Estimated mass 249 kg

TD200H□□V



Estimated mass 252 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

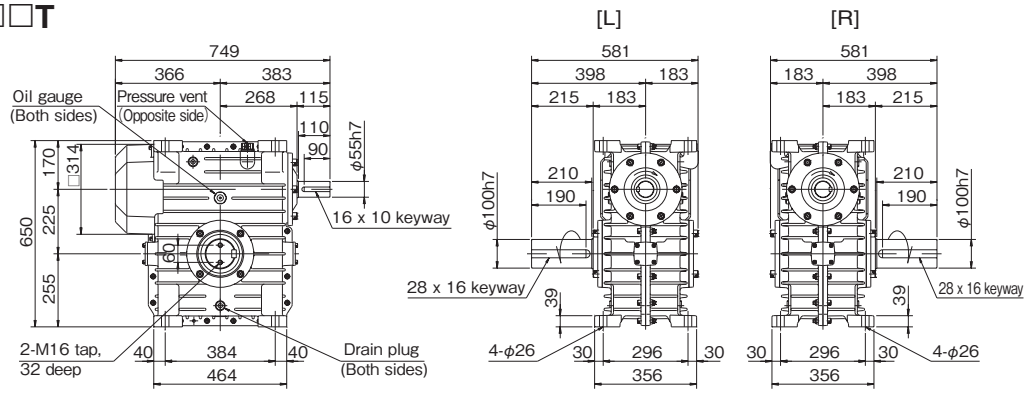
Refer to Page 131 for actual reduction ratios.

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.

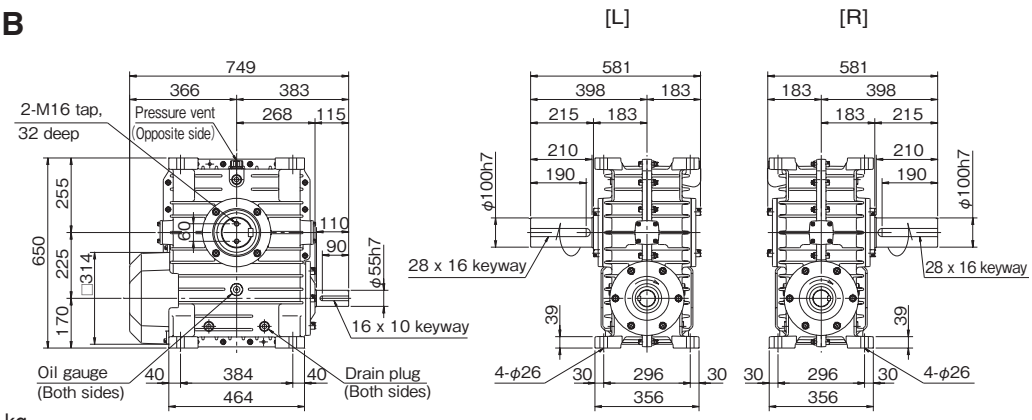
Dimensional Drawings TD225S

TD225S□□T



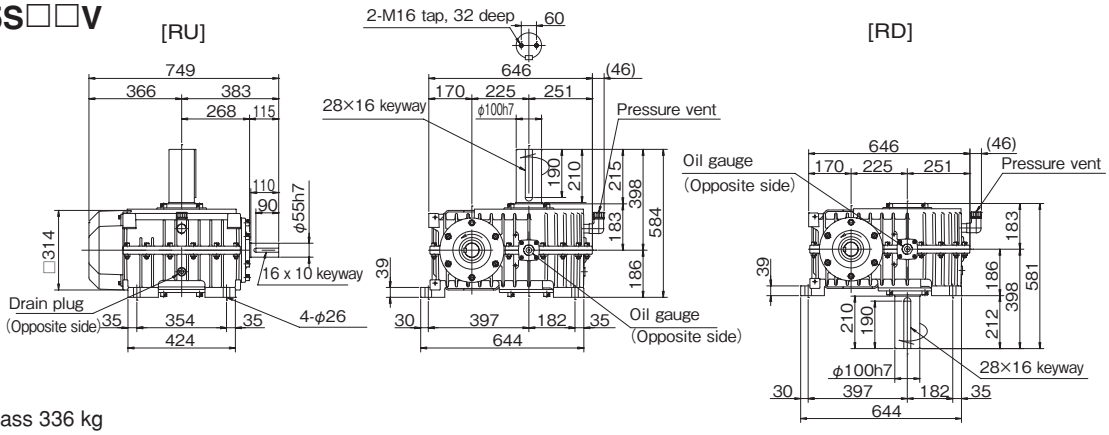
Estimated mass 346 kg

TD225S□□B



Estimated mass 331 kg

TD225S□□V



Estimated mass 336 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

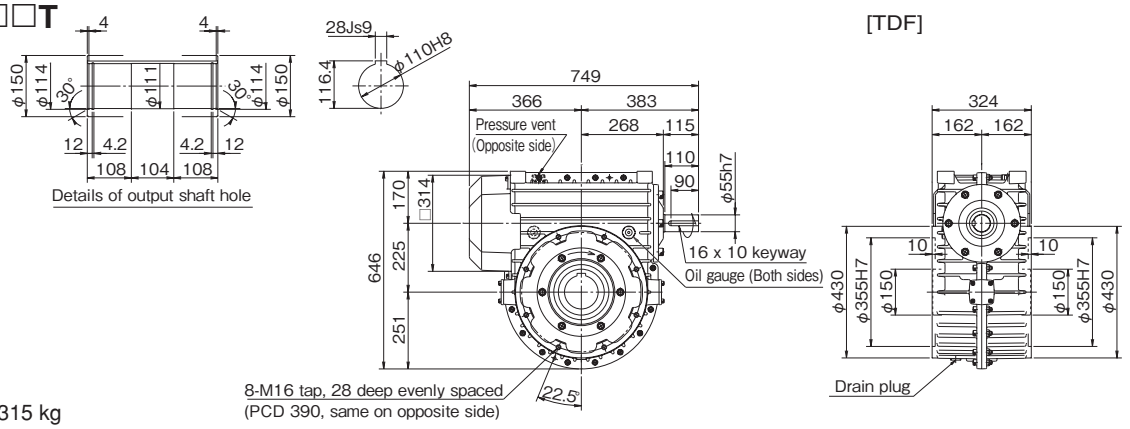
Refer to Page 131 for actual reduction ratios.

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}
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.

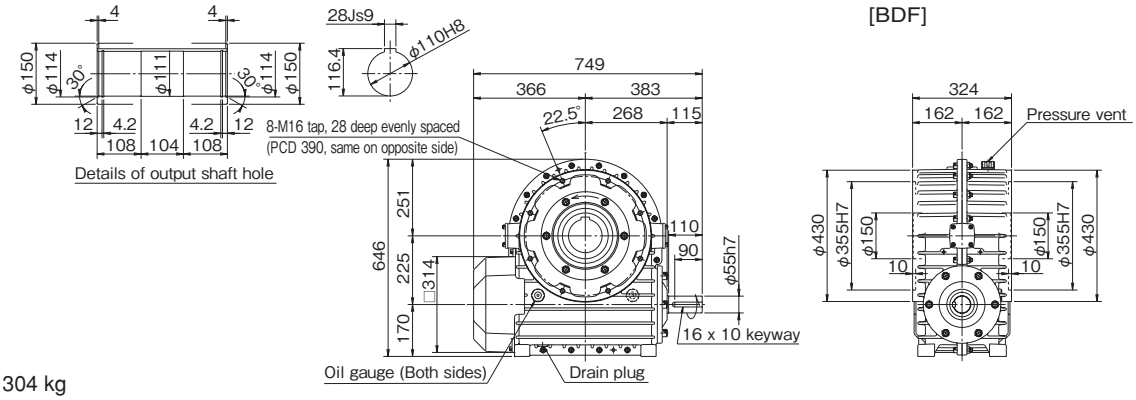
Dimensional Drawings TD225H

TD225H□□T



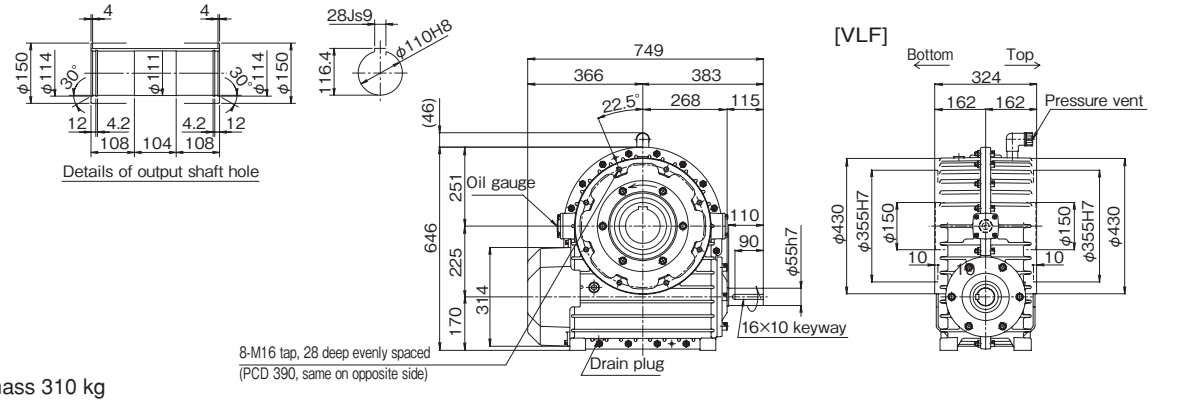
Estimated mass 315 kg

TD225H□□B



Estimated mass 304 kg

TD225H□□V



Estimated mass 310 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

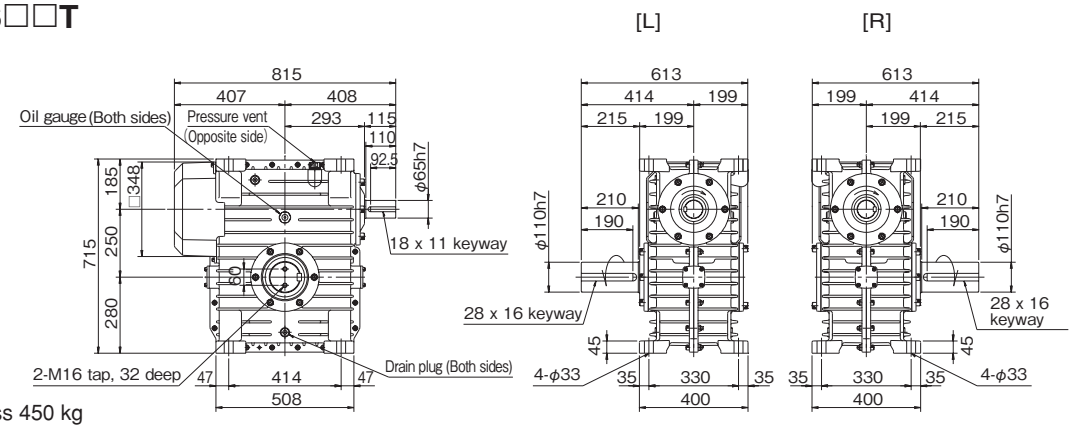
Refer to Page 131 for actual reduction ratios.

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.

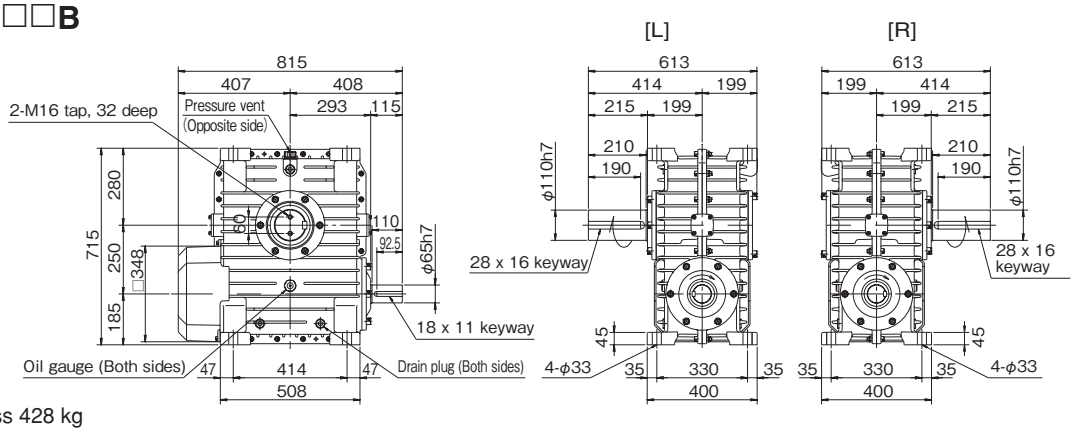
Dimensional Drawings TD250S

TD250S□□T



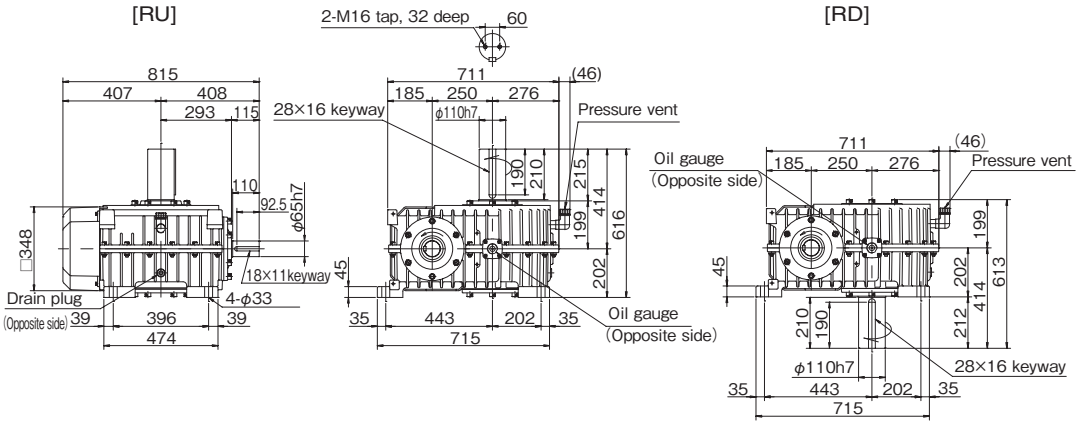
Estimated mass 450 kg

TD250S□□B



Estimated mass 428 kg

TD250S□□V



Estimated mass 418 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

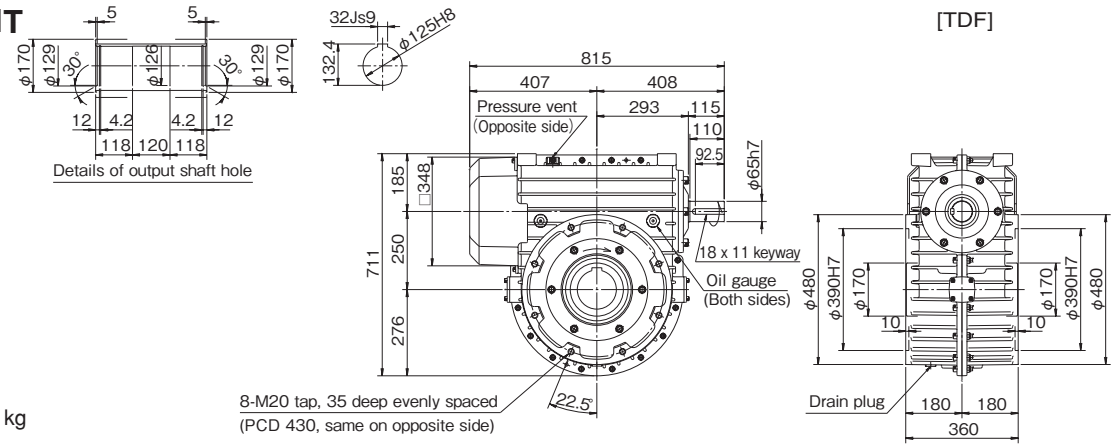
Refer to Page 131 for actual reduction ratios.

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	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.

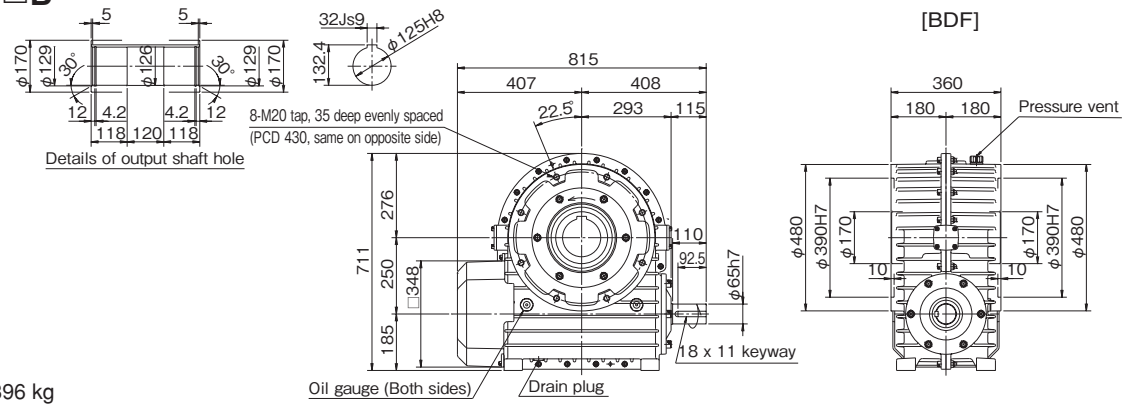
Dimensional Drawings TD250H

TD250H□□T



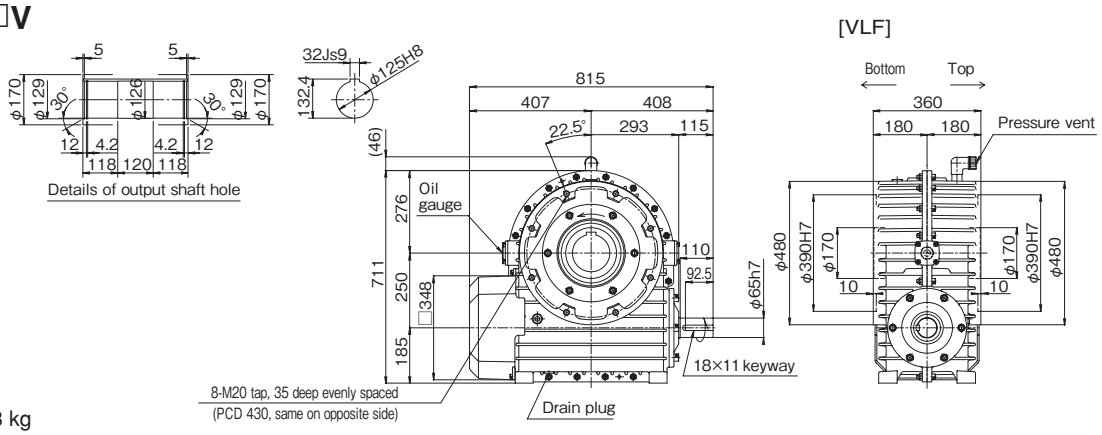
Estimated mass 410 kg

TD250H□□B



Estimated mass 396 kg

TD250H□□V



Estimated mass 403 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

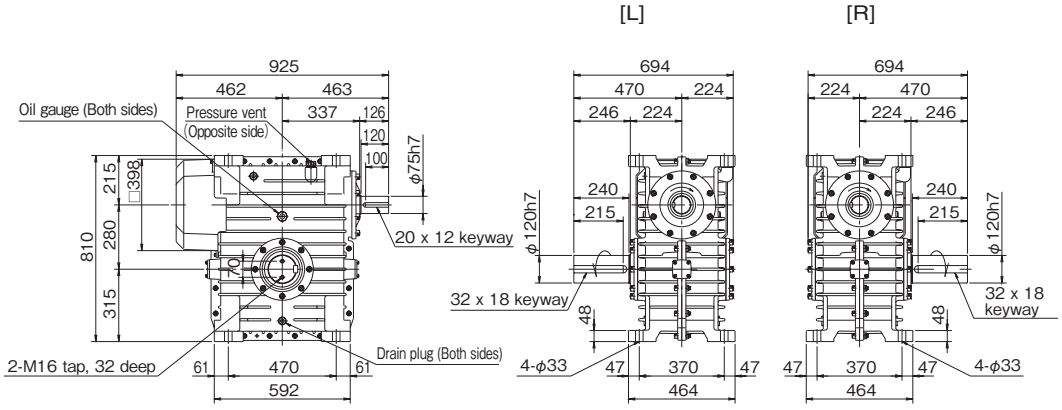
Refer to Page 131 for actual reduction ratios.

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.

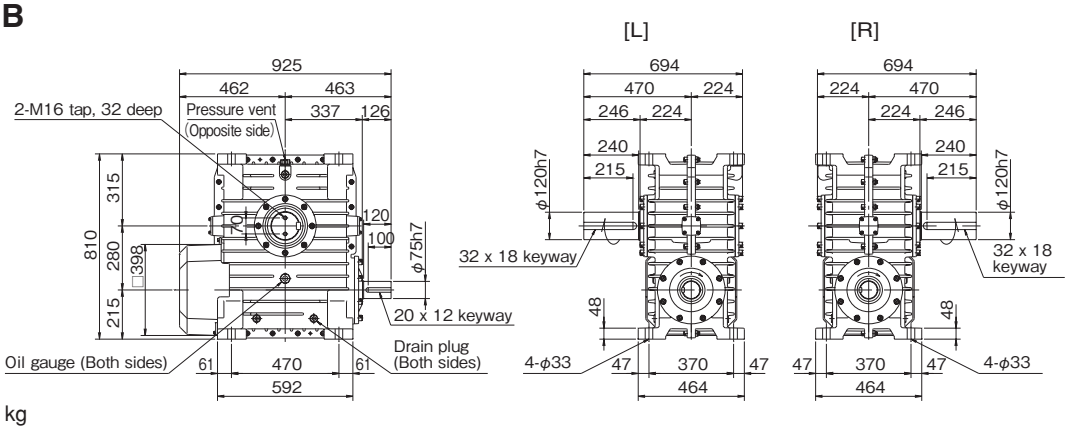
Dimensional Drawings TD280S

TD280S□□T



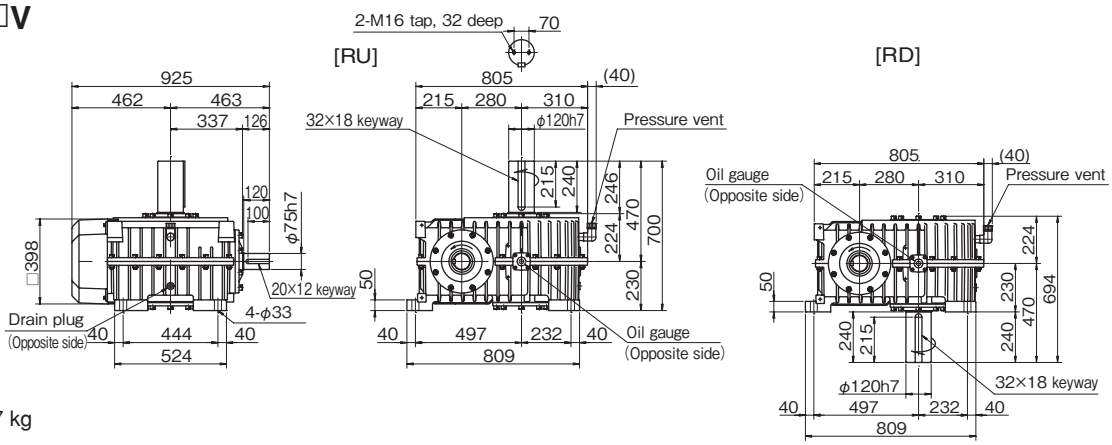
Estimated mass 632 kg

TD280S□□B



Estimated mass 601 kg

TD280S□□V



Estimated mass 587 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

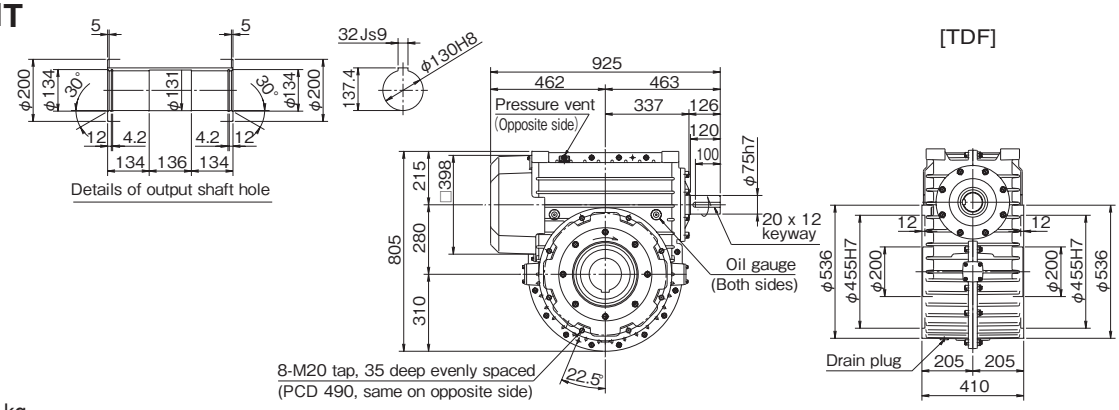
Refer to Page 131 for actual reduction ratios.

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.

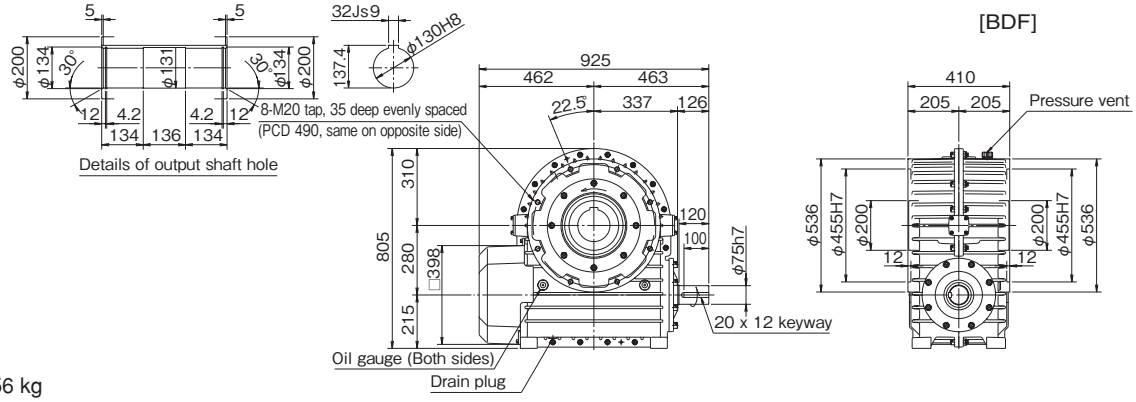
Dimensional Drawings TD280H

TD280H□□T



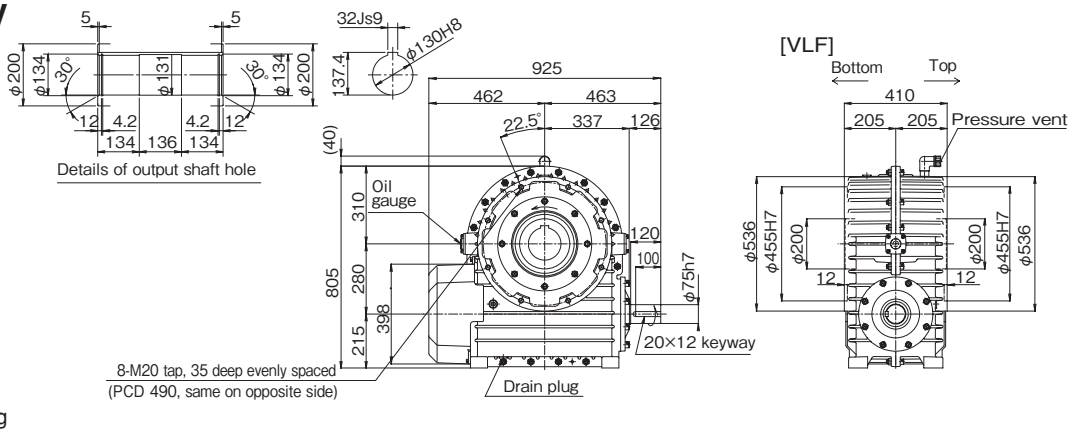
Estimated mass 576 kg

TD280H□□B



Estimated mass 556 kg

TD280H□□V



Estimated mass 566 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

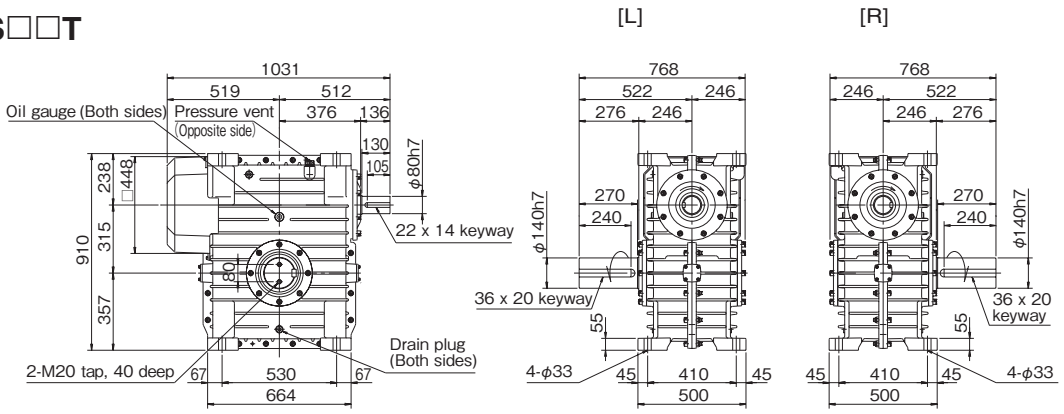
Refer to Page 131 for actual reduction ratios.

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.

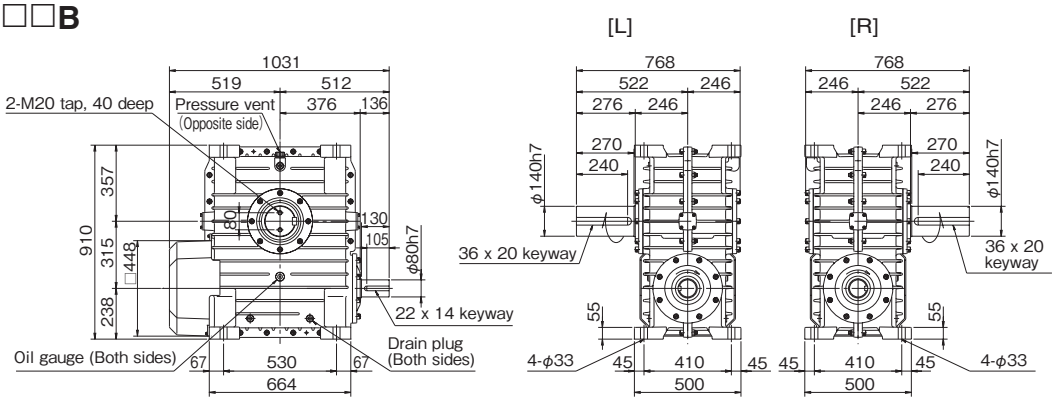
Dimensional Drawings TD315S

TD315S□□T



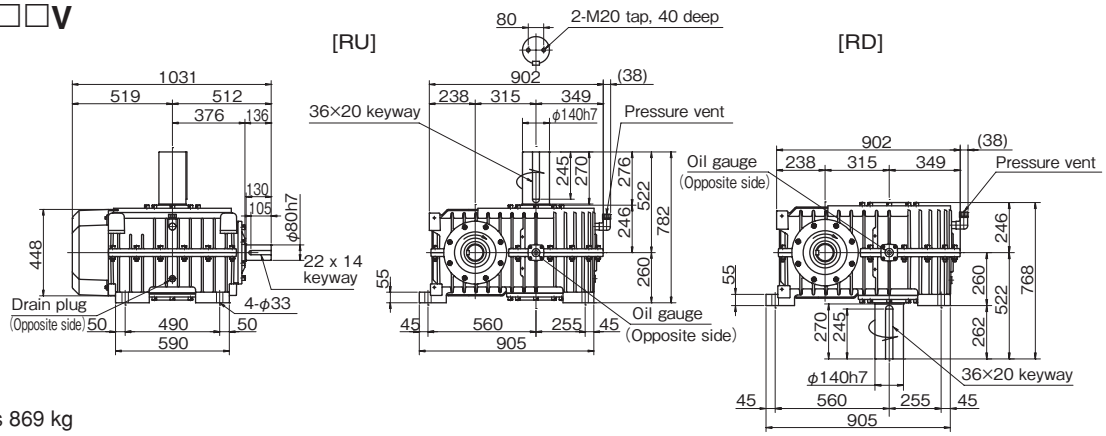
Estimated mass 907 kg

TD315S□□B



Estimated mass 861 kg

TD315S□□V



Estimated mass 869 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

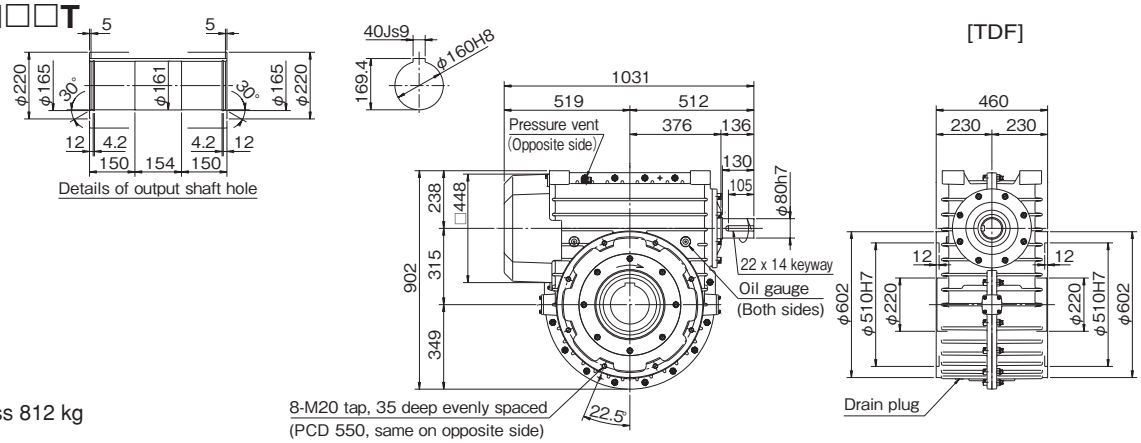
Refer to Page 131 for actual reduction ratios.

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.

