

Zero backlash positioner, Ultra-compact model

RollerDrive[®]

MR series



The **ZERO-Backlash** Technology

A mechanism developed through the pursuit of outstanding functionality and performance.

Superior movement achieved with zero-backlash technology

In FA equipment, motion control using servo systems is a crucial element which greatly affects equipment performance. Naturally, equipment specifications and performance are designed assuming that the expected motion is attained, but if there are factors such as backlash, insufficient rigidity or control instability in the motion control section, then output motion will deviate from input control commands, and it will be difficult to attain the expected performance.

With the RollerDrive MR Series, a motor is mechanically reduced while maintaining, and stability. An output motion faithful to input control commands can be attained by achieving zero-backlash with our unique preloaded mechanism. This is a revolutionary Ultra Small FA motion control unit, which combines rolling transmission for high-efficiency and elimination of wear, an orthogonal layout of input and output axes for greater compactness, and standard features like a hollow shaft for greater ease-of-use.



Positioner Lineup

For general factory automation

MR
Ultra-compact model



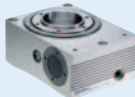
RGV
Standard model



RGR
Large-Diameter Model



RA
Lightweight model



RU
High rigidity model

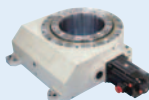


For welding machines

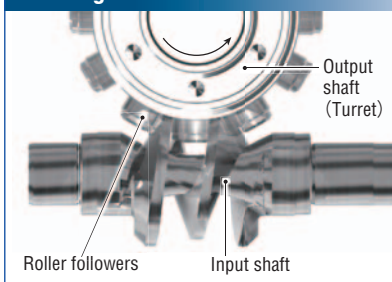
SP
Standard model



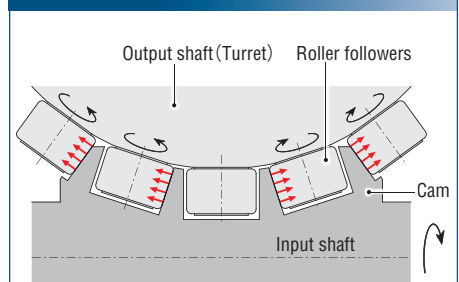
RW
High precision model



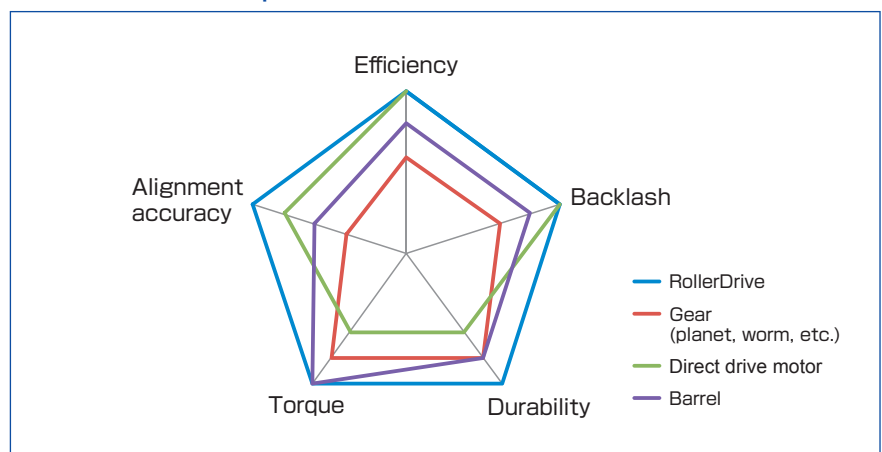
Roller gear mechanism



Preload mechanism

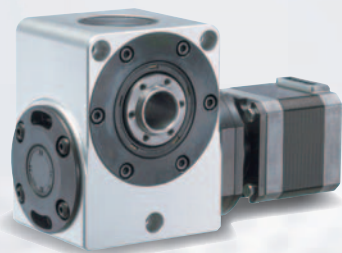


Performance Comparison



World's smallest roller drive

MR series



MR25 [Stepper motor installation orientation, five positions]



MR25 [Stepper motor installation orientation, one positions]

Feature

1

Ultra small, zero backlash positioner

Ultra small speed positioner that eliminates backlash with its own adjustable preload on the roller gear cam and roller follower.

Feature

2

Maintenance free

Since there is no deterioration in the precision of the internal parts due to aging, and the unit has excellent durability, there is no need for periodic calibration or adjustment.

Feature

3

There is a wide range of motors to choose from

A wide range of servo and stepper motors can be installed. (Motors from various motor manufacturers can be used)

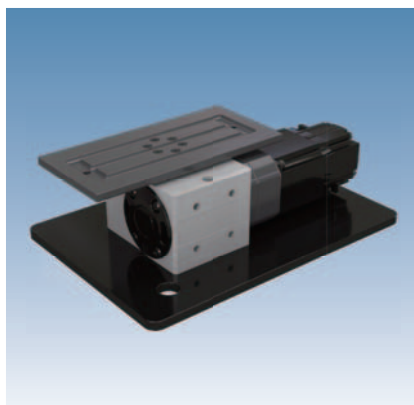
Feature

4

Mounts in any position

The MR main housing can be mounted in any direction, allowing you to create various motions.

Applications



Alignment table



Turning and swinging arms



Handling unit

Model code

Model code

MR 20 - 10 G1 T B - A1 - 0

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

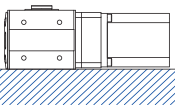
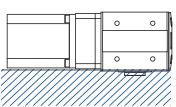
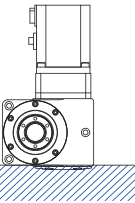
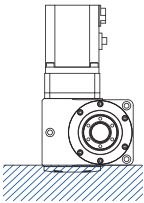
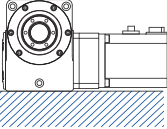
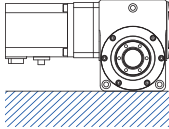
① Model	② Size	③ Gear ratio	④ Lubrication and mounting position	⑤ Servomotor position	⑥ Option	⑦ Servomotor fastener elements	⑧ Version
MR	20	10	G 1 Mounting position 1・2・3・4・5・6 Refer to the mounting position code Grease lubrication	T:Mounted on right side as viewed from front U:Mounted on left side as viewed from front	Blank:No option A:Rust prevention specifications B:Rust-proof, dust-proof, and waterproof specifications	A1:With attachment 00:Without attachment (Without accessories, such as a motor base) Please refer to pages 5 to 19 to select an attachment code.	0:Version 0
	25	12					
	32						

About installation of motor

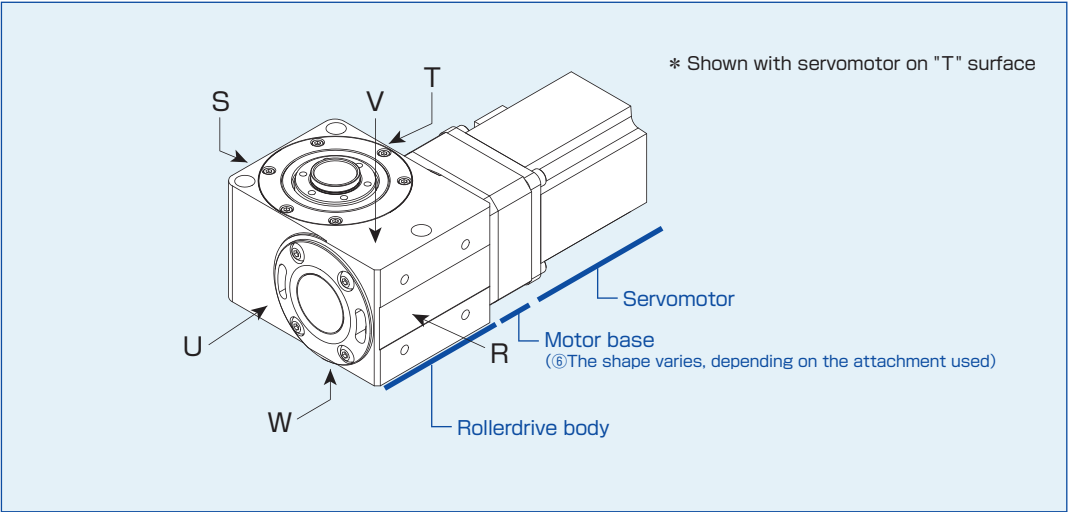
Please purchase and install a motor to mount on the unit.

Since an installation manual is included with the product, please do not start the installation until you understand the complete instructions.

Mounting position code

1	2	3	4	5	6
					
W surface on bottom	V surface on bottom	U surface on bottom	T surface on bottom	R surface on bottom	S surface on bottom

RollerDrive surfaces



RollerDrive specifications

Grease lubrication type

Model		MR20	MR25	MR32
Gear ratio		10	12	12
Upper limit torque at start/stop	N·m	2.7	5.2	10.0
Max. input speed*	min ⁻¹	2,000		
Rated input speed*	min ⁻¹	1,500		
Angular repeatability accuracy	arc·sec or less	±15		
Surface runout	μm or less	50		
Weight (Motor not included)	kg	1.0	1.3	2.1

* If you want to rotate the output continuously for 360 ° or more, please contact us in advance.

