MITSUBISHI ELECTRIC

Changes for the Better

FACTORY AUTOMATION

for a greener tomorrow eco Changes

MITSUBISHI CNC DRIVE SYSTEM GENERAL CATALOG



- **MDS-E/EH Series**
- **MDS-EM Series**
- **MDS-EJ/EJH Series**

GLOBAL IMPACT OF MITSUBISHI ELECTRIC



Through Mitsubishi Electric's vision, "Changes for the Better" are possible for a brighter future.

Changes for the Better

We bring together the best minds to create the best technologies. At Mitsubishi Electric, we understand that technology is the driving force of change in our lives. By bringing greater comfort to daily life, maximizing the efficiency of businesses and keeping things running across society, we integrate technology and innovation to bring changes for the better.

Mitsubishi Electric is involved in many areas including the following

Energy and Electric Systems
A wide range of power and electrical products from generators to large-scale displays.

Electronic Devices
A wide portfolio of cutting-edge semiconductor devices for systems and products.

Home Appliance
Dependable consumer products like air conditioners and home entertain ment systems.

Information and Communication Systems
Commercial and consumer-centric equipment, products and systems.

Industrial Automation Systems
Maximizing productivity and efficiency with cutting-edge automation technology.

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DRIVE SYSTEM

Drive unit



High-performance Servo/ Spindle Drive Units MDS-E/EH Series

- The servo control-dedicated core processor realizes an increase in control speed, leading to improved basic performance. When combined with a higher resolution motor sensor and enhanced high-speed optical communication, this drive contributes to high-speed, high-accuracy control.
- Motor power connector comprises an anti-misinsertion mechanism. This helps to eliminate connection errors.
- Improved diagnostic and preventive-maintenance features.
- Safe Torque Off (STO) and Safe Brake Control (SBC) are supported in effort to enhance safety features.



Multi-hybrid Drive Units MDS-EM Series

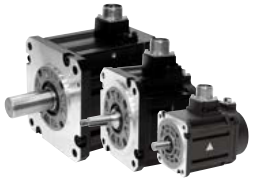
- The multi-hybrid drive unit is capable of driving a maximum of three servo axes and one spindle. This contributes to the downsizing of machines and offers technical advantages.
- Motor power connector comprises an anti-misinsertion mechanism. This helps to eliminate connection errors.
- Safe Torque Off (STO) and Safe Brake Control (SBC) are supported in effort to enhance safety features.



All-in-one compact drive units MDS-EJ/EJH Series

- Ultra-compact drive units with built-in power supplies contribute to reduced control panel size.
- The servo control-dedicated core processor realizes an increase in control speed, leading to improved basic performance. When combined with a higher resolution motor sensor and enhanced high-speed optical communication, this drive contributes to high-speed, high-accuracy control.
- Safe Torque Off (STO) and Safe Brake Control (SBC) are supported in effort to enhance safety features.
- MDS-EJH 400V system drive unit is available (Note 1).

Servo motors



Medium-inertia, high-accuracy and high-speed motors HG Series

- Sensor resolution has been significantly improved. The servo motors, which boast smooth rotation and outstanding acceleration capabilities, are well-suited to serve as feed axes of machine tools.
- Range 0.2 to 9 [kW]
- Maximum rotation speed: 4,000 or 5,000 [r/min]
- Safety support sensors are included as standard specification. Sensor connectors are screw-locked and have enhanced vibration resistance. Three sensor resolutions (i.e., 1, 4 and 67 million pulses/rev) are available.



Linear Servo Motor LM-F Series

- Use in clean environments is possible since no ball screws are used, eliminating possible contamination from grease.
- Elimination of transmission mechanisms, including backlash, enables smooth and quiet operation even at high speeds.
- Dimensions:
  Length: 170 to 1,010 [mm]
  Width: 120 to 240 [mm]



Direct Drive Servo Motor TM-RB Series

- High-torque, direct-drive motor combined with high-gain control provides quick acceleration and positioning, which makes rotation smoother.
- Suitable for rotary axes that drive tables or spindle heads.
- Range:
  Maximum torque: 36 to 1,280 [N·m]

Spindle motor



High-performance Spindle Motor SJ-D Series

- Motor energy loss has been significantly reduced by optimizing the magnetic circuit.
- High-speed bearing incorporated as a standard feature helps to achieve higher speed, lower vibration and improved durability.
- Range:
  Normal SJ-D Series 3.7 to 11 [kW]
  Compact & light SJ-DJ Series 5.5 to 15 [kW]
- Maximum speed 10,000 or 12,000 [r/min]