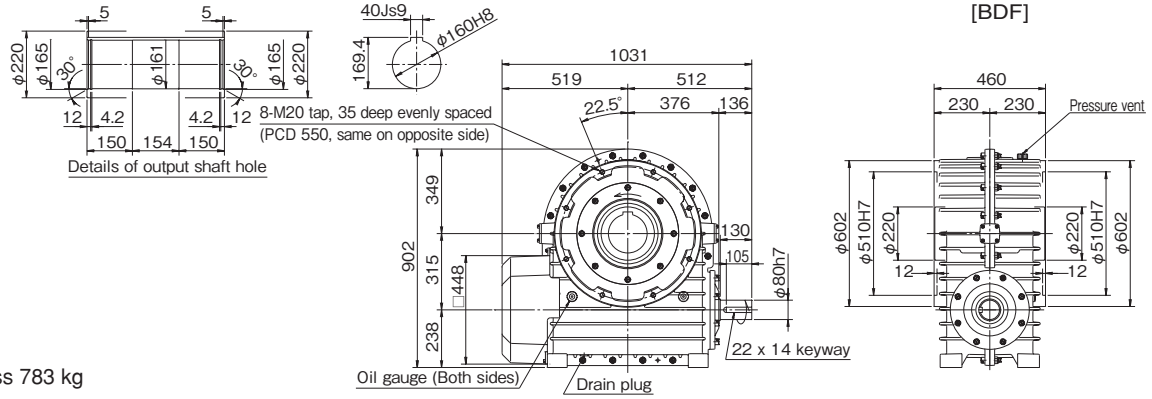
Dimensional Drawings TD315H

TD315H□□T



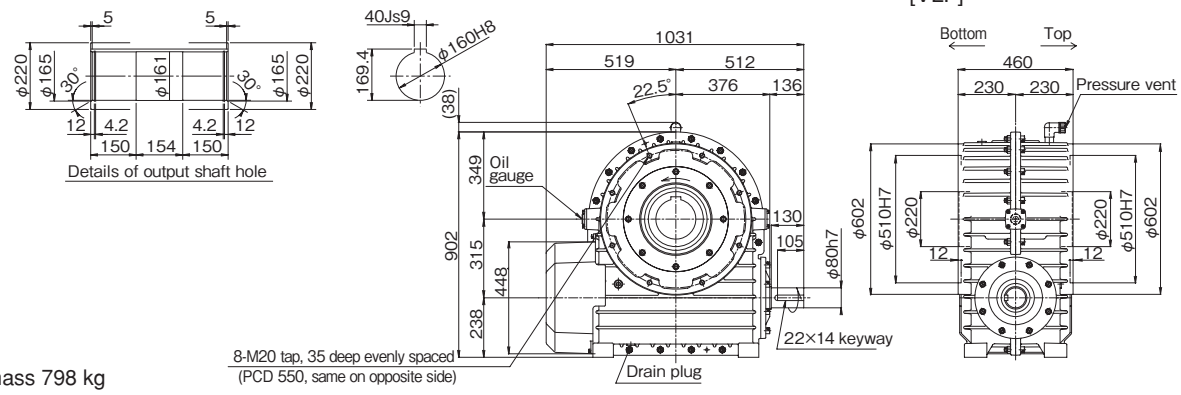
Estimated mass 812 kg

TD315H□□B



Estimated mass 783 kg

TD315H□□V



Estimated mass 798 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Refer to Page 131 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 Gear Reducers

(Nominal reduction ratio: 1/100 to 1/3600)

Transfer Capacity Table .....151 - 154

Technical Data .....155 - 156

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

Dimensional Drawings .....157 - 172

Transfer Capacity Table

Refer to Page 155 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 155 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 155 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 155 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 213 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)

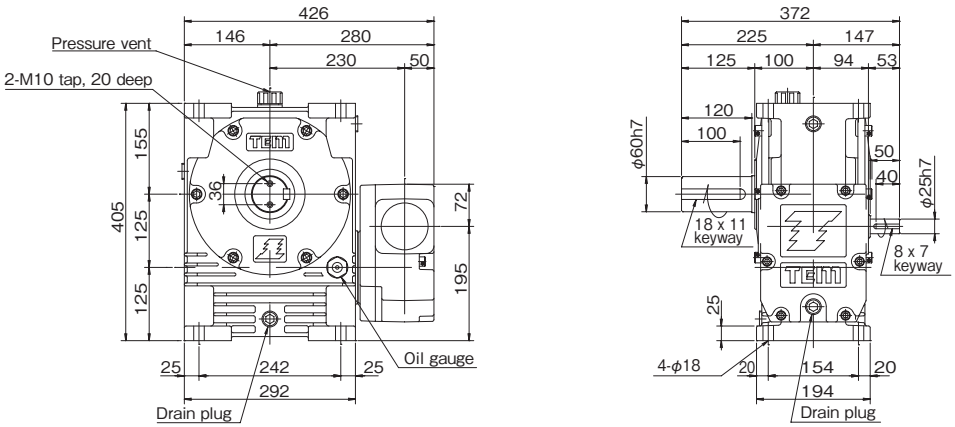
Moment of inertia on input shaft {GD²}: kg·m² {kgf·m²}

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

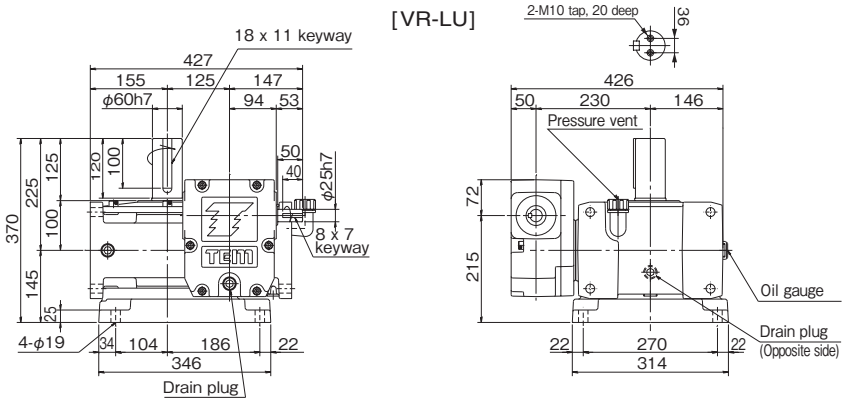
[BR-L]



Estimated mass 98 kg

TD125S□□V

[VR-LU]



Estimated mass 109 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

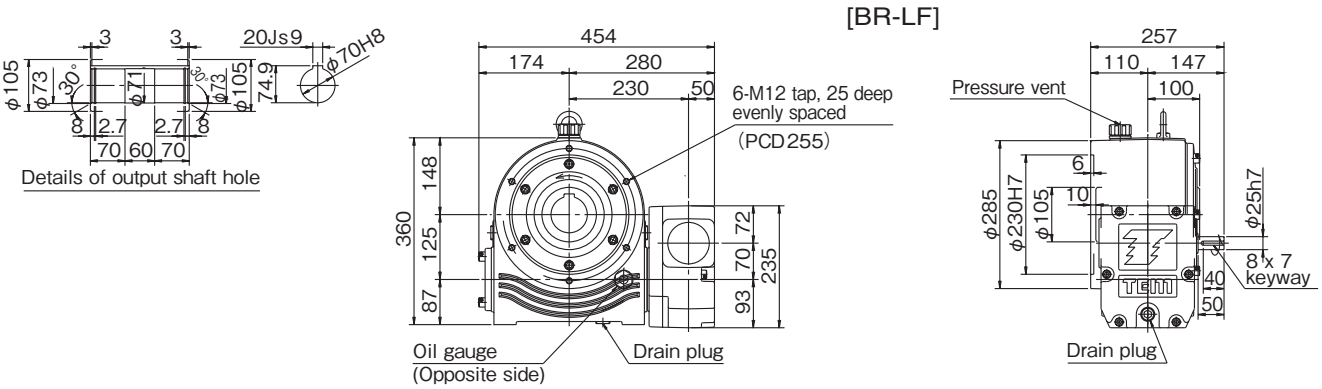
Transfer Capacity Table

Refer to Page 155 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}

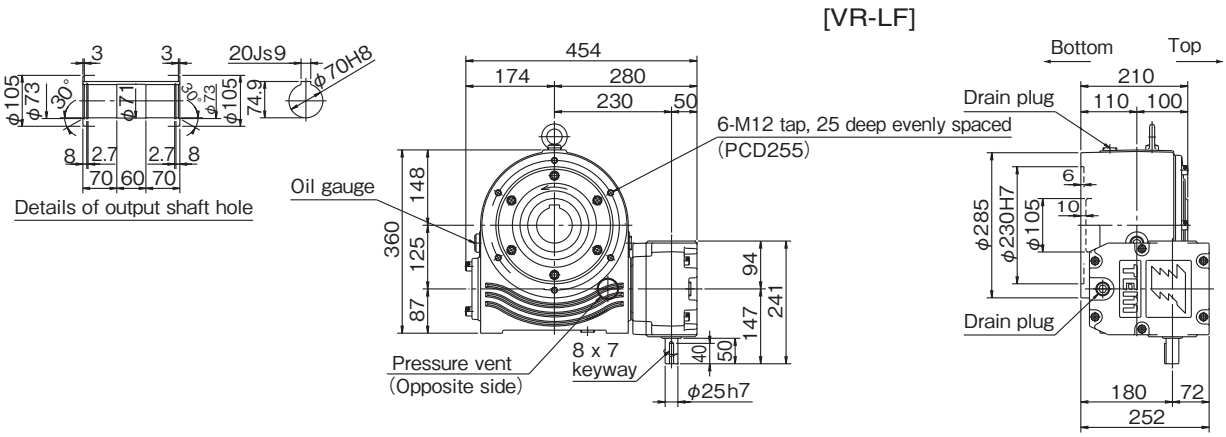
Dimensional Drawings TD125H

TD125H□□B



Estimated mass 89 kg

TD125H□□V



Estimated mass 90 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

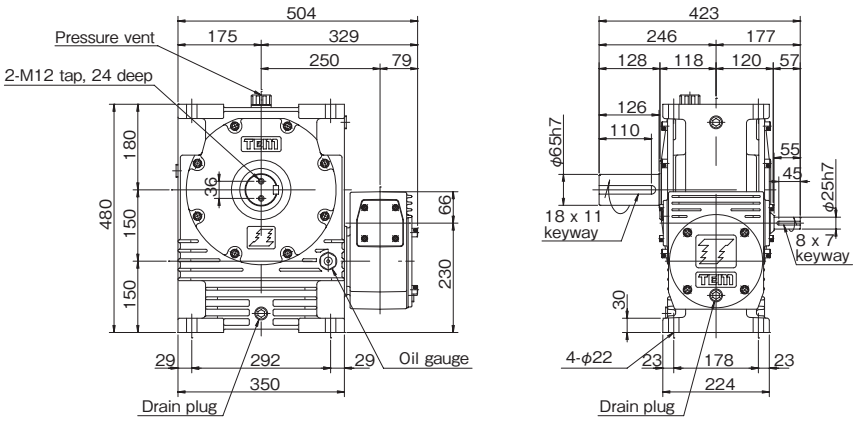
Refer to Page 155 for actual reduction ratios.

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

TD150S□□B

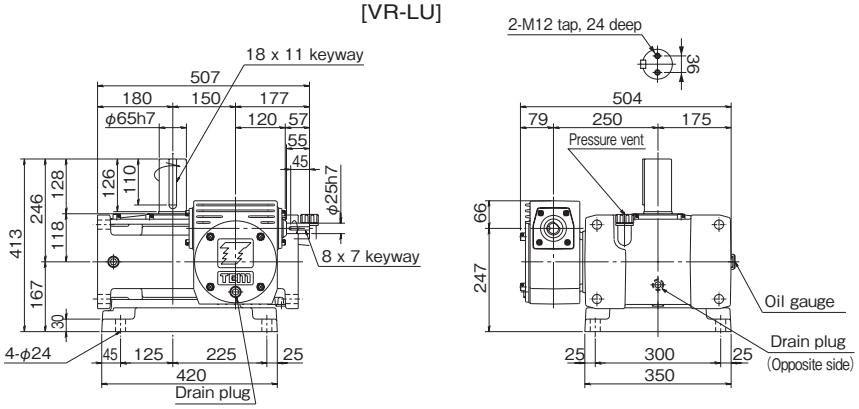
[BR-L]



Estimated mass 154 kg

TD150S□□V

[VR-LU]



Estimated mass 182 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

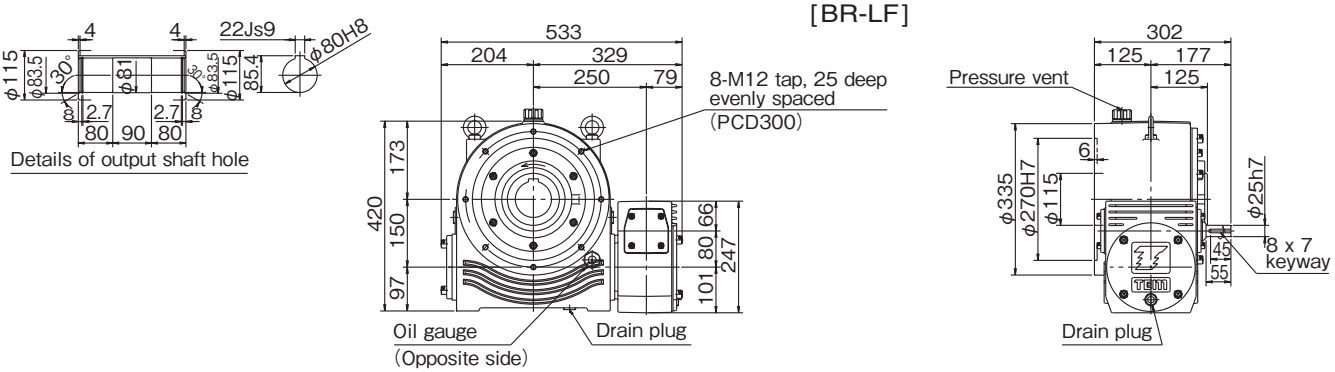
Transfer Capacity Table

Refer to Page 155 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}

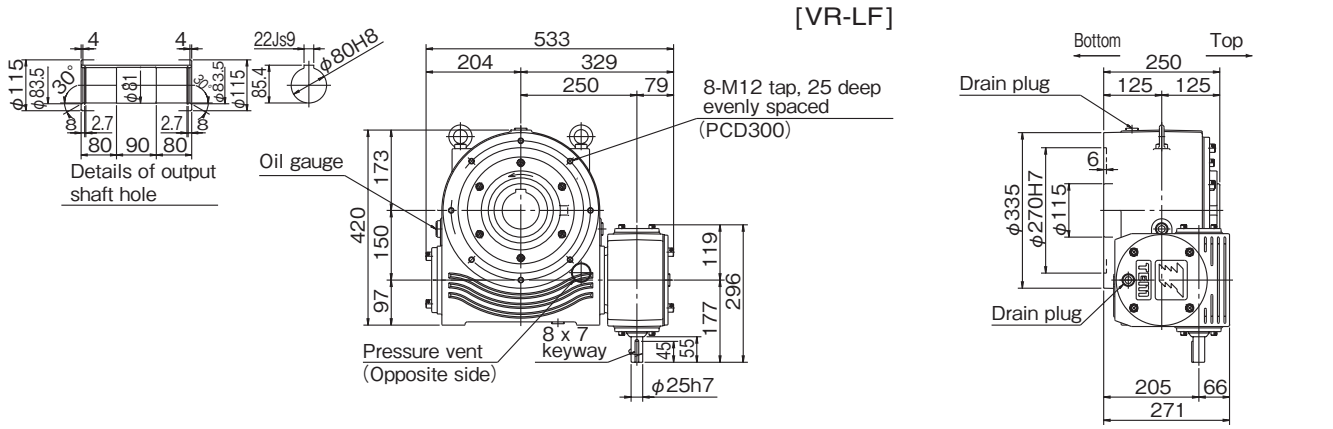
Dimensional Drawings TD150H

TD150H□□B



Estimated mass 146 kg

TD150H□□V



Estimated mass 148 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

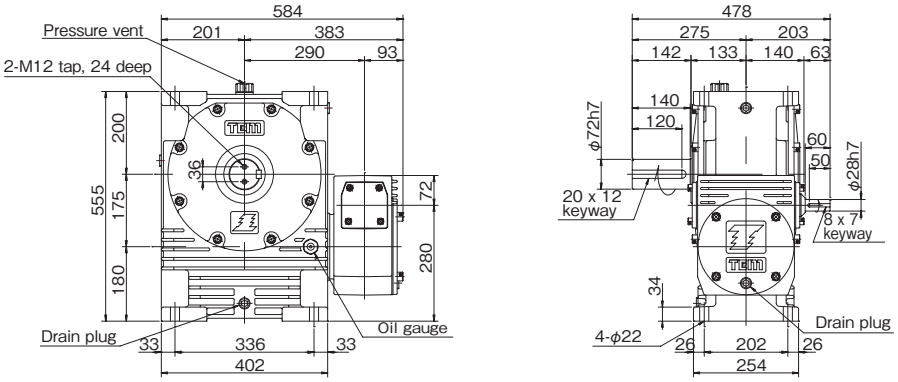
Refer to Page 155 for actual reduction ratios.

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

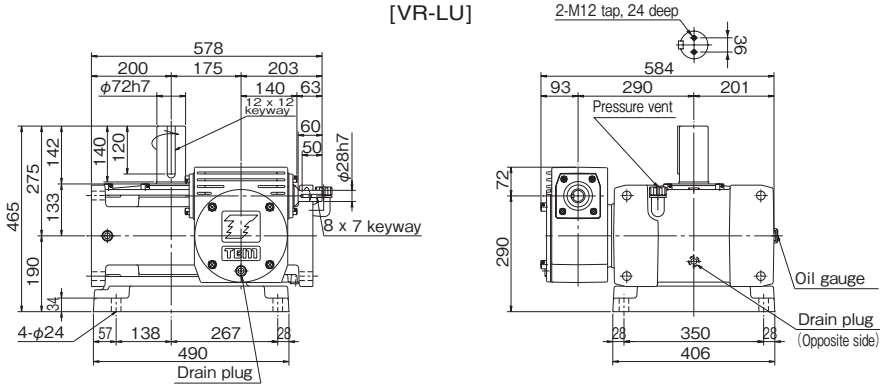
[BR-L]



Estimated mass 242 kg

TD175S□□V

[VR-LU]



Estimated mass 264 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

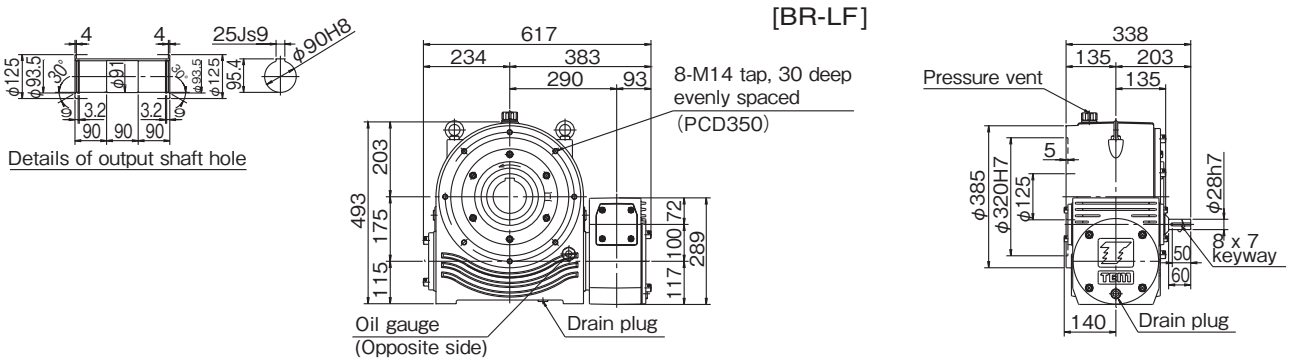
Transfer Capacity Table

Refer to Page 155 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}

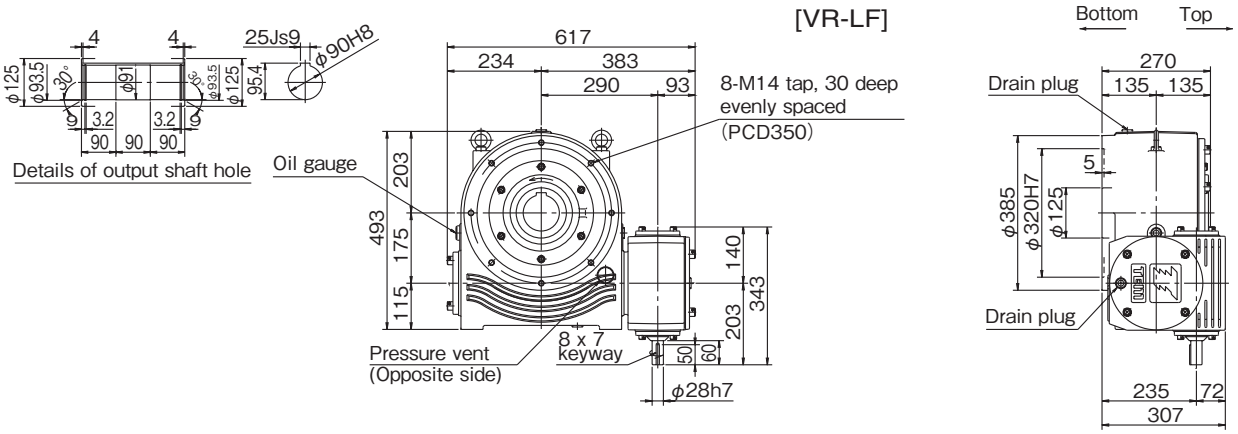
Dimensional Drawings TD175H

TD175H□□B



Estimated mass 219 kg

TD175H□□V



Estimated mass 222 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

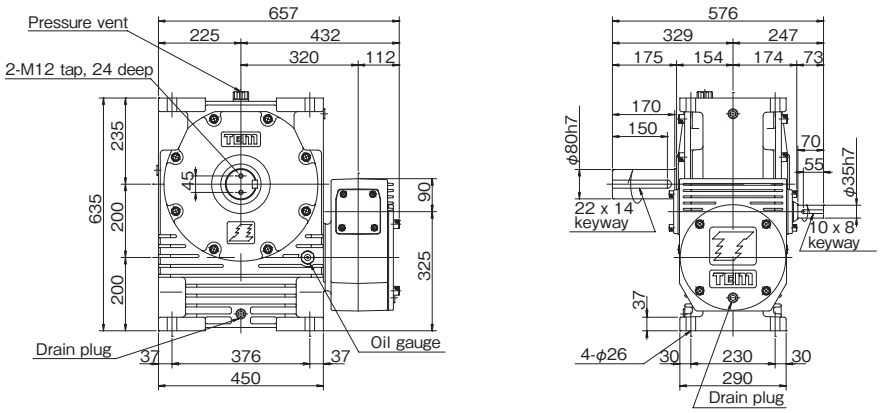
Refer to Page 155 for actual reduction ratios.

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

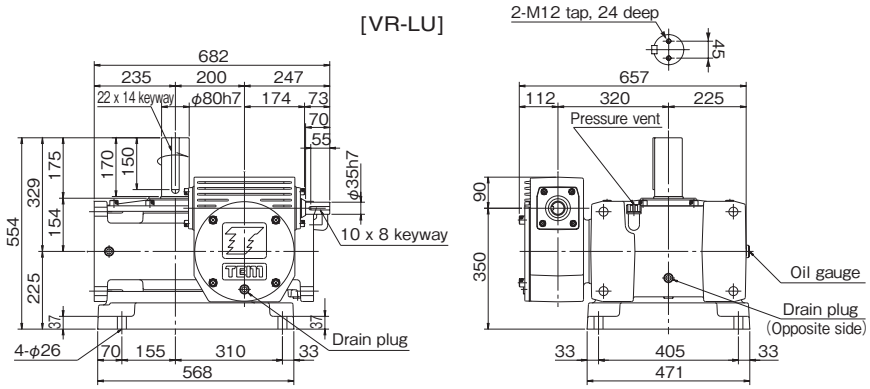
[BR-L]



Estimated mass 407 kg

TD200S□□V

[VR-LU]



Estimated mass 462 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

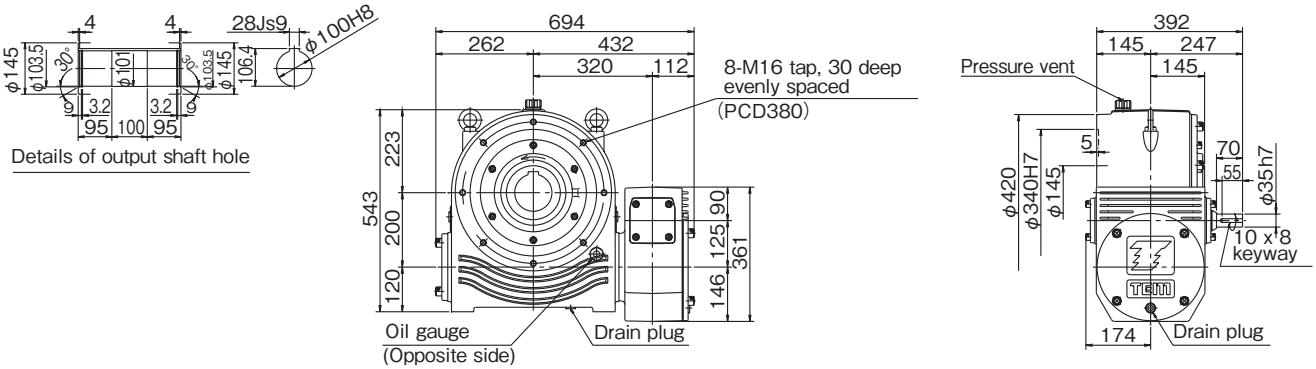
Refer to Page 155 for actual reduction ratios.

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

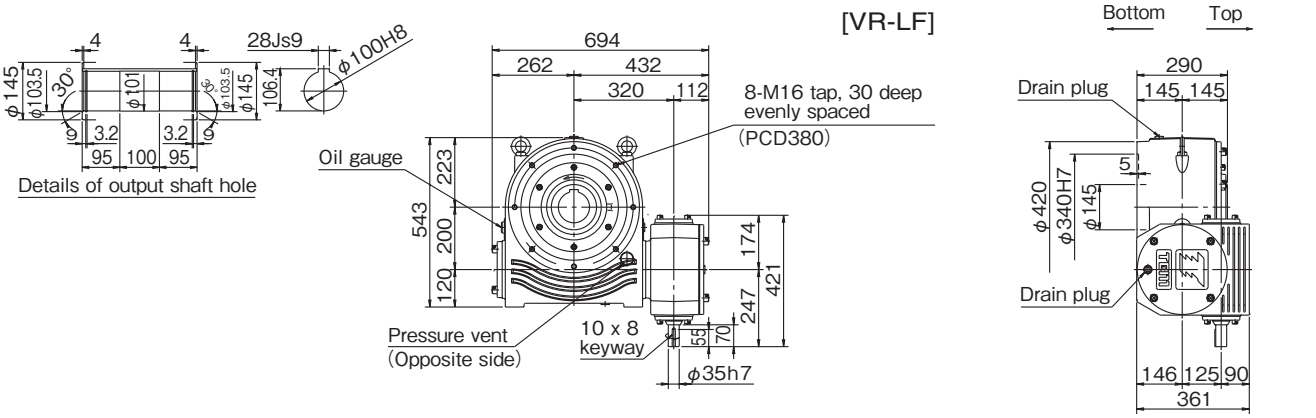
[BR-LF]



Estimated mass 327 kg

TD200H□□V

[VR-LF]



Estimated mass 330 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

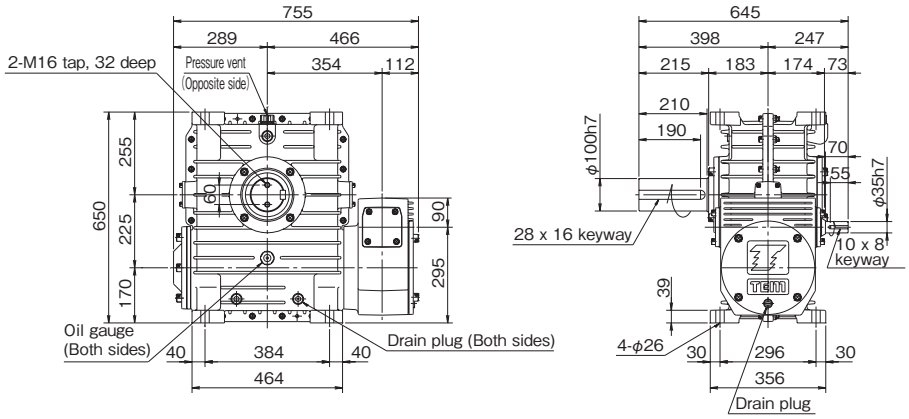
Refer to Page 155 for actual reduction ratios.

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

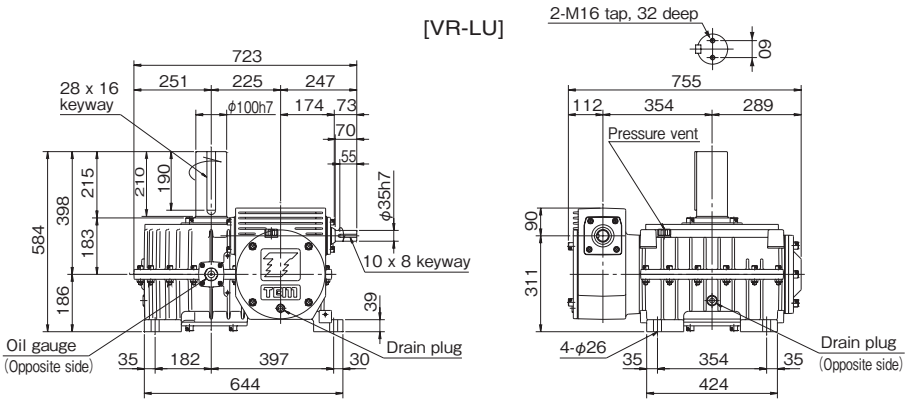
[BR-L]



Estimated mass 415 kg

TD225S□□V

[VR-LU]



Estimated mass 420 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

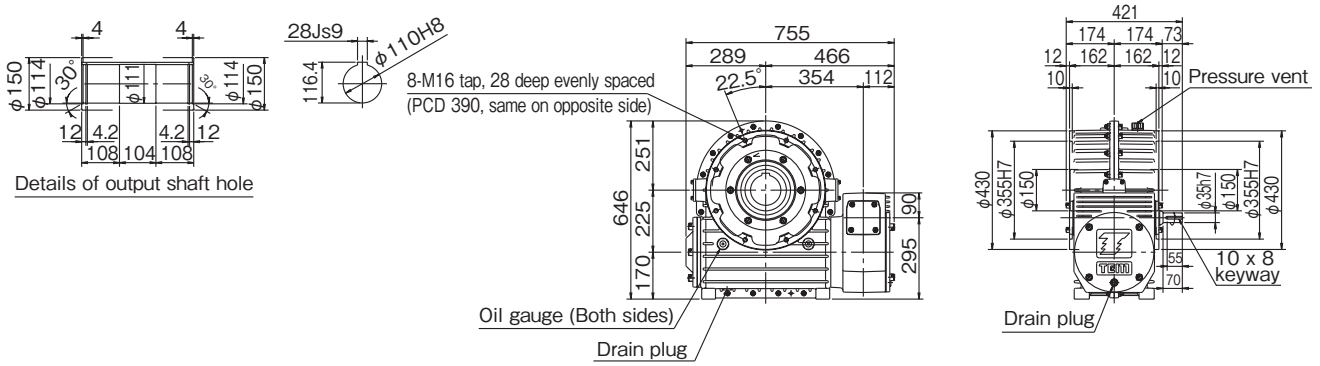
Transfer Capacity Table

Refer to Page 155 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

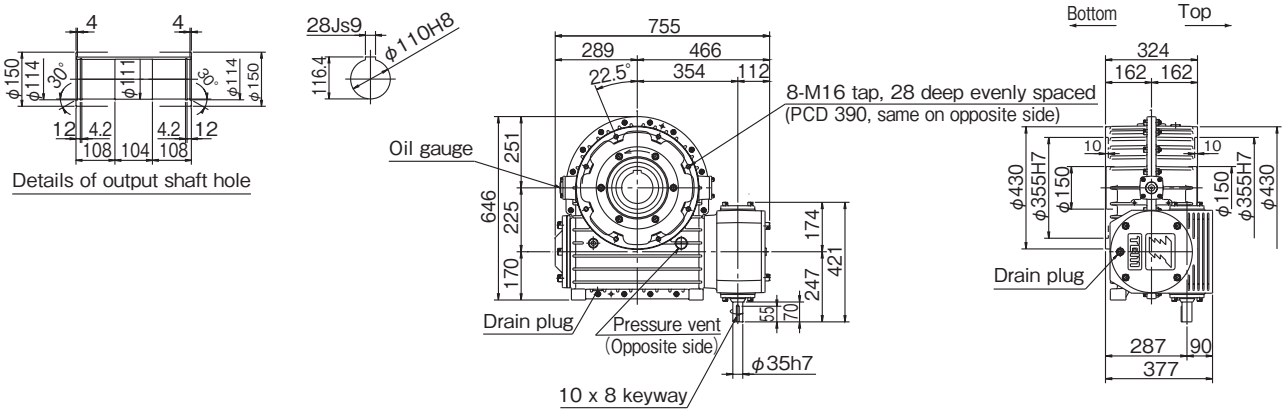
TD225H□□B



Estimated mass 388 kg

TD225H□□V

[VR-LF]



Estimated mass 394 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

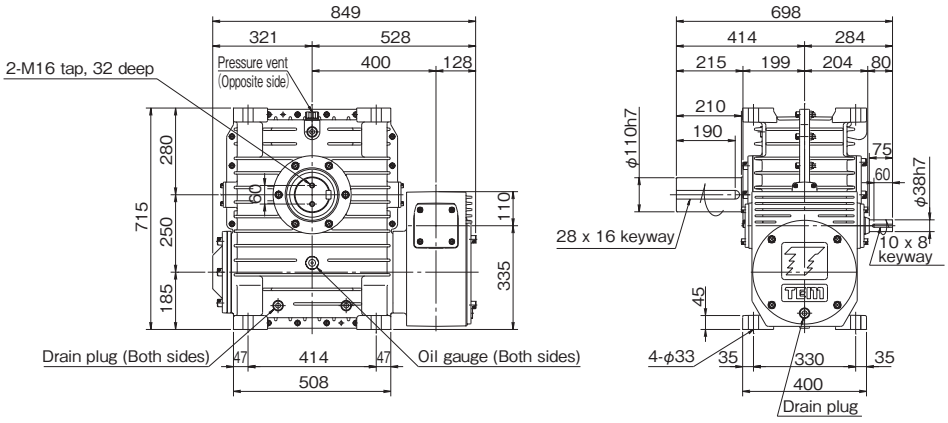
Refer to Page 155 for actual reduction ratios.

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

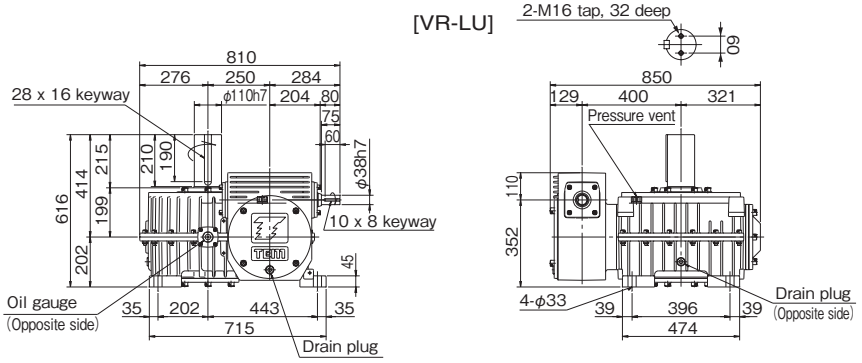
[BR-L]



Estimated mass 554 kg

TD250S□□V

[VR-LU]



Estimated mass 544 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

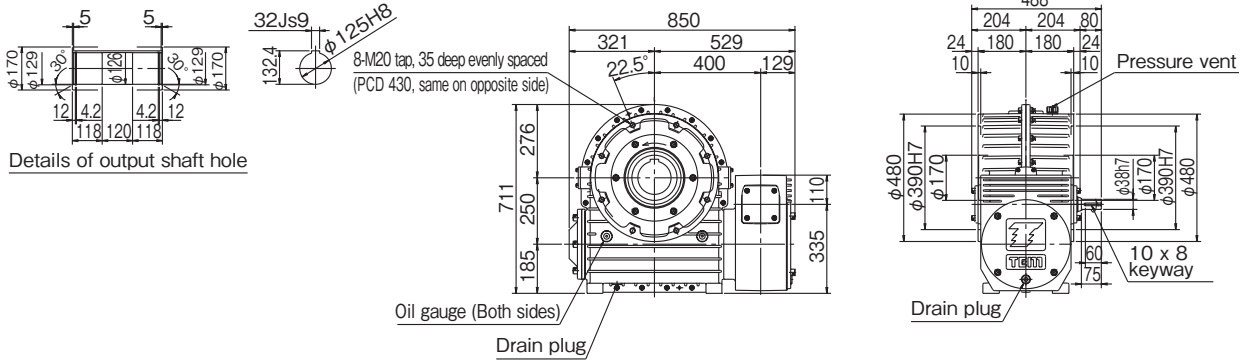
Transfer Capacity Table

Refer to Page 155 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}

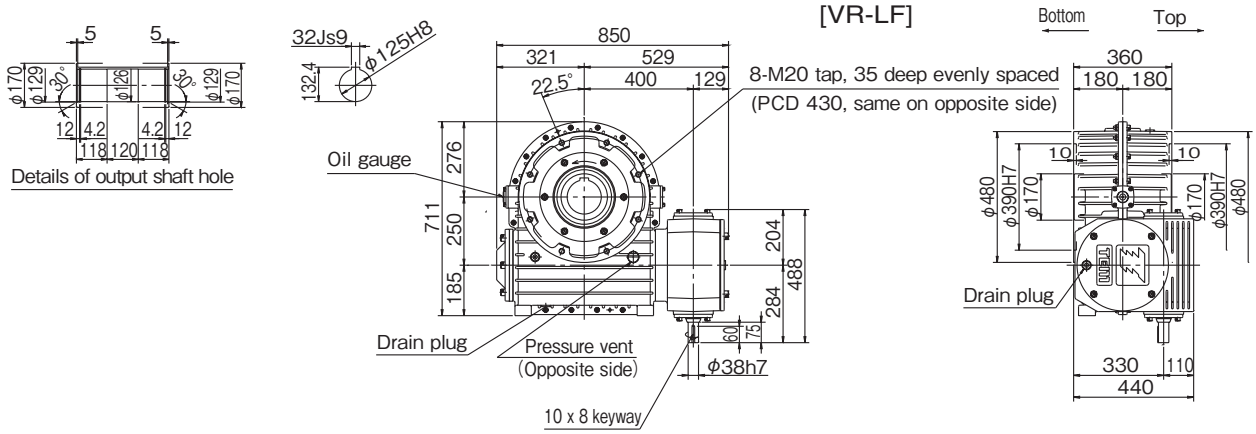
Dimensional Drawings TD250H

TD250H□□B



Estimated mass 522 kg

TD250H□□V



Estimated mass 529 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

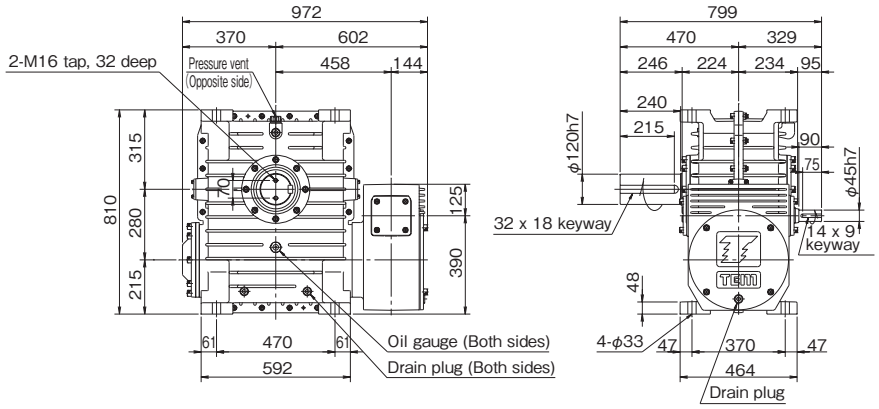
Refer to Page 155 for actual reduction ratios.

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	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

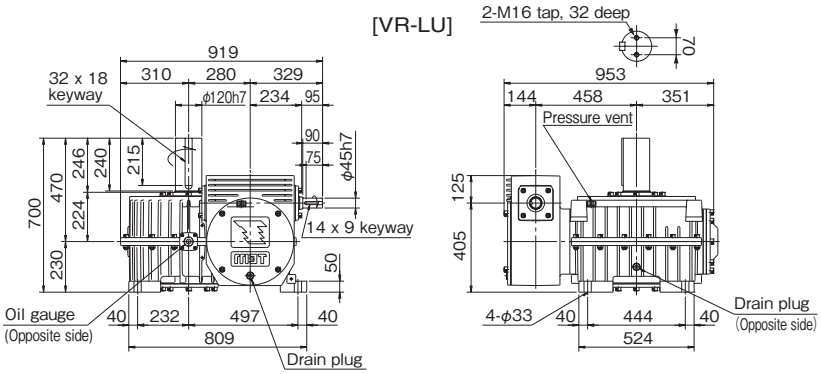
[BR-L]



Estimated mass 793 kg

TD280S□□V

[VR-LU]



Estimated mass 779 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

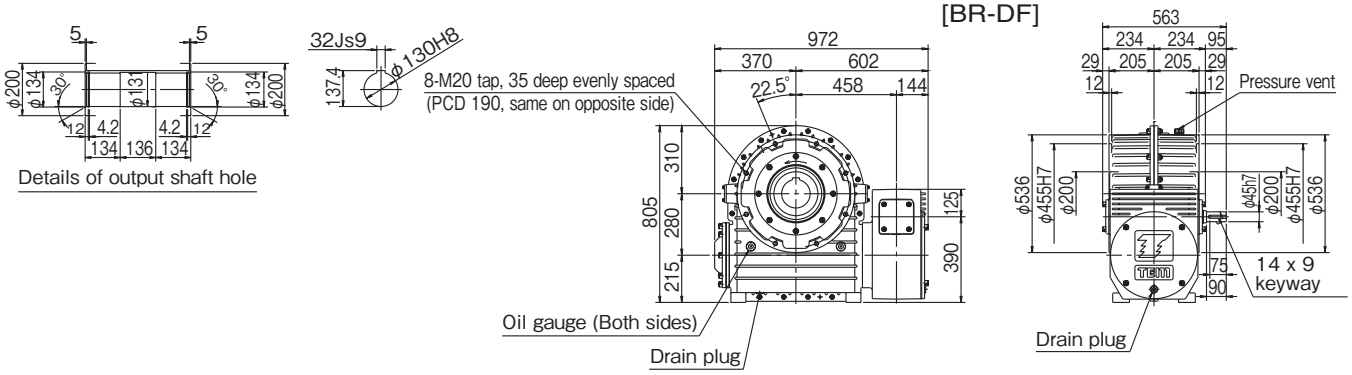
Transfer Capacity Table

Refer to Page 155 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}

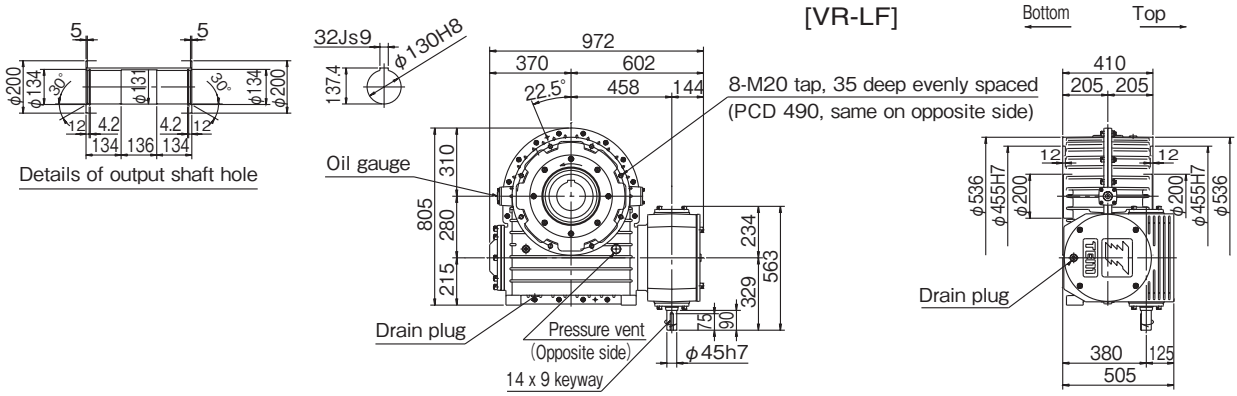
Dimensional Drawings TD280H

TD280H□□B



Estimated mass 748 kg

TD280H□□V



Estimated mass 758 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

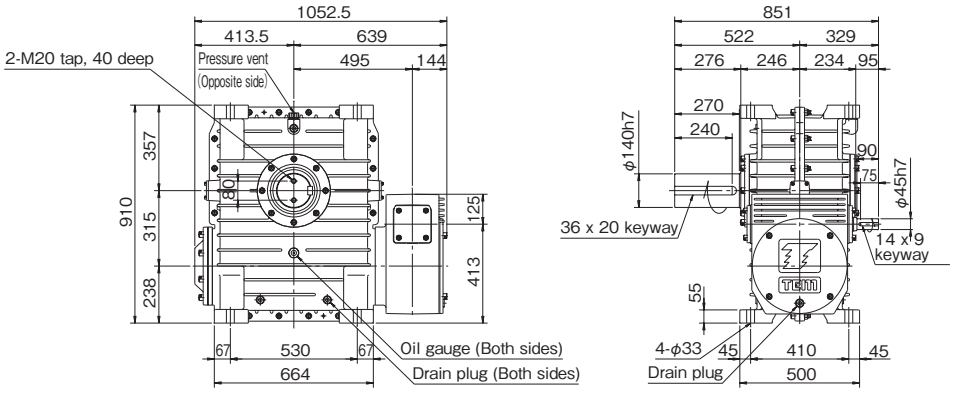
Refer to Page 155 for actual reduction ratios.