How to determine the allowable load mass and allowable moment

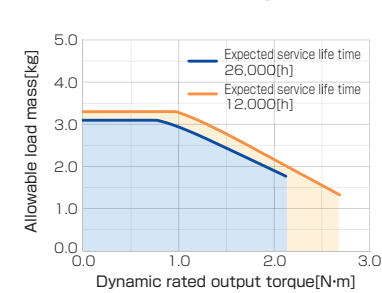
Check the allowable load mass and allowable moment as follows.

1. Find the average load torque based on the rated output speed (rpm) and load conditions.
(The maximum load torque should never exceed the starting/stopping upper limit torque)
2. Find the allowable values for the average load torque and rated output speed by looking at the dynamic rated output torque diagram below.
3. Find each maximum allowable value by referring to the allowable load mass diagram, the allowable moment diagram and the average load torque.

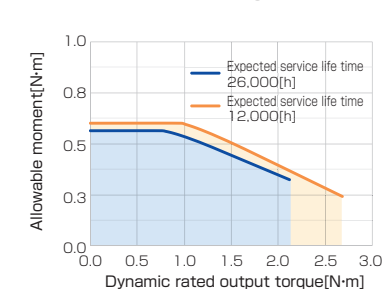
MR20 dynamic rated output torque diagram



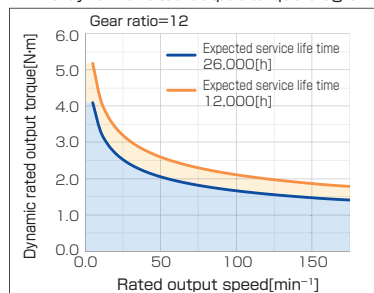
MR20 allowable load mass diagram



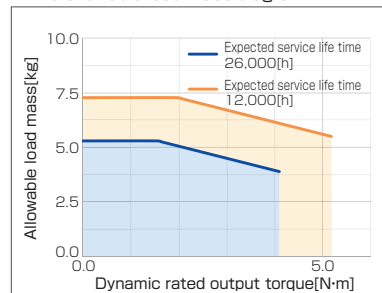
MR20 allowable moment diagram



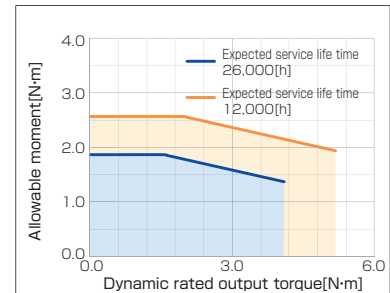
MR25 dynamic rated output torque diagram



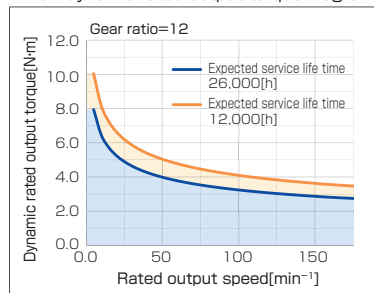
MR25 allowable load mass diagram



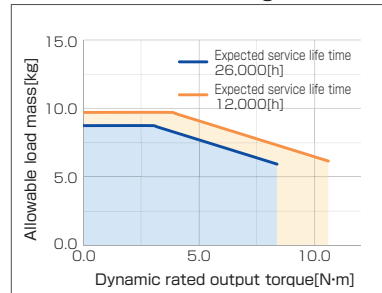
MR25 allowable moment diagram



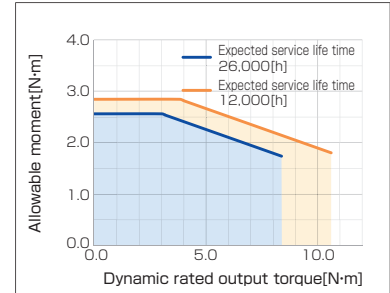
MR32 dynamic rated output torque diagram



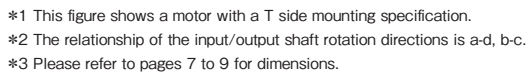
MR32 allowable load mass diagram



MR32 allowable moment diagram



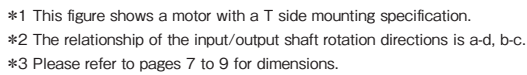
Unit:mm



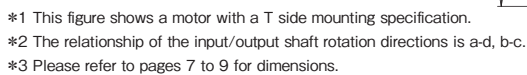
Unit:mm



Unit:mm



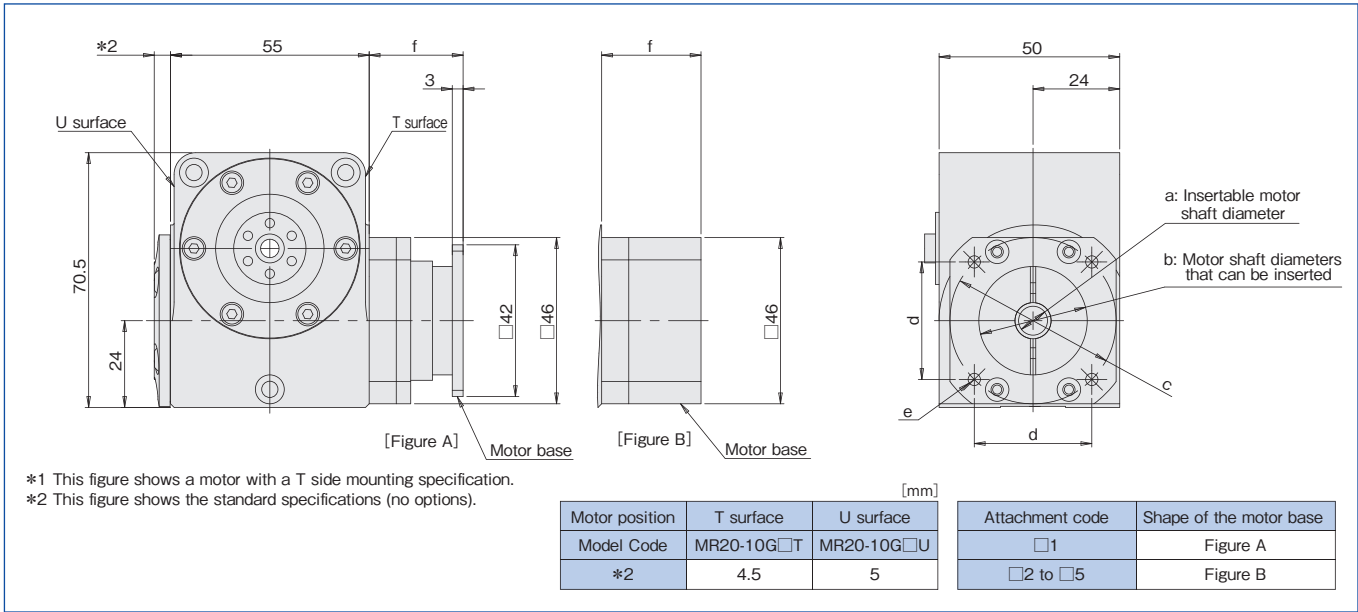
Unit:mm



MR20 Dimensions

MR20 Attachment Code Selection Chart With Attachment

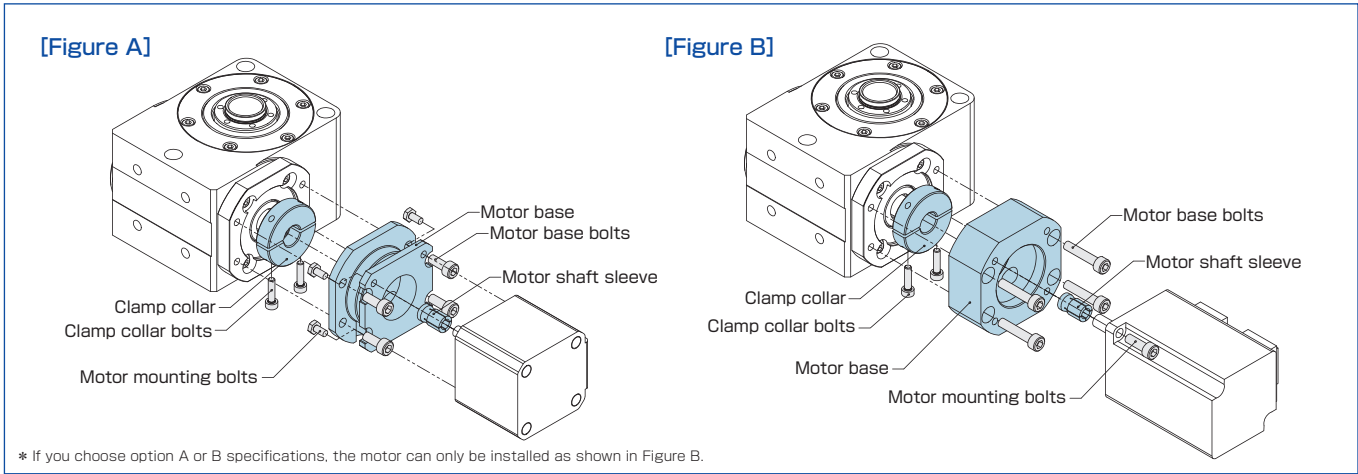
Unit:mm



Attachment code	a	b	c	d	e	f
A1	ϕ5	ϕ22	—	31	(4)ϕ3.4 THRU	26
N1	ϕ8		ϕ48	—	(4)M3×0.5, 6DP	
N2		ϕ45	(4)M4×0.7, 8DP		23.5	
N3		ϕ46				
N4						
N5						