High-output, High-torque Spindle Motor SJ-DG Series

- Addition of S3 rating (%ED rating) has improved output and torque acceleration/deceleration characteristics.
- Balance adjustment ring has been added to the counter-load side for fine tuning.
- Range S3 rating: 5.5 to 15 [kW]
- Maximum speed 10,000 or 12,000 [r/min]



Low-inertia, High-speed Spindle Motor SJ-DL Series

- The spindle motors are dedicated to tapping machines requiring faster drilling and tapping.
- The latest design technologies have made it possible to attain lower vibration and greater rigidity even with the lighter weight.
- Range 0.75 to 7.5 [kW]



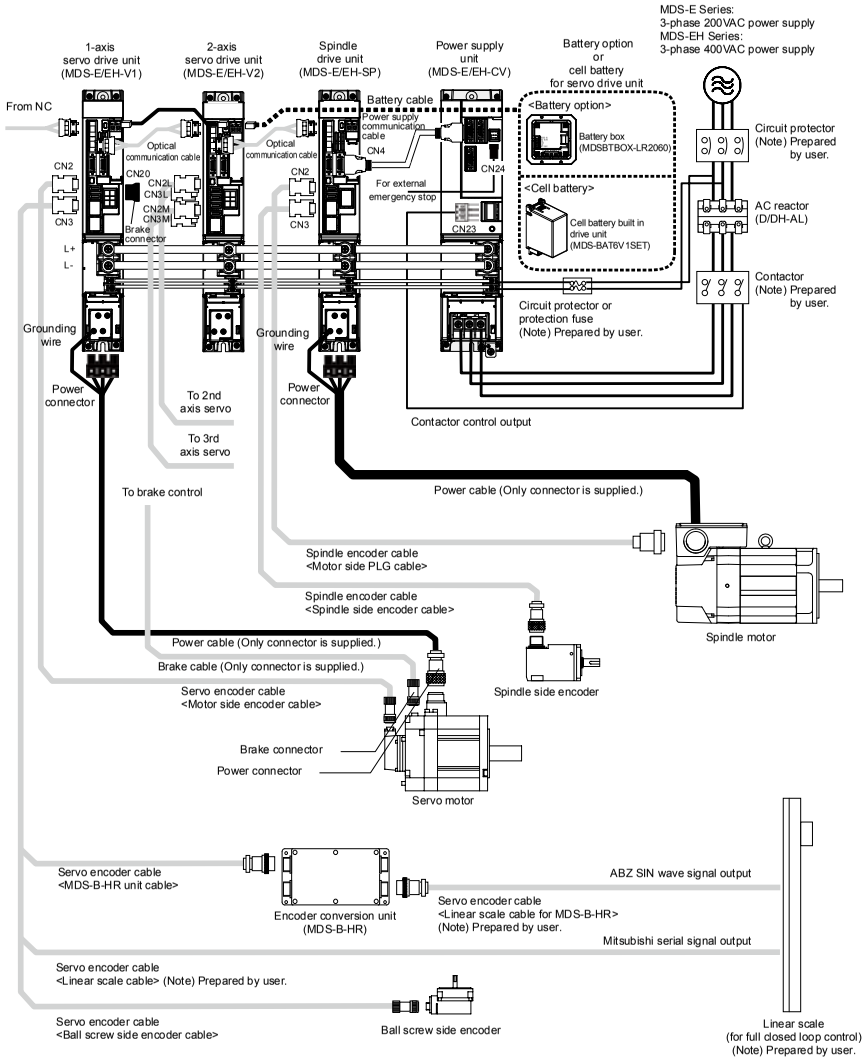
Built-in Spindle Motor SJ-BG Series

- The electrical design has been optimized to increase the continuous rated torque per unit volume, contributing to the downsizing of spindle units.
- A mold with cooling jacket is available as an optional feature.