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

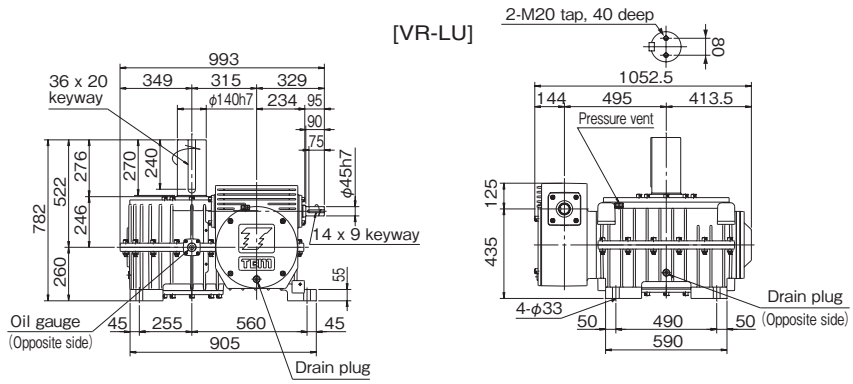
[BR-L]



Estimated mass 1053 kg

TD315S□□V

[VR-LU]



Estimated mass 1061 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

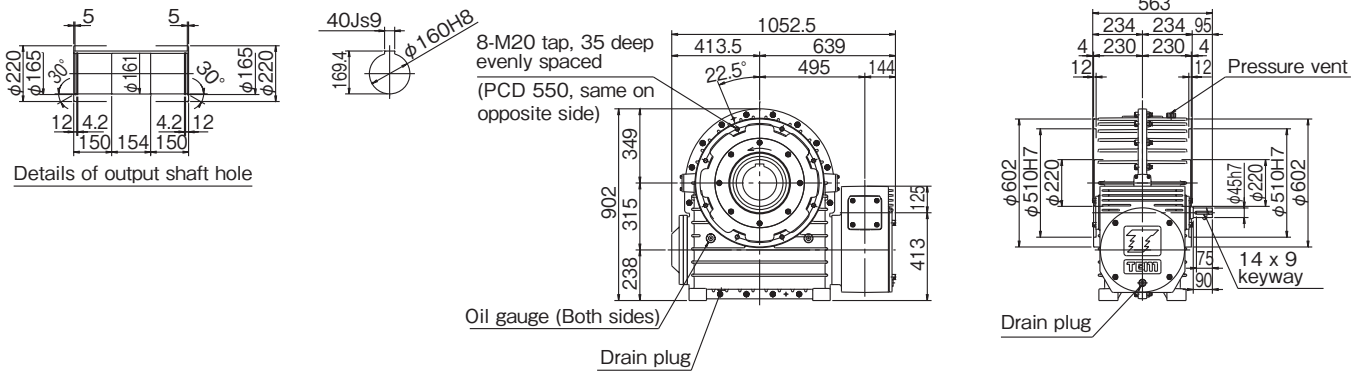
Transfer Capacity Table

Refer to Page 155 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}

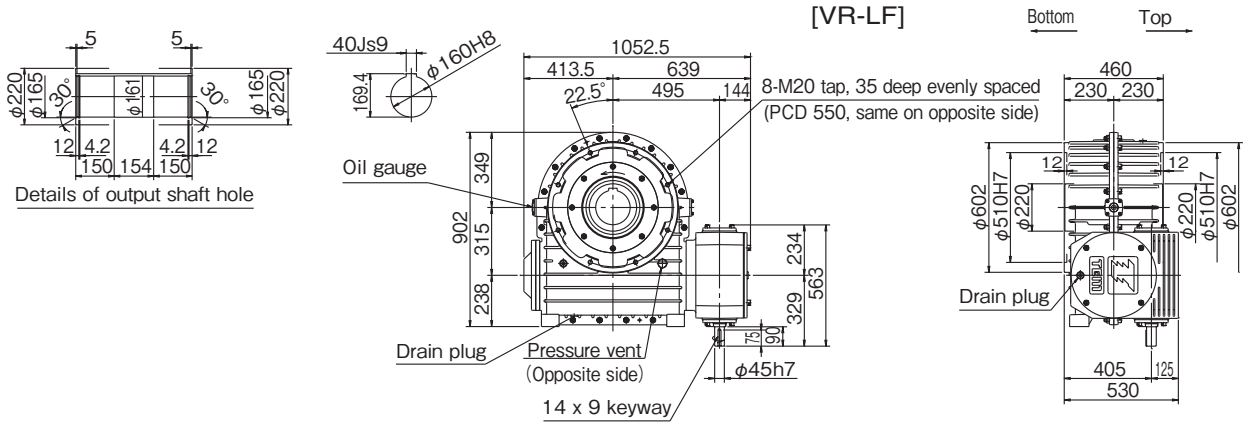
Dimensional Drawings TD315H

TD315H□□B



Estimated mass 975 kg

TD315H□□V



Estimated mass 990 kg

*Refer to Page 126 for shaft arrangements and relative direction of rotation.

Transfer Capacity Table

Refer to Page 155 for actual reduction ratios.

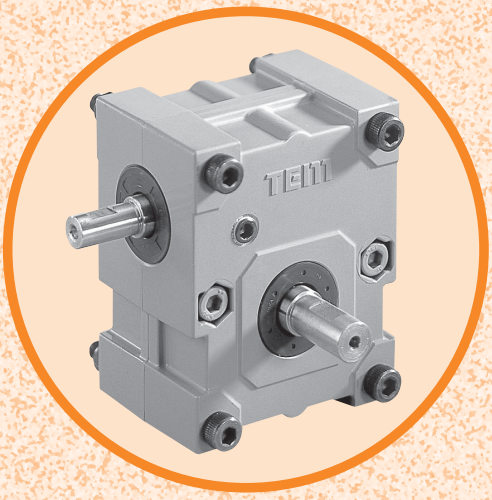
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
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

Worm Power Drive®

High Balance Cylindrical Worm Gear

TM Series



Model Number Designation 175

Model Number Designation
Specifications

Handling 176

Usage Tips

Sizing 177

Procedures
Quick Sizing Chart

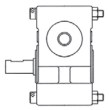
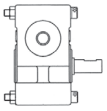
Transfer Capacity Table.....178

Dimensional Drawings

..... 179 - 183

TM Series

Model Number Designation

Series	Size	Series	Reduction Ratio	Shaft Arrangement
TM Series				
TM	10	E	20	A
TM	13	E	50	B
	10 13 16 22	E	10 20 30 40 50 60	A: The input shaft is positioned above the output shaft. Looking at the input shaft, the output shaft is on the left side.  B: From the same position, the output shaft is on the right side.  C: From the same position, the output shaft is on both sides.

Standard package

Mounting direction	Mounts on any side.
Paint color	Munsell 2.5G6/3
Keyway	Old JIS (B1301-1959) flat key included. (D cut on models TM10 and TM13) * If the shaft type is double input or double output, the keyway may not be in the same phase. Contact us if the phases must be matched.
Actual reduction ratio	Reduction ratios for TM series are all actual.

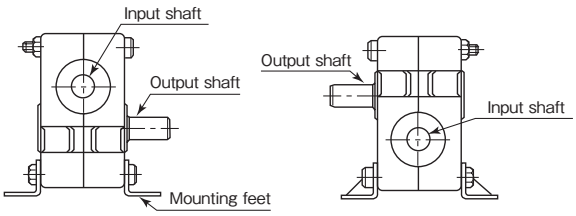
Handling

Usage Tips

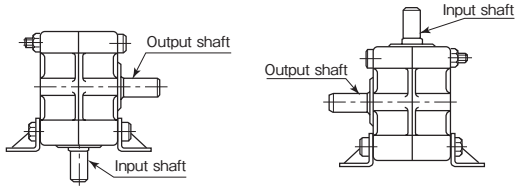
1. Mounting with standard feet

Loosen two of the four hex cap bolts and promptly attach the supplied feet.
(Feet sold separately for TM22E)

■ **Standard feet-mount examples**



Upright (use span A on housing)



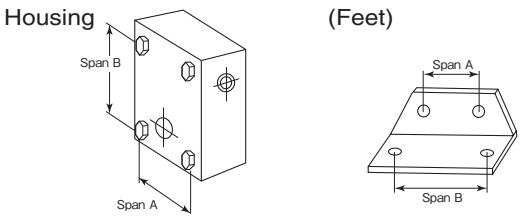
Horizontal (use span B on housing)

Bolt sizes and tightening torque

Size	Bolt size {mm}	Tightening torque N·m {kgf·m}
TM10E	4-M 6 x 60	4.9 to 5.9 {0.50 to 0.60}
TM13E	4-M 8 x 80	12 to 14 {1.2 to 1.4}
TM16E	4-M10 x 90	24 to 27 {2.4 to 2.7}
TM22E	2-M10 x 100	24 to 27 {2.4 to 2.7}
	2-M10 x 120	24 to 27 {2.4 to 2.7}

Pitch width Units: mm

Size	Span A	Span B
TM10E	57	76
TM13E	71	96
TM16E	88	111
TM22E	115	150

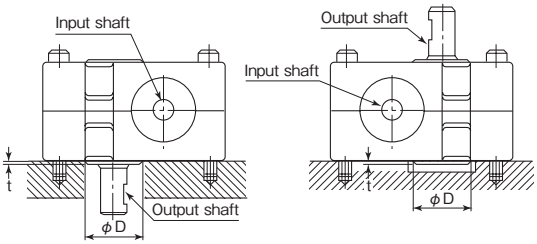


2. Mounting directly (flange mounting)

When mounting the reducer directly to the floor or wall, take note of the following:

(1) The oil seal and cap protrude about 1 mm from the mounting surface. Make sure to leave at least 1 mm of clearance between the reducer and mounting surface.

(2) After removing the four mounting bolts, promptly install the reducer.
Handle with care to prevent lubrication oil from leaking.



Model No.	D	t
TM10E	30	1
TM13E	35	1
TM16E	35	1
TM22E	72	0.5

3. When mounting a sprocket on the shaft

Do not apply excessive shock to the shaft. Doing so may damage the bearings.

4. Reducer temperature and lubrication

(1) Reducers are shipped filled with Mobile Cylinder Oil 600W and should be used as is. 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 93°C, it could indicate an undersized reducer or low oil level. Stop operation and inspect immediately.

(2) Contact us if the reducer is to be used in ambient temperatures below 5°C or above 40°C.

Sizing

Procedures

1. Determine the service factor based on the total hours of operation per day, load characteristics, and start/stop frequency.
2. For service conditions indicated in the ▭ boxes, use the Quick Sizing Chart instead of selecting by motor kW.
3. If the reducer is to be driven slower than 500 r/min, base your selection on the output torque in the Transfer Capacity table.
4. For service conditions that fall outside the ▭ boxes, calculate the compensation kW (or compensation load torque).

   Compensation kW (or compensation load torque) = Motor kW (or load torque) x service factor

5. From the Transfer Capacity table, select the size 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.
6. Use formula 2 to check that the expected radial load on the output shaft is within the allowable radial load (page 178) of the size selected above.

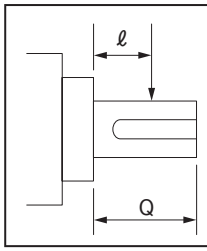
$$\text{Allowable radial load} \geq \frac{T \times f \times Lf}{R} \quad \cdots \text{Formula 2}$$

T: Compensation torque N·m {kgf·m},
f: OHL factor, Lf: Point of load factor
R: Pitch radius (m) of sprockets, and pulleys
Note) If using a belt, take initial belt tension into account when considering the radial load.

• Service factor

Load characteristics	Operating hours (per day) 0.5	2	10	24
Uniform load			(1.25)	1.25 (1.5)
Loads with moderate shock		(1.25)	1.25 (1.5)	1.5 (1.75)
Loads with heavy shock	(1.25)	1.25 (1.5)	1.5 (1.75)	1.75 (2.0)

Note 1) Use the value in ( ) above if the start/stop frequency is more than 10 times/hour.
2) Contact us if the start/stop frequency is more than 10 times/hour using a servo motor.



OHL Factor (f)

Chain	1.0
Gears, toothed belt	1.25
V belt, heavy duty toothed belt	1.5

Point of action factor (Lf)

When l ≤ Q/2··Lf=1
When l > Q/2··Lf=2 l/Q

Quick Sizing Chart

Input r/min	Reduction Ratio	Motor kW 0.065	0.09	0.1	0.2	0.4	0.75
1750	10	10E	10E	10E	10E	13E	22E
	20	10E	10E	10E	13E	16E	22E
	30	10E	10E	10E	13E	22E	**EWJ50**
	40	10E	10E	10E	13E	22E	**EWJ63**
	50	10E	13E	13E	16E	22E	**EWJ63**
	60	10E	13E	13E	16E	22E	**EWJ63**
1450	10	10E	10E	10E	10E	13E	22E
	20	10E	10E	10E	13E	16E	22E
	30	10E	10E	10E	13E	22E	**EWJ50**
	40	10E	10E	13E	16E	22E	**EWJ63**
	50	10E	13E	13E	16E	22E	**EWJ63**
	60	13E	13E	13E	16E	22E	**EWJ63**
1150	10	10E	10E	10E	10E	13E	22E
	20	10E	10E	10E	13E	16E	22E
	30	10E	10E	10E	13E	22E	**EWJ63**
	40	10E	13E	13E	16E	22E	**EWJ63**
	50	10E	13E	13E	16E	22E	**EWJ63**
	60	13E	13E	13E	16E	22E	**EWJ70**
950	10	10E	10E	10E	13E	16E	22E
	20	10E	10E	10E	13E	22E	22E
	30	10E	13E	13E	16E	22E	**EWJ63**
	40	10E	13E	13E	16E	22E	**EWJ63**
	50	13E	13E	13E	16E	22E	**EWJ63**
	60	13E	13E	13E	22E	**EWJ63**	**EWJ70**
500	10	10E	10E	10E	13E	16E	22E
	20	10E	13E	13E	16E	22E	**EWJ63**
	30	13E	13E	13E	16E	22E	**EWJ70**
	40	13E	13E	16E	22E	**EWJ63**	**EWJ70**
	50	13E	16E	16E	22E	**EWJ63**	**EW80**
	60	13E	16E	16E	22E	**EWJ70**	**EW100**

* If the size you arrive at is a TM22E or larger, we recommend our EW/EWJ Series.

Moment of Inertia on Input Shaft

TM Series

Moment of Inertia on Input Shaft {GD²} × 10^{-3} kg·m² {× 10^{-3} kgf·m²}

Size	1/10	1/20	1/30	1/40	1/50	1/60
10E	0.005 (0.02)	0.005 (0.02)	0.005 (0.02)	0.005 (0.02)	0.005 (0.02)	0.004 (0.02)
13E	0.01 (0.05)	0.01 (0.05)	0.01 (0.05)	0.01 (0.05)	0.01 (0.05)	0.01 (0.04)
16E	0.02 (0.10)	0.02 (0.10)	0.02 (0.10)	0.02 (0.09)	0.02 (0.09)	0.02 (0.08)
22E	0.11 (0.43)	0.10 (0.41)	0.10 (0.39)	0.09 (0.37)	0.09 (0.35)	0.08 (0.33)

Transfer Capacity Table

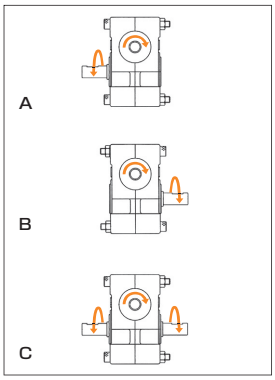
Size	Reduction Ratio	1750 r/min			1450 r/min			1150 r/min		
		Input kW	Output torque N·m {kgf·m}	Allowable Radial Load on Output N {kgf}	Input kW	Output torque N·m {kgf·m}	Allowable Radial Load on Output N {kgf}	Input kW	Output torque N·m {kgf·m}	Allowable Radial Load on Output N {kgf}
10E	10	0.187	8.53 {0.87}	427 { 43.6}	0.176	9.51 {0.97}	473 { 48.3}	0.166	11.2 {1.14}	520 { 53.1}
	20	0.127	10.6 {1.08}	636 { 64.9}	0.121	12.0 {1.22}	687 { 70.1}	0.104	12.7 {1.30}	738 { 75.3}
	30	0.091	10.1 {1.03}	784 { 80.0}	0.088	11.5 {1.17}	850 { 86.7}	0.082	13.0 {1.33}	916 { 93.5}
	40	0.081	11.1 {1.13}	880 { 89.8}	0.076	12.2 {1.24}	944 { 96.3}	0.064	12.5 {1.28}	944 { 96.3}
	50	0.069	11.1 {1.13}	944 { 96.3}	0.062	11.6 {1.18}	944 { 96.3}	0.052	11.9 {1.21}	944 { 96.3}
	60	0.058	10.4 {1.06}	944 { 96.3}	0.051	10.8 {1.10}	944 { 96.3}	0.044	11.2 {1.14}	944 { 96.3}
13E	10	0.375	17.2 {1.76}	432 { 44.1}	0.352	19.4 {1.98}	461 { 47.0}	0.331	22.6 {2.31}	489 { 49.9}
	20	0.253	21.4 {2.18}	671 { 68.5}	0.237	23.7 {2.42}	718 { 73.3}	0.224	27.7 {2.83}	765 { 78.1}
	30	0.181	20.5 {2.09}	837 { 85.4}	0.176	23.5 {2.40}	895 { 91.3}	0.165	27.0 {2.75}	954 { 97.3}
	40	0.161	22.7 {2.32}	916 { 93.5}	0.152	25.1 {2.56}	954 { 97.3}	0.144	29.1 {2.97}	954 { 97.3}
	50	0.144	23.9 {2.44}	954 { 97.3}	0.136	26.3 {2.68}	954 { 97.3}	0.118	27.6 {2.82}	954 { 97.3}
	60	0.127	23.3 {2.38}	954 { 97.3}	0.116	24.7 {2.52}	954 { 97.3}	0.102	26.4 {2.69}	954 { 97.3}
16E	10	0.562	26.4 {2.69}	696 { 71.0}	0.525	29.4 {3.00}	725 { 74.0}	0.492	34.4 {3.51}	755 { 77.0}
	20	0.378	32.5 {3.32}	931 { 95.0}	0.359	36.8 {3.75}	970 { 99.0}	0.333	42.0 {4.29}	1029 {105 }
	30	0.281	32.8 {3.35}	1127 {115 }	0.262	36.2 {3.69}	1176 {120 }	0.238	40.2 {4.10}	1176 {120 }
	40	0.239	34.8 {3.55}	1176 {120 }	0.228	39.2 {4.00}	1176 {120 }	0.214	44.7 {4.56}	1176 {120 }
	50	0.214	36.8 {3.75}	1176 {120 }	0.205	41.4 {4.22}	1176 {120 }	0.193	47.1 {4.81}	1176 {120 }
	60	0.197	38.8 {3.96}	1176 {120 }	0.187	42.9 {4.38}	1176 {120 }	0.166	46.4 {4.73}	1176 {120 }
22E	10	1.110	53.0 {5.41}	2097 {214 }	1.040	59.5 {6.07}	2215 {226 }	0.977	69.8 {7.12}	2342 {239 }
	20	0.738	65.7 {6.70}	2754 {281 }	0.696	73.7 {7.52}	2891 {295 }	0.656	86.3 {8.81}	3107 {317 }
	30	0.537	65.6 {6.69}	3293 {336 }	0.508	73.5 {7.50}	3430 {350 }	0.476	84.7 {8.64}	3685 {376 }
	40	0.463	71.3 {7.28}	3577 {365 }	0.439	79.9 {8.15}	3812 {389 }	0.414	92.3 {9.42}	4057 {414 }
	50	0.414	75.9 {7.74}	3891 {397 }	0.393	84.7 {8.64}	4126 {421 }	0.371	97.6 {9.96}	4145 {423 }
	60	0.379	79.6 {8.12}	4145 {423 }	0.361	88.9 {9.07}	4145 {423 }	0.323	96.6 {9.86}	4145 {423 }

Size	Reduction Ratio	950 r/min			500 r/min			100 r/min		
		Input kW	Output torque N·m {kgf·m}	Allowable Radial Load on Output N {kgf}	Input kW	Output torque N·m {kgf·m}	Allowable Radial Load on Output N {kgf}	Input kW	Output torque N·m {kgf·m}	Allowable Radial Load on Output N {kgf}
10E	10	0.157	12.7 { 1.30}	563 { 57.4}	0.094	14.0 { 1.43}	659 { 67.2}	0.022	14.9 { 1.52}	944 { 96.3}
	20	0.089	12.9 { 1.32}	764 { 78.0}	0.052	13.8 { 1.41}	944 { 96.3}	0.012	14.2 { 1.45}	944 { 96.3}
	30	0.071	13.4 { 1.37}	944 { 96.3}	0.042	14.1 { 1.44}	944 { 96.3}	0.011	14.9 { 1.52}	944 { 96.3}
	40	0.056	13.0 { 1.33}	944 { 96.3}	0.033	13.6 { 1.39}	944 { 96.3}	0.008	13.8 { 1.41}	944 { 96.3}
	50	0.045	12.3 { 1.25}	944 { 96.3}	0.027	12.8 { 1.31}	944 { 96.3}	0.007	13.4 { 1.37}	944 { 96.3}
	60	0.037	11.3 { 1.15}	944 { 96.3}	0.023	12.1 { 1.23}	944 { 96.3}	0.006	12.5 { 1.28}	944 { 96.3}
13E	10	0.313	25.7 { 2.62}	534 { 54.5}	0.220	33.1 { 3.38}	632 { 64.5}	0.053	36.3 { 3.70}	954 { 97.3}
	20	0.205	30.2 { 3.08}	835 { 85.2}	0.123	32.7 { 3.34}	954 { 97.3}	0.030	35.2 { 3.59}	954 { 97.3}
	30	0.156	30.1 { 3.07}	954 { 97.3}	0.099	33.8 { 3.45}	954 { 97.3}	0.025	36.1 { 3.68}	954 { 97.3}
	40	0.127	30.1 { 3.07}	954 { 97.3}	0.078	32.4 { 3.31}	954 { 97.3}	0.020	34.5 { 3.52}	954 { 97.3}
	50	0.104	28.6 { 2.92}	954 { 97.3}	0.064	30.8 { 3.14}	954 { 97.3}	0.017	32.9 { 3.36}	954 { 97.3}
	60	0.091	27.3 { 2.79}	954 { 97.3}	0.057	29.6 { 3.02}	954 { 97.3}	0.015	31.1 { 3.17}	954 { 97.3}
16E	10	0.463	38.7 { 3.95}	823 { 84.0}	0.364	55.9 { 5.70}	853 { 87.0}	0.087	61.5 { 6.28}	1176 {120 }
	20	0.317	47.7 { 4.87}	1058 {108 }	0.213	57.8 { 5.90}	1176 {120 }	0.053	63.2 { 6.45}	1176 {120 }
	30	0.231	46.2 { 4.71}	1176 {120 }	0.174	61.4 { 6.27}	1176 {120 }	0.045	67.2 { 6.86}	1176 {120 }
	40	0.205	50.5 { 5.15}	1176 {120 }	0.134	57.7 { 5.89}	1176 {120 }	0.035	62.3 { 6.36}	1176 {120 }
	50	0.173	49.6 { 5.06}	1176 {120 }	0.109	54.5 { 5.56}	1176 {120 }	0.029	59.1 { 6.03}	1176 {120 }
	60	0.148	48.0 { 4.90}	1176 {120 }	0.094	53.0 { 5.41}	1176 {120 }	0.025	56.5 { 5.77}	1176 {120 }
22E	10	0.923	79.1 { 8.07}	2470 {252 }	0.771	121 {12.3 }	2852 {291 }	0.189	138 {14.1 }	4145 {423 }
	20	0.614	96.0 { 9.80}	3263 {333 }	0.460	129 {13.2 }	3940 {402 }	0.115	145 {14.8 }	4145 {423 }
	30	0.450	94.7 { 9.66}	4145 {423 }	0.362	134 {13.7 }	4145 {423 }	0.095	151 {15.4 }	4145 {423 }
	40	0.391	102 {10.4 }	4145 {423 }	0.284	129 {13.2 }	4145 {423 }	0.075	144 {14.7 }	4145 {423 }
	50	0.351	108 {11.0 }	4145 {423 }	0.228	122 {12.4 }	4145 {423 }	0.058	127 {13.0 }	4145 {423 }
	60	0.290	102 {10.4 }	4145 {423 }	0.187	113 {11.5 }	4145 {423 }	0.050	123 {12.6 }	4145 {423 }

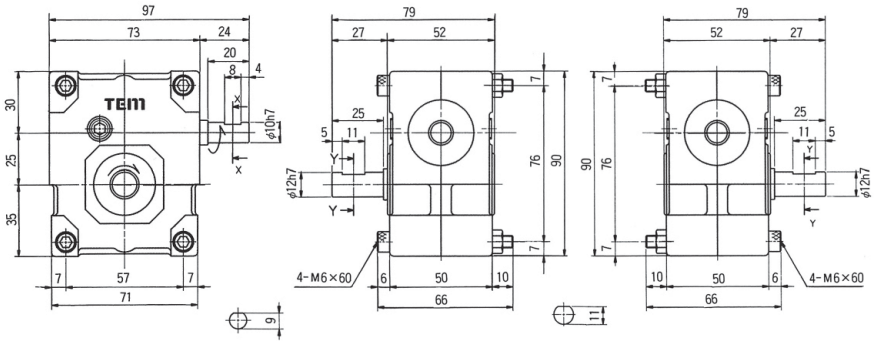
Dimensional Drawings TM10E

TM10E

(Relative rotational directions)



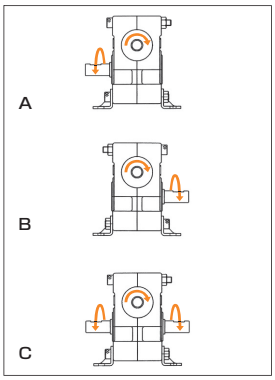
[A] [B]

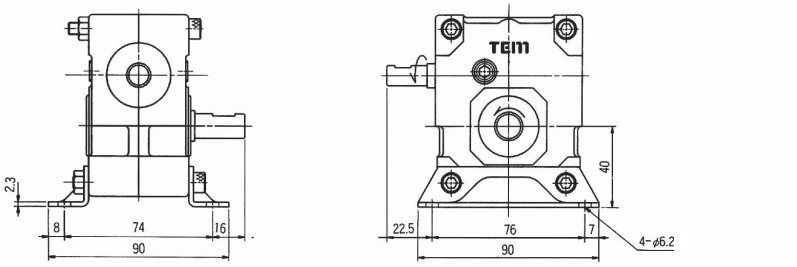


Estimated mass 0.9 kg

[Input horizontal feet-mount]

(Relative rotational directions)



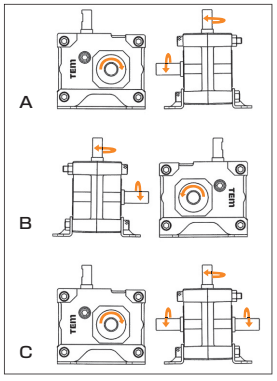


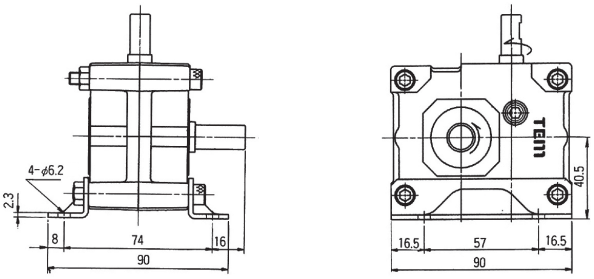
Estimated mass 1.0 kg

Note) Feet supplied with TM10E.

[Input vertical feet-mount]

(Relative rotational directions)





Estimated mass 1.0 kg

Note) Feet supplied with TM10E.

Transfer Capacity Table

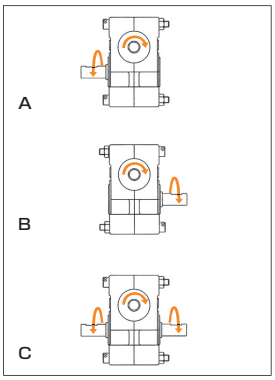
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TM10E	10	0.187	8.53 {0.87}	0.176	9.51 {0.97}	0.166	11.2 {1.14}	0.157	12.7 {1.30}	0.094	14.0 {1.43}	0.022	14.9 {1.52}
	20	0.127	10.6 {1.08}	0.121	12.0 {1.22}	0.104	12.7 {1.30}	0.089	12.9 {1.32}	0.052	13.8 {1.41}	0.012	14.2 {1.45}
	30	0.091	10.1 {1.03}	0.088	11.5 {1.17}	0.082	13.0 {1.33}	0.071	13.4 {1.37}	0.042	14.1 {1.44}	0.011	14.9 {1.52}
	40	0.081	11.1 {1.13}	0.076	12.2 {1.24}	0.064	12.5 {1.28}	0.056	13.0 {1.33}	0.033	13.6 {1.39}	0.008	13.8 {1.41}
	50	0.069	11.1 {1.13}	0.062	11.6 {1.18}	0.052	11.9 {1.21}	0.045	12.3 {1.25}	0.027	12.8 {1.31}	0.007	13.4 {1.37}
	60	0.058	10.4 {1.06}	0.051	10.8 {1.10}	0.044	11.2 {1.14}	0.037	11.3 {1.15}	0.023	12.1 {1.23}	0.006	12.5 {1.28}

Note) Feet supplied with TM10E.

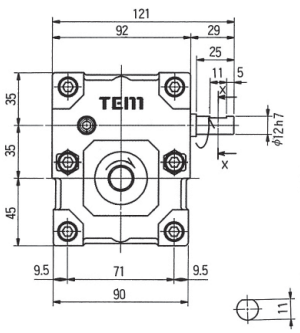
Dimensional Drawings TM13E

TM13E

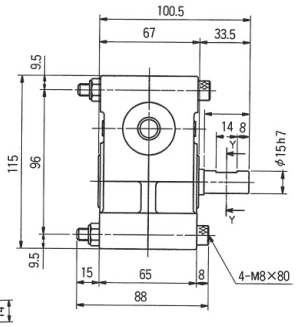
(Relative rotational directions)



[A]



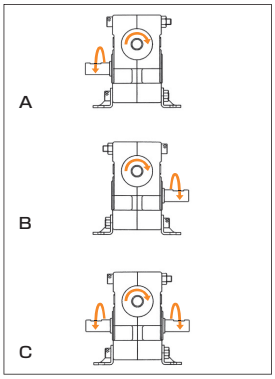
[B]

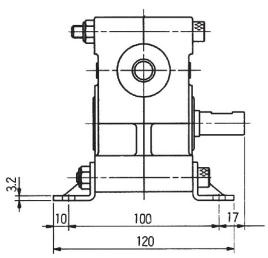


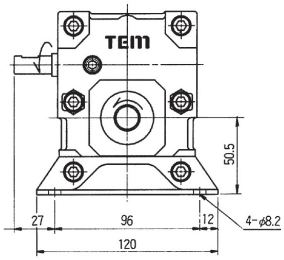
Estimated mass
1.8 kg

[Input horizontal feet-mount]

(Relative rotational directions)





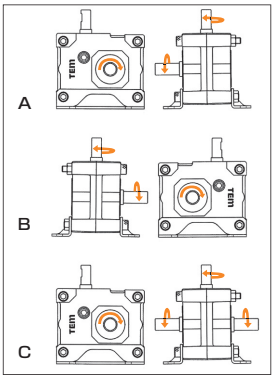


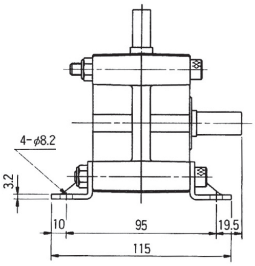
Estimated mass
2.0 kg

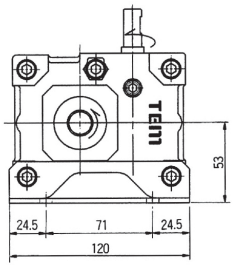
Note) Feet supplied with TM13E.

[Input vertical feet-mount]

(Relative rotational directions)







Estimated mass
2.0 kg

Note) Feet supplied with TM13E.

Transfer Capacity Table

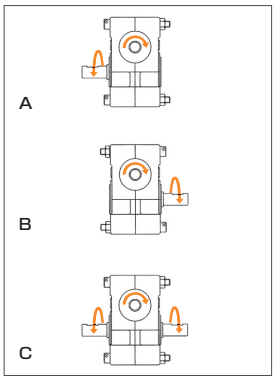
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TM13E	10	0.375	17.2 {1.76}	0.352	19.4 {1.98}	0.331	22.6 {2.31}	0.313	25.7 {2.62}	0.220	33.1 {3.38}	0.053	36.3 {3.70}
	20	0.253	21.4 {2.18}	0.237	23.7 {2.42}	0.224	27.7 {2.83}	0.205	30.2 {3.08}	0.123	32.7 {3.34}	0.030	35.2 {3.59}
	30	0.181	20.5 {2.09}	0.176	23.5 {2.40}	0.165	27.0 {2.75}	0.156	30.1 {3.07}	0.099	33.8 {3.45}	0.025	36.1 {3.68}
	40	0.161	22.7 {2.32}	0.152	25.1 {2.56}	0.144	29.1 {2.97}	0.127	30.1 {3.07}	0.078	32.4 {3.31}	0.020	34.5 {3.52}
	50	0.144	23.9 {2.44}	0.136	26.3 {2.68}	0.118	27.6 {2.82}	0.104	28.6 {2.92}	0.064	30.8 {3.14}	0.017	32.9 {3.36}
	60	0.127	23.3 {2.38}	0.116	24.7 {2.52}	0.102	26.4 {2.69}	0.091	27.3 {2.79}	0.057	29.6 {3.02}	0.015	31.1 {3.17}

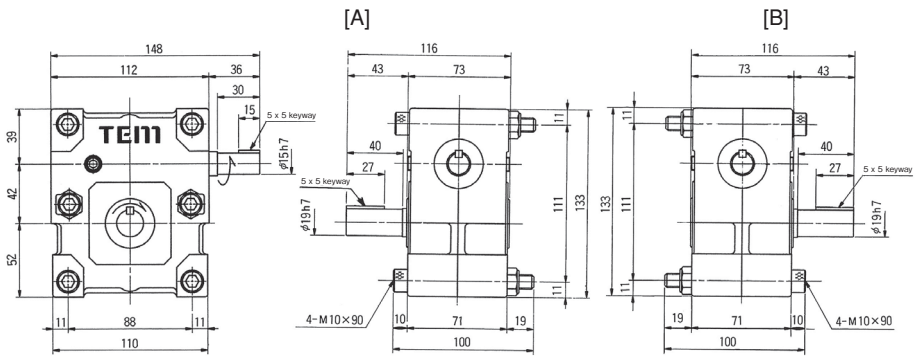
Note) Feet supplied with TM13E.

Dimensional Drawings TM16E

TM16E

(Relative rotational directions)



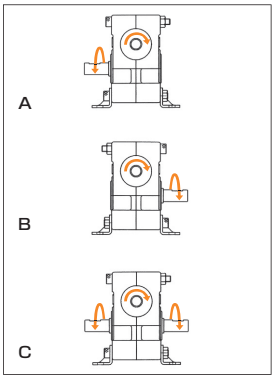


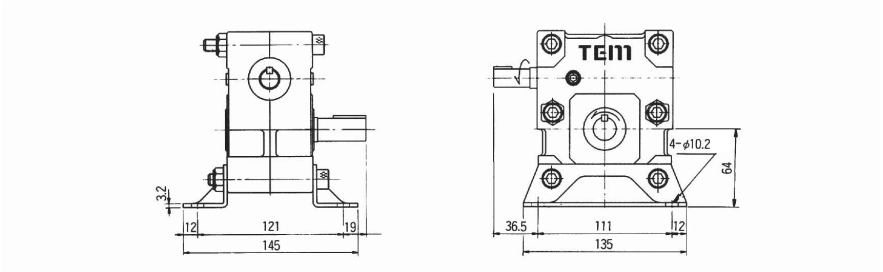
Estimated mass
2.8 kg

Note) Old JIS (B1301-1959) flat key included.