Accessories	Attachment code			
	A1	N1	N2, N3, N4	N5
Motor base	○	○	○	○
Clamp collar	○	○	○	○
Motor shaft sleeve	○	—	—	—
Motor base bolt	M3×10 (4)		M3×20 (4)	M3×18 (4)
Clamp collar bolts	M3×12 (2)			

Motor installation schematic



List of available servomotors for the MR20

Manufacture	Servomotor series	Motor	Rated output [kW]	Rated torque [N·m]	Rated rotation speed [min ⁻¹]	Motor rotor inertia [x10 ⁻⁴ kg·m ²]	Attachment code
Mitsubishi Electric	MELSERVO-J4	HG-KR13	0.1	0.32	3,000	0.0777	N4
		HG-MR13	0.1	0.32	3,000	0.0300	N4
	MELSERVO-J5	HK-KT13W	0.1	0.32	3,000	0.0686	N4
		HK-KT13UW	0.1	0.32	3,000	0.1210	N4
Yaskawa Electric	Σ-7	SGM7J-01A	0.1	0.318	3,000	0.0659	N4
		SGM7J-C2A	0.15	0.477	3,000	0.0915	N4
		SGM7A-01A	0.1	0.318	3,000	0.0337	N4
		SGM7A-C2A	0.15	0.477	3,000	0.0458	N4
	Σ-V	SGMJV-01A	0.1	0.318	3,000	0.0665	N4
		SGMJV-C2A	0.15	0.477	3,000	0.0883	N4
		SGMAV-01A	0.1	0.318	3,000	0.0380	N4
		SGMAV-C2A	0.15	0.477	3,000	0.0531	N4
Panasonic	MINAS A5	MSMD01	0.1	0.32	3,000	0.0510	N3
		MSME01	0.1	0.32	3,000	0.0510	N3
	MINAS A6	MSMF01	0.1	0.32	3,000	0.0480	N3
		MHMF01	0.1	0.32	3,000	0.0710	N4
FANUC	βiS	βiS 0.3/5000	0.1	0.32	4,000	0.0340	N4
SANYO DENKI	R2	R2AA04010F	0.1	0.318	3,000	0.0627	N4
OMRON	1S	R88M-1M10030	0.1	0.318	3,000	0.0890	N4
	G5	R88M-K10030	0.1	0.32	3,000	0.0510	N4
	G	R88M-G10030	0.1	0.32	3,000	0.0510	N4
KEYENCE	SV	SV-M010	0.1	0.318	3,000	0.0665	N4
	SV2	SV2-M010A	0.1	0.318	3,000	0.0659	N4
NIDEC SANKYO	S-FLAG	MY101	0.1	0.32	3,000	0.0610	N4
		MG101	0.1	0.32	3,000	0.0640	N4
ORIENTAL MOTOR	NX	NX410A	0.1	0.318	3,000	0.0290	N2
TAMAGAWA SEIKI	TBL-i II	TS4603	0.1	0.32	3,000	0.0350	N4
		TS4604	0.15	0.477	3,000	0.0510	N4
	TBL-iIV	TSM3104	0.1	0.318	3,000	0.0620	N4
	TBL-iIVs	TSM4104	0.1	0.318	3,000	0.0350	N4
FUJI ELECTRIC	ALPHA5	GYS101D5	0.1	0.318	3,000	0.0371	N4
	ALPHA7	GYS101D7	0.1	0.318	3,000	0.0371	N4
SIEMENS	SIMOTICS S-1FK7	1FK7015	0.1	0.16	6,000	0.0830	N5

* Please prepare the servo motor with no keyway.

List of available stepper motors for the MR20

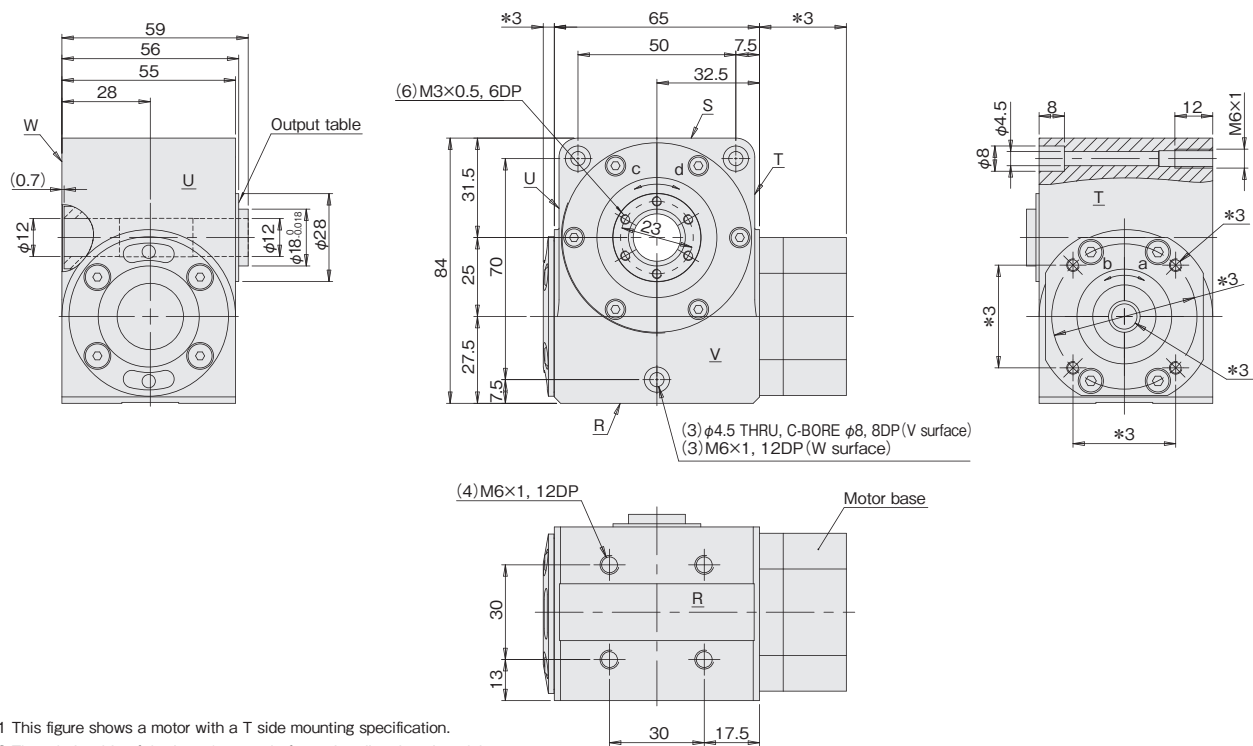
Manufacture	Stepper motor series	Motor	Rated current [A/phase]	Holding torque [N·m]	Motor rotor inertia [$\times 10^{-4} \text{kg} \cdot \text{m}^2$]	Attachment code
SANYO DENKI	F2	SH1424-5041	1	0.48	0.089	A1
		SH1424-5241	2	0.48	0.089	A1
		103H5210-5140	0.5	0.49	0.074	A1
		103H5210-5240	1	0.51	0.074	A1
ORIENTAL MOTOR	PKP2	PKP244D15A2	1.5	0.48	0.054	A1
		PKP244D23A2	2.3	0.48	0.054	A1
		PKP245D08A2	0.85	0.66	0.073	A1
		PKP245D15A2	1.5	0.66	0.073	A1
		PKP245D23A2	2.3	0.66	0.073	A1
		PKP246D15A2	1.5	0.99	0.11	A1
		PKP246D23A2	2.3	0.99	0.11	A1
		PKP246U12A2	1.2	0.75	0.11	A1
	PKP5	PKP246U16A2	1.6	0.75	0.11	A1
		PKP546N18A2	1.8	0.5	0.11	A1
		PKP546MN18A	1.8	0.44	0.121	A1
	α STEP	AZM48A0C	—	0.77	0.115	N1
TAMAGAWA SEIKI	TS	TS3617N504	1.2	0.75	0.114	A1

* Please prepare the stepper motor with no keyway.

MR25 Dimensions

MR25 standard specifications dimensional drawings (no options)

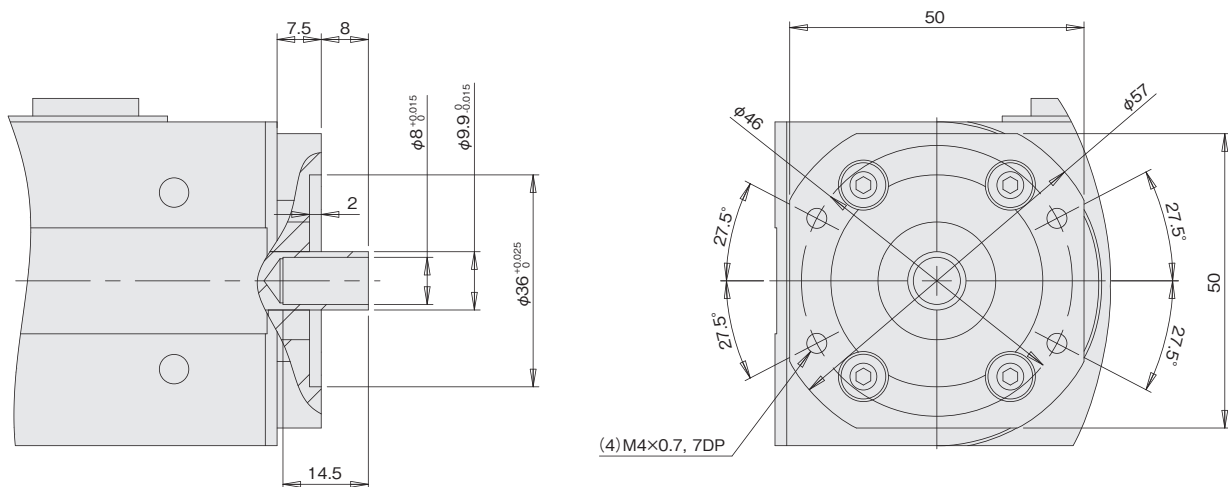
Unit:mm



- *1 This figure shows a motor with a T side mounting specification.
- *2 The relationship of the input/output shaft rotation directions is a-d, b-c.
- *3 Please refer to pages 12 to 14 for dimensions.

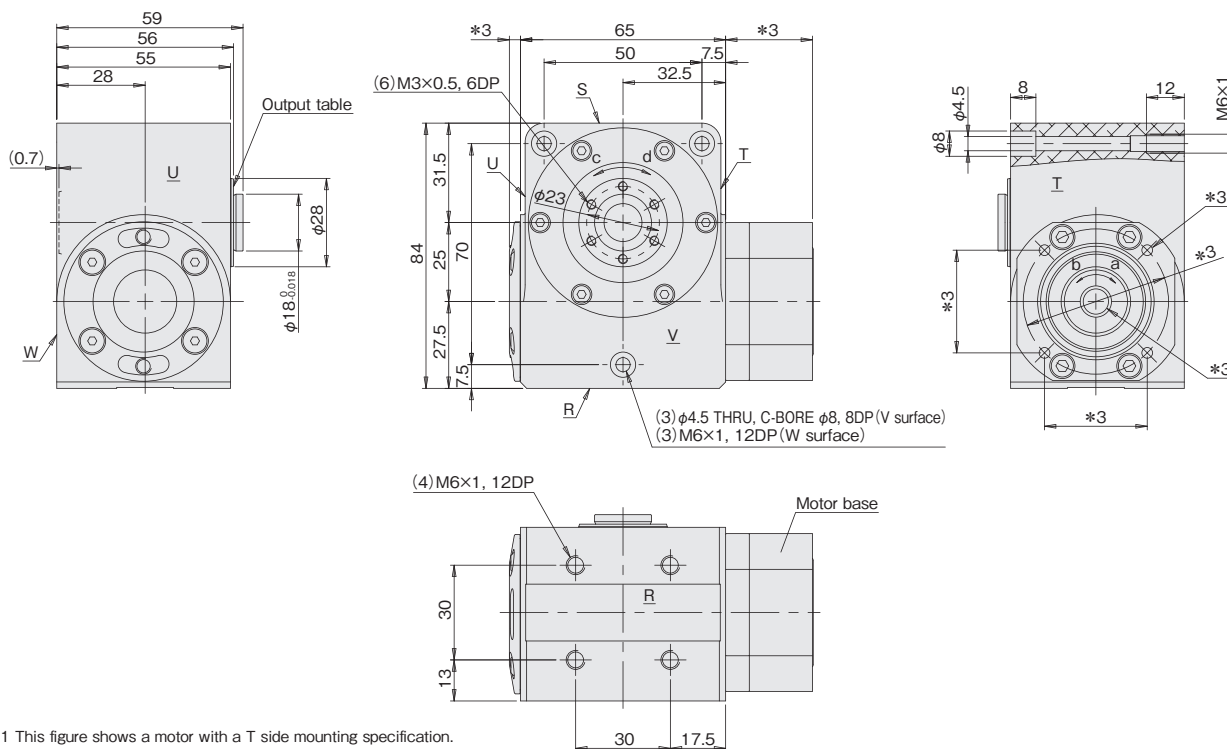
MR25 standard specifications detailed view of the input axis, specifications without attachments

Unit:mm



MR25's option A specification dimension drawings

Unit:mm



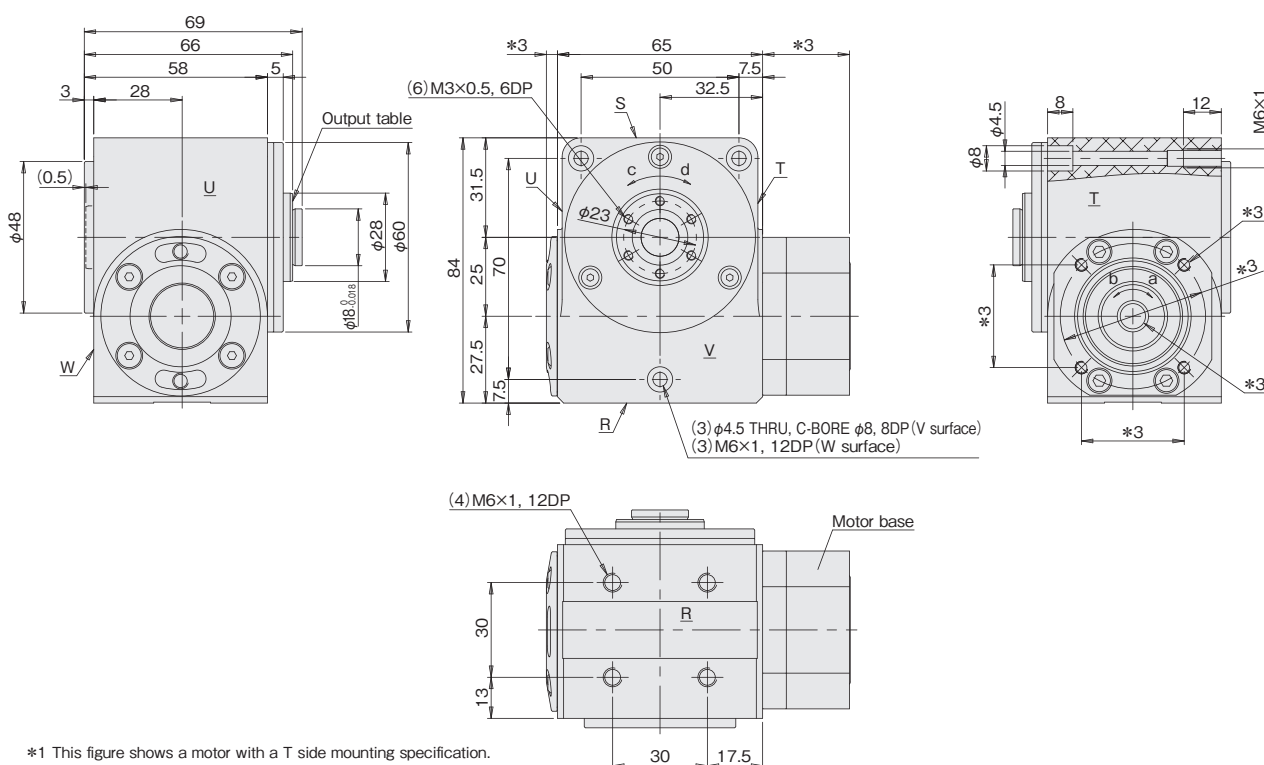
*1 This figure shows a motor with a T side mounting specification.

*2 The relationship of the input/output shaft rotation directions is a-d, b-c.

※3 Please refer to pages 12 to 14 for dimensions.

MR25's option B specification dimension drawings

Unit:mm



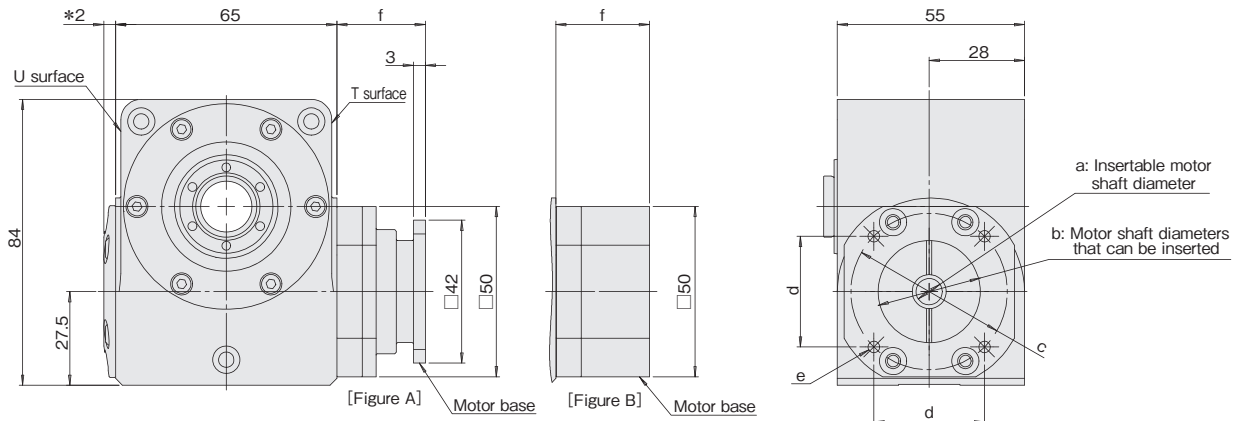
*1 This figure shows a motor with a T side mounting specification.