[Input horizontal feet-mount]

(Relative rotational directions)



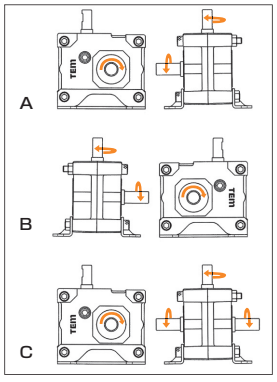


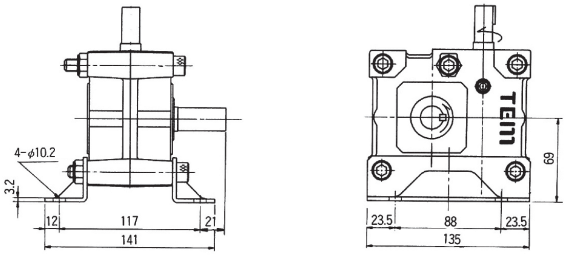
Estimated mass
3.3 kg

Note 1) Old JIS (B1301-1959) flat key included.
2) Feet supplied with TM16E.

[Input vertical feet-mount]

(Relative rotational directions)





Estimated mass
3.3 kg

Note 1) Old JIS (B1301-1959) flat key included.
2) Feet supplied with TM16E.

Transfer Capacity Table

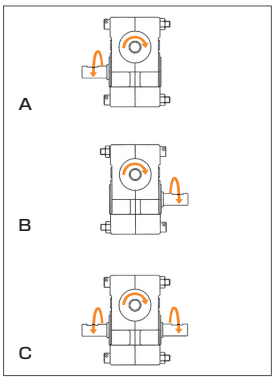
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TM16E	10	0.562	26.4 {2.69}	0.525	29.4 {3.00}	0.492	34.4 {3.51}	0.463	38.7 {3.95}	0.364	55.9 {5.70}	0.087	61.5 {6.28}
	20	0.378	32.5 {3.32}	0.359	36.8 {3.75}	0.333	42.0 {4.29}	0.317	47.7 {4.87}	0.213	57.8 {5.90}	0.053	63.2 {6.45}
	30	0.281	32.8 {3.35}	0.262	36.2 {3.69}	0.238	40.2 {4.10}	0.231	46.2 {4.71}	0.174	61.4 {6.27}	0.045	67.2 {6.86}
	40	0.239	34.8 {3.55}	0.228	39.2 {4.00}	0.214	44.7 {4.56}	0.205	50.5 {5.15}	0.134	57.7 {5.89}	0.035	62.3 {6.36}
	50	0.214	36.8 {3.75}	0.205	41.4 {4.22}	0.193	47.1 {4.81}	0.173	49.6 {5.06}	0.109	54.5 {5.56}	0.029	59.1 {6.03}
	60	0.197	38.8 {3.96}	0.187	42.9 {4.38}	0.166	46.4 {4.73}	0.148	48.0 {4.90}	0.094	53.0 {5.41}	0.025	56.5 {5.77}

Note) Feet supplied with TM16E.

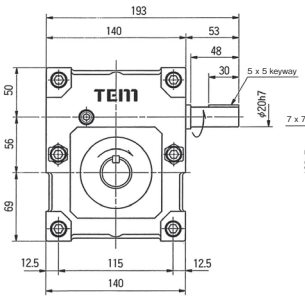
Dimensional Drawings TM22E

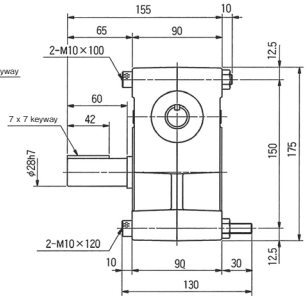
TM22E

(Relative rotational directions)

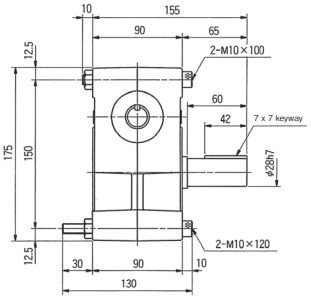


[A]





[B]

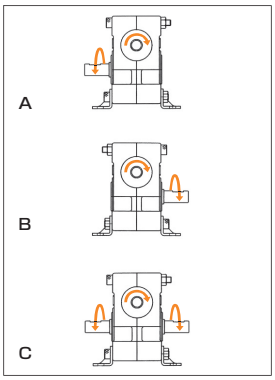


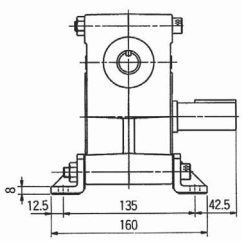
Estimated mass 7.0 kg

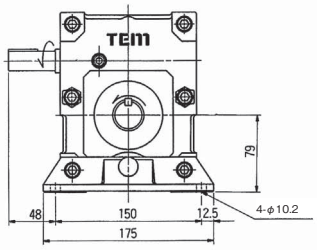
Note) Old JIS (B1301-1959) flat key included.

[Input horizontal feet-mount]

(Relative rotational directions)





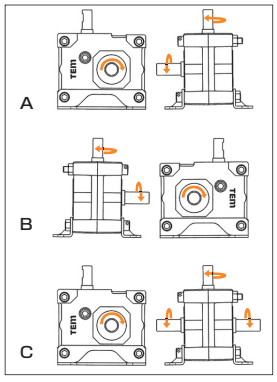


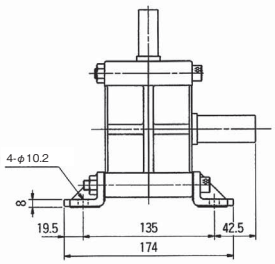
Estimated mass 13 kg

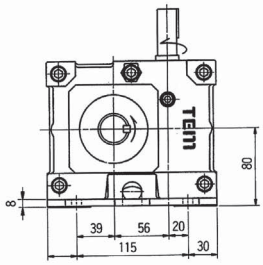
Note 1) Old JIS (B1301-1959) flat key included.
2) Feet sold separately for TM22E.

[Input vertical feet-mount]

(Relative rotational directions)







Estimated mass 13 kg

Note 1) Old JIS (B1301-1959) flat key included.
2) Feet sold separately for TM22E.

Transfer Capacity Table

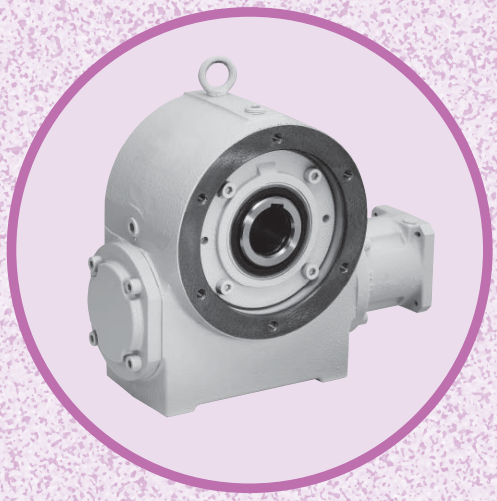
Size	Input	1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
	Reduction Ratio	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}	Input kW	Output torque N·m {kgf·m}
TM22E	10	1.110	53.0 {5.41}	1.040	59.5 {6.07}	0.977	69.8 {7.12}	0.923	79.1 {8.07}	0.771	121 {12.3}	0.189	138 {14.1}
	20	0.738	65.7 {6.70}	0.696	73.7 {7.52}	0.656	86.3 {8.81}	0.614	96.0 {9.80}	0.460	129 {13.2}	0.115	145 {14.8}
	30	0.537	65.6 {6.69}	0.508	73.5 {7.50}	0.476	84.7 {8.64}	0.450	94.7 {9.66}	0.362	134 {13.7}	0.095	151 {15.4}
	40	0.463	71.3 {7.28}	0.439	79.9 {8.15}	0.414	92.3 {9.42}	0.391	102 {10.4}	0.284	129 {13.2}	0.075	144 {14.7}
	50	0.414	75.9 {7.74}	0.393	84.7 {8.64}	0.371	97.6 {9.96}	0.351	108 {11.0}	0.228	122 {12.4}	0.058	127 {13.0}
	60	0.379	79.6 {8.12}	0.361	88.9 {9.07}	0.323	96.6 {9.86}	0.290	102 {10.4}	0.187	113 {11.5}	0.050	123 {12.6}

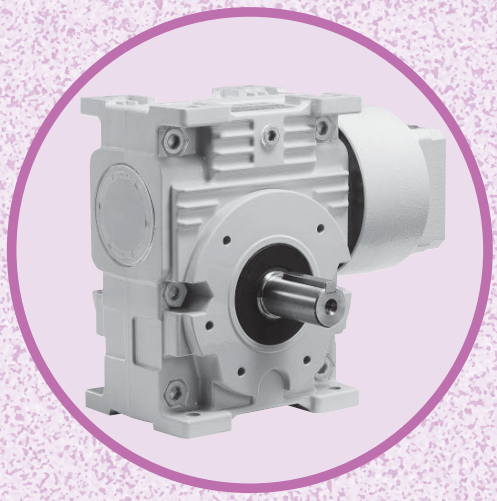
Note) Feet sold separately for TM22E.

Memo

TERVO Series

Standard line of worm reducers with servo motor mounting flange





Features.....185

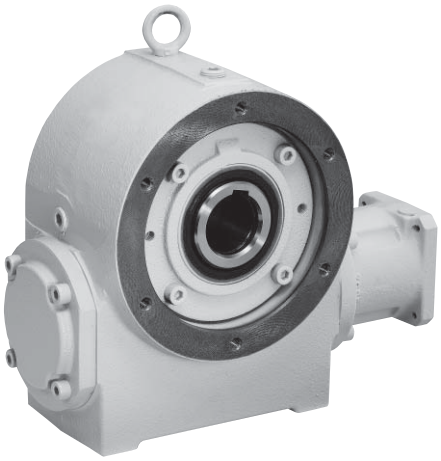
Model Number Designation.....186

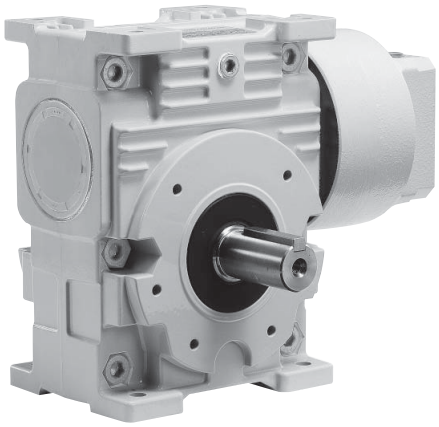
Model Number Designation
Shaft Arrangement

Features

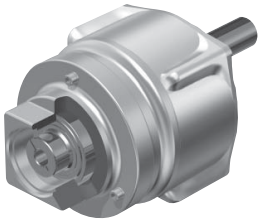
Tsubaki's SERVO TERVO Converts Equipment to Servo Drive

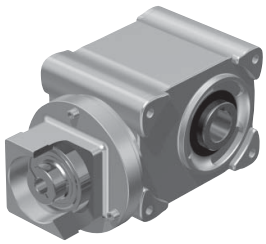
BROAD LINE UP

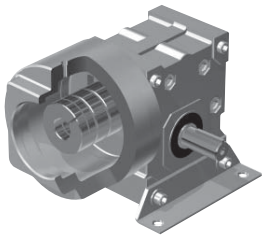




Standardized clamp for servo motors.





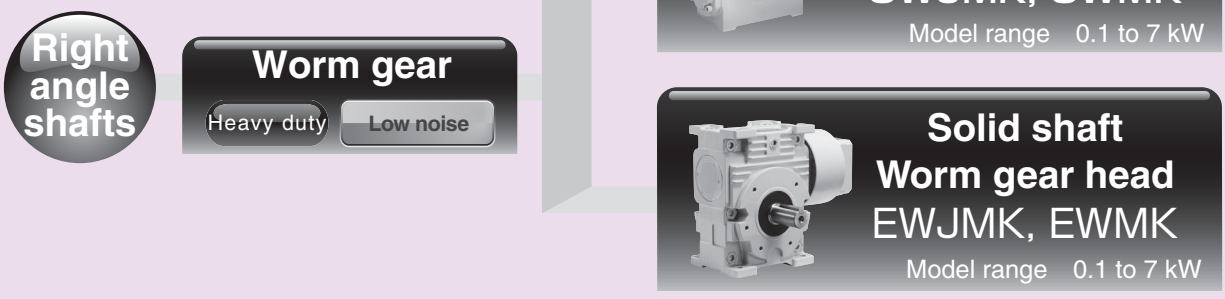


Highly versatile

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

Economical

- Servo driven worm gear heads afford better economic efficiency and shorter delivery.



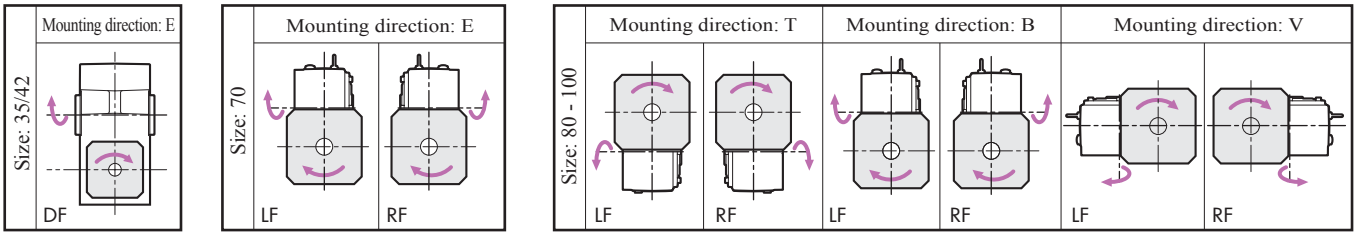
Model Number Designation

Series		Size	Mounting direction	Reduction Ratio	Shaft Arrangement		Mount code (clamp type)
TERVO Series	Hollow output **SWJMK**	**42**	**E**	**30**	**DF**	-	□□□C
	SWMK	**80**	**T**	**30**	**LF**	-	□□□C
	Solid output **EWJMK**	**70**	**E**	**30**	**LR**	-	□□□C
	EWMK	**80**	**T**	**30**	**L**	-	□□□C
	TMMK	**16**	**E**	**30**	**A**	-	□□□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 187 and 188.

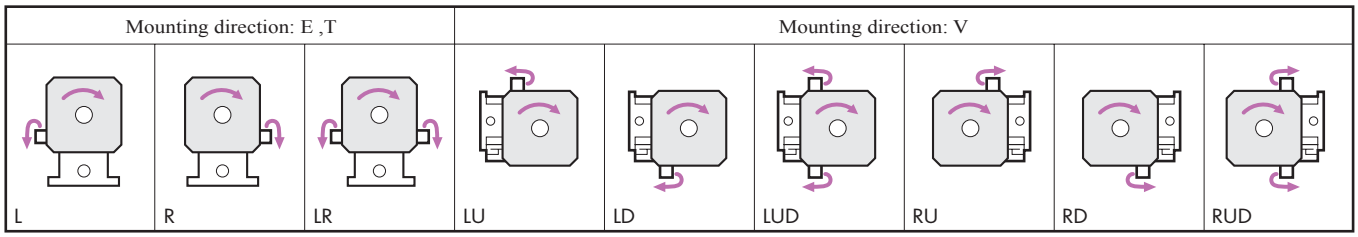
Note) Shafts can also be made for keyed servo motors. Contact us for details.

Shaft Arrangement

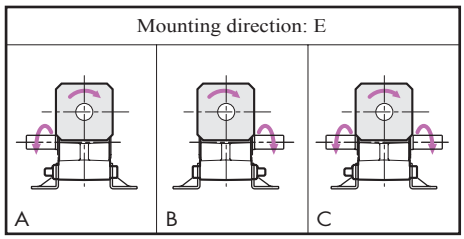
SWJMK/SWMK



EWJMK/EWMK



TMMK



* For transfer capacities and dimensions, refer to our separate brochure, “Tsubaki TERVO” (TERVO reducer for servo motor).

Models

Worm gear head SWJMK, SWMK, EWJMK, and EWMK types

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

Top SWJMK·SWMK
Bottom 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 △ : Available on request

■ Mount code chart by motor manufacturer

1. Mitsubishi Electric

Servo Motor J4 Series

Motor capacity	Rated 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	K3YC
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

Servo Motor J3 Series

Motor capacity	Rated 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) Mount code chart shows the typical examples as of December 2012. Servo motors that are not listed in the chart may be supported. Please contact us for details.

Note) The specifications of servo motors are subject to change due to each manufacturer's circumstances. Please be sure to check in advance the supportability of gear heads vis-a-vis the motor installation dimensions.

2. Yaskawa Electric

Servo Motor Σ -V Series

Motor capacity	Rated speed	Model No.	Mount code
200 W	3000 r/min	SGMAV-02A	E4HC
400 W		SGMAV-04A	E4HC
200 W	3000 r/min	SGMJV-02A	E4HC
400 W		SGMJV-04A	E4HC

Servo Motor Σ Series

Motor capacity	Rated speed	Model No.	Mount code
200 W	3000 r/min	SGM-02	E4HC
300 W		SGM-03	E4HC
400 W		SGM-04	E4HC
750 W		SGM-08	G5KC
200 W	3000 r/min	SGME-02	E4HC
300 W		SGME-03	E4HC
400 W		SGME-04	E4HC
750 W		SGME-08	G5KC
450 W	1500 r/min	SGMG-05A □ A	K3LC
850 W		SGMG-09A □ A	K3LC
1300 W		SGMG-13A □ A	K3MC
1800 W		SGMG-20A □ A	L1RC
200 W	3000 r/min	SGML-02	E4HC
300 W		SGML-03	E4HC
400 W		SGML-04	E4HC
750 W		SGML-08	G5KC

Servo Motor Σ Ⅲ Series

Motor capacity	Rated speed	Model No.	Mount code
200 W	3000 r/min	SGMAS-02A	E4HC
400 W		SGMAS-04A	E4HC
600 W		SGMAS-06A	E4HC
750 W		SGMAS-08A	G5KC
1150 W		SGMAS-12A	G5KC
200 W	3000 r/min	SGMPS-02A	G2HC
400 W		SGMPS-04A	G2HC
750 W		SGMPS-08A	K2KC
1500 W		SGMPS-15A	K2LC

Motor capacity	Rated speed	Model No.	Mount code
200 W	3000 r/min	SGMAH-02	E4HC
400 W		SGMAH-04	E4HC
750 W		SGMAH-08	G5KC
100 W	3000 r/min	SGMPH-01	E4DC
200 W		SGMPH-02	G2HC
400 W		SGMPH-04	G2HC
750 W		SGMPH-08	K2KC
1500 W		SGMPH-15	K2LC
450 W	1500 r/min	SGMGH-05 □□ A	K3LC
850 W		SGMGH-09 □□ A	K3LC
1300 W		SGMGH-13 □□ A	K3MC
1800 W		SGMGH-20 □□ A	L1RC
200 W	3000 r/min	SGMAJ-02	E4HC
300 W		SGMAJ-03	E4HC

3. Fuji Electric FA Components & Systems

Motor capacity	Rated speed	Model No.	Mount code
100 W	3000 r/min	GYC101	E4DC
200 W		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. Sanyo Denki

Servo Motor P Series

Motor capacity	Rated speed	Model No.	Mount code
300 W	2000 r/min	P10B10030	J1KC
750 W		P10B10075	J1KC
500 W		P10B13050	K3LC
1000 W		P10B13100	K3LC
1500 W		P10B13150	K3MC
2000 W		P10B18200	L1RC
200 W	3000 r/min	P30B06020	E4HC
400 W		P30B06040	E4HC
750 W		P30B08075	G5KC
500 W	2000 r/min	P60B13050	K3MC
1000 W		P60B13100	K3MC
1500 W		P60B13150	K3MC
2000 W		P60B13200	K3MC
2000 W		P60B18200	L1RC
750 W	2000 r/min	P80B15075	L1PC
1200 W		P80B18120	M2MC

5. Panasonic

Servo Motor MINAS A5 Series

Motor capacity	Rated 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	J4LC
2000 W		MDME20	J5LC

6. Tamagawa Seiki

Servo Motor TBL-i Series

Motor capacity	Rated speed	Model No.	Mount code
100 W	3000 r/min	TS4506	E4HC
200 W		TS4507	E4HC
400 W		TS4509	E4HC
600 W		TS4513	G5LC

Servo Motor TBL-i Ⅱ Series

Motor capacity	Rated speed	Model No.	Mount code
200 W	3000 r/min	TS4607	E4HC
400 W		TS4609	E4HC
100 W	3000 r/min	TS4606	E4DC
200 W		TS4611	G2HC
400 W		TS4612	G2HC
600 W		TS4613	G5LC
750 W		TS4614	G5LC

Note) Mount code chart shows the typical examples as of December 2012. Servo motors that are not listed in the chart may be supported. Please contact us for details.

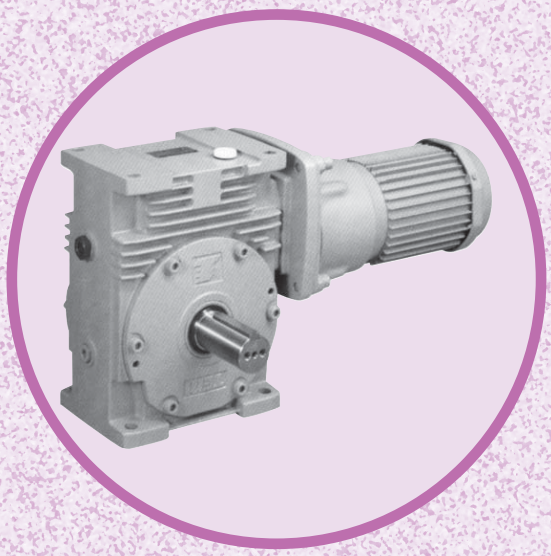
Note) The specifications of servo motors are subject to change due to each manufacturer's circumstances. Please be sure to check in advance the supportability of gear heads vis-a-vis the motor installation dimensions.

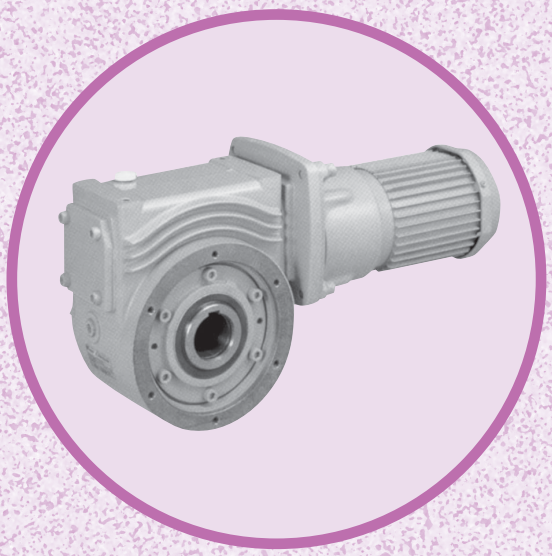
Memo

TERUS Series

Integrated Gear Reducers

Offers superior characteristics of a helical worm
Achieves high reduction ratio in right angle form





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Features
Packages

Series and Model Number Designation

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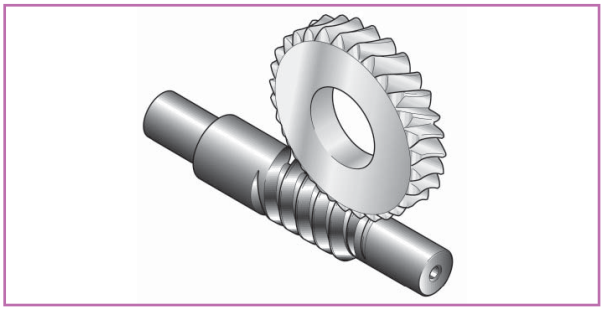
Characteristics of standard packages

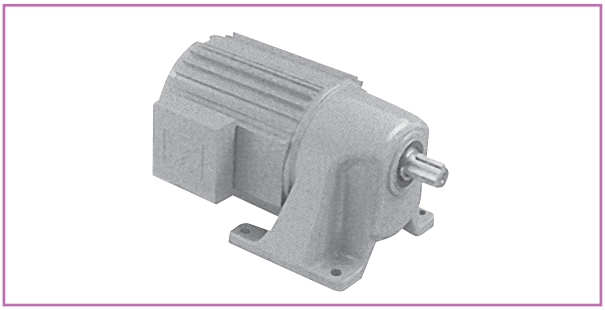
Ideal combination of worm gear and helical gear!!

Worm gear



+

Geared motor



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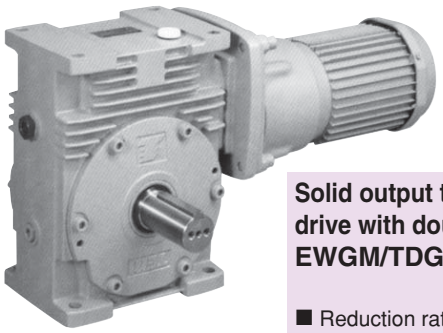
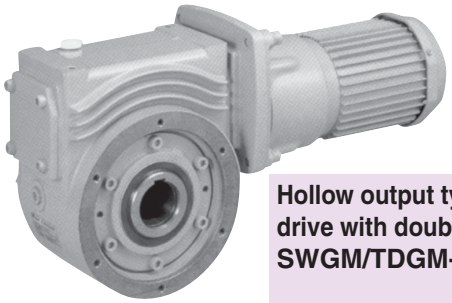
Helical worm motor



Solid output type right angle drive with double reduction
EWGM/TDGM-S

- Reduction ratio: 1/100 to 1/3600
- Motor: 0.1 to 5.5 kW
- Output torque: 40 to 31,000 N·m



Hollow output type right angle drive with double reduction
SWGM/TDGM-H

- Reduction ratio: 1/100 to 1/3600
- Motor: 0.1 to 5.5 kW
- Output torque: 40 to 31,000 N·m

Features

Toughness

With double reduction, the durability of the last reduction gear is key. TERUS uses **tough worm gears**.
Worm gear motors offer robust durability for intrusive applications.

Compact

Uses a **helical worm gear** for a **tightly integrated** right angle double reduction drive.
Right angle drive and double reduction reducer in a single unit reduces equipment footprint.
Contributes to lower cost designs by reducing the number of components used.

Silent

Worm gears are silent.
Helical worm motor designed to be as silent as possible by combining an inherently quiet worm gear and geared motor.
Widely used for theatrical equipment where silence is a must.

Options

Takes advantage of the **wide range of options** offered for geared motors.

- International standards (Global): TRIPLE200/CE compliant (Europe)/UL compliant (North America)/CCC compliant (China)
- + α Series: Shock relay, torque guard, rotary encoder Power-Lock, taper bush
- AC source: 400 V models, different voltages, single phase 100 V (200 V)
- Protection: Outdoor models, water-proof models (IP65)
- Others: Frequency inverters, manual quick-release brake

Packages

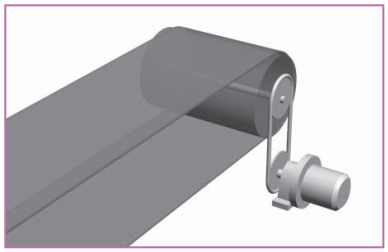
Reduces footprint of equipment and affords cost savings (by using less components)!!

A Standard package

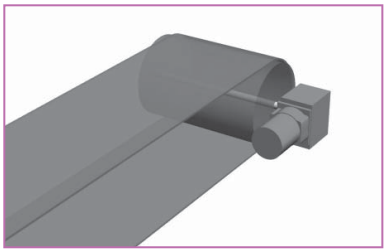
High efficiency and reduction ratio configurations meet a wide range of equipment applications

Conveyor drives

Ideal for applications that demand compact right angle drives with high reduction ratios. Reduces equipment footprint, number of components used, and assembly hours (cost reductions).



Geared motor + chain + sprocket



TERUS Series

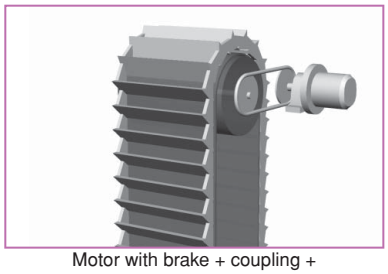
- Motor: 0.1 to 5.5 kW
- Reduction ratio: 1/100 to 1/3600
- Torque: up to 31,000 N·m

Typical applications: low-speed conveyors, drying kilns, etc.

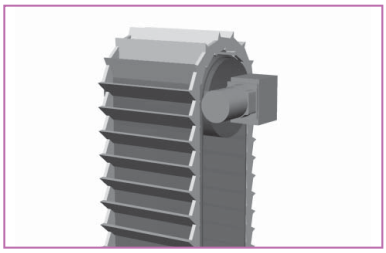
B Self-locking package

Self-locking configurations suitable for lifts, elevators, inverters, etc.

Bucket elevator



Motor with brake + coupling + worm gear reducer + chain + sprocket



TERUS Series

- Motor: 0.1 to 3.7 kW
- Reduction ratio: 1/100 to 1/1800
- Torque: up to 28,000 N·m

JFM Just Fit Model

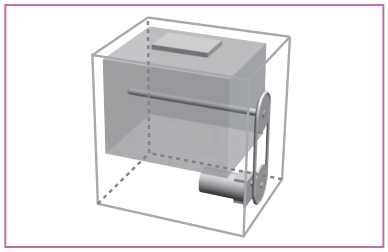
Typical applications: inverters, opening/closing devices, inclined conveyors

C Ecology package

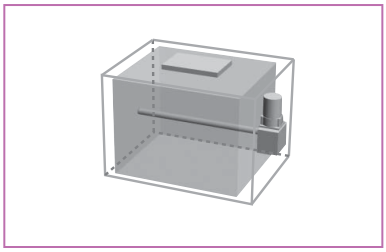
Tough gear train designed to withstand shocks expected with garbage disposers and crushers.

Garbage disposer

Minimal equipment footprint. Smaller design but still capable of handling the same payload. Lower inlet. Makes garbage disposal much easier.



Geared motor + chain + sprocket



TERUS Series

- Motor: 0.1 to 3.7 kW
- Reduction ratio: 1/100 to 1/1200
- Torque: up to 21,000 N·m

JFM Just Fit Model

Typical applications: garbage disposers, crushers, mixers

X Special configurations

Made to order configurations for drop-in solutions. Configured to meet a variety of needs including multiple gear ratios for self-locking properties.

YOUR NEXT DROP-IN MODEL

Troi Drive / Worm Power Drive + Geared Motor

Freely configurable

- Motor: 0.1 to 5.5 kW
- Reduction ratio: 1/100 to 1/3600

JFM Just Fit Model

Standard Models

A Type: Standard package [0.1 to 5.5 kW]

All-purpose configurations offer high efficiency and reduction ratios to meet a wide range of equipment applications

Motor Capacity \ 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	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
3.7 kW	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
5.5 kW	○	○	○	○	○	○	○	○	○	○	○	○	○			

B Type: Self-locking package [0.1 to 3.7 kW]

Self-locking and dependable configurations suitable for lifts, elevators, inverters, etc.
- Gear motor criteria: Sized with emphasis on durability of gear teeth to motor.
- Worm gear criteria: Sized with emphasis on durability of worm gear in 1/50 or 1/60 ratios to achieve self-locking effect.

Motor Capacity \ 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	○	○	○	○	○	○	○	○	○
3.7 kW	○	○	○	○	○	○	○	○	○

C Type: Ecology package [0.1 to 3.7 kW]

Tough gear train designed to withstand shocks expected with garbage disposers and crushers.
- Gear motor criteria: Sized with emphasis on durability of gear teeth to motor.
- Worm size criteria: Sized with emphasis on worm gear durability against impacts.

Motor Capacity \ 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	○	○	○	○	○	○	○	○
3.7 kW	○	○	○	○	○	○	○	○

X Type: Special configurations

The TERUS can be customized to match applications other than types A, B, and C. Specify the geared motor + Troi drive / Worm Power Drive combination to match your specific application.
We can propose a build-to-order gear system specifically for your equipment. Let us know what you require from your TERUS system.
Note, the combinations for a special configuration must be within these boundaries:

[Applicable range] (1) Geared motor: 40 W to 5.5 kW motor, reduction ratio = from about 1/5 to 1200
(2) Troi drive / Worm Power Drive: size 25 to 315, reduction ratio = 1/10 to 1/60

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

Model Number Designation

	Series	Worm size	Output shaft style	Package	Mounting position	Total reduction ratio	Shaft arrangement	Motor capacity	With/ without brake	Motor option symbol	Reducer option symbol
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 Ecology package	TDGM	255	H	C	B	1800	DF	150	B	W	
X type Special configurations	TDGM	150	S	X	V	4800	LF	010			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

(1) Series	EWJGM, EWGM, SWJGM, SWGM, TDGM
(2) Worm size (Center distance : mm)	EWJGM: 50, 63, 70 EWGM: 80, 100, 125, 150, 175, 200 SWJGM: 50, 63, 70 SWGM: 80, 100, 125, 150, 175, 200 T D G M: 175, 200, 225, 250, 280, 315
(3) Output shaft style	S: Solid (EWJGM, EWGM, TDGM) H: Hollow (SWJGM, SWGM, TDGM)
(4) Package	A: Standard B: Self-locking C: Ecology X: Special combination
(5) Mounting position	T: Output shaft horizontal B: Output shaft horizontal V: Output shaft vertical E: Output shaft horizontal (EWJGM, SWJGM only)
(6) Total reduction ratio (Nominal Reduction Ratio)	(Ex.) 1200 = 1/1200 600= 1/600
(7) Shaft arrangement * When viewed from the 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 capacity	(Ex.) 020 = 3 phase 0.2 kW
(9) With/without brake	Blank: without brake B: with brake
(10) Motor option symbol	Z: Variable frequency motor W: Outdoor model E: Rotary encoder 400 V class (400/440/440 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 N: 200 V class CE compliant N2: 200 V class UL compliant PN3: 200 V class CCC compliant (plastic terminal box) H: Hard terminal box Q: Manual quick-release brake M: Manual release shaft (motor fan cover side) (0.75 kW or smaller)
(11) Reducer option symbol	K: Power-Lock TB: Taper bush

Note 1) Refer to our properties chart for motor size, reducer size, and reduction ratio combinations.
2) Consult us for package and option symbol combinations.
3) Enter a hyphen before the reducer option symbol.

Characteristics A Type: Standard Package with Solid Output Shaft [S]

Motor Output {kW}	Nominal Reduction Ratio	TERUS Model No.	TERUS combinations GMTA Frame No.	GMTA Reduction Ratio	Worm Frame No.	Worm Reduction Ratio	Actual reduction ratio	Output shaft speed r/min 50 Hz	Output shaft speed r/min 60 Hz	Allowable torque on output shaft 50 Hz N·m {kgf·m}	Allowable torque on output shaft 60 Hz N·m {kgf·m}	Allowable radial load on output N {kgf}
0.1	100	EWJGM50S	18	10	50	10	97.79	15.3	18.4	47 {4.8}	39 {4.0}	2,558 {261}
	150			15		10	148.00	10.1	12.2	70 {7.1}	59 {6.0}	2,558 {261}
	200			20		10	198.21	7.57	9.08	93 {9.5}	78 {7.9}	2,558 {261}
	250			25		10	248.43	6.04	7.25	109 {11}	97 {10}	2,558 {261}
	300	EWJGM63S	18	30	63	10	294.64	5.09	6.11	136 {14}	114 {12}	4,155 {424}
	400			40		10	401.53	3.74	4.48	184 {19}	154 {16}	4,155 {424}
	500			50		10	498.17	3.01	3.61	224 {23}	190 {19}	4,155 {424}
	600			40		15	602.30	2.49	2.99	224 {23}	211 {22}	4,155 {424}
	800	EWJGM70S	18	40	70	20	803.06	1.87	2.24	315 {32}	265 {27}	5,674 {579}
	1000	EWGM80S	18	50	80	20	996.34	1.51	1.81	397 {41}	334 {34}	7,575 {773}
	1200	EWGM100S	24	120	100	10	1221.60	1.23	1.47	538 {55}	451 {46}	11,505 {1,174}
	1500			100		15	1494.66	1.00	1.20	607 {62}	511 {52}	11,505 {1,174}
	1800			120		15	1832.40	0.82	0.98	738 {75}	620 {63}	11,505 {1,174}
	2400			120		20	2443.20	0.61	0.74	844 {86}	763 {78}	11,505 {1,174}
	3000	EWGM125S	24	120	125	25	3054.00	0.49	0.59	1,090 {111}	918 {94}	15,131 {1,544}
	3600			120		30	3664.80	0.41	0.49	1,162 {119}	982 {100}	15,131 {1,544}
0.2	100	EWJGM50S	18	10	50	10	97.79	15.3	18.4	94 {10}	79 {8.1}	2,558 {261}
	150	EWJGM63S	18	15	63	10	148.00	10.1	12.2	141 {14}	118 {12}	4,155 {424}
	200			20		10	198.21	7.57	9.08	186 {19}	156 {16}	4,155 {424}
	250			25		10	248.43	6.04	7.25	224 {23}	194 {20}	4,155 {424}
	300			20		15	297.32	5.05	6.05	224 {23}	215 {22}	4,155 {424}
	400	EWJGM70S	18	20	70	20	396.42	3.78	4.54	315 {32}	272 {28}	5,674 {579}
	500	EWGM80S	18	25	80	20	496.86	3.02	3.62	409 {42}	344 {35}	7,575 {773}
	600		24	40		15	585.45	2.56	3.07	470 {48}	421 {43}	7,575 {773}
	800	EWGM100S	24	40	100	20	780.60	1.92	2.31	639 {65}	537 {55}	11,505 {1,174}
	1000			50		20	988.14	1.52	1.82	777 {79}	653 {67}	11,505 {1,174}
	1200			60		20	1188.34	1.26	15.1	844 {86}	778 {79}	11,505 {1,174}
	1500	EWGM125S	24	75	125	20	1445.72	1.04	1.25	1,146 {117}	962 {98}	15,131 {1,544}
	1800		28	120		15	1809.80	0.83	0.99	1,465 {149}	1,232 {126}	15,131 {1,544}
	2400	EWGM150S	28	120	150	20	2413.06	0.62	0.75	1,853 {189}	1,562 {159}	21,825 {2,227}
	3000			120		25	3016.33	0.50	0.60	2,240 {229}	1,888 {193}	21,825 {2,227}
	3600			120		30	3619.59	0.41	0.50	2,330 {238}	1,972 {201}	21,825 {2,227}
0.4	100	EWJGM63S	24	10	63	10	103.13	14.5	17.5	199 {20}	167 {17}	4,155 {424}
	150	EWJGM70S	24	15	70	10	151.25	9.92	11.9	287 {29}	241 {25}	5,674 {579}
	200	EWGM80S	24	20	80	10	193.88	7.74	9.28	371 {38}	311 {32}	7,575 {773}
	250			25		10	247.50	6.06	7.27	469 {48}	394 {40}	7,575 {773}
	300			20		15	290.82	5.16	6.19	470 {48}	432 {44}	7,575 {773}
	400	EWGM100S	24	20	100	20	387.76	3.87	4.64	659 {67}	555 {57}	11,505 {1,174}
	500			25		20	495.00	3.03	3.64	830 {85}	698 {71}	11,505 {1,174}
	600	EWGM125S	28	60	125	10	600.00	2.50	3.00	1,095 {112}	917 {94}	15,131 {1,544}
	800			40		20	810.38	1.85	2.22	1,318 {135}	1,108 {113}	15,131 {1,544}
	1000			50		20	1018.18	1.47	1.77	1,572 {160}	1,377 {141}	15,131 {1,544}
	1200	EWGM150S	28	60	150	20	1200.00	1.25	1.50	1,923 {196}	1,616 {165}	21,825 {2,227}
	1500			75		20	1464.94	1.02	1.23	2,328 {238}	1,955 {199}	21,825 {2,227}
	1800		38	120		15	1756.70	0.85	1.02	2,589 {264}	2,422 {247}	21,825 {2,227}
	2400	EWGM175S	38	120	175	20	2342.26	0.64	0.77	3,459 {353}	3,102 {317}	24,451 {2,495}
	3000	EWGM200S	38	120	200	25	2927.83	0.51	0.61	4,259 {435}	3,580 {365}	29,743 {3,035}
	3600			120		30	3513.39	0.43	0.51	4,550 {464}	3,832 {391}	29,743 {3,035}
0.75	100	EWGM80S	28	10	80	10	101.59	14.8	17.7	374 {38}	314 {32}	7,575 {773}
	150	EWGM100S	28	15	100	10	146.94	10.2	12.2	542 {55}	455 {46}	11,505 {1,174}
	200			20		10	199.48	7.52	9.02	727 {74}	610 {62}	11,505 {1,174}
	250			25		10	253.97	5.91	7.09	844 {86}	769 {79}	11,505 {1,174}
	300	EWGM125S	28	20	125	15	299.22	5.01	6.02	1,023 {104}	860 {88}	15,131 {1,544}
	400			20		20	398.96	3.76	4.51	1,301 {133}	1,096 {112}	15,131 {1,544}
	500			25		20	507.94	2.95	3.54	1,572 {160}	1,376 {140}	15,131 {1,544}
	600	EWGM150S	38	60	150	10	600.82	2.50	3.00	2,067 {211}	1,733 {177}	21,825 {2,227}
	800			40		20	812.70	1.85	2.21	2,488 {254}	2,093 {214}	21,825 {2,227}
	1000	EWGM175S	38	50	175	20	982.86	1.53	1.83	3,019 {308}	2,539 {259}	24,451 {2,495}
	1200			60		20	1201.64	1.25	1.50	3,459 {353}	3,073 {314}	24,451 {2,495}
	1500	EWGM200S	38	75	200	20	1493.34	1.00	1.21	4,412 {450}	3,710 {379}	29,743 {3,035}
	1800		42	120	200	15	1837.50	0.82	0.98	5,360 {547}	4,498 {459}	29,743 {3,035}
	2400	TDGM200S	42	120	200	20	2450.00	0.61	0.73	8,101 {827}	6,806 {694}	32,400 {3,306}
	3000			100	200	30	3032.82	0.49	0.59	9,075 {926}	7,651 {781}	32,400 {3,306}
	3600			120	200	30	3858.75	0.39	0.47	11,143 {1,137}	9,586 {978}	32,400 {3,306}

Contact us for external dimensions.
Refer to our separate brochure for details on the hollow output shaft {H} for the A type, and for the B and C types.