*2 The relationship of the input/output shaft rotation directions is a-d, b-c.

※3 Please refer to pages 12 to 14 for dimensions.

MR25 Attachment Code Selection Chart With Attachment

Unit: mm



*1 This figure shows a motor with a T side mounting specification.
 *2 This figure shows the standard specifications (no options).

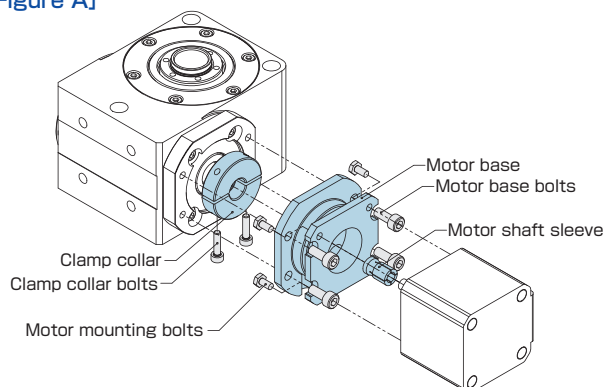
Motor position	T surface	U surface	Attachment code	Shape of the motor base
Model Code	MR25-12G□T	MR25-12G□U	□1	Figure A
*2	3.5	5	□2 to □6	Figure B

Attachment code	a	b	c	d	e	f
A1	φ5	φ22	—	31	(4)φ3.4 THRU	26
C6	φ6.35	φ36		41	(4)M4×0.7, 8DP	
N1	φ8	φ22		31	(4)φ3.4 THRU	
N2		φ22	φ48	—	(4)M3×0.5, 6DP	27.5
N3			φ45			
N4		φ30	φ46			
N5					(4)M4×0.7, 8DP	23.5

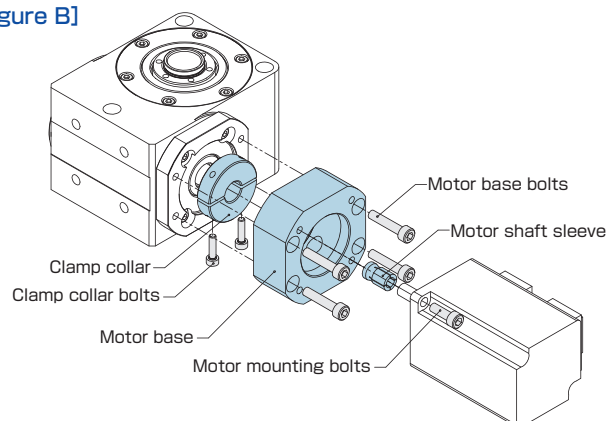
Accessories	Attachment code				
	A1	N1	N2, N3, N4	N5	C6
Motor base	○	○	○	○	○
Clamp collar	○	○	○	○	○
Motor shaft sleeve	○	—	—	—	○
Motor base bolt	M4×10 (4)		M4×20 (4)	M4×18 (4)	M4×20 (4)
Clamp collar bolts	M3×12 (2)				

Motor installation schematic

[Figure A]



[Figure B]



* If you choose option A or B specifications, the motor can only be installed as shown in Figure B.

List of available servomotors for the MR25

Manufacture	Servomotor series	Motor	Rated output [kW]	Rated torque [N·m]	Rated rotation speed [min ⁻¹]	Motor rotor inertia [x10 ⁻⁴ kg·m ²]	Attachment code
Mitsubishi Electric	MELSERVO-J4	HG-KR13	0.1	0.32	3,000	0.0777	N4
		HG-MR13	0.1	0.32	3,000	0.0300	N4
	MELSERVO-J5	HK-KT13W	0.1	0.32	3,000	0.0686	N4
		HK-KT13UW	0.1	0.32	3,000	0.1210	N4
		HK-KT1M3W	0.15	0.48	3,000	0.0977	N4
Yaskawa Electric	Σ-7	SGM7J-01A	0.1	0.318	3,000	0.0659	N4
		SGM7J-C2A	0.15	0.477	3,000	0.0915	N4
		SGM7A-01A	0.1	0.318	3,000	0.0337	N4
		SGM7A-C2A	0.15	0.477	3,000	0.0458	N4
	Σ-V	SGMJV-01A	0.1	0.318	3,000	0.0665	N4
		SGMJV-C2A	0.15	0.477	3,000	0.0883	N4
		SGMAV-01A	0.1	0.318	3,000	0.0380	N4
Panasonic	MINAS A5	MSMD01	0.1	0.32	3,000	0.0510	N3
		MSME01	0.1	0.32	3,000	0.0510	N3
	MINAS A6	MSMF01	0.1	0.32	3,000	0.0480	N3
		MHMF01	0.1	0.32	3,000	0.0710	N4
FANUC	βiS	βiS 0.3/5000	0.1	0.32	4,000	0.0340	N4
SANYO DENKI	R2	R2AA04010F	0.1	0.318	3,000	0.0627	N4
OMRON	1S	R88M-1M10030	0.1	0.318	3,000	0.0890	N4
	G5	R88M-K10030	0.1	0.32	3,000	0.0510	N4
	G	R88M-G10030	0.1	0.32	3,000	0.0510	N4
KEYENCE	SV	SV-M010	0.1	0.318	3,000	0.0665	N4
	SV2	SV2-M010A	0.1	0.318	3,000	0.0659	N4
NIDEC SANKYO	S-FLAG	MY101	0.1	0.32	3,000	0.0610	N4
		MG101	0.1	0.32	3,000	0.0640	N4
ORIENTAL MOTOR	NX	NX410A	0.1	0.318	3,000	0.0290	N2
TAMAGAWA SEIKI	TBL-i II	TS4603	0.1	0.32	3,000	0.0350	N4
		TS4604	0.15	0.477	3,000	0.0510	N4
	TBL-iIV	TSM3104	0.1	0.318	3,000	0.0620	N4
	TBL-iIVs	TSM4104	0.1	0.318	3,000	0.0350	N4
FUJI ELECTRIC	ALPHA5	GYS101D5	0.1	0.318	3,000	0.0371	N4
	ALPHA7	GYS101D7	0.1	0.318	3,000	0.0371	N4
SIEMENS	SIMOTICS S-1FK7	1FK7015	0.1	0.16	6,000	0.0830	N5

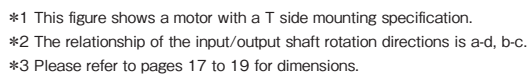
* Please prepare the servo motor with no keyway.

List of available stepper motors for the MR25

Manufacture	Stepper motor series	Motor	Rated current [A/phase]	Holding torque [N·m]	Motor rotor inertia [$\times 10^{-4} \text{kg} \cdot \text{m}^2$]	Attachment code
SANYO DENKI	F3	103H6333-0340	3	0.58	0.17	C6
ORIENTAL MOTOR	PKP2	PKP245D15A2	1.5	0.66	0.073	A1
		PKP245D23A2	2.3	0.66	0.073	A1
		PKP246D15A2	1.5	0.99	0.11	A1
		PKP246D23A2	2.3	0.99	0.11	A1
		PKP246U12A2	1.2	0.75	0.11	A1
		PKP246U16A2	1.6	0.75	0.11	A1
		PK258-02A	2	1.2	0.42	C6
	α STEP	AZM48A0C	—	0.77	0.115	N1
TAMAGAWA SEIKI	TS	TS3621N2	2	0.65	0.2	C6

* Please prepare the stepper motor with no keyway.

Unit:mm

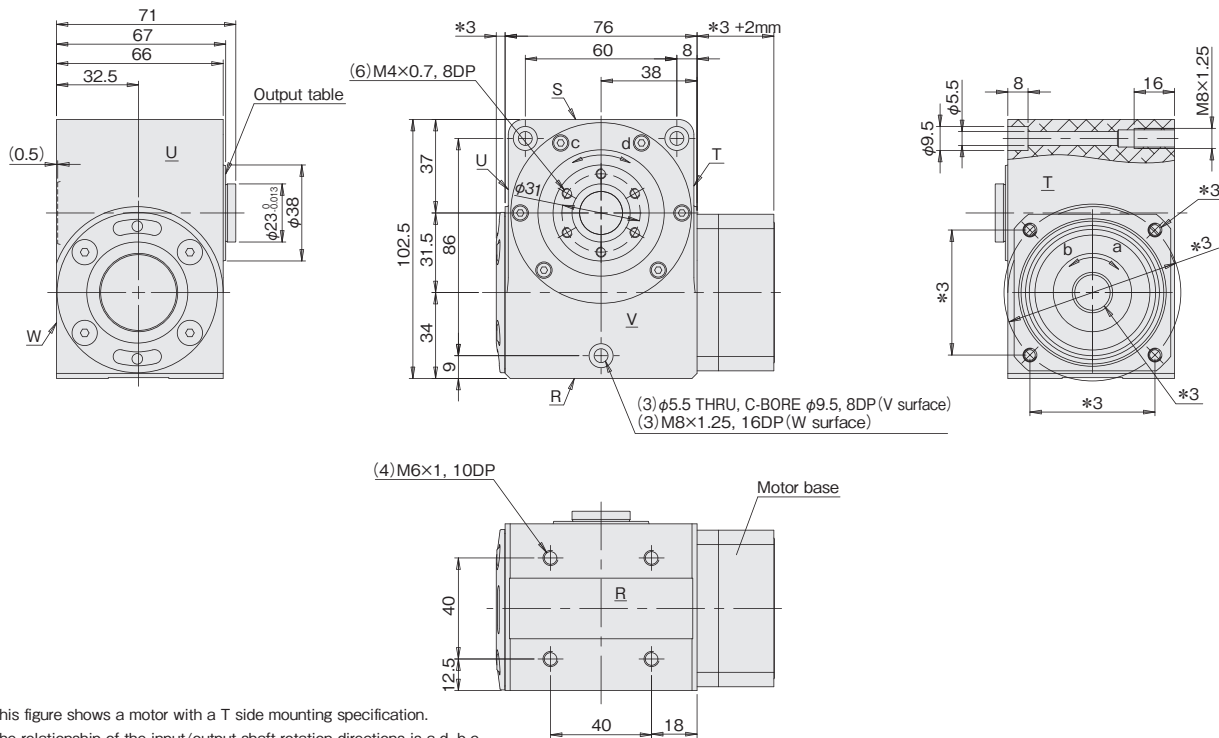


Unit:mm



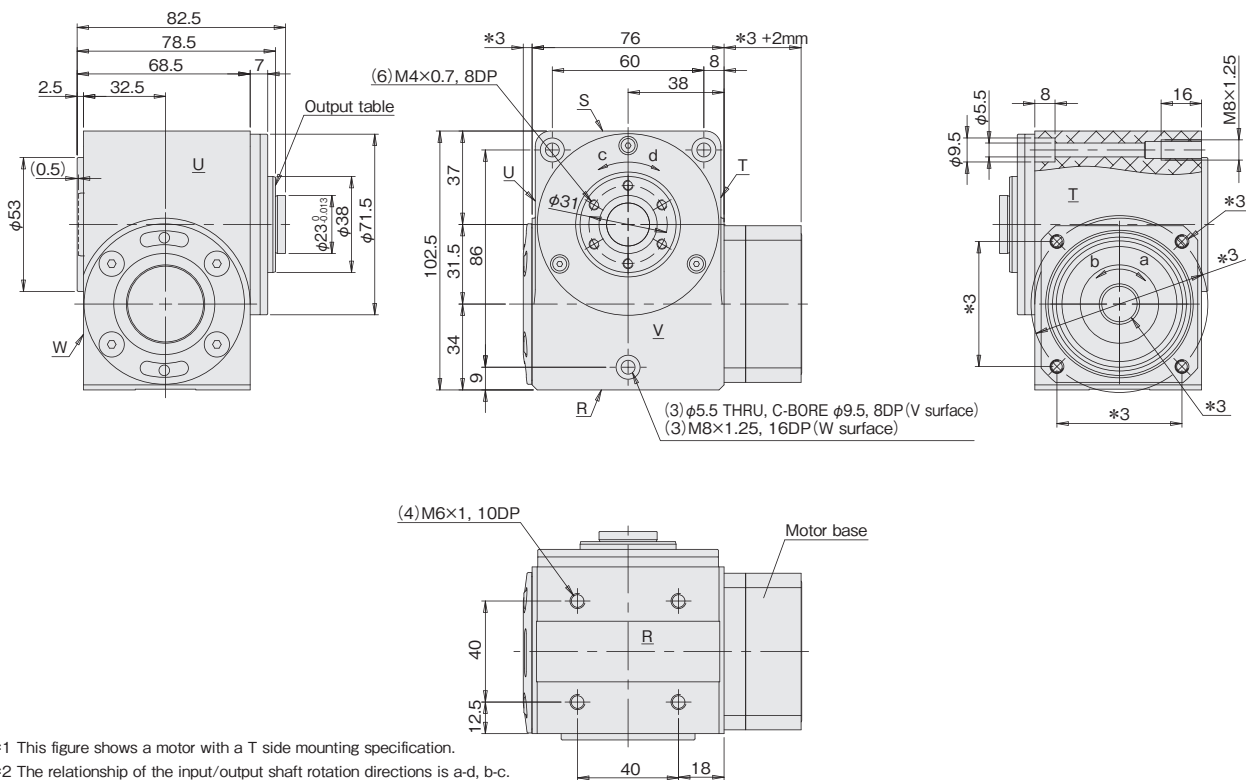
MR32's option A specification dimension drawings

Unit:mm



MR32's option B specification dimension drawings

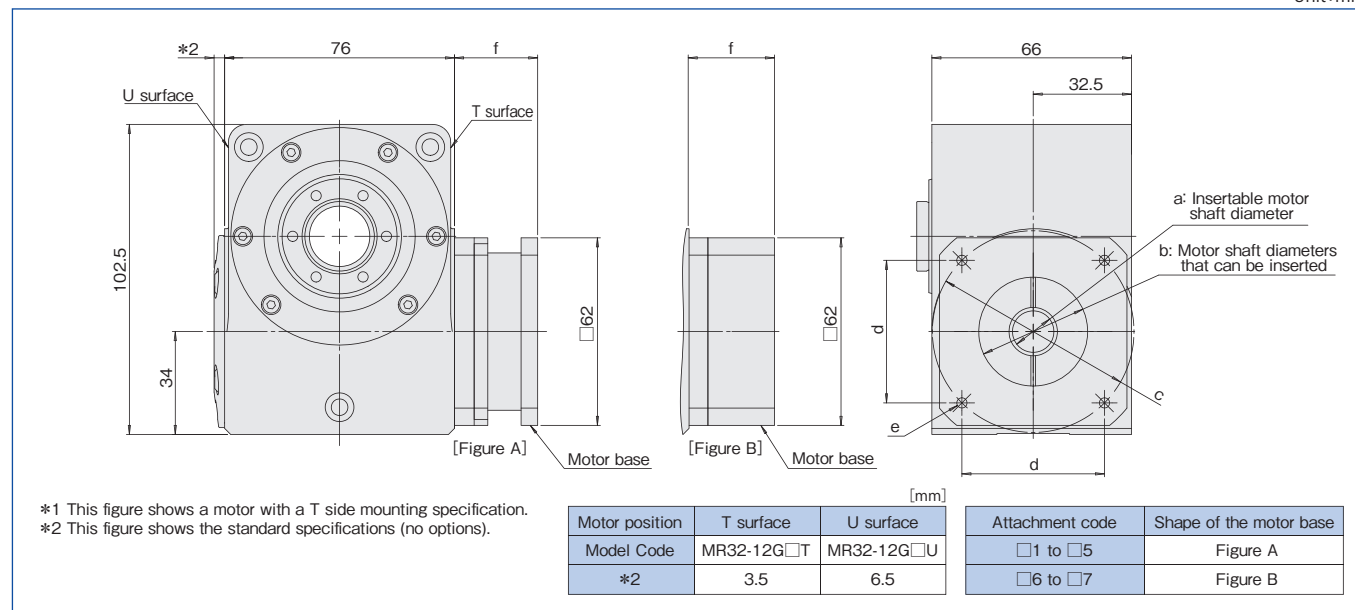
Unit:mm



MR32 Dimensions

MR32 Attachment Code Selection Chart With Attachment

Unit:mm



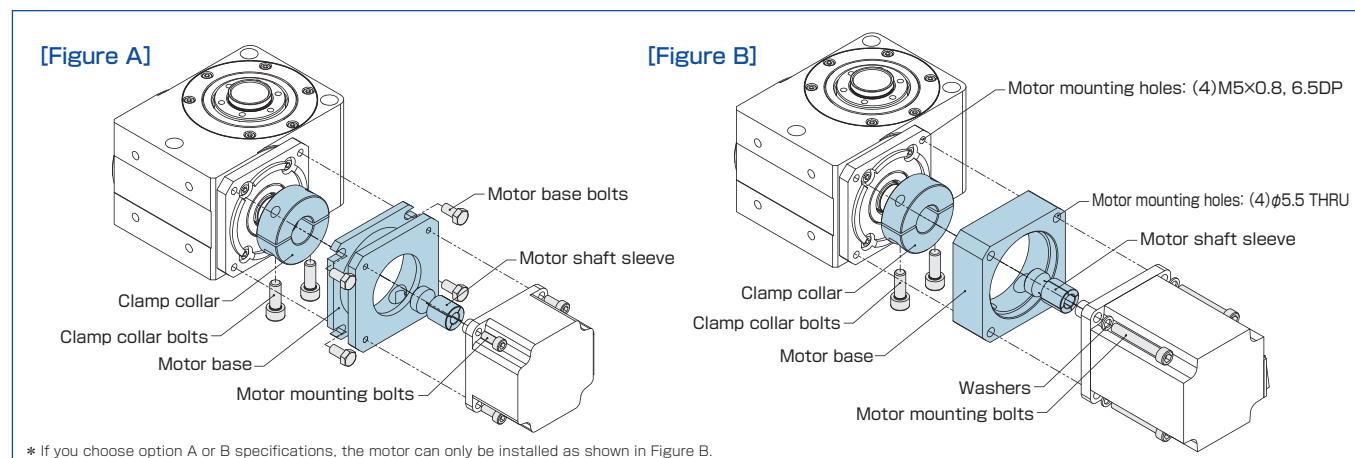
Attachment code	a	b	c	d	e	f
B1	φ6.35	φ36	-	41	(4)M4×0.7, 5.5DP	27.5
B3		φ38.1		47.14		
C2	φ8	φ36	-	50	(4)M5×0.8, 5.5DP	28.5
C3		φ38.1		47.14		
D4	φ9	φ40	φ63	-	(4)φ5.5 THRU*	31.5
D6		φ50	φ70	-	(4)φ5.5 THRU*	
E2	φ10	φ36	-	50	(4)M4×0.7, 5.5DP	27.5
F5	φ11	φ50	φ70	-	(4)M4×0.7, 5.5DP	31.5
N2	φ14	φ36	-	50	(4)M4×0.7, 5.5DP	27.5
N5		φ50	φ70	-	(4)M4×0.7, 5.5DP	31.5
N6		φ50	φ70	-	(4)φ5.5 THRU*	28.5
N7		φ50	φ70	-	(4)φ5.5 THRU*	28.5

* Refer to motor mounting hole dimensions in the motor mounting diagram [Figure B].