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
			GMTA		Worm			50 Hz	60 Hz	50 Hz	60 Hz	
			Frame No.	Reduction Ratio	Frame No.	Reduction Ratio				N·m {kgf·m}	N·m {kgf·m}	N {kgf}
1.5	100	EWGM100S	38	10	100	10	100.00	15.0	18.0	750 {76}	630 {64}	11,505 {1,174}
	150	EWGM125S	38	15	125	10	150.00	10.0	12.0	1,113 {114}	935 {95}	15,131 {1,544}
	200			20		10	196.15	7.65	9.18	1,439 {147}	1,209 {123}	15,131 {1,544}
	250			25		10	240.91	6.23	7.47	1,572 {160}	1,472 {150}	15,131 {1,544}
	300	EWGM150S	38	30	150	10	300.00	5.00	6.00	2,180 {222}	1,830 {187}	21,825 {2,227}
	400			20		20	392.30	3.82	4.59	2,578 {263}	2,173 {222}	21,825 {2,227}
	500	EWGM175S	38	25	175	20	481.82	3.11	3.74	3,171 {324}	2,672 {273}	24,451 {2,495}
	600	EWGM200S	42	60	200	10	614.92	2.44	2.93	4,227 {431}	3,546 {362}	29,743 {3,035}
	800			40		20	785.06	1.91	2.29	4,802 {490}	4,046 {413}	29,743 {3,035}
	1000			50		20	974.08	1.54	1.85	5,805 {592}	4,955 {506}	29,743 {3,035}
	1200	TDGM200S	42	60	200	20	1229.84	1.22	1.46	8,840 {902}	7,425 {758}	32,400 {3,306}
	1500			75		20	1457.18	1.03	1.24	10,397 {1,061}	8,733 {891}	32,400 {3,360}
	1800			60		30	1937.00	0.77	0.93	11,143 {1,137}	10,603 {1,082}	32,400 {3,306}
	2400	TDGM225S	50	120	225	20	2555.84	0.59	0.70	17,542 {1,790}	15,049 {1,536}	37,000 {3,776}
	3000	TDGM250S	50	100	250	30	3088.10	0.49	0.58	20,160 {2,057}	16,983 {1,733}	44,000 {4,490}
	3600			120		30	3864.93	0.39	0.47	22,648 {2,311}	20,974 {2,140}	44,000 {4,490}
2.2	100	EWGM125S	42	10	125	10	98.70	15.2	18.2	1,094 {112}	920 {94}	15,131 {1,544}
	150			15		10	144.54	10.4	12.5	1,572 {160}	1,324 {135}	15,131 {1,544}
	200	EWGM150S	42	20	150	10	206.59	7.26	8.71	2,235 {228}	1,877 {192}	21,825 {2,227}
	250			25		10	254.55	5.89	7.07	2,589 {264}	2,293 {234}	21,825 {2,227}
	300	EWGM175S	42	30	175	10	291.43	5.15	6.18	3,137 {320}	2,633 {269}	24,451 {2,495}
	400			20		20	413.18	3.63	4.36	3,459 {353}	3,393 {346}	24,451 {2,495}
	500	EWGM200S	42	25	200	20	509.10	2.95	3.54	4,837 {494}	4,081 {416}	29,743 {3,035}
	600		50	60		10	605.77	2.48	2.97	5,805 {592}	5,127 {523}	29,743 {3,035}
	800	TDGM200S	50	40	200	20	776.12	1.93	2.32	8,346 {852}	7,008 {715}	32,400 {3,306}
	1000			50		20	995.08	1.51	1.81	10,587 {1,080}	8,892 {907}	32,400 {3,306}
	1200			60		20	1211.54	1.24	1.49	11,143 {1,137}	10,735 {1,095}	32,400 {3,306}
	1500	TDGM225S	50	75	225	20	1533.77	0.98	1.17	16,124 {1,645}	13,544 {1,382}	37,000 {3,776}
	1800			60		30	1877.89	0.80	0.96	17,542 {1,790}	15,566 {1,588}	37,000 {3,776}
	2400	TDGM280S	50	60	280	40	2483.66	0.60	0.72	23,296 {2,377}	19,656 {2,006}	49,000 {5,000}
	3000			75		40	3067.54	0.49	0.59	28,355 {2,893}	23,930 {2,442}	49,000 {5,000}
	3600			60		60	3695.20	0.41	0.49	30,106 {3,072}	25,808 {2,633}	49,000 {5,000}
3.7	100	EWGM150S	50	10	150	10	100.80	14.9	17.9	1,894 {193}	1,592 {162}	21,825 {2,227}
	150			15		10	151.58	9.90	11.9	2,589 {264}	2,349 {240}	21,825 {2,227}
	200	EWGM175S	50	20	175	10	206.67	7.26	8.71	3,459 {353}	3,187 {325}	24,451 {2,495}
	250	EWGM200S	50	25	200	10	249.23	6.02	7.22	4,520 {461}	3,798 {388}	29,743 {3,035}
	300			30		10	305.45	4.91	5.89	5,490 {560}	4,612 {471}	29,743 {3,035}
	400			20		20	413.34	3.63	4.35	5,805 {592}	5,654 {577}	29,743 {3,035}
	500	TDGM200S	50	25	200	20	498.46	3.01	3.61	9,463 {966}	7,941 {810}	32,400 {3,306}
	600			30		20	610.90	2.46	2.95	11,143 {1,137}	9,656 {985}	32,400 {3,306}
	800	TDGM225S	50	40	225	20	829.45	1.81	2.17	15,055 {1,536}	12,640 {1,290}	37,000 {3,776}
	1000	TDGM250S	50	50	250	20	994.06	1.51	1.81	18,142 {1,851}	15,227 {1,554}	44,000 {4,490}
	1200			40		30	1254.29	1.20	1.44	21,291 {2,173}	17,924 {1,829}	44,000 {4,490}
	1500	TDGM280S	50	50	280	30	1515.94	0.99	1.19	25,742 {2,627}	21,668 {2,211}	49,000 {5,000}
	1800			30		60	1863.25	0.81	0.97	28,312 {2,889}	23,962 {2,445}	49,000 {5,000}
	2400			40		60	2468.12	0.61	0.73	30,106 {3,072}	30,056 {3,067}	49,000 {5,000}
	3000	TDGM315S	50	50	315	60	3081.59	0.49	0.58	43,682 {4,457}	37,007 {3,776}	60,800 {6,204}
5.5	100	EWGM175S	50	10	175	10	99.90	15.0	18.0	2,169 {221}	1,823 {186}	24,451 {2,495}
	150	EWGM200S	50	15	200	10	153.59	9.77	11.7	3,261 {333}	2,742 {280}	29,743 {3,035}
	200			20		10	197.70	7.59	9.10	4,148 {423}	3,487 {356}	29,743 {3,035}
	250	TDGM175S	50	25	175	10	249.79	6.00	7.21	5,751 {587}	4,814 {491}	25,500 {2,602}
	300			30		10	299.75	5.00	6.00	6,868 {701}	5,751 {587}	25,500 {2,602}
	400	TDGM200S	50	20	200	20	395.40	3.79	4.55	8,668 {885}	7,272 {742}	32,400 {3,306}
	500	TDGM225S	50	25	225	20	499.59	3.00	3.60	10,919 {1,114}	9,161 {935}	37,000 {3,776}
	600			30		20	599.50	2.50	3.00	13,010 {1,328}	10,919 {1,114}	37,000 {3,776}
	800	TDGM250S	50	20	250	40	790.80	1.90	2.28	15,843 {1,617}	13,340 {1,361}	44,000 {4,490}
	1000	TDGM280S	50	25	280	40	999.17	1.50	1.80	19,742 {2,014}	16,632 {1,697}	49,000 {5,000}
	1200			30		40	1199.00	1.25	1.50	23,424 {2,390}	19,742 {2,014}	49,000 {5,000}
	1500	TDGM315S	50	30	315	50	1462.20	1.03	1.23	27,367 {2,793}	23,103 {2,357}	60,800 {6,204}
	1800			30		60	1813.13	0.83	0.99	31,785 {3,243}	26,895 {2,744}	60,800 {6,204}

Contact us for external dimensions.
Refer to our separate brochure for details on the hollow output shaft (H) for the A type, and for the B and C types.

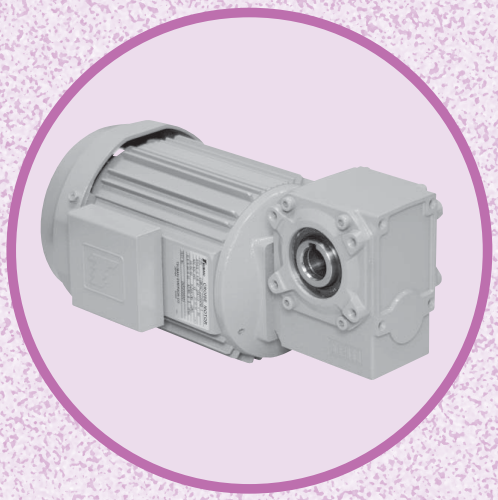
Memo

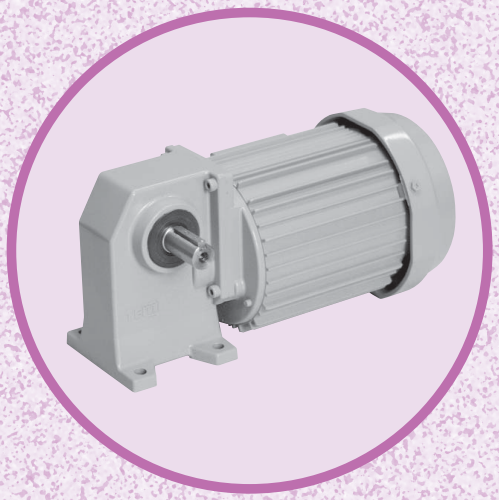
CROISE MOTOR

Croise motor

Insistence on a compact design resulted in a right angle worm gear motor with excellent quietness and self-locking properties.

***"Croise" is French for "right angle".**





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Features

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Model Number Designation (0.1 to 0.75 kW)
Model Number Designation (1.5 to 3.7 kW)

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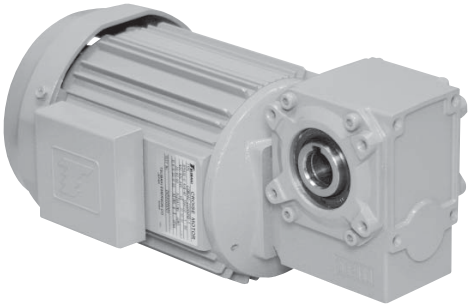
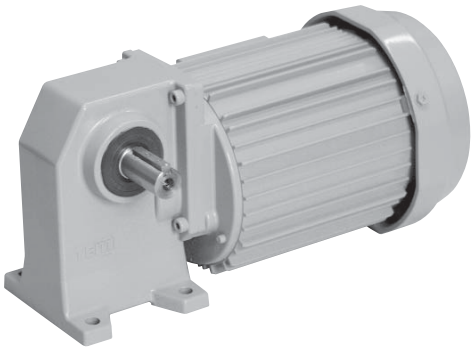
Features

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





Worm motors satisfy various needs from the customer's perspective

1.	**Right angle drive with high reduction ratio**	Croise motors are right angle drives with double reduction ratios that use worm gears to allow space-saving equipment layout possibilities. The CSMA series uses a worm gear for a single reduction ratio of up to 1/60, while the HCMA/HCM series uses a helical gear for the first reduction and a worm gear for the second reduction to achieve a combined reduction ratio of up to 1/300 in a right angle drive.
2.	**Lightweight**	All motor sizes are made from aluminum frame for lightweight construction. The simple construction of frame sizes 13 to 28 in the CSMA series makes them 30% lighter than competing right angle gear motors.
3.	**Compact**	The simple construction of the CSMA series motor makes it shorter lengthwise, an attribute that lends itself to compact designs. As for the HCMA/HCM series, the helical gear used for the first reduction reduces the offset between the input shaft and the output shaft in the worm gear, resulting in a more compact profile.
4.	**Silent operation**	These motors operate much more smoothly and silently compared to other gearing methods. A silent brake is used to squelch the irritating metal-to-metal screech when the brake is engaged.
5.	**Excellent stopping accuracy**	Backlash is minute compared to other gearing methods, which allows for potentially superior stopping accuracy.
6.	**High efficiency**	Over the 1/10 to 1/60 reduction ratio range, the CSMA series offers high efficiency in the low reduction ratio range (1/10 to1/30), and the HCMA/MCM series in the high reduction ratio range (1/40 to 1/60).
7.	**Robust against shock**	Compared to other gearing methods, the teeth on a worm gear are more robust against shock.

Model Number Designation (0.1 to 0.75 kW)

Refer to our separate brochure for details such as characteristics and external dimensions.

	Series	Motor Capacity		Reducer Frame No.	Mounting direction symbols	Mounting Style	Reduction Ratio	Shaft arrangement	Package symbols	Option symbols
Croise motor (0.1 to 0.75 kW)	CSMA	010	–	13	0	L	20	T	B	□□□
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) Series
CSMA: Single reduction with motor HCMA: Double reduction with motor

(2) Motor capacity
(Ex.) 010 = 3-phase 0.1 kW

(3) Reducer frame No.
(Ex.) 13 = Frame size 13

(4) Mounting direction symbols
(Ex.) 0 (See mounting direction symbols and corresponding mounting direction diagrams)

(5) Mounting style
H: hollow shaft U: face mount L: foot mount

(6) Reduction ratio
(Ex.) 20 = 1/20

(7) Shaft arrangement
L: Looking from the motor, the output shaft is on the left side. T: Output shaft is on both sides
R: Looking from the motor, the output shaft is on the right side. Blank: hollow shaft
* Only for hollow shaft models with overload protection device
(L: Looking from the motor, the mounting side is on the left side (overload protection device goes on the right side)
R: Looking from the motor, the mounting side is on the right side (overload protection device goes on the left side.)

(8) Package symbols
Blank: without brake B: with brake BE: with encoder SR: shock relay (not available for 0.75 kW motor)

(9) Option symbols
G: mechanical overload protection device (only for hollow shaft type) Z: variable frequency motor (not available for 0.55 kW motor)
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
PN3: 200 V class CCC compliant (plastic terminal box)
VN: 400 V class CE compliant
PVN3: 200 V class CCC compliant (plastic terminal box)
N2: 200 V class UL compliant
HN3: 200 V class CCC compliant (hard terminal box)
VN2: 400 V class UL compliant
PVN3: 200 V class CCC compliant (plastic terminal box))
H: Hard terminal box Q: Manual quick-release brake M: Manual release shaft

Supplement code (Shown as second line of model number)
Terminal box position P1: 90° offset P2: 180° offset P3: 270° offset
Outdoor type, hard terminal box inlet direction 1) D1: 90° offset D2: 180° offset D3: 270° offset
Color (standard color: Munsell 2.5G 6/3
C0: light gray (Munsell N7.5) C1: light sliver metallic
C2: ivory white (Munsell 7.5Y9/1) C3: dark silver metallic

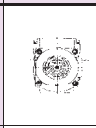
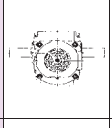
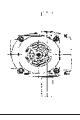
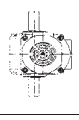
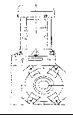
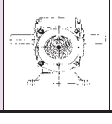
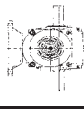
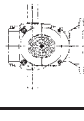
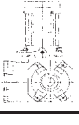
Each supplement code may be combined in any order.

Note 1) Standard position is opposite the load side. The mounting direction of the plastic terminal boxes on our standard motors can also be changed by changing the direction of the cover.

■ Mounting direction symbols

CSMA Series		HCMA Series			
Frame No. 13 to 28		Frame No. 16 to 28		Frame No. 32 to 50	
Mounting No.	Direction	Mounting No.	Target mounting direction	Mounting No.	Target mounting direction
0	Specify 0 even though the motor 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

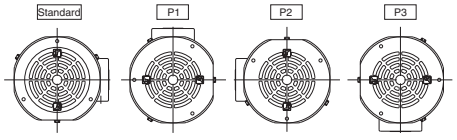
■ Mounting direction diagrams

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 Bottom ↔ Top						Specify when ordering.
Face mount Bottom ↔ Top						
Foot mount Bottom ↔ Top						

■Terminal box mounting direction and inlet direction

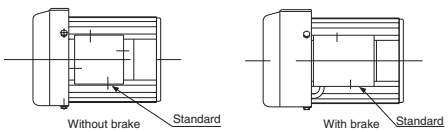
Mounting direction

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



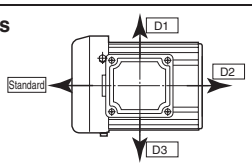
Inlet direction

On the standard motor, change the inlet direction by turning the terminal box cover.



Details of symbols for outdoor models and hard terminal box inlet positions

Facing the terminal box, the possible inlet positions are every 90° clockwise from the standard position, starting at D1, D2, and D3.



■Combination of package and option symbols

Package symbol: blank

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			

Package symbol: B

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		

Package symbol: BE

Z	ZV
V	VH
H	

Package symbol: SR

N

Note) Motors with a water-resistant brake for outdoor use are made to order. Note, this changes the motor to a non-standard design.

Model Number Designation (1.5 to 3.7 kW)

Refer to our separate brochure for details such as characteristics and external dimensions.

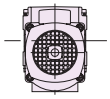
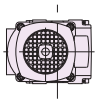
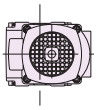
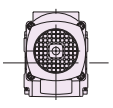
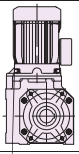
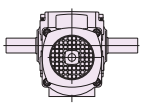
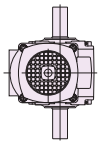
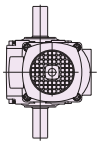
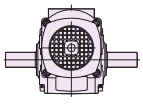
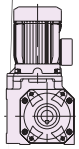
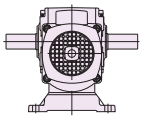
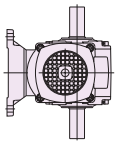
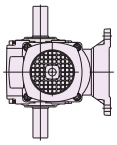
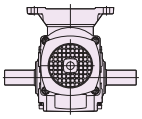
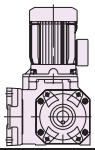
	Series	Motor Capacity		Reducer Frame No.	Mounting direction symbols	Mounting Style	Reduction Ratio	Shaft arrangement	Package symbols	Option symbols
Croise motor (1.5 to 3.7 kW)	CSMA	150	–	32	1	L	60	T	B	□□□
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) Series	CSMA: Single reduction with motor HCMA: Double reduction with motor
(2) Motor capacity	(Ex.) 150 = 3-phase 1.5 kW
(3) Reducer frame No.	(Ex.) 32 = Frame size 32 1)
(4) Mounting direction symbols	(Ex.) 1 (See mounting direction symbols and corresponding mounting direction diagrams)
(5) Mounting style	H: hollow shaft U: face mount L: foot mount
(6) Reduction ratio	(Ex.) 60 = 1/60
(7) Shaft arrangement	L: Looking from the motor, the output shaft is on the left side. T: Output shaft is on both sides R: Looking from the motor, the output shaft is on the right side. Blank: hollow shaft *Only for hollow shaft models with overload protection device L: Looking from the motor, the mounting side is on the left side (overload protection device goes on the right side) R: Looking from the motor, the mounting side is on the right side (overload protection device goes on the left side.)
(8) Package symbols	Blank: without motor B: with brake BE: Encoder
(9) Option symbols	G: mechanical overload protection device (only for hollow shaft type) Z: variable frequency motor W: outdoor type V: 400 V class (400/400/440 V, 50/60/60 Hz) V1: 380 V 50 Hz V2: 380 V 60 Hz (5.5 kW type is only available on order) V3: 415 V 50 Hz V4: 460 V 60 Hz N: CE compliant (global series) 2) Q: Manual quick-release brake
Supplement code (Shown as second line of model number)	Terminal box position P1: 90° offset P2: 180° offset P3: 270° offset Hard terminal box inlet direction D1: 90° offset D2: 180° offset Color (standard color: Munsell 2.5G 6/3 with no symbol) C0: light gray (Munsell N7.5) C1: light sliver metallic C2: ivory white (Munsell 7.5Y9/1) C3: dark silver metallic

Each supplement code may be combined in any order.

Note 1) Pressure vent supplied with frame sizes 32 to 50.
2) For information on voltages for global series, refer to thes small-size gear motor catalog or Tsubaki's General Catalog.
3) Design for HCMA series 5.5 kW motors in stock. Contact us for details.

■ 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 Bottom ↔ Top						Specify mounting direction when ordering.
Face mount Bottom ↔ Top						
Foot mount Bottom ↔ Top						

Note) Always specify mounting position 0 for CSM series with frame size 28 even though it can be mounted in any direction. Specify 5 for the HCM series as these models are limited to that mounting position.

■Combination of package and option symbols

Package symbol: blank or G

Z	ZW	ZWV
	ZV	
W	WV	
	WV1	
	WV2	
	WV3	
	WV4	
V		
V1		
V2		
V3		
V4		
VN		
N		

Package symbol: B

Z	ZV	ZVQ
	ZQ	
	VQ	
V1		
V2		
V3		
V4		
Q		

Package symbol: B

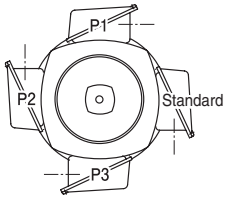
Z	ZV	
V		

Note) Motors with a water-resistant brake for outdoor use are made to order.
Note, this changes the motor to a non-standard design.

■Terminal box mounting direction and inlet direction

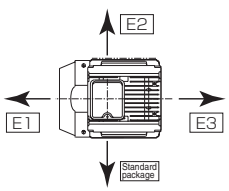
Mounting direction

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



■Standard, outdoor type terminal box inlet position symbol

Facing the terminal box, the possible inlet positions are every 90° clockwise from the standard position, starting at E1, E2, and E3.



Models

Croise Motor (hollow shaft)

	CSMA Series								HCMA 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											

Design for HCMA series 5.5 kW motors in stock. Contact us for details.

Croise Motor (face mount)

	CSMA Series								HCMA 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											

Design for HCMA series 5.5 kW motors in stock. Contact us for details.

Croise Motor (foot mount)

	CSMA Series								HCMA 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											

Items in thick boxes ☐ come with built-in feet.
Design for HCMA series 5.5 kW motors in stock. Contact us for details.

Reduction Ratio (Combinations)

Actual reduction ratios (integral) shown for all Croise motors.

CSMA Series (worm gear = single reduction)

Reduction Ratio	10	15	20	25	30	40	50	60

HCMA Series (High speed side: helical gear x low speed side: 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 used with reduction ratio sizes 240 and 300.
2) The figures in ( ) indicate the reduction ratio of the worm gear for the 3.7 kW motor used with reduction ratio sizes 120, 150, 240, and 300.

Specifications

■ Standard package

Motor	Output	3 Phase: 0.1, 0.2, 0.4, 0.55, 0.75, 1.5, 2.2, 3.7 kW
		With/without brake
	AC source	200/200/220 V 50/60/60 Hz
	Poles	4
	Protection	Totally enclosed fan-cooled (IP44)
	Cooling	Self-cooling (JC411)
	Rating	Continuous
	Insulation	Class E
	Brake model	Engaged when denergized, DC solenoid brake
Reducer	Reduction ratio	1/10 to 1/300
	Reduction method	External gearing (worm gear and helical gear)
	Lubrication method	Oil lubrication
	Keyway at shaft tip	New JIS keyway (JIS B 1301-1996 normal class): output shaft key supplied (except for hollow shafts)
	Output shaft	Tap holes provided (except for hollow shafts)
Ambient conditions	Installation	Indoors free of dust and water
	Ambient temperature	0 to 40°C
	Ambient humidity	85% or less (no condensation)
	Altitude	No more than 1,000 m above sea level
	Atmosphere	Area must be free of corrosive and explosive gases and steam.
	Mounting direction	Horizontal is the standard direction. Specify if the unit must be mounted in a non-horizontal position. CSMA reducers in sizes 13 to 28 may be mounted in any direction.
Color		Munsell 2.5G6/3

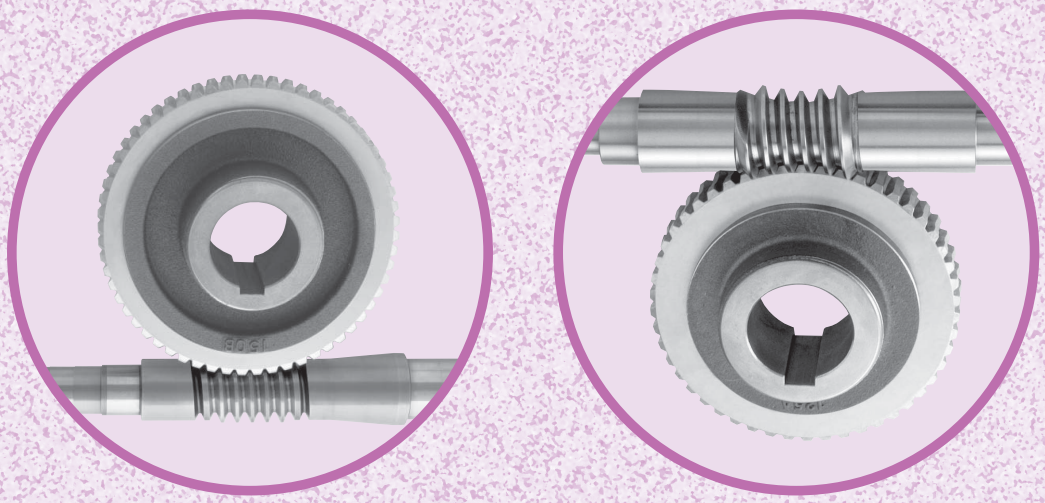
Note) Motors with brake have a protection rating of IP20.

■ Motor amperage

No. of phases	Output	Frequency Hz	Voltage V	Rated amperage A	Rated speed r/min	Brake amperage on AC side A (Reference) at 20°C
3	0.1 kW	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)	0.178
	0.2 kW			1.2/1.1/1.1 (0.59/0.55/0.55)	1420/1700/1720 (1410/1690/1720)	0.178
	0.4 kW			2.3/2.0/2.0 (1.2/1.0/1.0)	1380/1650/1680 (1390/1670/1700)	0.232
	0.55 kW			2.9/2.6/2.5 (1.45/1.3/1.3)	1380/1650/1690 (1380/1650/1690)	0.232
	0.75 kW			3.8/3.4/3.4 (2.0/1.7/1.7)	1410/1690/1710 (1410/1690/1710)	0.273
	1.5 kW			7.0/6.2/6.0 (3.5/3.1/3.0)	1420/1710/1730 (1420/1710/1730)	0.10
	2.2 kW			9.8/8.9/8.5 (4.9/4.5/4.3)	1420/1710/1730 (1420/1710/1730)	0.10
	3.7 kW			16.0/14.8/14.0 (8.0/7.4/7.0)	1420/1710/1730 (1420/1710/1730)	0.08

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

Worm Gear Set



Worm Power Drive® Gear set

Model Numbers/Specifications..... 205

Gear Set Model Numbers, Models, Specifications, Reference Dimensions

TroiDrive Gear set

Model Numbers/Specifications..... 206

Gear Set Model Numbers, Models, Specifications, Reference Dimensions

Transfer Capacity Table

..... 207 - 208

Dimensions ..... 209 - 210

Technical Data..... 211

Worm Power Drive® Gear Set

Worm gear sets equivalent to those used on our Worm Power Drive EWJ and EW Series are available separately.

■ Specify information regarding the size, reduction ratio, and dimensional requirements when inquiring.

Gear Set Model Numbers

	Product name, size		Reduction Ratio	Worm gear set
EWJ Series equivalents	**WEJ70**	**-**	**10**	**WGS**
EW Series equivalents	**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) ○ indicates standard design with right-hand helix.
2) Contact us for left-hand helix.

Specifications

Transfer capacity

Refer to the transfer capacity for each size.
(Contact us for details.)

Actual reduction ratio

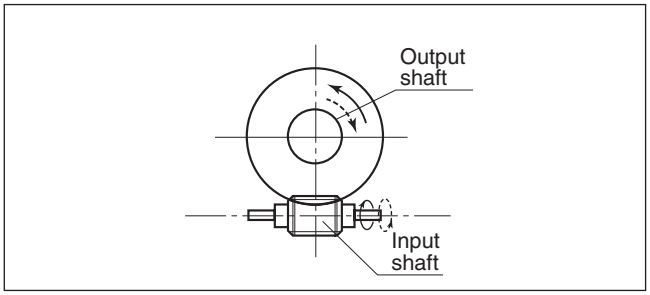
Reduction ratios are all integer ratios.

Keyway

Keyways are finished to New JIS standards for normal grade keyways (JIS B 1301-1976). (Key supplied for the input shaft)

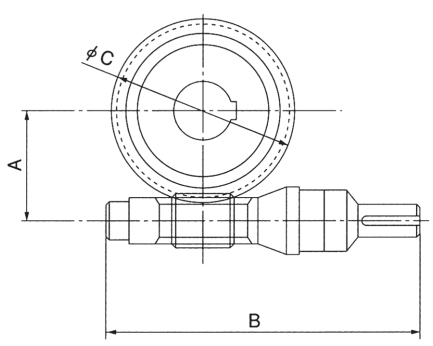
Relation between input and output shaft rotation

Worms are always cut to a right-handed helix. Therefore, the output shaft always rotates as shown with respect to the rotating direction of the input shaft.



Reference dimension diagrams

(Dimensions are for reference and are subject to vary depending on the reduction ratio. Contact us 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 on our Troi Drive TD Series are available separately.

Gear Set Model Numbers

Product name, 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) ○ indicates standard design with right-hand helix.
2) Contact us for left-hand helix and nominal reduction ratios 15 and 25.

Specifications

Transfer capacity (Refer to pages 207 to 208)

- Figures indicate raw capacity ratings of the gear set.
- It may be necessary to consider the thermal rating when using separately purchased gear sets. Contact us for details.
- Assembly workmanship may affect the transfer capacity. Contact us for details.

Actual reduction ratio

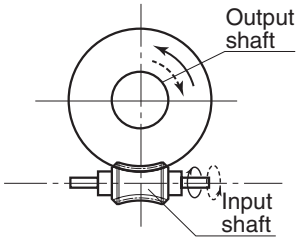
	TD125WGS	TD150WGS	TD175WGS	TD200WGS	TD225WGS	TD250WGS	TD280WGS	TD315WGS
10	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25
20	20.00	20.50	20.50	20.00	20.50	20.50	20.50	20.50
30	31.50	31.50	32.50	31.50	31.00	31.00	30.50	31.00
40	40.00	41.00	41.00	40.00	40.00	40.00	41.00	40.00
50	50.00	50.00	50.00	50.00	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 to New JIS standards for normal grade keyways (JIS B 1301-1976). (Key supplied for the input shaft)

Relation between input and output shaft rotation

Worms are always cut to a right-handed helix.
Therefore, the output shaft always rotates as shown with respect to the rotating direction of the input shaft.

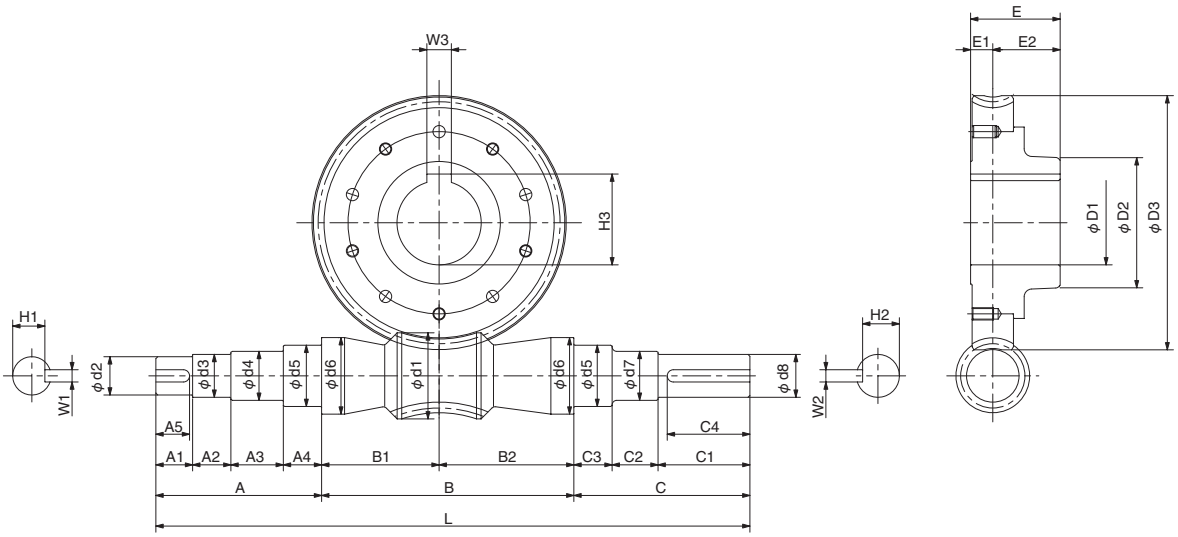


TroiDrive Gear Set Transfer Capacity

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

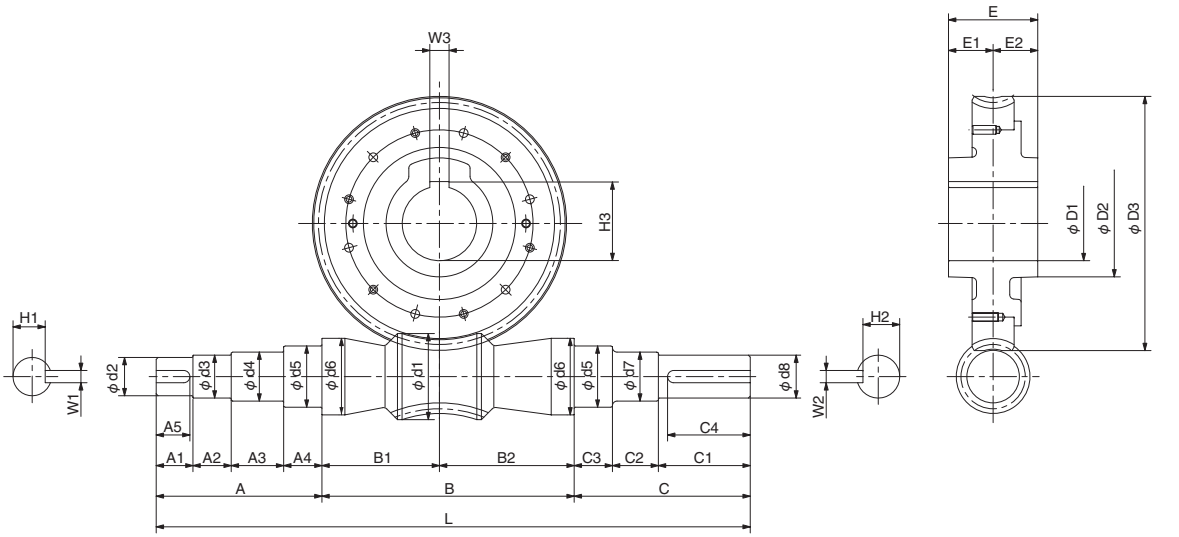


Units: mm

Size	Worm dimensions																	
	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 dimensions								Wheel dimensions								Estimated 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. Other sizes can be built. Contact us for further details.
Dimensions for d1 and D3 differ depending on reduction ratio, even for the same size.