Accessories	Attachment code				
	N6	N7	D6	N2, N5	Other All
Motor base	○	○	○	○	○
Clamp collar	○	○	○	○	○
Washer	—	○	○	—	—
Motor shaft sleeve	—	—	○	—	○
Motor base bolt	M5×35 (4)*			M5×10 (4)	
Clamp collar bolts	M6×16 (2)				

* The motor base mounting bolt, M5×35, is a bolt for fastening the motor to the base. (See motor mounting diagram B)

Motor installation schematic



List of available servomotors for the MR32

Manufacture	Servomotor series	Motor	Rated output [kW]	Rated torque [N·m]	Rated rotation speed [min ⁻¹]	Motor rotor inertia [x10 ⁻⁴ kg·m ²]	Attachment code
Mitsubishi Electric	MELSERVO-J4	HG-KR23	0.2	0.64	3,000	0.2210	N6
		HG-MR23	0.2	0.64	3,000	0.0865	N6
	MELSERVO-J5	HK-KT23W	0.2	0.64	3,000	0.2090	N6
Yaskawa Electric	Σ-7	SGM7J-02A	0.2	0.637	3,000	0.2630	N7
		SGM7A-02A	0.2	0.637	3,000	0.1390	N7
	Σ-V	SGMJV-02A	0.2	0.637	3,000	0.2590	N7
		SGMAV-02A	0.2	0.637	3,000	0.1160	N7
Panasonic	MINAS A5	MSMD02	0.2	0.64	3,000	0.1400	F5
		MHMD02	0.2	0.64	3,000	0.4200	F5
		MSME02	0.2	0.64	3,000	0.1400	F5
	MINAS A6	MSMF02	0.2	0.64	3,000	0.1400	F5
		MHMF02	0.2	0.64	3,000	0.2900	F5
FANUC	βiS	βiS 0.5/6000	0.35	0.65	6,000	0.1800	D6
SANYO DENKI	R2	R2AA06020F	0.2	0.637	3,000	0.2190	N7
	R5	R5AA06020H	0.2	0.637	3,000	0.1980	N7
		R5AA06020F	0.2	0.637	3,000	0.1980	N7
OMRON	1S	R88M-1M20030	0.2	0.637	3,000	0.2232	F5
	G5	R88M-K20030	0.2	0.64	3,000	0.1400	F5
	G	R88M-G20030	0.2	0.64	3,000	0.1400	F5
KEYENCE	SV	SV-M020	0.2	0.637	3,000	0.2590	N7
	SV2	SV2-M020A	0.2	0.637	3,000	0.2630	N7
NIDEC SANKYO	S-FLAG	MX201	0.2	0.64	3,000	0.1400	N7
		MZ201	0.2	0.64	3,000	0.4400	N7
ORIENTAL MOTOR	NX	NX620A	0.2	0.637	3,000	0.1620	N2
TAMAGAWA SEIKI	TBL-V	TS4747	0.2	0.38	5,000	0.1650	C3
		TS4748	0.3	0.57	5,000	0.2700	C3
	TBL-i II	TS4607	0.2	0.64	3,000	0.1800	N7
	TBL-iIV	TSM3202	0.2	0.64	3,000	0.2400	N7
	TBL-iIVs	TSM4202	0.2	0.64	3,000	0.1500	N6
FUJI ELECTRIC	ALPHA5	GYS201D5	0.2	0.637	3,000	0.1350	N7
		GYB201D5	0.2	0.637	3,000	0.2400	N7
	ALPHA7	GYS201D7	0.2	0.637	3,000	0.1350	N7
		GYB201D7	0.2	0.637	3,000	0.3300	N7
SIEMENS	SIMOTICS S-1FK7	1FK7022	0.38	0.6	6,000	0.2800	D4

* Please prepare the servo motor with no keyway.

List of available stepper motors for the MR32

Manufacture	Stepper motor series	Motor	Rated current [A/phase]	Holding torque [N·m]	Motor rotor inertia [x10 ⁻⁴ kg·m ²]	Attachment code
SANYO DENKI	F2	103H7126-0□□□	1~3	1.27	0.36	B3
		103H7126-5□□□	1~3	1.6	0.36	B3
		103H7128-5□□□	1~3	2	0.49	C3
		103H7126-6□□□	1~3	1.27	0.36	B3
		SP2563-5□□60	1~3	1	0.21	B3
		SP2566-5□□60	1~3	1.7	0.36	B3
		SP2563-5□□00	1~3	1	0.21	B3
		SP2566-5□□00	1~3	1.7	0.36	B3
		SH1602-0440	2	1.1	0.4	B3
		SH1603-0440	2	1.7	0.75	C3
		SH1602-5240	2	1.28	0.4	B3
		SH1603-5240	2	2.15	0.75	C3
		103H7822-0□□40	1~3	1.17	0.4	C2
		103H7823-0□□40	1~3	2.1	0.84	C2
		103H7822-0□□60	1~3	1.17	0.4	C3
		103H7823-0□□60	1~3	2.1	0.84	C3
		103H7822-□□740	2~4	1.37	0.4	C2
		103H7823-□□740	2~4	2.7	0.84	C2
		103H7822-□□760	2~4	1.37	0.4	C3
		103H7823-□□760	2	2.7	0.84	C3
	F3	103H7333-0340	3	1.1	0.36	B3
		103H783□□0340	3	0.95~1.68	0.4~0.84	C2
	F5	SM5602-7241	0.75	0.9	0.31	E2
		SM5603-7241	0.75	1.7	0.6	E2
		SM5602-8241	1.4	0.9	0.31	E2
		SM5603-8241	1.4	1.7	0.6	E2
ORIENTAL MOTOR	PKP2	PK258-02A	2	1.2	0.42	B1
		PKP266D□□□A2	1.4~4.2	1.4	0.27	C3
		PKP268D□□□A2	1.4~4.2	2.5	0.5	C3
		PKP266U□□□A2	1~2	1.1	0.27	C3
		PKP268U□□□A2	1~2	2	0.5	C3
		PKP266MD28A	2.8	1.32	0.29	C3
		PKP268MD28A	2.8	2.23	0.49	C3
		PKP266MU20A	2	1.1	0.29	C3
		PKP268MU20A	2	1.75	0.49	C3
		PK26□□DA	2.8	1.06~3.1	0.28~0.9	C3
		PK266JA	2	1.35	0.45	C3
		PK267JA	2	1.7	0.57	C3
		PK269JA	2	2.2	0.9	C3
	PKP5	PKP568N28A2	2.8	1.5	0.5	C3
		PKP566FN□□□A2	2.4~3.8	1.15	0.29	C2
		PKP569FN□□□A2	2.4~3.8	2.1	0.54	C2
		PKP566FMN24A	2.4	1.25	0.49	C2
		PKP569FMN24A	2.4	2.3	0.97	E2
	αSTEP	ARM66A0C	—	1.2	0.38	E2
		ARM69A0C	—	2	0.75	E2
		AZM66A0C	—	1.2	0.37	E2
		AZM69A0C	—	2	0.74	E2
SHINANO KENSHI	P-PMS	P-PMSA-U56D5M	1	1.847	0.47	B3
		P-PMSA-U56D5	2	1.876	0.47	B3
		P-PMSA-U56D5H	3	1.847	0.47	B3
		P-PMSA-B56D3	2.8	1.376	0.245	B3
		P-PMSA-B56D5	2.8	2.424	0.47	B3
		P-PMSA-U60D3	2	1.341	0.44	C2
		P-PMSA-U60D5	2	2.541	0.92	C2
		P-PMSA-U60D3H	3	1.33	0.44	C2
		P-PMSA-U60D5H	3	2.86	0.92	C2
		P-PMSA-B60D1	2.8	1.165	0.28	C2
		P-PMSA-B60D3	2.8	1.647	0.44	C2
		P-PMSA-B60D5	2.8	3.106	0.92	C2
TAMAGAWA SEIKI	TS	TS3690N3E□	1~3	1.45	0.52	B3
		TS3653N3E□	1~3	1.35	0.43	B3
		TS3653N4E12	5	2	0.52	B3
		TS3606N2E□	1~3	1.35	0.45	C3
		TS3606N3E□	1~3	1.7	0.57	C3
		TS3606N4E□	1~3	2.2	0.9	C3

* Please prepare the stepper motor with no keyway.

Attention: _____

Date _____

Our contact
person: _____

Model Sizing Form for the ***RollerDrive®*** MR series

Customer's Company, Department		TEL
Address		FAX
Name	Email	

A) Application

B) Overview drawing, loads, operating environment, etc.

(Draw a sketch of the table, workpieces, fixtures, etc., to mount on the output shaft of the MR, and indicate any loads that will occur during rotation.)

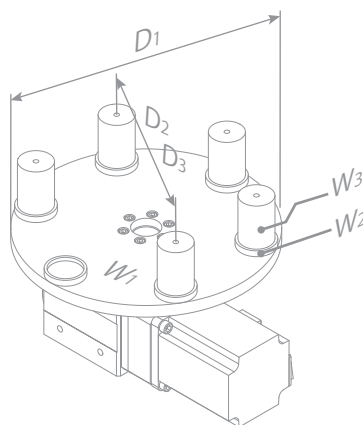


Table diameter : D_1	[mm]
Table mass : W_1	[kg]
P.C.D of fixtures : D_2	[mm]
Mass per fixture : W_2	[kg]
Number of fixtures : n_2	[pcs.]
P.C.D of workpieces : D_3	[mm]
Mass per workpiece : W_3	[kg]

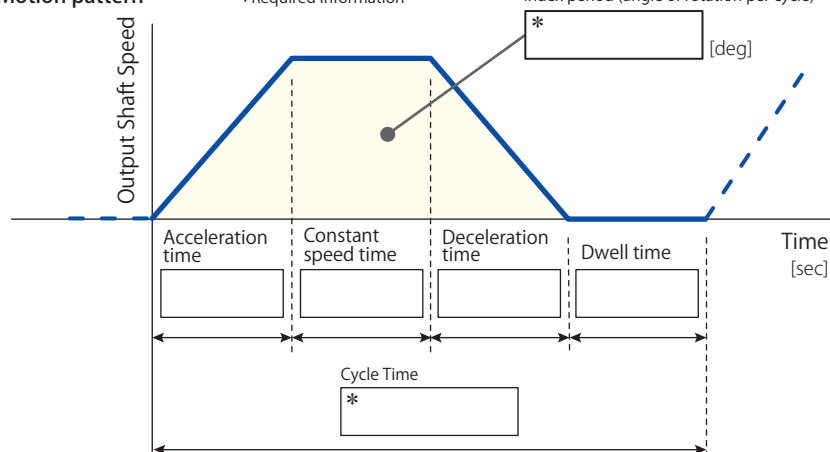
Load that acts upon the output shaft

Axial/radial loads	Moment load	Number of workpieces : n_3
[N]	[N·m]	[pcs.]

C) Motion pattern

*Required information

Index period (angle of rotation per cycle)



E) Intended servomotor

Manufacture

Model No.

Motor size (rated output)

[kW]

F) Mounting direction of servomotor

T surface (right side viewed from front)

U surface (left side viewed from front)

Circle applicable answer.

G) Attachment code

See catalogs p.5 - 19

D) Lubrication and product mounting position

See catalog p3, 4

Please choose one

Product mounting position : ☐ W surface on bottom ☐ V surface on bottom ☐ U surface on bottom
☐ T surface on bottom ☐ R surface on bottom ☐ S surface on bottom

H) Option

☐ None ☐ A: Rust prevention
☐ B: Rust prevention + Dust-proof + waterproof

MR-2020/10-5

Contact at Sankyo

Installation site

The product should be installed in a place satisfying the following conditions:

- Environment temperature from 5 to 40°C
Due to heat generated by the motor and internally by the RollerDrive, the surface temperature of the product may rise. Please take steps to cool the unit, such as a fan or the like, so that the surface temperature does not exceed 60°C.
- Humidity under 85% (no condensation)
- Non vacuum or extreme pressure
- No exposure to water, oil, chemicals, dusts, etc.
- No existence of explosive gas, other hazardous gas, or radio active materials
- No direct sunlight
- Excessive shock or force does not act
- Grounded from electric current
- Minimum electro magnetic noise (be cautious on welding machines)

Installing

Put the product with proper orientation on a flat and rigid surface. Fix a rotating table or a component on the output flange.

Tightening torque table A
Housing screws (Aluminium alloy)

Unit: N·m	
Screw size	Tightening torque(DIN6.8)
M6	7.5
M8	18.5

Tightening torque table B
Output flange (Steel alloy)

Unit: N·m	
Screw size	Tightening torque(DIN10.9)
M3	1.5
M4	4.1

Tighten screws with proper tightening torque by using torque wrench. Apply LOCTITE 242 (recommended) or equivalent agent when tightening screws to avoid being loosened during operation.
Tightening torque should follow tables show in below.

Lubricants

The MR series are lubricated with grease.

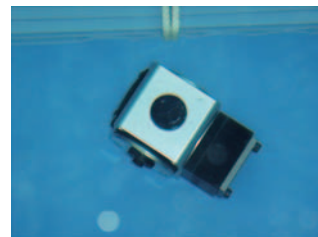
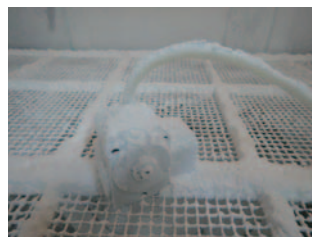
If your MR uses grease lubrication, grease changes are usually unnecessary as the unit is essentially maintenance-free. (If you have any questions regarding lubrication, contact Sankyo.)

Brand of grease used: JX Nippon Oil & Energy Corporation EPNOC GREASE AP(N)2

About rust-proof, dust-proof and waterproof products

Rust-proof, dust-proof and waterproof options protect the MR series housing.

After conducting the IP67 test (IEC60529 test conditions), we asked TÜV Rheinland Japan Co., Ltd. to confirm that there was no intrusion of water or dust into the MR series housing. [We used the model MR20 for this test.]



IP is an abbreviation of (International Protection), which indicates how well foreign matter (steel filings, copper shavings, dust, water, etc.) can be prevented from entering the housing of electrical and mechanical products. The number indicates the type protection.

"IP6X" indicates complete protection against dust, and "IPX7" indicates that water will not enter when a housing is submerged in water at the specified pressure (15 cm to 1 m below the water surface) for 30 minutes.

- The rust-proof, dust-proof and waterproof rating of this product does not guarantee that it will be failure-free nor the length of the product's life.
- It is not possible to protect against the intrusion of solids and liquids in all environments.
- This product is suitable for use in environments subject where there is a strong jet of water.
- Please contact us before using chemicals to clean it.
- If the rust-proof, dust-proof and waterproof option is not ordered, the MR series main housing protection class will be equivalent to IP54.

Limitations on the use of this product

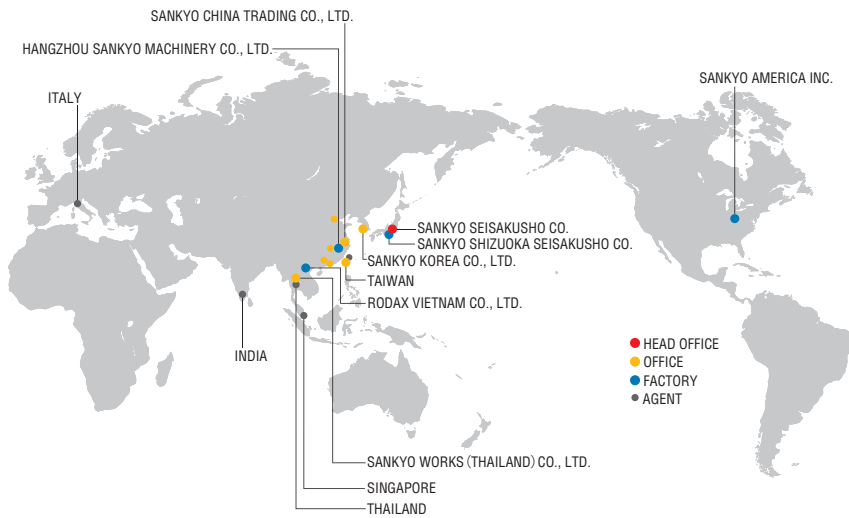
- This product cannot be used in applications where operation of the product has a direct impact in human life, or can cause bodily harm to people. The scope of these use limitations includes the following applications:
 - i. Medical equipment
 - ii. Nuclear power related equipment
 - iii. Aerospace equipment
 - iv. Equipment for handling explosive, corrosive or toxic substances etc.
- Please consult with our company if you are considering use in one of the above applications.
- If there is a possibility that this product will be used in a final use location outside Japan, in weapons or equipment for weapon manufacture, then it may be subject to regulation due to the Foreign Exchange and Foreign Trade Control Law. Please take extra care with regard to the application and region of use, and properly submit applications and follow procedures if necessary.

Notes on information

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- The information in this catalog is current as of October 2020.
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Global network



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