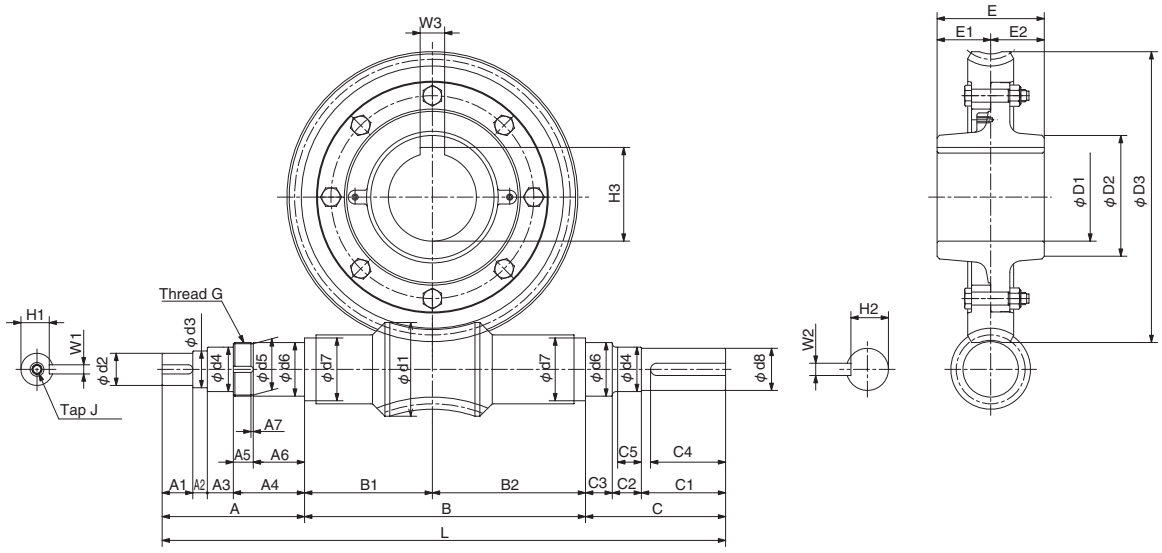


Units: mm

Size	Worm dimensions																	
	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 dimensions								Wheel dimensions								Estimated 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. Other sizes can be built. Contact us for further details.
Dimensions for d1 and D3 differ depending on reduction ratio, even for the same size.



Units: mm

Size	Worm dimensions																					
	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 dimensions										Wheel dimensions								Estimated 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 x 24	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. Other sizes can be built. Contact us for further details.
Dimensions for d1 and D3 differ depending on reduction ratio, even for the same size.

TroiDrive Technical Data for Gear Sets

1. Machining accuracy of housing

The final machining accuracy of the housing has a tremendous impact on the performance of the gear set. Gear sets assembled into housings that fail to meet the recommended machining tolerances will fail to mesh properly due to poor tooth contact. This can result in reduced performance and life, and cause abnormal 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

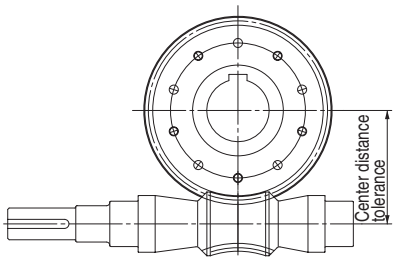


Figure 2 Perpendicularity tolerance

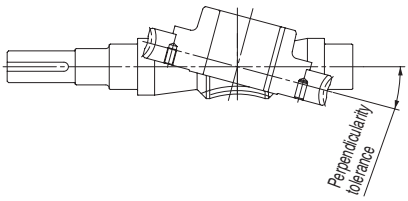


Table 1 Center Distance and Perpendicularity Tolerances

Size	Center distance tolerance (H7)	Perpendicularity tolerance
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 in the housing for visually verifying the correct position of the worm wheel during assembly, and tooth contact during adjustment. The hole can also be used for regularly inspecting the condition of the teeth on the worm wheel.

3. Input/output shaft bearing

The input and output shafts are subject to both radial and thrust loads. Make sure the bearings and bearing supports are designed to support both shafts at the same time.

As a general rule, use taper roller bearings to bear shafts. Contact us if you have any questions or concerns regarding this.

Note) Ask for our separate assembly manual for procedures on adjusting the contact of the gear set teeth.

4. Lubrication

Under normal operating conditions, the recommended oil for input shafts driven at 500 r/min or faster is Daphne Alpha Oil TE260 (IDEMITSU); for speeds 500 r/min or slower Daphne Alpha Oil TE380. Contact us for other operating conditions.

Technical Data

Technical Data on Reducers .....213 - 217

Reduction ratio
Backlash
Tapped hole locations
Plug sizes
Mounting surface dimensions for V type
Relation between input and output shaft rotation
Detailed dimensions of hollow output shaft

Technical Data on Motors .....218 - 223

Motor amperage
Brake
Standard terminal box
Detailed dimensions of motor flange
Wiring
Variable frequency drives

Technical Data on Reducers

Reduction Ratio

EWJ / EWJM / EW / EWM / SWJ / SWJM / SW / SWM 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 the 16 standardized combinations shown below.

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 for the EWJ/EWJM/EW/EWM/SW/SWM series

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 the 15 standardized 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 for the TD series

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

Single reduction type

Units: 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

Units: 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

Single reduction type

Units: 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

Units: 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 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.

Technical Data on Reducers

■ Backlash (angle)

TD Series

Solid output shaft (S)

Single reduction type

Units: angle°

Nominal reduction ratio \ Size	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

Units: angle°

Nominal reduction ratio \ Size	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

Units: angle°

Nominal reduction ratio \ Size	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

Units: angle°

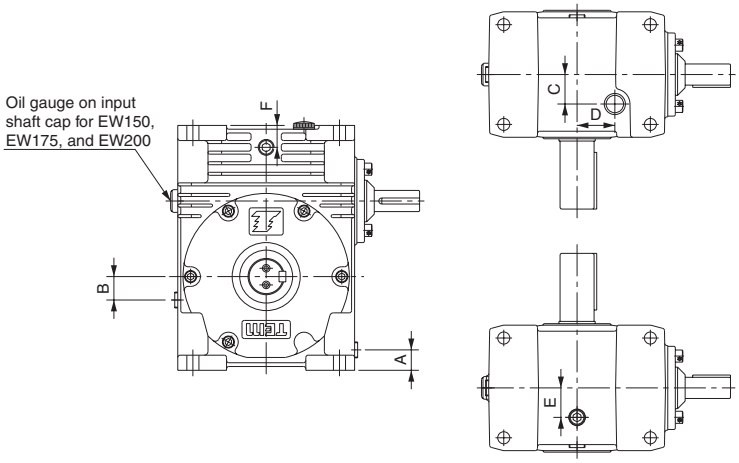
Nominal reduction ratio \ Size	TD125H	TD150H	TD175H	TD200H	TD225H	TD250H	TD280H	TD315H
100 to 250	0.10 to 0.35	0.09 to 0.29	0.08 to 0.27	0.08 to 0.25	0.06 to 0.22	0.06 to 0.21	0.06 to 0.20	0.06 to 0.18
300 to 450	0.09 to 0.28	0.09 to 0.26	0.07 to 0.22	0.07 to 0.21	0.06 to 0.18	0.05 to 0.17	0.06 to 0.16	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 the 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.

Tap hole locations and plug sizes

EW Series

EW80 to 200



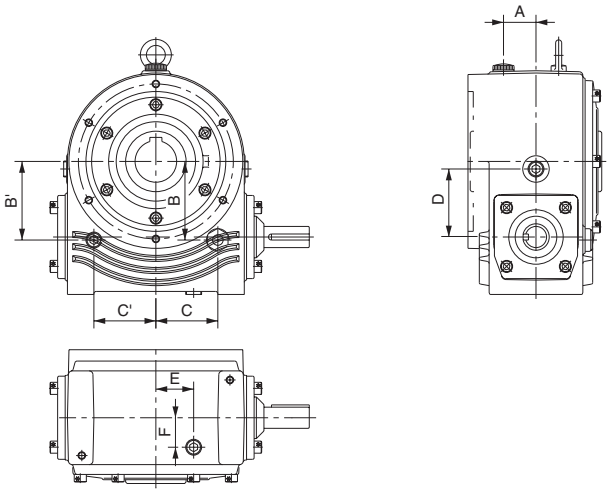
Units: mm

Size	A	B	C	D	E	F	Housing side plug size
EW 80	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



Units: mm

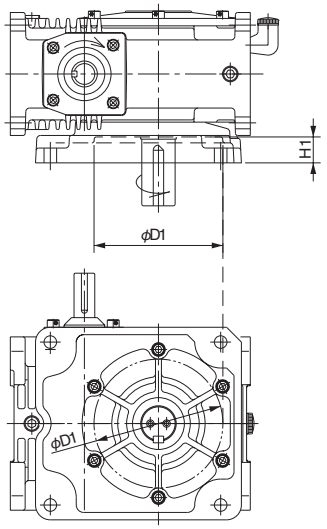
Size	A	B	B'	C	C'	D	E	F	Housing side plug size
SW 80	35	80	80	71	71	80	40	32	5-PS 1/2
SW100	43	104	104	82	82	90	50	39	5-PS 1/2
SW125	53	125	125	105	105	90	65	44	5-PS 3/4
SW150	64	134	134	130	130	110	80	55	5-PS 3/4
SW175	72	155	155	160	160	125	90	64	5-PS 3/4
SW200	74	165	165	170	170	135	100	65	5-PS 3/4

*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



Units: mm

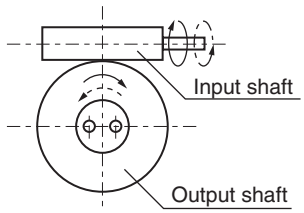
Size	D1	H1
EWJ50	78	27
EWJ63	92	32
EWJ70	108	38
EW 80	138	30
EW100	178	35
EW125	220	45
EW150	260	52
EW175	304	60
EW200	335	71

Technical Data on Reducers

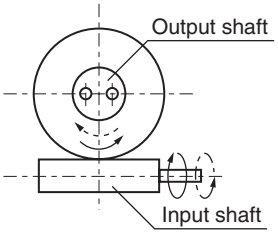
Relation between input and output shaft rotation

EWJ / EW / EWJM / EWM / SWJ / SW / SWJM / SWM / TM / TD Series

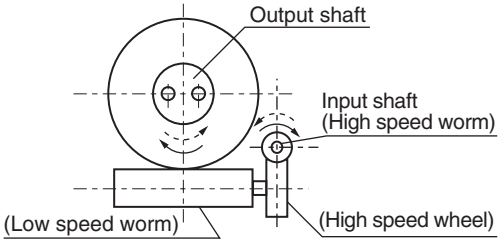
Worms are always cut to a right-handed helix. Therefore, the output shaft always rotates as shown with respect to the rotating direction of the input shaft.



T type
(Single reduction 1/10 to 1/60)

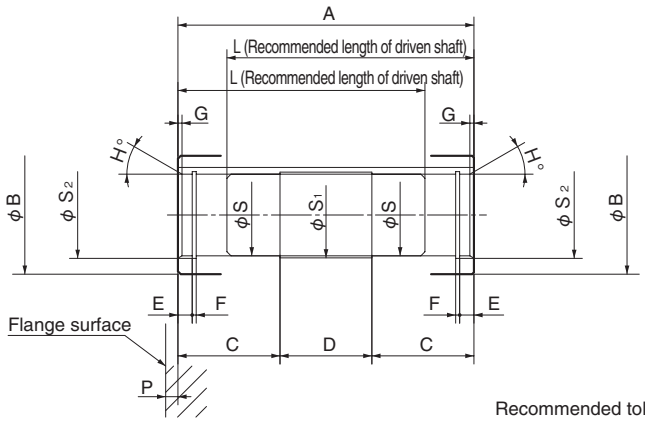


B type
(Single reduction 1/10 to 1/60)



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)

Units: mm

Size	A	B	C	D	E	F	G	H°	P	S	S1	S2	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 1) Models SWJ25, SWJ35, and SWJ42 do not have a stop ring groove.
2) Dimension "P" measures from the flange surface to the end of the shaft. (Applies to the SWJ/SWJM/SW/SWM series.)
On models SWJ25, SWJ35, and SWJ42, the flange protrudes beyond the end of the shaft so dimension P is indicated as a negative value.
3) The hollow shaft bore is finished to H8. Keyways are finished to New JIS normal grade (Js9).

TD Series

Units: mm

Size	A	B	C	D	E	F	G	H°	P	S	S1	S2	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) Dimension "P" measures from the flange surface to the end of the shaft.

Technical Data on Motors

Motor amperage

No. of phases	Output	Poles	Frequency Hz	Voltage V	Rated amperage A	Rated speed r/min	Brake amperage on AC side A (Reference) at 20°C
3	0.1 kW	4	50/60/60	200/200/220	0.63/0.57/0.58	1420/1680/1710	0.12
	0.2 kW				1.2/1.1/1.1	1420/1700/1720	0.12
	0.4 kW				2.3/2.0/2.0	1380/1650/1680	0.16
	0.75 kW				3.8/3.4/3.4	1410/1690/1710	0.17
	1.5 kW				7.0/6.2/6.0	1420/1710/1730	0.29
	2.2 kW				9.8/8.9/8.5	1420/1710/1730	0.29
	3.7 kW				16.0/14.8/14.0	1420/1710/1730	0.26
	5.5 kW				23.8/21.0/20.0	1430/1730/1740	0.29
3	0.1 kW	4	50/60/60	400/400/440	0.32/0.29/0.29	1440/1740/1740	0.14
	0.2 kW				0.59/0.55/0.55	1410/1690/1720	0.14
	0.4 kW				1.2/1.0/1.0	1390/1670/1700	0.11
	0.75 kW				2.0/1.7/1.7	1410/1690/1710	0.13
	1.5 kW				3.5/3.1/3.0	1420/1710/1730	0.15
	2.2 kW				4.9/4.5/4.3	1420/1710/1730	0.15
	3.7 kW				8.0/7.4/7.0	1420/1710/1730	0.14
	5.5 kW				11.9/10.5/10.0	1430/1730/1740	–

1) If the motor has a brake, add the brake amperage listed above if the brake leads are connected to the motor leads.
Brake amperage on the AC side are for a 200 and 400 VAC motors operating at 60 Hz.

Brake

1. Brake characteristics

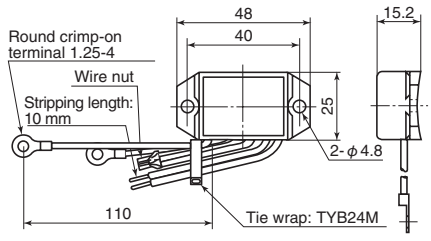
Motor output	3-phase	0.1 kW	0.2 kW	0.4 kW	0.75 kW	1.5 kW	2.2 kW	3.7 kW	5.5 kW
Brake model number	3-phase 200 V	SLB01	SLB02	SLB04	SLB07	SLB15	SLB22	VNB371K	VNB55K
	3-phase 400 V	SLB01	SLB02	SLB04V	SLB07V	SLB15V	SLB22V	VNB371KV	–
DC module model No.	3-phase 200 V	DM200D				DM200D			PM180B
	3-phase 400 V					DM400D			–
Braking torque	Static friction torque N·m	0.98	1.96	3.92	7.35	15	22	36	54
	{kgf·m}	0.1	0.2	0.40	0.75	1.5	2.2	3.7	5.5
	Dynamic friction torque N·m	0.78	1.57	3.14	5.88	12	17	29	43
	{kgf·m}	0.08	0.16	0.32	0.60	1.2	1.8	3.0	4.4
Voltage	3-phase 200 V	90 VDC				90 VDC			54 VDC
	3-phase 400 V					180 VDC			–
Amperage at 20°C A	3-phase 200 V	0.178	0.178	0.232	0.273	0.289	0.289	0.261	0.288
	3-phase 400 V					0.145	0.145	0.135	–
Capacity	at 20°C W	16.0	16.0	20.9	24.6	26.1	26.1	27.0	16.7
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	0.7	1.2
Moment of inertia	kg·m^2	0.02 × 10^{-3}	0.04 × 10^{-3}	0.04 × 10^{-3}	0.10 × 10^{-3}	0.22 × 10^{-3}	0.22 × 10^{-3}	0.48 × 10^{-3}	1.66 × 10^{-3}
GD^2	kgf·m^2	0.10 × 10^{-3}	0.15 × 10^{-3}	0.15 × 10^{-3}	0.41 × 10^{-3}	0.9 × 10^{-3}	0.9 × 10^{-3}	1.9 × 10^{-3}	6.6 × 10^{-3}
Total brake duty	J	1.31 × 10^8	1.85 × 10^8	1.85 × 10^8	3.66 × 10^8	10.8 × 10^8	10.8 × 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	11.0 × 10^7	11.0 × 10^7	13.8 × 10^7	25.2 × 10^7
Allowable starting frequency		10 times/min							
Braking delay S (reference)	Wiring across motor phases	0.18 to 0.25	0.15 to 0.21	0.14 to 0.17	0.20 to 0.24	0.30 to 0.50	0.30 to 0.45	0.50 to 0.70	0.20 to 0.30
	Separate AC power source	0.11 to 0.18	0.09 to 0.12	0.06 to 0.09	0.10 to 0.13	0.10 to 0.20	0.10 to 0.20	0.20 to 0.40	0.03 to 0.05
	AC separate control	0.11 to 0.18	0.09 to 0.12	0.06 to 0.09	0.10 to 0.13	0.10 to 0.20	0.10 to 0.20	0.20 to 0.40	0.03 to 0.05
	DC injection braking	0.05 to 0.07	0.04 to 0.06	0.03 to 0.05	0.04 to 0.06	0.01 to 0.02	0.01 to 0.02	0.02 to 0.04	–

Note 1) Braking torque indicates static and dynamic friction torque after initial wear.
2) Braking delay times are for reference and are subject to vary depending on the condition of the brake, usage conditions, and individual part differences. DC injection braking is recommended where fast brake response is required such as with lifts and elevators.

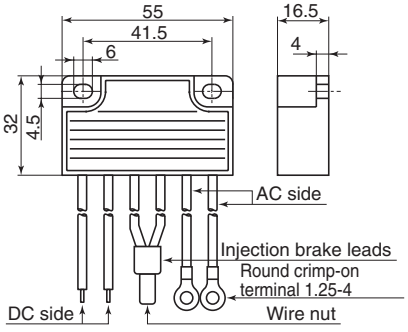
2. Rectifier (DC module)

The DC module is built-in and pre-wired with the motor leads. If DC injection braking is to be used, specify when ordering, or connect as shown in the wiring diagram on page 222.
If the DC module should be delivered separately, such as for mounting inside a control cabinet, specify when ordering.

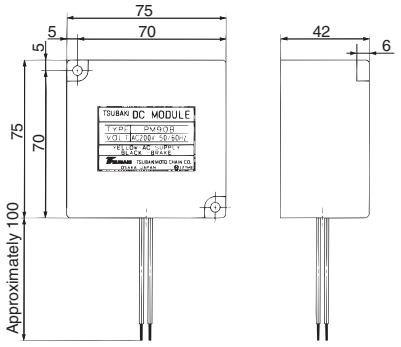
Outline Dimensions (DM200D)



Outline Dimensions (DM400D)



Outline Dimensions (PM180B)



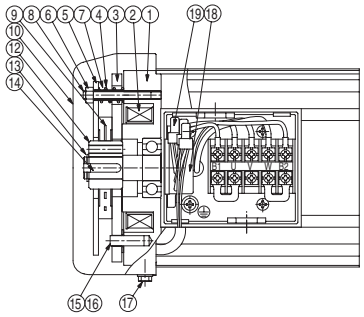
Technical Data on Motors

Brake

3. Brake construction

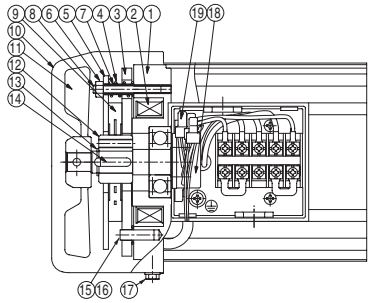
0.1 kW

(1) Bracket for opposite side of load with yoke
(2) Coil
(3) Armature
(4) Retainer spring
(5) Brake pad
(6) U nut
(7) Collar
(8) Guide bolt
(9) Lining
(10) Fan cover
(12) Square hub
(13) Stop ring
(14) Keyway
(15) Spring pin
(16) Braking spring
(17) Fan cover fixing screw
(18) DC module
(19) Wire nut



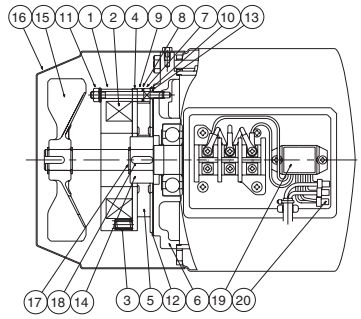
0.2 to 2.2 kW

(1) Bracket for opposite side of load with yoke
(2) Coil
(3) Armature
(4) Retainer spring
(5) Brake pad
(6) U nut
(7) Collar
(8) Guide bolt
(9) Lining
(10) Fan cover
(11) Fan (not shown above)
(12) Square hub
(13) Stop ring
(14) Keyway
(15) Spring pin
(16) Braking spring
(17) Fan cover fixing screw
(18) DC module
(19) Wire nut



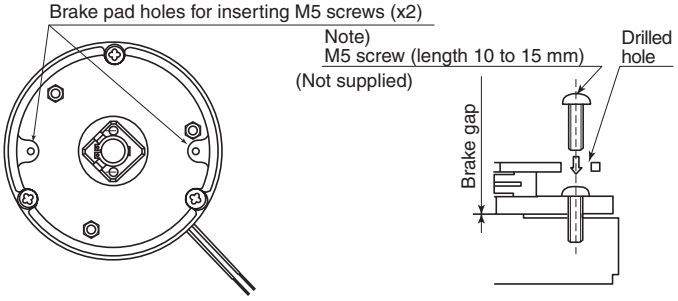
3.7 to 5.5 kW

(1) Yoke
(2) Coil
(3) Braking spring
(4) Armature
(5) Lining
(6) Bracket for opposite side of load
(7) Stud bolt
(8) Liner
(9) Distance collar
(10) Protective liner
(11) Hex nut
(12) Brake pad
(13) Sheet packing
(14) Center hub
(15) Fan
(16) Fan cover
(17) Stop ring
(18) Keyway
(19) DC module
(20) Wire nut



* Manual release (standard: 0.1 to 2.2 kW)

- Release the brake after making sure the output shaft is not under load.
- Remove the fan cover and attach the screws.
- After servicing, make sure to remove the screws and replace the fan cover before operating the motor.

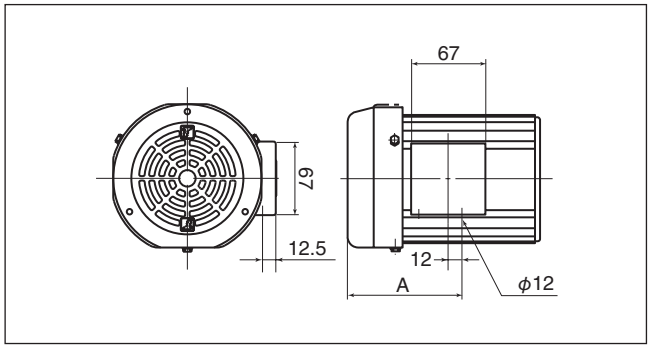


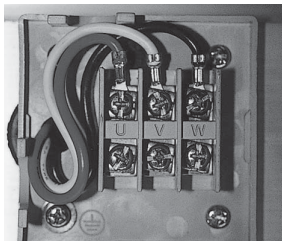
Note) M6 screws used on 1.5 and 2.2 kW motors.

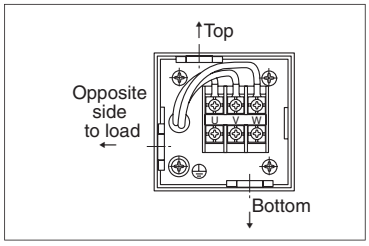
■ Standard terminal box (0.1 to 0.75 kW)

1. Standard terminal box, plastic

● Terminal box mounting position (for motors without brake)

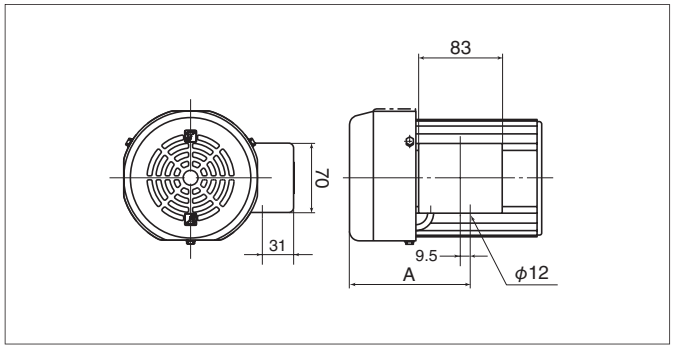


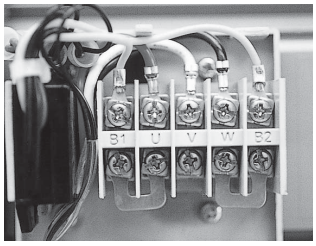


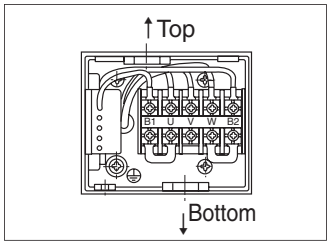


Motor output	A
0.1 kW	64.5
0.2 kW	102.5
0.4 kW	102.5
0.75 kW	98.5

● Terminal box mounting position (for motors with brake)



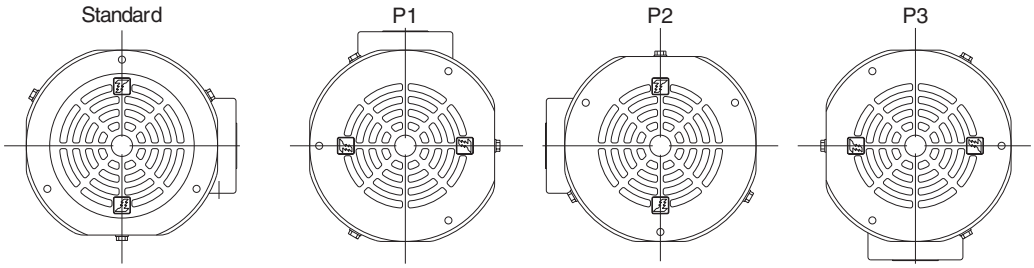




Motor output	A
0.1 kW	102.5
0.2 kW	119.5
0.4 kW	119.5
0.75 kW	125.5

● Mounting position on motor

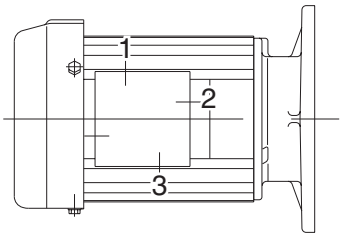
The terminal box can be mounted in any 90° position. Specify when ordering. It is also possible for the customer to change the mounting position by removing the mounting bolts to the motor and reorienting the motor.



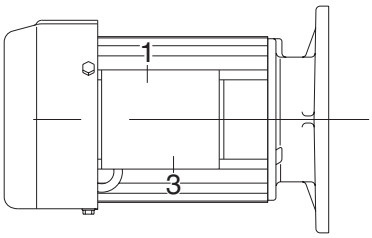
Note) 0.1 kW motors without a brake do not have a fan cover.

● Direction of terminal box inlet

The customer can reorient the inlet to any desired position as shown in the figure below.



Without brake



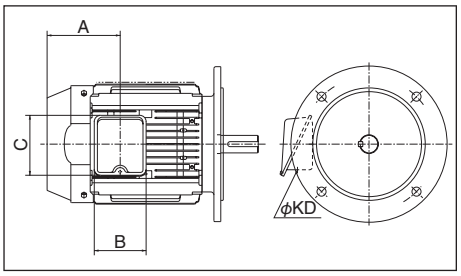
With brake

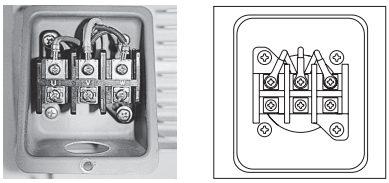
Technical Data on Motors

Standard terminal box (1.5 to 5.5 kW)

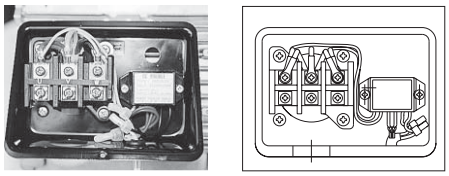
2. Standard terminal box, steel

● Terminal box mounting position





Without brake



With brake

Note) The DC module (PM180B) for the 5.5 kW motor mounts outside the terminal box.

Units: mm

Motor Capacity	Without brake				With brake			
	A	B	C	ϕKD	A	B	C	ϕKD
1.5 kW	117	83	97	27	196	135	96	27
2.2 kW	117	83	97	27	196	135	96	27
3.7 kW	138	83	97	27	212	177	97	27
5.5 kW	152	123	128	35	264	214	125	35.5

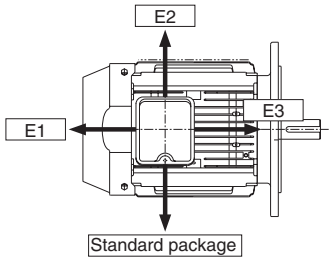
Note) On the 1.5 and 3.7 kW motors, the standard mounting position for the terminal box is 15° upwards.

● Mounting position on motor

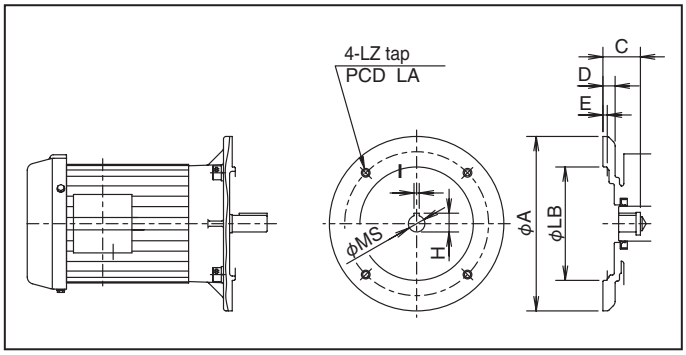
The terminal box can be mounted in any 90° position just like the 0.1 to 0.75 kW motors. Specify when ordering. It is also possible for the customer to change the mounting position by removing the mounting bolts to the motor and reorienting the motor.

● Direction of terminal box inlet

Mounts at 90° pitches.
(Cannot be changed on 5.5 kW motors with a brake)
Specify when ordering.
(Example: terminal inlet direction E1)



Detailed dimensions of motor flange (Tolerance of dimension LB is G7)



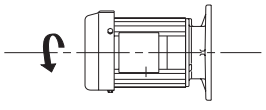
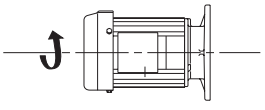
Units: mm

Motor (kW)	ϕA	ϕLB	C	D	E	ϕMS	H	I	LZ	LA	Mounting bolts
0.2	160	110	26	12	5	11	12.5*	4*	M 8	130	M 8 x 25
0.4	160	110	33	12	5	14	16.1	5	M 8	130	M 8 x 25
0.75	200	130	43	13	5	19	21.6	6	M10	165	M10 x 30
1.5	200	130	53	13	5	24	27.1	8	M10	165	M10 x 30
2.2, 3.7	250	180	63	14	6	28	31.1	8	M12	215	M12 x 30
5.5, (7.5)	300	230	83	16	6	38	41.1	10	M12	265	M12 x 35

* Motof flange dimensions are based on JIS C 4212: 2000 IP4X (totally enclosded).
Take note that keyway specifications have been standardized for the 0.2 kW 4P motor. Consult us if the motor shaft is a D cut shaft.

Wiring

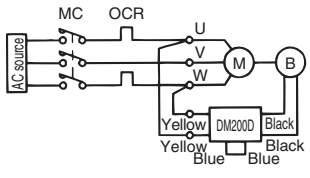
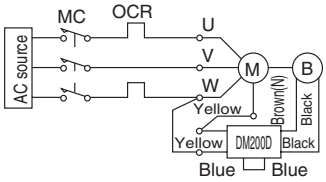
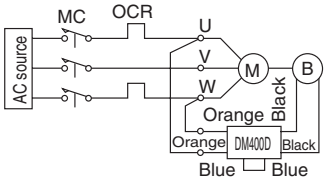
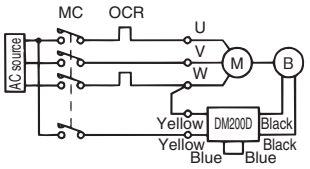
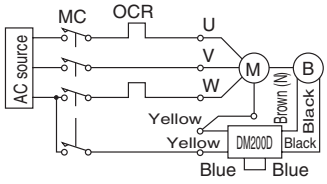
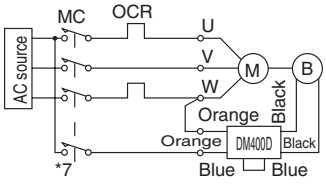
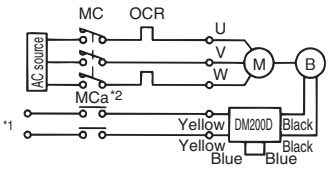
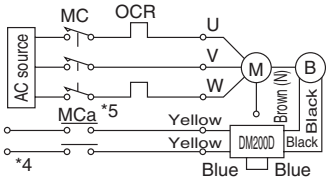
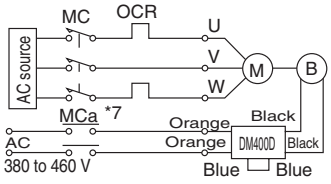
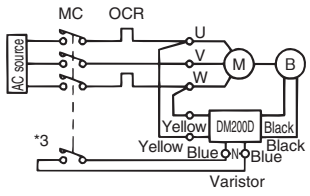
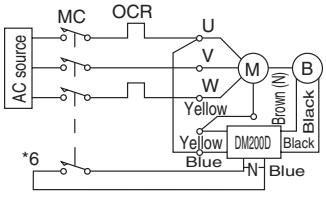
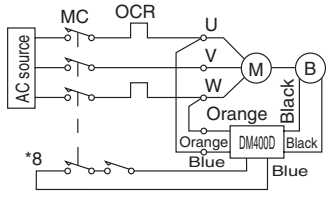
1. Rotating direction

Motor capacity	Wiring	Rotating direction	Wiring	Rotating direction
0.1 kW to 5.5 kW	U V W R S T		U V W T S R	

■ Wiring

2. Wiring a motor with a brake

(1) Brakes on standard models are factory wired across the motor phases.
(2) The wiring method affects response time. Select the wiring method that best suits the application by referring to the diagram below.
(3) Refer to the instruction manual supplied with the product for details.

Application		Wiring method		
		3-phase 200 V 0.1 to 5.5 kW	3-phase 400 V 0.1 to 0.75 kW	3-phase 400 V 1.5 to 3.7 kW
Wiring across motor phases	• For general use • Standard factory wiring			
Separate AC power source	• For shorter stopping time • Use when installing a phase advancing capacitor.			
AC separate control	• For variable frequency control Replace the MC with the variable frequency controller. • Use to control the brake separately	 Brake supply voltage (connection *1) 0.1 kW, 0.2 kW: 200 to 254 VAC 0.4 kW, 0.75 kW: 200 to 220 VAC 1.5 kW, 2.2 kW: 200 to 230 VAC 3.7 kW, 5.5 kW: 200 to 220 VAC	 Note. The brown lead (N) wired into the wiring nut must be isolated from the terminal block. If supplying power to a DC module via a transformer, size it as shown below: 0.1 to 0.4 kW: 60 VA 0.75 kW: 100 VA *4 Brake supply voltage 200 to 254 VAC	
DC injection braking	• Use when stopping accuracy is required (lifts, elevators, etc.)			

Ⓜ : motor Ⓑ : brake MC: motor starter MCa: auxiliary relay OCR: overcurrent relay DM200D/DM400D: DC module -N-: Varistor

Note 1) The auxiliary relay used at *2 should be rated for 200 VAC, 7A or more (load resistance).
2) The auxiliary contact of MC, (or an auxiliary relay) used at *3 should be rated for 200 VAC, 10 A or more (load resistance).
3) The supply power to the DC module (DM200D) is 200 V. (This applies also when using AC separate controlled braking for a 400 V class 3-phase motor from 0.1 to 0.75 kW.) If no 200 V power source is available, furnish a step down transformer to obtain 200 V. Note, size the transformer as follows: (0.1 to 0.4 kW: 60 VA or more, 0.75 to 3.7 kW: 100 VA or more). The DC module for the 3-phase, 200 V, 5.5 kW motor is PM180B.
4) Install surge protection at contacts as necessary.
5) The contact on the auxiliary relay (MCa) used at *7 should be rated for 400 to 440 VAC inductive loads of 1 A or more.
The contacts on the auxiliary relay (MCa) used at *8 should be rated for 400 to 440 VAC inductive loads of 1 A or more and wired in series of two or three contacts.
6) The DC module for the 3-phase 200 V, 5.5 kW motor is PM180B. This module has a built-in relay and must not be used with DC injection braking.
7) 3-phase, 400 V, 0.4 kW and 0.75 kW have a gap limit of 0.4 mm (heated) when brake supply voltage for connection *4 is 200 V AC.

* Use of varistors with DC injection braking

When using DC injection braking, various conditions (wiring length, method, type of relay, etc.) may cause damage to the brake's power module. To prevent such damage, wire a varistor across the terminals used for DC injection braking. For maximum protection, connect the varistor to the blue lead wires as close as possible to the brake's power module. Varistors with the following model numbers may be used.
For DM200D, use a varistor rated for 470 V. DM400D has a built-in varistor and does not require an external one.

Product name	Manufacturer	Model No.
		DM200D
Surge absorber	Panasonic	ERZV14D471
Zetwrap	Fuji Electric Device Technology	ENE471D-14A
Ceramic varistor	Nippon Chemi-Con	TND14V-471KB00AAA0

Technical Data on Motors

Variable frequency drive (VFD) (using a variable frequency drive for a standard motor)

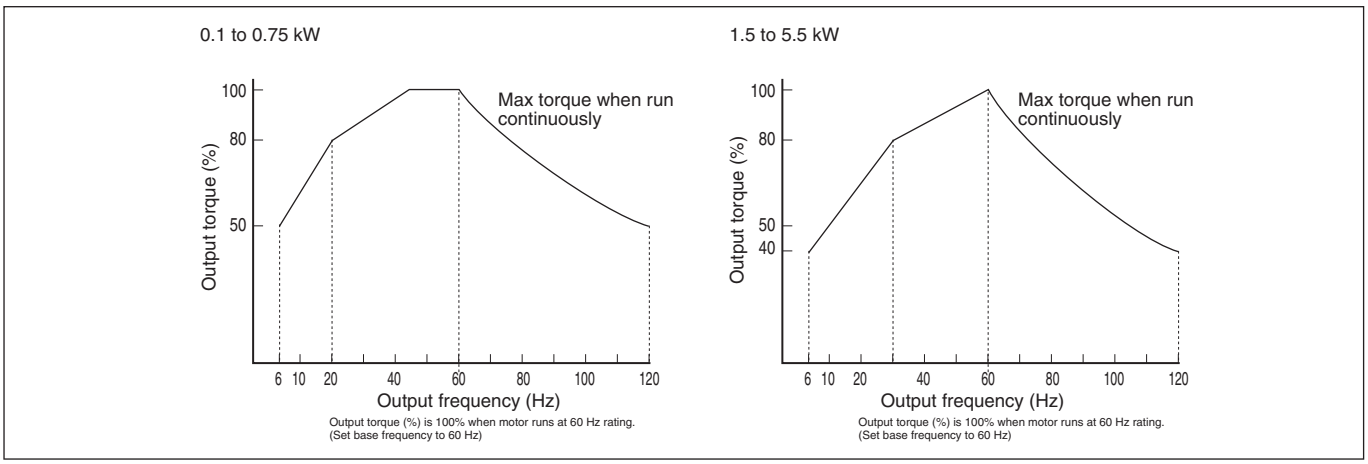
1. Usable frequency range

The usable frequency range is 120 Hz max. Use within the VFD's allowable frequency range when operating at low frequency (low speed range).

2. Torque characteristics

Refer to the graph below for frequency and torque characteristics.

- Torque is inversely proportional to rotating speed. Therefore, in the high speed range, the kW becomes constant and causes the torque to drop.
  As the speed increases, so does the vibration and operating noise of the motor and fan, including the noise during deceleration.
- In mid speed ranges, the motor delivers basically the rated torque.
- In low speed ranges, temperature rise becomes noticeable as the duty cycle and cooling efficiency drop.
  To prevent these effects from occurring, the motor should be controlled to deliver less torque as shown in the graph below.



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.

3. When used with a brake

- The brake must be supplied with the rated frequency and voltage at all times. When using a VFD, always wire the brake for separate control by referring to the wiring diagram on page 222. For standard motors, the brake leads are factory connected to the motor leads under the same terminal screw. Remove the screws and wire separately.
- Apply brakes at 60 Hz (1800 r/min) or less.
  Braking at high speed ranges above 60 Hz may cause mechanical damage or abnormal abrasion wear on the brake linings. Always apply at 60 Hz or less.
- Low speed operation also lowers the motor's cooling capacity which can reduce the life of the motor in terms of thermal resistance. In this case, reduce the duty of the brake under power.

4. Notes

- When operating at low frequencies or above 60 Hz, reduce the torque as shown in the graph above.
- When using a VFD with a 400 V class motor, high voltage spikes occur as the VFD switches (micro surge) which can result in insulation failure. Because the motor must be protected against micro surges, TEM provides protection against micro surges for all standard 400 V class motors, even if not instructed to do so.
- Temperature rise, noise, and vibration levels will be higher than when using mains service power.
- To protect the motor from overheating, set the VFD's electronic thermal protector for general-purpose motor characteristics, or install a thermal relay between the VFD and motor.
- When using the motor at the base frequency of 50 Hz, set the output torque to 0.8x the value in the table above.
- The motor may resonate depending on the rotating speed and frequency. When running the motor continuously, avoid the resonance frequency by changing the VFD's carrier frequency.
- When test running under light loads, the motor may draw a large current at low frequencies.
  This is a characteristic of the motor and is not abnormal. The current can be lowered by changing the settings in the VFD (lowering the torque boost and/or the V/F ratio, and using torque vector control).
- Continous operation at frequencies above 60 Hz will cause the reducer to heat up and should thus be avoided. Contact us for details.

With variable frequency driven motor

TEM offers motors from 0.1 to 5.5 kW compatible with variable frequency drives. Refer to Page 238.

Option

Reducer Options.....225 - 237

Mounting bolts
Mounting feet
Torque arm
Adapter
Output shaft cover
Double input shaft types
Worms with left-hand helix
Input shaft taps
Output shaft taper roller bearing specifications
Output shaft Power-Lock specifications
Output shaft taper bush specifications
SWM Series coupling connections
Specifications of TD Series with motor
Double faced flange specifications
Base spigot facing
Taps on housing bottom
Low backlash models
Various oil gauges
Drain valve
Ductile cast iron housings (FCD)

Motor Options.....238 - 239

Voltages
Variable frequency motors
Global series (international standards)
Outdoor specification
Encoders
Manual quick-release brake
Manual release shaft
Hard terminal box
Steel fan covers

Paint Options 240

Paint color options
Specified colors
Special painting
Special rust-proofing specifications

Design in stock 241

Reducer Options

Mounting bolts

EWJ / EWJM / SWJ / SWJM Series

TEM offers standard bolts for flange mounting, available for separate purchase or as an optional item.
Flange mount bolts are available in the sizes shown in the Table on the right.
Bolts are shipped with matching nuts.

Model No. example: J25–FMB

Model No.	Size	Pieces	Bolt size
J25-FMB	EWJ25 SWJ25	4	M6 x 60
J35-FMB	EWJ35 SWJ35	4	M8 x 80
J42-FMB	EWJ42 SWJ42	4	M10 x 90

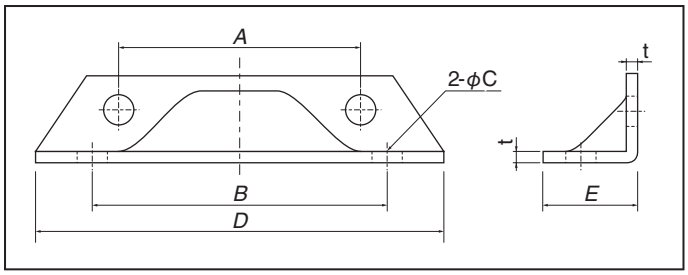
Mounting feet

EWJ / EWJM Series

TEM offers mounting feet available for separate purchase or as an optional item. Feet can also be factory mounted to reducers as a special order.
When shipped as an optional item, two feet are supplied complete with two sets of mounting bolts and nuts.

(1) Standard dimensions of mounting feet shown below.

Model No. example: EWJ35–L



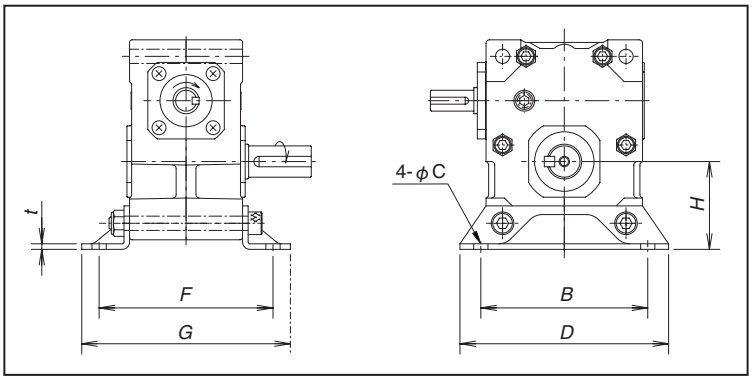
Units: mm

Model No.	Size	A	B	C	D	E	t	Bolt size
EWJ25-L	EWJ25	57	76	6.2	90	20	2.3	M6 x 60
EWJ35-L	EWJ35	71	96	8.2	120	27.5	3.2	M8 x 80
EWJ42-L	EWJ42	88	111	10.2	135	37	3.2	M10 x 90

* Mounting feet have been surface treated and are supplied unpainted.

(2) The following dimensions are for reducers with mounting feet attached. Contact us to have the mounting feet attached prior to shipment.

Model No. example: EWJ42E10R–LA



Units: 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

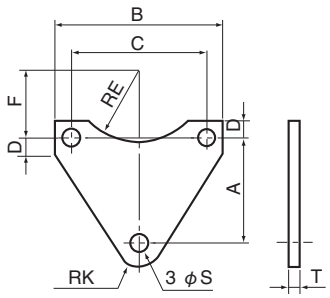
* Other mounting feet arrangements are possible but require a different model number. Consult us for details.

Torque arm

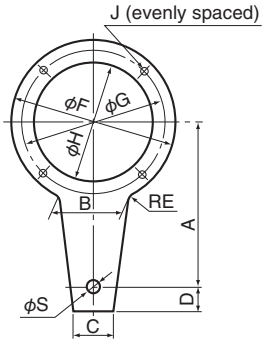
SWJ / SWJM / SW / SWM Series

Model No. example: SW200TA

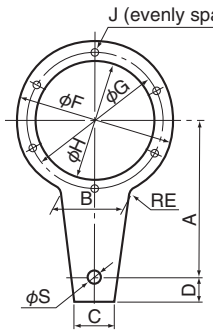
SWJ25TA·SW35TA·SW42TA



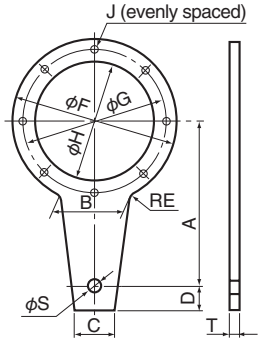
SW56TA·SWJ63TA



SW70TA to SW125TA



SW150TA to SW200TA



Units: mm

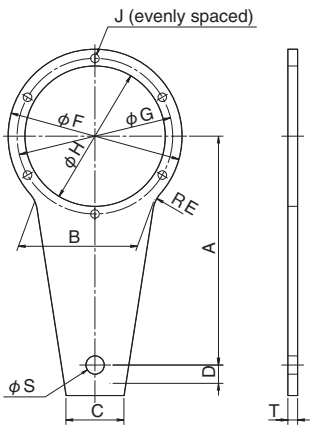
Size	A	B	C	D	RE	ϕF	ϕG	ϕH	J	RK	ϕS	T
SWJ25TA	37	71	57	7	30	28	–	–	–	9	6.6	4.5
SW35TA	54.5	90	71	9.5	37	35.5	–	–	–	12	9	6
SW42TA	64	110	88	11	45	41	–	–	–	15	11	6
SW56TA	140	60	35	20	25	140	120	100	4 – ϕ 9	–	11	6
SWJ63TA	170	75	45	25	30	170	145	120	4 – ϕ11	–	14	9
SW70TA	175	75	45	25	30	177	157	137	6 – ϕ 9	–	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 these select models: SW35TA for SWJ35, SW42TA for SWJ42, SW56TA for SWJ50, and SW70TA for SWJ70.
* Mounting bolts supplied.

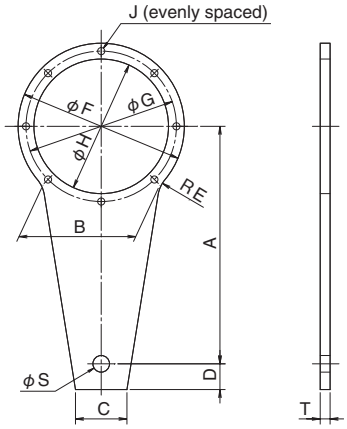
TD Series

Model No. example: TD225TA

TD125TA



TD150TA to TD315TA



Units: 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

* Mounting bolts supplied.

Reducer Options

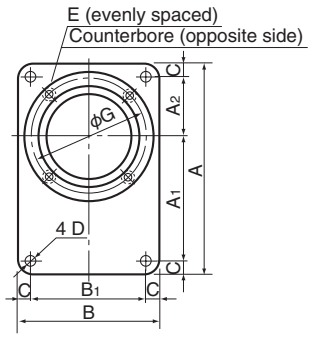
■ Adapter

SWJ / SWJM / SW / SWM Series

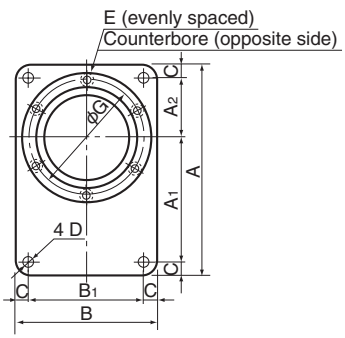
The mounting portion of the output shaft can be machined to a male spigot for mounting an optional adapter that allows bolts to be mounted from opposite the driven shaft.
Contact us to have the adapter attached prior to shipment.

Model No. example: SW70AD

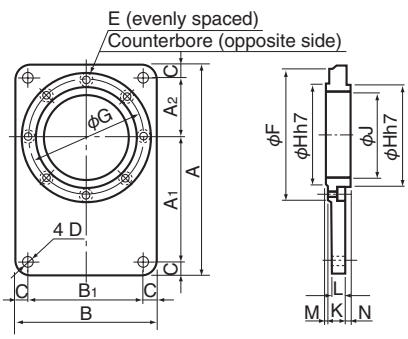
SW56AD/SWJ63AD



SW70AD to SW125AD



SW150AD to SW200AD



Units: 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

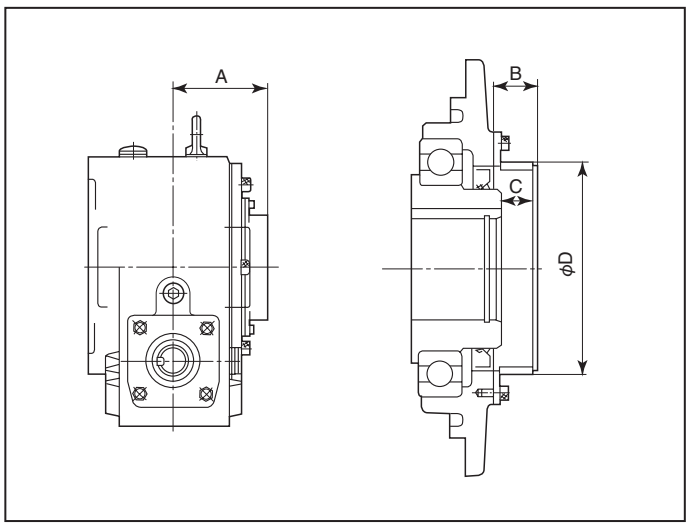
* Adapter SW56AD mounts as is on model SWJ50.
* Adapter SW70AD mounts as is on model SWJ70.
* Mounting bolts supplied.

■ Output shaft cover

SWJ / SWJM / SW / SWM / TD Series

These protective covers fit on standard hollow output models. Special machining is required on the reducer to mount the cover. Please specify when ordering. (Consult us for output shafts machined for mounting our Power-Lock.)

Model No. examples: SW125CP
TD175CP



Units: 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 us for inquiries about output shaft covers for models SWJ25 to SWJ63.

■ Double input shaft types

EWJ / EWJM / EW / EWM / SWJ / SWJM / SW / SWM / TD Series

Troi Drives and Worm Power Drives can be made with an input shaft on either side (standard package) to a double shaft on both sides.
(The same dimensions and shape applies to the input shaft on the other side.)

Model No. examples

EWJ/EWJM series: EWJ25E10L–T2

SWJ/SWJM series: SWJ25E60DF–T2

Double input shaft types

EW/EWM series: EW100B30–1–1–L

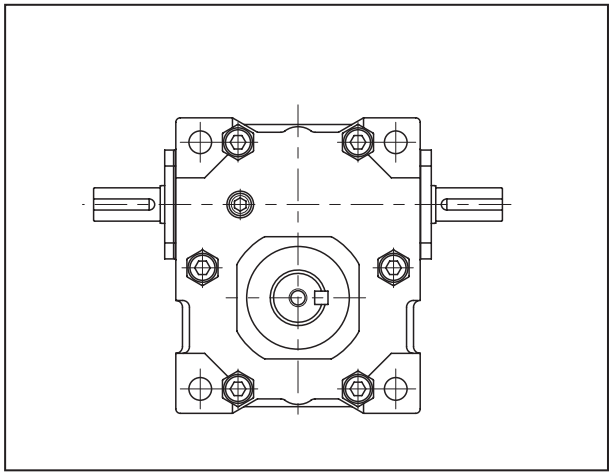
SW/SWM series: SW150V20–1–1–RF

TD series: TD250H60–1–1–BDF

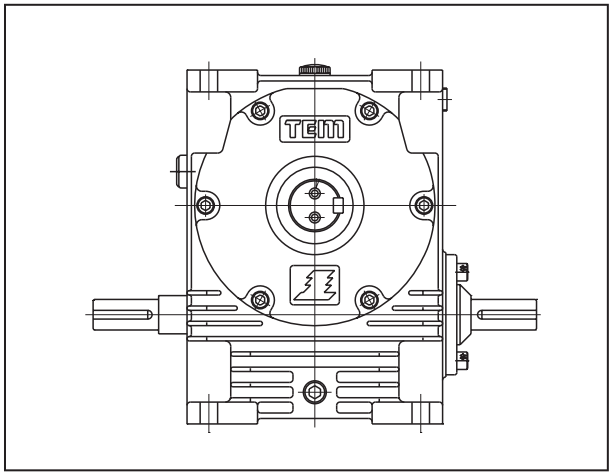
Double input shaft types

* Note, a different symbol is used to specify double input shafts for the EWJ/EWJM/SWJ/SWJM series and the EW/EWM/SW/SWM/TD series.
* Refer to Page 175 for the TM series.
* If the reducer has a double input shaft, the keyway may not be aligned in the same phase. Contact us if the phases must be matched.
* No filter is provided on the opposite side of double input shafts on models EW(M)80 to 200 and SW(M)80 to 200.

Representative drawing EWJ42E



Representative drawing EW100B



■ Worms with left-hand helix

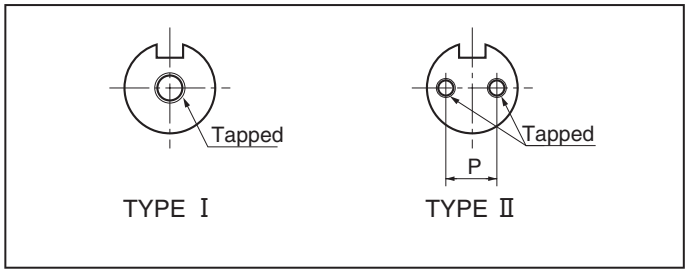
EWJ / EWJM / EW / EWM / SWJ / SWJM / SW / SWM Series

Worm Power Drives can also be made with a left-handed helix instead of the standard right-handed helix.
(Excludes the Troi Drive TD Series.)
These reducers have the same transfer capacity and external dimensions as our standard packages, but the rotating direction of the output shaft will differ with respect to the input shaft.
Contact us for details.

Reducer Options

Input shaft taps

Taps can be machined in the end of the input shaft to prevent sprockets and gears mounted on it from falling off.
(Taps are provided standard on the output shafts of the EWJ/EW/SW/TD series.)



EWJ / EW / SWJ / SW Series

(Single reduction type)

Units: 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)

Units: 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)

Units: 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)

Units: 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

TM Series

Units: mm

Size	TM10	TM13	TM16	TM22
Type	–	–	Ⅰ	Ⅰ
Size	–	–	M6	M8
Depth (L)	–	–	12	12
Pitch (P)	–	–	–	–

Output shaft taper roller bearing specifications

SWJ / SWJM / SW / SWM Series

If the allowable radial and/or axial load rating is too low, the standard ball bearings used for the output shaft can be changed to taper roller bearings to allow heavier loads.

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 Options

■ Output shaft Power-Lock® specifications

Model number examples (model numbers for the reducer are based on the notations explained on pages 27, 77, and 125.)

SW/SWM series: **SW100B30LF –K**

TD series 200 or lower: **TD200H30BLF –K**

With Power-Lock

Shaft arrangement (position on flange face)

SWJ/SWJM series: **SWJ50E60DF–KL**

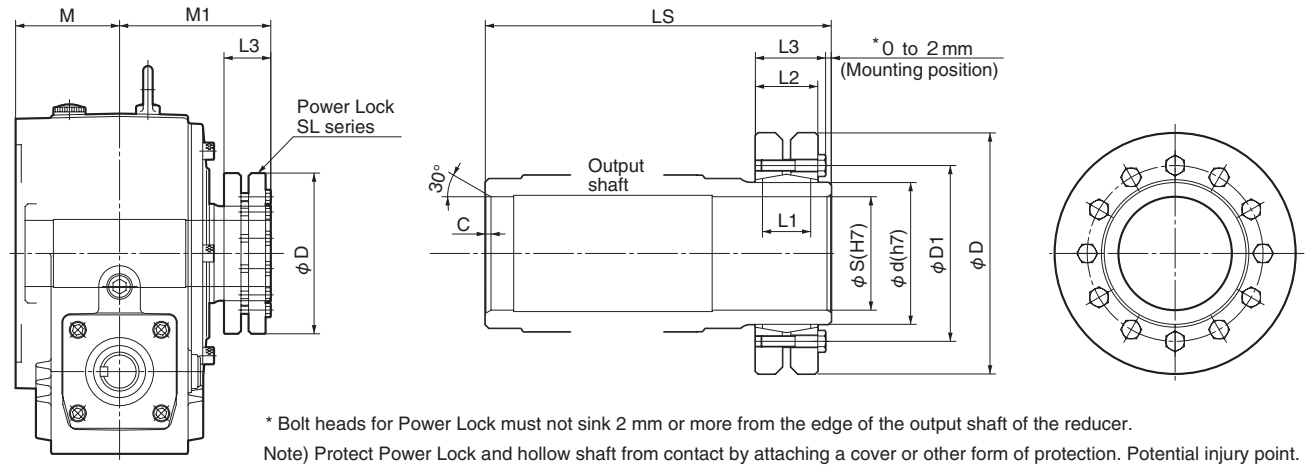
TD series 225 or higher

With Power-Lock*

*KL: looking from the input shaft, mount the Power-Lock on the left
*KR: looking from the input shaft, mount the Power-Lock on the right

* The output shaft on the EW-H and EWM-H type can also be made for Power-Lock mounting. Consult us for details.

● Dimensional drawings (The standard mounting surface for the Power-Lock on models SW/SWM/ TD125 to 200H is on the counter flange face.)



* Bolt heads for Power Lock must not sink 2 mm or more from the edge of the output shaft of the reducer.
Note) Protect Power Lock and hollow shaft from contact by attaching a cover or other form of protection. Potential injury point.

● Models: Combinations, dimensions, capacity

	Reducer Size	Power-Lock specifications																
		Tsubaki Power-Lock SL series model number {Hub OD x OD / d x D}	Transfer torque N·m {kgf·m}	Dimensions {mm}									Tightening bolts			Esti-mated mass kg
				φS {H7}	D1	L1	L2	L3	M	M1	LS	C	Pieces	Size	Tightening torque MA N·m {kgf·m}	
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 x 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 x 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 x 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 x 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 x 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 x 35	29.4 { 3.0}	4.7
	SW150	PL110 × 185SL	2740 { 280.0}	80	136	39	50	57	125	193	318	4	9	M10 x 40	57.8 { 5.9}	5.9
	SW175	PL125 × 215SL	3920 { 401.0}	90	160	42	54	61	135	210	345	4	12	M10 x 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 x 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 us for other combinations.
2} Transfer capacities are the maximum values and are given for the Power-Lock, not the reducer.
3} Specify the mounting position of the Power-Lock for models SWJ, SWJM, TD225 to 315H.
4} Refer to the external diagrams of the reducer for dimension details.

Output shaft Power-Lock specifications

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 231) is ideal.

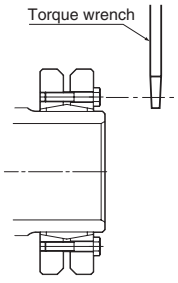


Figure 1 Mounting

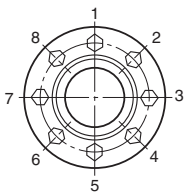


Figure 2 Bolt tightening sequence

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) Continued tightening in the same sequence as in Step 3, this time increasing the torque to 1/2 (refer to MA value on page 231).

6) Continued tightening in the same sequence as in Step 3, this time using the prescribed torque (refer to MA value on page 231).

7) Finally, tighten all tightening bolts clockwise in sequence with the specified torque. Repeat this several times. This completes the installation.

2. Removal

*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 bolt 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 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 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 TEM dealer for replacement or new bolts.

4. Reusability

- If reusing the removed Power-Lock, thoroughly remove any dirt from it with a rag. 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 the Power-Lock in accordance with the standard specifications on pages 17 to 18.

Reducer Options

Output shaft taper bush specifications

Model number examples (model numbers for the reducer are based on the notations explained on pages 27 and 77.)

Without motor: SW100B30LF –TB 40

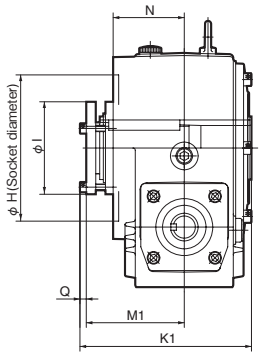
- Mounting direction
- Shaft arrangement (position on flange face)
- Shaft hole diameter (Ex. 40 = φ40)
- with taper bush

* The output shaft on the EW-H and EWM-H type can also be made for taper bush mounting. Consult us for details.

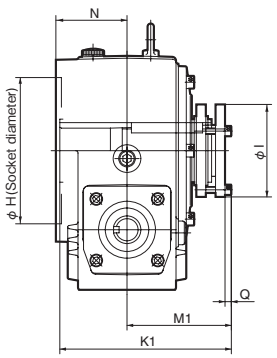
● Dimensional drawings (The standard mounting surface for the taper bush is the flange face on the reducer.)

[External Diagram]

●Flange-side Mount (standard)

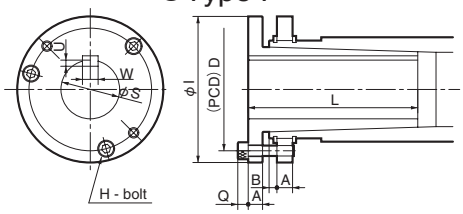


●Opposite Flange-side Mount (specify)

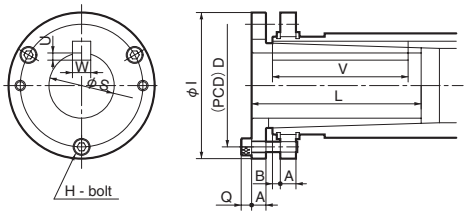


[Taper Bush Type and External Diagram]

●Type I



●Type II



● Detailed dimensions

Units: 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	M 6 x 30	13.7 {1.4}
SW80	197	115	160	78	105	117	8	12	5	87	M 8 x 40	34.3 {3.5}
SW100	217	124	185	90	117	130	8	12	5	99	M 8 x 40	34.3 {3.5}
SW125	267	157	230	110	150	160	10	15	5	128	M10 x 50	67.6 {6.9}
SW150	309	174	270	125	162	187	10	15	5	140	M10 x 50	67.6 {6.9}

Size	S (H7)	W	U	V	Type	Keyway on 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	Keyway on 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

Note) Refer to the external diagrams of the reducer for dimension details.

Output shaft taper bush specifications

● 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 and 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.

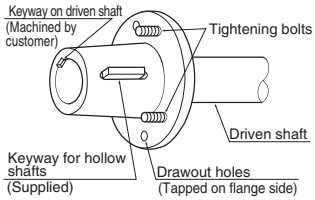


Figure 1 Part Names for Type 1 Taper Bush

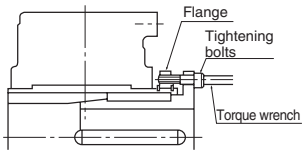


Figure 2 Mounted Taper Bush

2. Removal

These procedures outline the standard torque arm mounting.

Note) Make sure power to the machine and equipment is turned off 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 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 TEM 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 233.

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 17 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. Bolt strength class is 10.9.

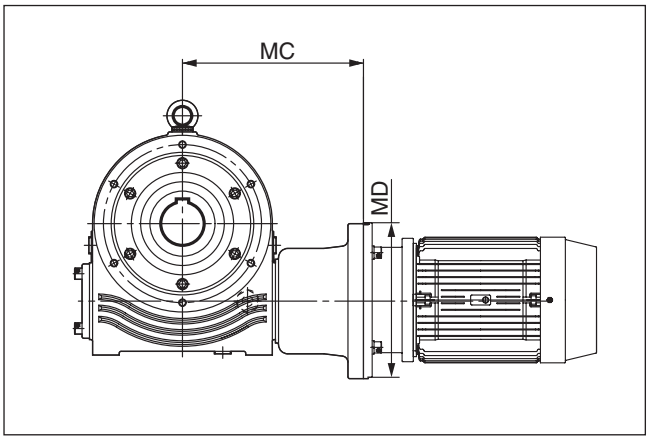
Table 2 Allowable radial load on output shaft

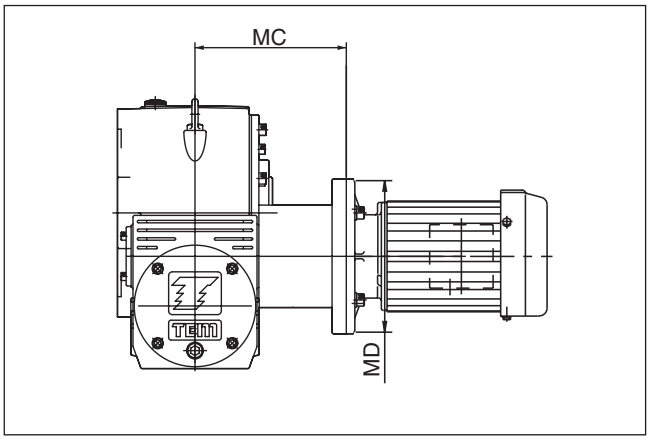
Size	Reduction ratio	Input speed											
		1750 r/min		1450 r/min		1150 r/min		950 r/min		500 r/min		100 r/min	
		N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}	N	{kgf}
SWJ70	10	2145	219	2230	228	2348	240	2456	251	2954	301	5750	587
	30	3385	345	3563	364	3800	388	4014	410	5011	511	9236	942
	60	4520	461	4793	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 Options

Coupling connections

SWM Series





Reduction ratio: 1/10 to 1/60

Size	Motor kW	MC	MD
SWM80	0.75 kW/1.5 kW	215	ϕ200
	2.2 kW/3.7 kW	226	ϕ250
SWM100	0.75 kW/1.5 kW	237	ϕ200
	2.2 kW/3.7 kW	247	ϕ250
	5.5 kW	289	ϕ300
SWM125	2.2 kW/3.7 kW	292	ϕ250
	5.5 kW	323	ϕ300
SWM150	5.5 kW	355	ϕ300

* EWM series is also available. Please contact us for details.

Reduction ratio: 1/100 to 1/3600

Size	Motor kW	MC	MD
SWM80	0.2 kW/0.4 kW	148	ϕ160
	0.75 kW	158	ϕ200
SWM100	0.2 kW/0.4 kW	148	ϕ160
	0.75 kW	158	ϕ200
SWM125	0.2 kW/0.4 kW	166	ϕ160
	0.75 kW/1.5 kW	186	ϕ200
	0.4 kW	205	ϕ160
SWM150	0.75 kW/1.5 kW	215	ϕ200
	2.2 kW/3.7 kW	226	ϕ250
SWM175	0.75 kW/1.5 kW	237	ϕ200
	2.2 kW/3.7 kW	247	ϕ250
SWM200	1.5 kW	282	ϕ200
	2.2 kW/3.7 kW	292	ϕ250
	5.5 kW	323	ϕ300

* EWM series is also available. Please contact us for details.

With motor specifications

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 Number

TDM150S30TL750 S

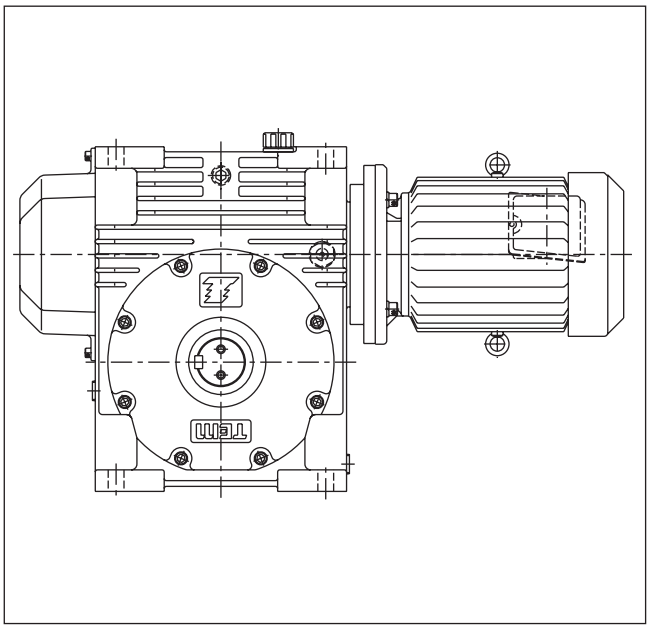
- TDM150S30TL750 S
  - With motor type
  - Motor Capacity
  - Motor Specifications

Motor Capacity

- 370: 3.7 kW
- 550: 5.5 kW
- 750: 7.5 kW
- 1100: 11 kW
- 1500: 15 kW
- 1850: 18.5 kW
- 2200: 22 kW
- 3000: 30 kW
- 3700: 37 kW

Motor Specifications

S: ship with standard motor installed
SB: ship with brake motor installed
SX: ship with customer-supplied motor installed
Y: customer to install motor



Double faced flange specifications

The hollow shaft (H) type for sizes SWJ/SWJM70, SW/SWM80 to 200, and TD125 to 200 can also be made with a double-faced flange.

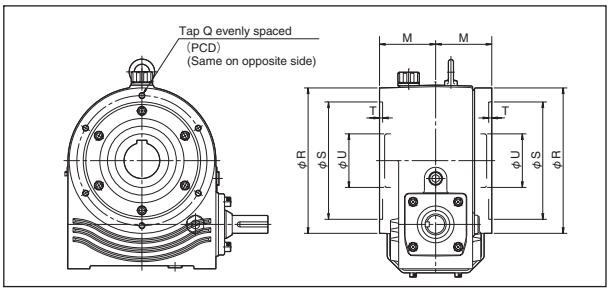
Model No. examples

SWJ/SWJM Series: SWJ70E60DF

SW/SWM Series: SW80B20DF

TD Series: TD175H40BDF

Double faced flange type



Note) For installation direction V type, shaft arrangement is LF and RF, in which case the standard installation face is the bottom side.

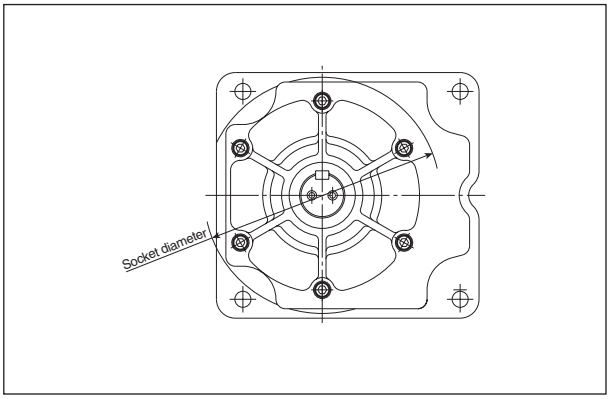
Units: mm

	Size	M	R	SH7	T	U	PCD	Q
SWJ/SWJM/SW/SWM series	SWJ70	70	177	137	5	58	157	6 – M8 x 15
	SW 80	78	200	160	6	70	180	6 – M10 x 20
	SW100	90	230	185	7	80	205	6 – M10 x 20
	SW125	110	285	230	6	105	255	6 – M12 x 25
	SW150	125	335	270	6	115	300	8 – M12 x 25
	SW175	135	385	320	5	125	350	8 – M14 x 29
	SW200	145	420	340	5	145	380	8 – M16 x 30
TD Series	TD 125H	110	285	230	6	105	255	6 – M12 x 25
	TD 150H	125	335	270	6	115	300	8 – M12 x 25
	TD 175H	135	385	320	5	125	350	8 – M14 x 29
	TD 200H	145	420	340	5	145	380	8 – M16 x 30

*Holes are not aligned on on the opposite side of the flange for model SWJ70. (SWJ70 = 30°)

Base spigot facing

The base side of the EWJ/EWJM/EW/EWM series with the V type base can be machined with a socket diameter.



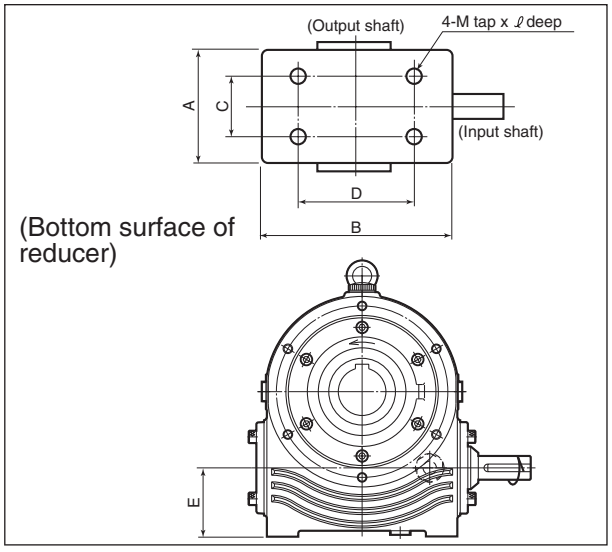
Units: mm

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	ϕ348H8	7
EW200	ϕ446H8	7

* Contact us for details.

Taps on housing bottom

Taps can be machined on the bottom side of the housing for all SW/SWM series and TD125 to 200 models with the hollow output shaft (H). These taps can be used to attach a mounting base or motor mounting base to the housing.



Units: mm

	Size	Reducer			Details of taps on the bottom		
		A	B	E	C	D	M tap x deep l
SW Series	SW 80	108	200	71	80	168	M12 x 20
	SW 100	124	234	75	100	196	M12 x 20
	SW 125	145	290	86	115	245	M16 x 28
	SW 150	175	340	97	140	290	M16 x 28
	SW 175	205	400	115	168	344	M20 x 35
	SW 200	210	440	120	170	380	M20 x 35
TD Series	TD 125	145	290	86	115	245	M16 x 28
	TD 150	175	340	97	140	290	M16 x 28
	TD 175	205	400	115	168	344	M20 x 35
	TD 200	210	440	120	170	380	M20 x 35

Note 1) The above tap machining is available by additional machining order.
2) Tap size x depth is the maximum value.
3) The housing surface must be machined in order to machine taps in the mounting surface.

Reducer Options

Low backlash models

The EWJ/EWJM/EW/EWM, SWJ/SWJM/SW/SWM, and TD series can be made with low backlash specifications for applications that require positioning accuracy.

Low backlash specifications: 0.06° to 0.14° (standard: 0.06° to 0.36°)
<Conditions> Model number: EW125T20L, accuracy on the output shaft
(Accuracy varies depending on the series, type, and reduction ratio. Consult us for further details.)

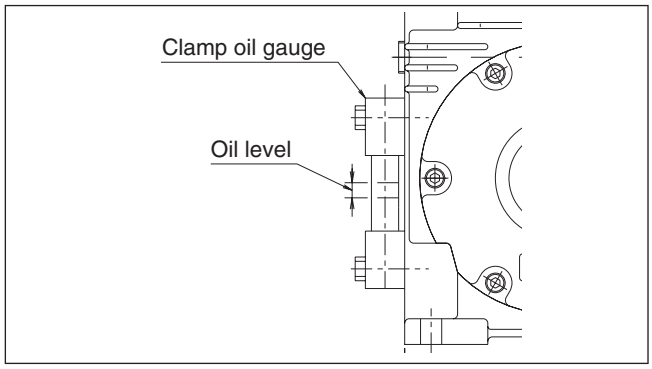
Various oil gauges

TEM can supply replace the standard plastic bulls-eye type oil gauge to a customer-specified gauge upon request.

1. Steel oil gauge

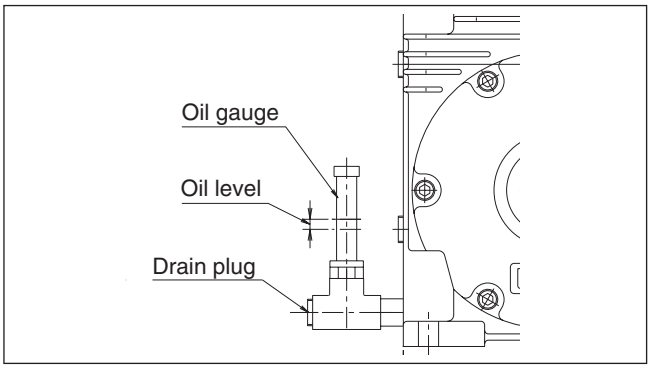
The standard plastic oil gauge can be replaced with a steel oil gauge.

2. Clamp oil gauge



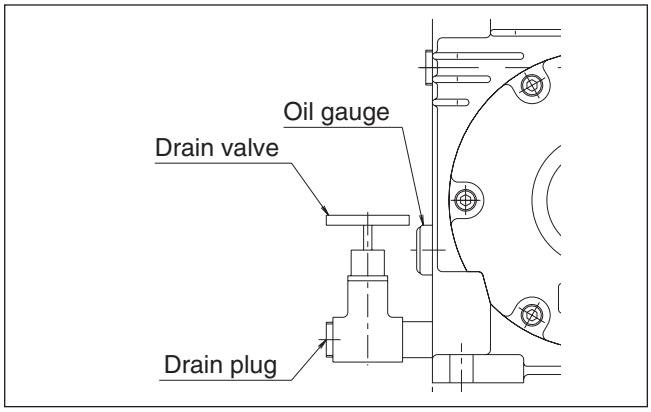
*Contact us about mounting limitations that may arise based on the series, type, size, and mounting position of the reducer.

3. Upright oil gauge (indoor models only)



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 us about limitations that may arise based on the series, type, and size of the reducer.

Motor Options

Voltages (symbols: V, V1, V2, V3, V4)

TEM can make 400 V class motors and other voltages as an option.

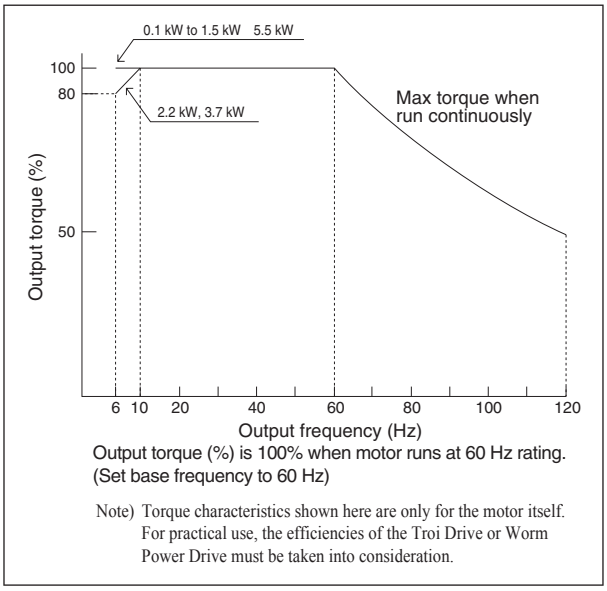
Voltage	400 V class (400/400/440 V 50/60/60 Hz)	380 V/50 Hz	380 V/60 Hz	415 V/50 Hz	460 V/60 Hz
Symbols	V	V1	V2	V3	V4

Applicable sizes: 0.1 to 3.7 kW

Variable frequency motors (Symbol: 200 V class=Z, 400 V class=ZV)

TEM also provides motors specifically for variable frequency drives (VFDs). These motors deliver constant torque from 6 to 60 Hz, with the continuous operating torque at 60 Hz. Note, on 2.2 kW and 3.7 kW motors, the torque drops at 10 Hz or less.

Applicable sizes: 0.1 to 5.5 kW



Output torque (%) is 100% when motor runs at 60 Hz rating.
(Set base frequency to 60 Hz)

Note) Torque characteristics shown here are only for the motor itself. For practical use, the efficiencies of the Troi Drive or Worm Power Drive must be taken into consideration.

Notes on models with VFD motors

- From 60 to 120 Hz, VFD 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 VFD should be set by adjusting the base frequency and base voltage settings in the VFD. Make sure the VFD's output voltage falls within the voltage and frequency specifications on the motor nameplate. (When using a VFD motor, the base frequency must be set to 60 Hz.) VFD motors should not be connected directly to source without going through the inverter. Otherwise, voltage fluctuations can cause frequent amperage increases. (This is not a problem for brief operation such as for test running and emergency use.) This effect is particularly noticeable at 50 Hz.
- Always set the base frequency of the VFD to 60 Hz.
- If 100% torque is required at slow frequency ranges, apply the torque boost feature in the VFD. Excessive torque boost over prolonged continuous operation can cause overheating and should be avoided.
- Also refer to the notes on variable frequency driven motors on page 223.

Global series

TEM makes available the global series which consists of two classes of motors. Our TRIPLE200 motors meet international standards (CE/UL/CCC) with a single motor, while our selectable motors meet individual voltages of individual countries.

TRIPLE200 (symbol: N4)

One motor satisfies three standards (CE/UL/CCC). It is ideal for machine tools and peripheral equipment.

Applicable sizes: 0.1 to 0.75 kW, 200/200/220 VAC 50/60/60 Hz

CE compliance (symbol: N)

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.

Applicable sizes: 0.1 to 5.5 kW

UL compliance (symbol: N2)

"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.

Applicable sizes: 0.1 to 0.75 kW

CCC compliance (symbol: PN3, HN3, WN3)

CCC stand for China Compulsory Certification (CCC) program. CCC compliance is required for exporting motors to China with smaller capacities of 1.1 kW or less.
Our products have received certification from the China Quality Certification Centre (CQC).

* The motor efficiency class is IE1.

Applicable sizes: 0.1 to 0.75 kW

Motor Options

Outdoor specifications [Symbol: W]

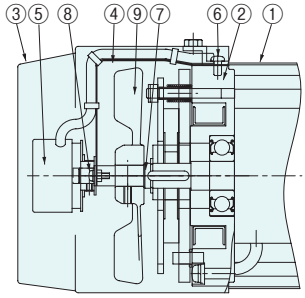
TEM makes available motors for outdoor installations.
・Outdoor motors have a different sized terminal box. Contact us for details.
・1.5 kW or higher motors with a brake for outdoor use are made to order for a continuous rating. Contact us for details.

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, etc. Always protect with an insulation cover and maintain the ambient temperature to 40° or below. 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.

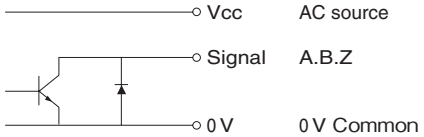
Applicable sizes: 0.1 to 5.5 kW

Encoders

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 more)

Supply voltage	4.5 to 30 VDC
Pulses	100
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)

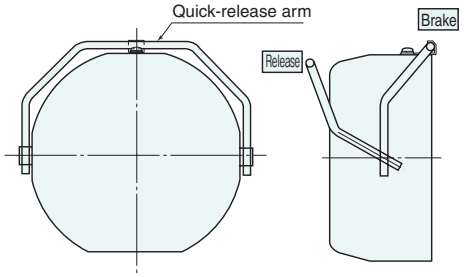
Applicable sizes: 0.1 to 3.7 kW

Manual quick-release brake (Symbol: Q)

Manual quick-release type is available for easy release of motor brakes.

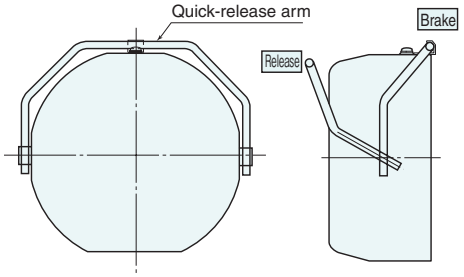
Applicable sizes: 0.1 to 3.7 kW

3-phase, 0.1 kW to 2.2 kW: SLB brake



Fan cover length is 25 mm longer for 0.1 kW size motors.

3-phase, 3.7 kW: VNB brake * Excluding Croise motors.

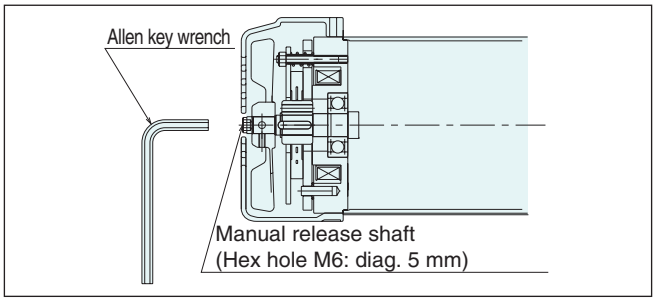


Manual release shaft (Symbol: M)

Activate by turning the hex socket hole (M6, width across flats 5 mm), located in the center of the motor fan cover, with an Allen wrench. Make sure the brake is released manually before operating.
Never turn it while the motor is running.

Applicable sizes: 0.1 to 2.2 kW

Note) Figure on the right shows a model for 0.1 kW to 0.75 kW.
1.5 kW and 2.2 kW types have a manual release shaft of □ 8.



Hard terminal boxes (Symbol: H)

The plastic terminal box can be changed to aluminum.

Applicable sizes: 0.1 to 0.75 kW

Steel fan covers

The plastic fan cover can be changed to a steel fan cover.

Applicable sizes: 0.1 to 0.75 kW

Paint Options

Paint color options

Optional paint colors can be arranged upon request. Specify the option symbol or paint color when ordering.

* Baked electrostatic powder in light gray (Munsell N7.5) is also available with an antibacterial agent. Contact us for details.

Color	Option symbol
Standard color (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 shipped painted with a customer-specified color upon request. Specify the Munsell code when ordering.

Special painting

Special painting is available upon request.

Category		Paint specifications		Weather resistant	Water resistant	Acid resistant	Alkali resistant	Applications
Classification	Paint	Generic name						
Standard	Indoor standard	EWJ25 to 42, SWJ25 to 42, EWJ50 to 70 (single reduction)	Baked electrostatic powder (Epoxy polyester binder)	△	△	△	△	Standard paint specification
		Primer	Soluble nitrocellulose	–	–	△	△	
		Top coat	Acrylic lacquer					
Semi-standard	Outdoor standard	Primer	Soluble nitrocellulose	△	△	△	△	Outdoor standard paint specification
		Top coat	Phthalic acid (alkyd) resin					
	Waterproof standard	Primer	Special modified epoxy	○	●	○	●	Waterproof standard paint specification
		Top coat	Two-component urethane resin					
Special painting	Long-oil phthalic acid resin	Primer	Long-oil alkyd resin rust prevention	○	○	△	△	Ships, bridge, 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	○	X	X	X	Normally withstands up to 100°C, momentarily withstands a maximum of 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	X	●	●	●	Good resistance against chemicals, oil, seawater, and water
		Top coat	Tar epoxide resin JIS-K-5664 (1 grdae)					

Note) Contact us for application details. ●: Most suitable ○: Suitable △: Contact TEM before making your selection
X: Unsuitable

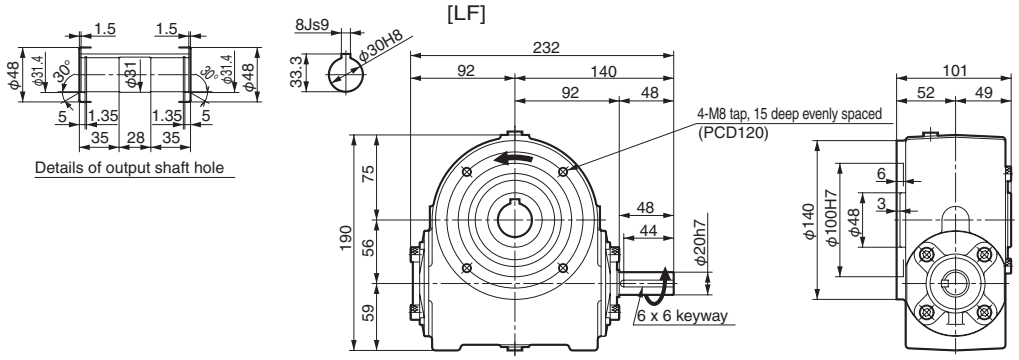
Special rust-proofing specifications

If rust prevention must last longer than the standard treatment, or for export grade rust prevention, contact us for more information.
(Standard rust prevention lasts six months after shipment from TEM when stored indoors.)

Designs in stock

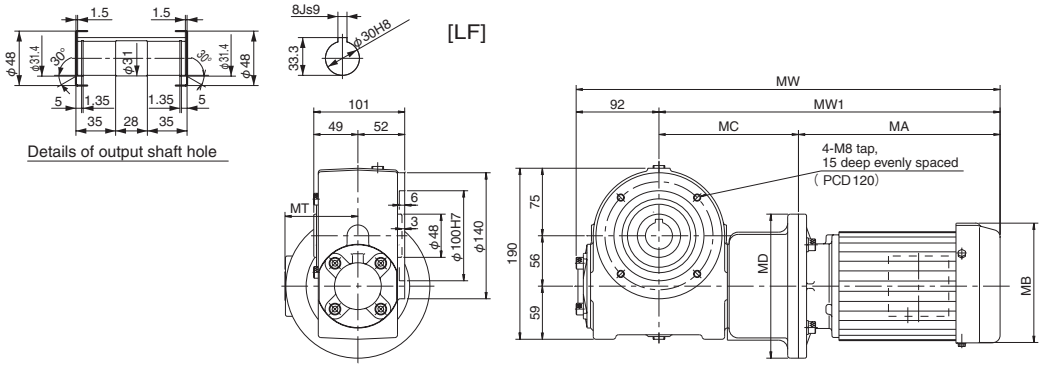
Dimension diagrams for designs in stock SW56E/SWM56E

SW56E



Estimated mass 12 kg

SWM56E



* Refer to Page 29 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}
SW56E	10	1.11	53.0 {5.41}	1.04	59.5 {6.07}	0.98	69.8 {7.12}	0.92	79.1 { 8.07}	0.77	120.5 {12.3}	0.19	138.2 {14.1}
	15	0.86	59.2 {6.04}	0.81	66.5 {6.79}	0.76	77.6 {7.92}	0.71	86.6 { 8.84}	0.58	128.4 {13.1}	0.14	140.1 {14.3}
	20	0.74	65.7 {6.70}	0.70	73.7 {7.52}	0.66	86.3 {8.81}	0.61	96.0 { 9.80}	0.46	129.4 {13.2}	0.12	145.0 {14.8}
	25	0.62	66.2 {6.75}	0.58	73.9 {7.54}	0.55	85.0 {8.67}	0.52	95.6 { 9.76}	0.38	124.3 {12.7}	0.10	137.5 {14.0}
	30	0.54	65.6 {6.69}	0.51	73.5 {7.50}	0.48	84.7 {8.64}	0.45	94.7 { 9.66}	0.36	134.3 {13.7}	0.10	150.9 {15.4}
	40	0.46	71.3 {7.28}	0.44	79.9 {8.15}	0.41	92.3 {9.42}	0.39	101.9 {10.4 }	0.28	129.4 {13.2}	0.08	144.1 {14.7}
	50	0.41	75.9 {7.74}	0.39	79.9 {8.15}	0.37	97.6 {9.96}	0.35	107.8 {11.0 }	0.23	121.5 {12.4}	0.06	127.4 {13.0}
	60	0.38	79.6 {8.12}	0.36	88.9 {9.07}	0.32	96.6 {9.86}	0.29	101.9 {10.4 }	0.19	112.7 {11.5}	0.05	123.5 {12.6}

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
SWM56E	0.4	30	48.6 {4.96}	57.6 {5.88}	224 (241)	155 (155)	379 (396)	471 (488)	140 (140)	160 (160)	81 (104.5)	21 (22)
		40	62.0 {6.33}	72.6 {7.41}								
		50	74.0 {7.55}	84.7 {8.64}								
		60	79.6 {8.12}	88.9 {9.07}								
	0.75	10	35.8 {3.66}	42.9 {4.38}	235 (262)	165 (165)	400 (427)	492 (519)	158 (158)	200 (200)	90 (113.5)	26 (28)
		15	51.6 {5.27}	61.6 {6.29}								
		20	65.7 {6.70}	73.7 {7.52}								
		25	66.2 {6.75}	73.9 {7.54}								

* Shaded boxes indicate the motor capacity exceeds the input kW of the reducer. Confirm output torque before using.
* Refer to Page 21 for sizing. * Thermal rating factor is 1.0.
* Contact us for the allowable load on the shaft.
■ No filter is used on the oil seals on the input and output shafts for models SW56E and SWM56E.
■ These models are factory filled and sealed with Mobil Cylinder Oil 600W.

Handling

Handling .....243 - 251

Parts Lists .....252 - 254

Handling

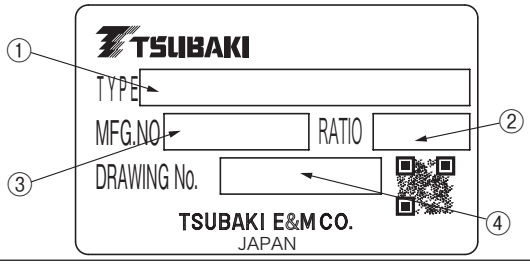
This section contains general information regarding the handling of the EWJ/EWJM/EW/EWM, and SWJ/SWJM/SW/SWM, and TD Series. For details, refer to the manual supplied with the product.

1. Upon receipt of your reducer

Check the following items upon receipt of your reducer. Contact your distributor if any defects are found, or if you have any questions.

(1) Verify the specifications on the nameplate correspond to your order. 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 No.), (2) RATIO (Reduction ratio), (3) MFG. No. (Manufacturing No.), and (4) DRAWING NO. (Drawing No.).

1-2. Model number

Make sure the model number of the unit delivered 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 us for details.
(3) Anti-rust treatment for export models is special and must be done prior to export. Contact us 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 upon noticing 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 EWJM42: No through holes on the top surface of the housing. Move by hand.
2) SWJ25 to 63, SWJM35 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 SWJM35 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/EW/EWM/TD-S), or flange-mounted (SW/SWM80 to 200).

4-1-1. Foot mount (EWJ/EWJM/EW/EWM/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 x 15	M8 x 15	M10 x 20	M8 x 25	M10 x 30	M12 x 35

EW/EWM sizes	EW80	EW100	EW125	EW150	EW175	EW200
Recommended bolts	M12 x 40	M14 x 45	M16 x 55	M20 x 60	M20 x 70	M24 x 80

TD-S sizes	TD125	TD150	TD175	TD200	TD225	TD250	TD280	TD315
Recommended bolts	M16 x 55	M20 x 60	M20 x 70	M24 x 80	M24 x 80	M30 x 100	M30 x 100	M30 x 110

- Avoid installing in such a way that can cause the housing to become deformed.
- The reducer is filled with lubrication oil 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 is.

4-1-2. Flange mount (EWJ25 to 42/EWJM42/SW80 to 200/SWM80 to 200)

Mount the reducer using the flange side of the housing. Observe these points.

(1) SW/SWM solid output shaft type

(1) Use the taps on the flange side of the reducer housing and use the spigot facing on the housing for positioning.
(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 for the flange surface. (Bolt sizes in table: depths are tapping depths.)

  Note) If the input/output connections are done without utilizing the spigot facing, tightening the bolts on the flange surface may cause an unexpected load on the shafts/bearings which may shorten the life of the reducer.

Recommended bolt sizes for flange surface

Reducer size	SW80	SW100	SW125	SW150	SW175	SW200
Bolt size	M10 20 deep	M10 20 deep	M12 25 deep	M12 25 deep	M14 30 deep	M16 30 deep
Mounting PCD	180	205	255	300	350	380
Number used	6 evenly spaced	6 evenly spaced	6 evenly spaced	8 evenly spaced	8 evenly spaced	8 evenly spaced

Handling

(2) EWJ25 to 42/EWJM42

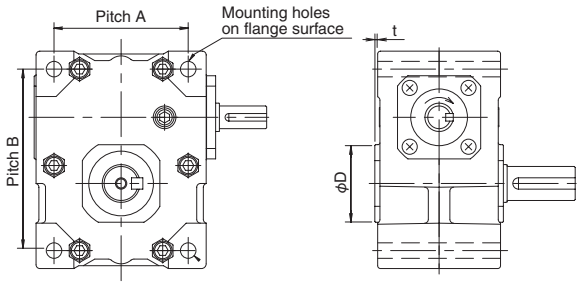
When mounting the reducer to the floor or wall, take note of the following:

(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) If the input/output connections are done before tightening the bolts on the flange surface, unexpected load may occur on the shafts/bearings and shorten the life of the reducer.



Clearance required between installation surfaces

Size	ϕD	t
EWJ25	46	3
EWJ35	48	1.5
EWJ42	63	3

Mounting bolt size, quantity, pitch

Size	Mounting bolt size	Pitch A	Pitch B
EWJ25	4-M6 x 60	57	76
EWJ35	4-M8 x 80	71	96
EWJ42	4-M10 x 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. When you do this, be careful not to damage the oil seal.

(4) The hollow shaft keyway is finished to New JIS standards for normal grade keyways. As for key length, refer to the following table, Recommended driven shaft lengths.

Recommended driven shaft lengths (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.

Note) If the torque arm is purchased from TEM, use the attached bolts. If you make the torque arm, use a bolt strength class of 10.9 or equivalent.

(2) Insert the reducer onto the driven shaft.

(3) Fix the reducer to the driven shaft in the axial direction.

- SWJ25 to 42: TEM recommends fixing the end plate on the end of the output shaft. (Figure 1)
- SWJ50 to 70, SW80 to 200, EW80-H to 200-H (hollow output shaft), TD125H to 315H: TEM recommends fixing the stop 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 217.

(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 tip of the torque arm 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 foot mount types. After fixing the output hollow shaft and driven shaft, set up the position of the bearing which supports the driven shaft.)

Note) The dimensions and configurations given in Table 1 on the next page are recommended for the end plate, which also serves as a draw plate.

Figure 1 SWJ25 to 42

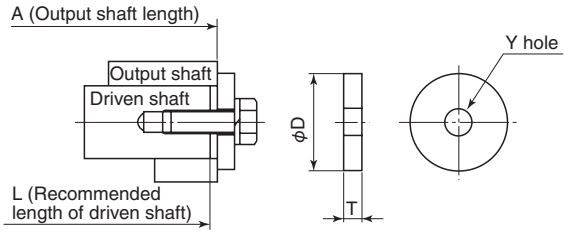


Figure 2 SWJ50 to 70/SW80 to 200
EW80-H to 200-H/TD125H to 315H

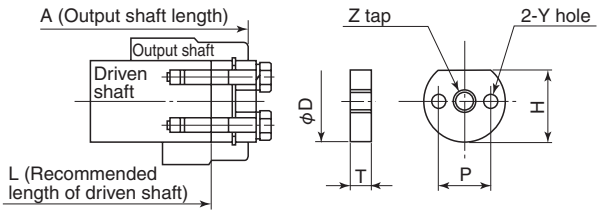


Table 1 Recommended End Plate Dimensions (also used as draw plate)

Size	Output shaft hole diameter	Recommended plate dimensiosn						Bolt for plate (with spring washer)	Stop ring size
		ϕD	T	H	Z	Y hole	P		
SWJ25	ϕ 12	16	4.5	–	–	5.5	–	1-M 5 x 15	
SWJ35	ϕ 20	26	6	–	–	9	–	1-M 8 x 25	–
SWJ42	ϕ 25	32	6	–	–	9	–	1-M 8 x 25	–
SWJ50	ϕ 30	29.6	9	25	M12	–	–	1-M10 x 40	C 30
SWJ63	ϕ 35	34.6	9	30	M12	–	–	1-M10 x 40	C 35
SWJ70	ϕ 40	39.6	12	34	M12	2- 6.6	24	2-M 6 x 40	C 40
EW/SW 80	ϕ 50	49.6	12	44	M16	2- 9	30	2-M 8 x 45	C 50
EW/SW100	ϕ 55	54.6	14	48	M16	2-11	32	2-M10 x 55	C 55
EW/SW125	ϕ 70	69.5	14	62	M24	2-14	44	2-M12 x 60	C 70
EW/SW150	ϕ 80	79.5	17	70	M24	2-14	52	2-M12 x 65	C 80
EW/SW175	ϕ 90	89.5	17	80	M30	2-14	60	2-M12 x 65	C 90
EW/SW200	ϕ100	99.5	17	89	M30	2-18	65	2-M16 x 75	C100
TD125	ϕ 70	69.5	14	62	M24	2-14	44	2-M12 x 60	C 70
TD150	ϕ 80	79.5	17	70	M24	2-14	52	2-M12 x 65	C 80
TD175	ϕ 90	89.5	17	80	M30	2-14	60	2-M12 x 65	C 90
TD200	ϕ100	99.5	17	89	M30	2-18	65	2-M16 x 75	C100
TD225	ϕ110	109.6	20	99	M30	2-18	65	2-M16 x 85	C110
TD250	ϕ125	124.4	20	113	M30	2-18	70	2-M16 x 85	C125
TD280	ϕ130	129.4	24	118	M36	2-22	80	2-M20 x 100	C130
TD315	ϕ160	159.4	24	146	M36	2-22	85	2-M20 x 100	C160

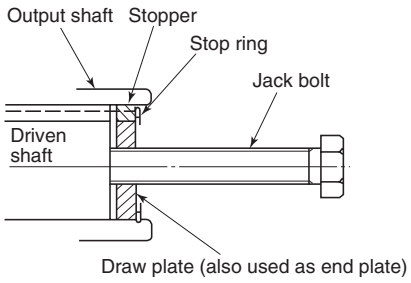
2. Removal procedures

(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) Remove any attachments on the tip of the torque arm, which stops the shaft from rotating, so that it moves moves freely.
(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 (Thread length)	Size	Output shaft bore diameter	Jack bolt (Thread length)
SWJ50	ϕ 30	M12 x 80	TD125H	ϕ70	M24 x 150
SWJ63	ϕ 35	M12 x 80	TD150H	ϕ80	M24 x 150
SWJ70	ϕ 40	M12 x 80	TD175H	ϕ90	M30 x 180
EW/SW 80	ϕ 50	M16 x 100	TD200H	ϕ100	M30 x 180
EW/SW100	ϕ 55	M16 x 100	TD225H	ϕ110	M30 x 180
EW/SW125	ϕ 70	M24 x 150	TD250H	ϕ125	M30 x 180
EW/SW150	ϕ 80	M24 x 150	TD280H	ϕ130	M36 x 250
EW/SW175	ϕ 90	M30 x 180	TD315H	ϕ160	M36 x 250
EW/SW200	ϕ100	M30 x 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 245 under section (2) for mounting information such as bolt size, dimensions, and pitch.
(3) Use the spigot facing 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 reducer by its flange to the driven machine (if radial load affects the reducer)

(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 taps on the flange side of the reducer housing while using the spigot facing on the housing for positioning. (SWJ25 does not have a socket diameter.)
(4) After fixing the reducer, fix the driven shaft in the thrust 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

* The reducer is mounted to the driven machine (if radial load does not affect the reducer)

(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.

* The reducer is mounted by its flange to the driven machine (if radial load affects the reducer)

(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 foot mounting (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

Worms are always cut to a right-handed helix. Verify the rotational direction of the input and output shafts.

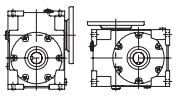
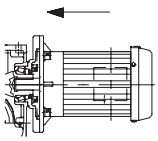
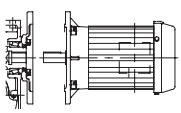
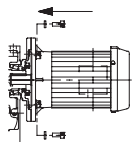
5-2. Connection

- 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 handling (applies to motor handling code Y for the EWJM/EWM/SWJM/SWM Series)

- Couplings are not used to install the motor to the input shaft of the reducer, because the input shaft is hollow.
- Reducer input shaft bores and keyways are machined for the specified motor capacity. Use the key supplied with the motor.
- Take safety precautions when following the procedures below.

Motor installation procedures

Step	Installation procedure	Note	Step	Installation procedure	Note
1	Place the reducer so that the motor can be mounted easily. 	Take necessary safety precautions 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 brand: Molybdenum Special (COSMO OIL)
2	Align the phases of the key on the motor output shaft to the keyway on the reducer input shaft. 	Take all necessary safety precautions when transporting the motor. 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. Torque the bolts according to their size and strength grade.

Note) 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, use the lifting hook on the motor and take all necessary safety precautions.

The reducer and motor are connected by Jaw-Flex coupling
(Applies to motor handling symbol Y for models EWJM42, EWJM50 to 70 double reduction type, SWJM35 to 70.)

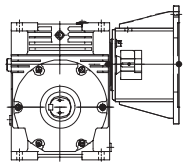
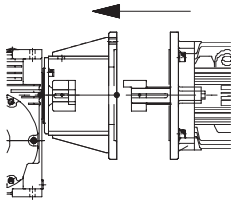
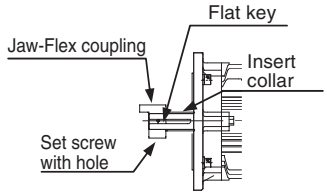
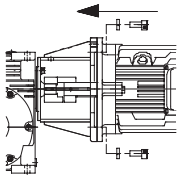
- The coupling hub on the reducer side is set (key and set screw) when shipped. Make sure it has not loosened during transport.
- The coupling hub supplied for the motor side is machined with a bore diameter and keyway that matches the specified motor capacity.

* Collars are provided to adjust the length of the motor shaft. Do not forget to insert them.
  Note) Use the key and set screw 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. Check against the table shown below.

Motor capacity	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 x 25 mm	M8 x 25 mm	M8 x 25 mm	M10 x 30 mm	M10 x 30 mm	M12 x 30 mm	M12 x 30 mm	M12 x 35 mm
Spring washer	M8	M8	M8	M10	M10	M12	M12	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. 	Take all necessary safety precautions 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 when making the connection. Do not force it in. 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 set screw with hole in the key. 	Do not hit the coupling with a hammer or other object when inserting it. Take all necessary safety precautions when transporting the motor.	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. Torque the bolts according to their size and strength grade.

Note) When connecting the reducer and motor, use the lifting hook on the motor and take all necessary safety precautions.

6. Operation

- The reducer is filled with lubrication oil and plugged before shipment. Replace the plug with the supplied pressure vent before use. (Otherwise, oil may leak from the oil seal due to high internal pressure.)
  There is no need to change the pressure vent on EWJ/EWJM (including double reduction models) and SWJ/SWJM models. These models can be used as is.

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:
- an appropriately sized earth leakage breaker and overcurrent relay is wired into the motor circuitry.
- all wiring is correct.
- the motor is properly ground.
- 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 results, operate the reducer for roughly one day under 1/2 to 1/3 load.

6-3. Load

- Loading the reducer above its rated capacity can affect its life and result in damage.
  Do not load the reducer above its rated capacity.

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. To prevent burn injuries, do not touch the reducer with your bare hands.

7. Daily inspection and maintenance

7-1. Daily inspection

To ensure smooth operation, make sure to conduct daily maintenance using the following table:

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 balls	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 bleeding clogged?

If you discover any abnormalities during the daily inspection, take the appropriate measures by referring to "9. Troubleshooting". 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 as is.

(1) Recommended oil

- Lubrication oil is vital to reducer capacity, life, and efficiency.
  Use only lubrication oil recommended by TEM. (Do not mix the oil with other brands.)

EWJ / EWJM / EW / EWM Series SWJ / SWJM / SW / SWM 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 us 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 TEM.
- It is not necessary to replace the oil for the EWJ/EWJM series and SWJ/SWJM 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: 1000 hours or three months after operation, whichever comes first.
  - Subsequent changes: 5000 hours or one year depending on operating conditions, whichever comes first.
  - It is easier to drain oil while it is warm, such as immediately 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.

• TEM recommends flushing the inside of the housing with the new oil.

Note) Do not mix the oil with other brands.

Note) No oil gauge is provided on the EWJ/EWJM series and SWJ/SWJM series.

(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 idle.)

Note) Do not mix the oil with other brands.

Note) Do not confuse the brand of oil used in the TD series for single and double reduction types.

■ **EWJ/EWJM 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 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 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 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 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 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 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 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 Reduction ratio: 1/10 to 1/60)

(2) Hollow output shaft (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 (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. Supplying grease (Semi-standard package)

- 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.
  (This is indicated on the external diagram as a grease nipple. Refer to the external diagram.)
- A stopper plug (M6 fine threaded hex bolt) is mounted before shipment to prevent oil leakage during transport. Replace it with the grease nipple supplied with the reducer during installation or before operating. Note, the bearings are greased before shipment.

- Follow the procedures outlined below to supply 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 oil to deteriorate prematurely.

Grease nipple size: A-M6F

7-4-1. Recommended grease (standard package ambient temperature: -10°C to 40°C)

Manufacturer	Brand (industrial all-purpose grease JIS grade 2)
Exxon Mobile	Mobilux EP2 (factory filled)
Showa Shell	Alvania EP No.2
JX Nippon Oil & Energy	EPNOC Grease AP2
Idemitsu	Daphne Coronex No. 2

Note) A different brand of grease may be used for special packages (high temperature, freezing, etc.). Always supply with the type of lubricant appropriate for the specifications. Also take note of any precautions documented on the external diagram.

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 us if 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 TEM for adjustment.
Loud noise Strong vibration	Damaged bearings	Contact TEM for repair.
	Bad tooth contact	
	Bearings are overtightened	
	Damage to the teeth	
	Insufficient oil	Contact TEM for repair and lubrication.
	Contaminated with foreign objects	Contact TEM 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 TEM 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 TEM for repair.
	Damaged or broken bearings	
	Seized gear tooth surfaces	

Parts Lists

EWJ/EWJM Series (Solid output shaft type)

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

Part name	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) The filter must also be replaced when replacing oil seals. Contact us for details.

Double reduction ratio 1/100 to 1/3600

Part name	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) The filter must also be replaced when replacing oil seals. Contact us for details.

SWJ/SWJM Series (Hollow output shaft type)

Single reduction ratio 1/10 to 1/60

Part name	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 common.
2) The filter must also be replaced when replacing oil seals. Contact us for details.

Parts Lists

EW/EWM/SW/SWM (-S) Series (Solid output shaft type)

Single reduction ratio 1/10 to 1/60

Part name	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	DM45, 68, 12	D55, 72, 9	D55, 72, 9	D55, 72, 9	DM58, 80, 12	D68, 90, 12
Output shaft oil seal	1	D40, 62, 8	DM48, 70, 9	DM63, 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 material.
2) There are two oil seals for double output shafts.
3) The filter must also be replaced when replacing oil seals. Contact us for details.
4) Input shaft oil seals are different for double input shaft models. Contact us for details.

Double reduction ratio 1/100 to 1/3600

Part name	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	DM45, 68, 12	D55, 72, 9	D55, 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	DM48, 70, 9	DM63, 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 common.
4) The filter must also be replaced when replacing oil seals. (Excluding sizes 80 to 125) Contact us for details.
5) Part numbers in ( ) apply to the SW/SWM series.

EW/EWM (-H)/SW/SWM Series (Hollow output shaft type)

Single reduction ratio 1/10 to 1/60

Part name	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	DM45, 68, 12	D55, 72, 9	D55, 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 material.
2) The filter must also be replaced when replacing oil seals. Contact us for details.
3) Input shaft oil seals are different for double input shaft models. Contact us for details.

Double reduction ratio 1/100 to 1/3600

Part name	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	DM45, 68, 12	D55, 72, 9	D55, 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 common.
3) The filter must also be replaced when replacing oil seals. (Excluding sizes 80 to 125) Contact us for details.
4) Part numbers in ( ) apply to the SW/SWM series.

TD Series

Single reduction ratio 1/10 to 1/60

Part name	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	DM105.135.14	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 double shaft types.
3) The filter must also be replaced when replacing oil seals. (Excluding sizes 225 to 315) Contact us for details.

Double reduction ratio 1/100 to 1/3600

Part name	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	DM45.68.12	D55.72.9	D55.72.9	1	D55.72.9	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 double shaft types.
3) The filter must also be replaced when replacing oil seals. (Excluding input shafts on size 125 and all shafts on size 225 to 315.) Contact us for details.

TM Series

Reduction ratio: 1/10 to 1/60

Part name	TM10E	TM13E	TM16E	TM22E
Input shaft seal cap	32.5	35.5	40.8	52. 9.5
Output shaft seal cap	30.5	35.5	35.5	72. 7.5
Input shaft oil seal	D12.32.5	D15.35.5	D17.40.9	D24.52.10
Output shaft oil seal	D15.30.5	D17.35.5	D20.35.8	D32.72.8
Input shaft bearing	6201ZZNR	6202ZZNRSH2	6203ZZNR	6205ZZ
Output shaft bearing	6202	6203	6004	6207

Specifications Check Form for Selection

Provide us with the following information when asking for assistance in sizing a Troi Drive / Worm Power Drive.

Machine or equipment used		
Application		
Motor	Type	- General purpose - Variable frequency controlled - Servo motor - Hydraulic motor - Other
	Capacity (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 ( )
	Start frequency	( ) starts/hour
	Shock environment	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 load	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
Other	Accessories	Yes/No
	Spare parts	Yes/No
Outline of equipment		

Memo

Memo

Limited Warranty

Tsubaki Co.: hereinafter referred to as “Seller”
Customer: hereinafter referred to as “Buyer”
Goods sold or supplied by Seller to Buyer: hereinafter referred to as “Goods”

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.

2. Warranty coverage

Should any damage or problem with the Goods arise within the warranty period, given that the Goods were operated and maintained according to the instructions provided in the manual, Seller will repair and replace at no charge once the Goods are returned to the Seller. This warranty only covers individual Goods supplied by the Seller to the Buyer and therefore does not include the following:
(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) Wear, tear or deterioration of parts including bearings and oil seals.
(11) Loss or damage not liable to the Seller.

⚠ Safety precautions

(General)

- Comply with the required safety regulations where the reducer is set or used. (Ordinance on Labor Safety Law by government, electrical system technical standards, building standard laws, etc.)
- To ensure optimum performance is obtained from the Troi Drive/Worm Power Drive, it is necessary to read and understand the instructions and safety precautions contained in the manual.
  If the instruction manual is not at hand, request one from the distributor where you purchased the product, or TEM with product name and model number.
  This manual should remain with the product at all times, including when redistributed.
  Make sure this manual is available to every person who operates the product.

(Selection)

- Select the products which are suitable for the usage environment and application.
- When using with equipment for transporting humans or an elevating device, install a suitable protection device on the equipment for safety purposes. Otherwise an accident resulting in death, injury or damage to the equipment may occur due to accidental falling.
- Use explosion-proof type motors in an explosive atmosphere. Use an explosion-proof type motor suitable for dangerous environments to prevent possible explosions, ignitions, electrical shock, injuries, fires and damage to the device.
- When driving an explosion-proof motor with an inverter, be sure to use a verified inverter with a motor because an inverter and a motor mate one-on-one. In addition, install an inverter in a non-explosive atomosphere because inverters have a non-explosive structure.
- When a 400V class inverter is used to drive the product, install a suppression filter or reactor to the inverter side or use reinforced insulation type motors.
- When the product is used for food processing machinery, install devices such as oil pans to prevent grease from leaking. Lubricant oil can damage food or other such products.

⚠ 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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