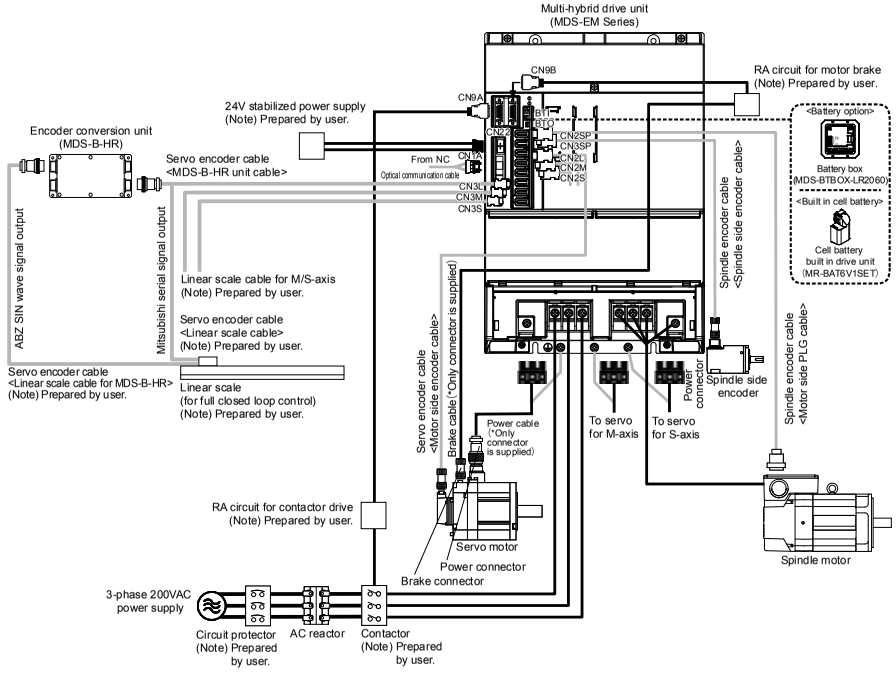
(Note 1) For servo motors only

SYSTEM CONFIGURATION

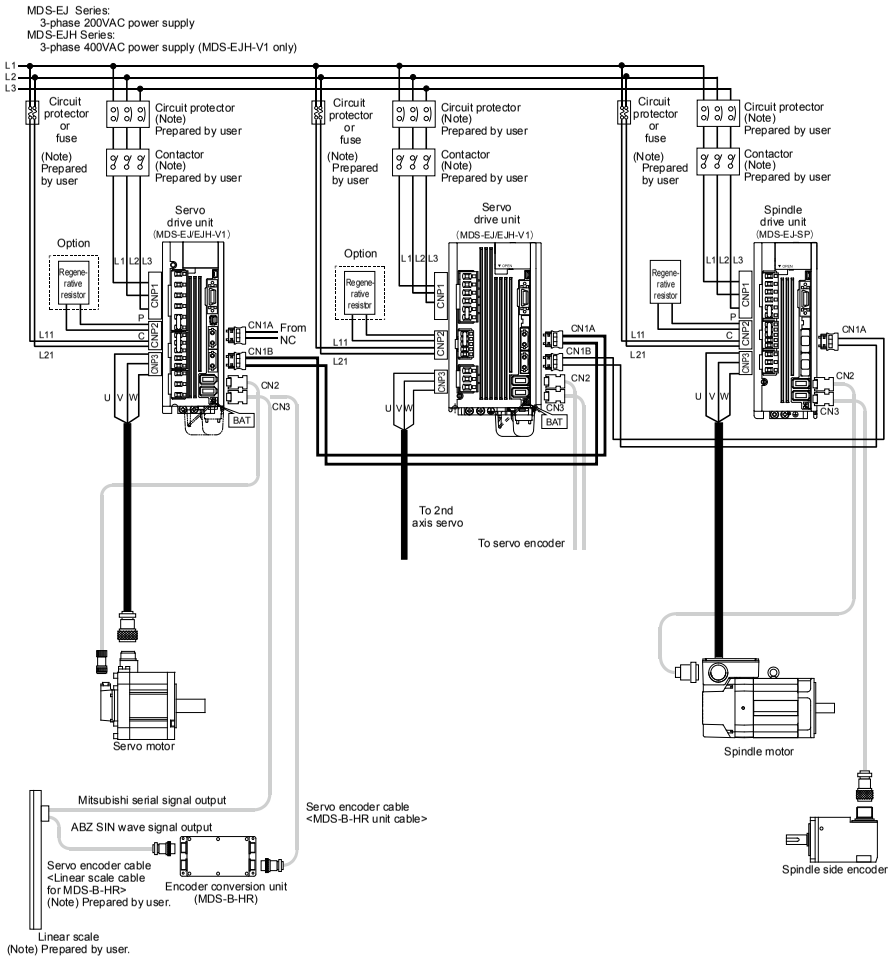
■MDS-E/EH Series



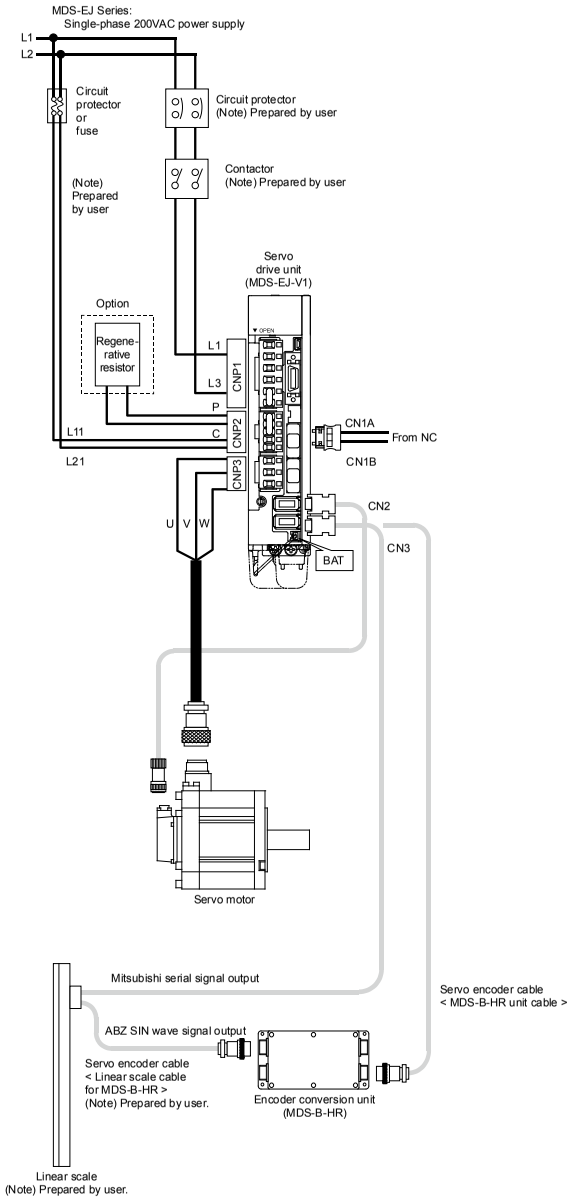
■MDS-EM Series



■MDS-EJ/EJH Series



<For single-phase power supply>



SPECIFICATIONS

<Servo specification>

Item		MDS-E-V1/V2/V3	MDS-EH-V1/V2	MDS-EM-SPV3	MDS-EJ/EJH-V1
1 Base control functions	1.1 Full closed loop control	●	●	●	●
	1.2 Position command synchronous control	●	●	●	●
	1.3 Speed command synchronous control	●(Note 2)	●	–	–
	1.4 Distance-coded reference position control	●	●	●	●
2 Servo control function	2.1 Torque limit function (stopper function)	●	●	●	●
	2.2 Variable speed loop gain control	●	●	●	●
	2.3 Gain changeover for synchronous tapping control	●	●	●	●
	2.4 Speed loop PID changeover control	●	●	●	●
	2.5 Disturbance torque observer	●	●	●	●
	2.6 Smooth High Gain control (SHG control)	●	●	●	●
	2.7 High-speed synchronous tapping control (OMR-DD control)	●	●	●	●
	2.8 Dual feedback control	●	●	●	●
	2.9 HAS control	●	●	●	●
	2.10 OMR-FF control	●	●	●	●
3 Compensation control function	3.1 Jitter compensation	●	●	●	●
	3.2 Notch filter	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1
	3.3 Adaptive tracking-type notch filter	●	●	●	●
	3.4 Overshooting compensation	●	●	●	●
	3.5 Machine end compensation control	●	●	●	●
	3.6 Lost motion compensation type 2	●	●	●	●
	3.7 Lost motion compensation type 3	●	●	●	●
	3.8 Lost motion compensation type 4	●	●	●	●
4 Protection function	4.1 Deceleration control at emergency stop	●	●	●	●
	4.2 Vertical axis drop prevention/pull-up control	●	●	●	●
	4.3 Earth fault detection	●	●	●	●
	4.4 Collision detection function	●	●	●	●
	4.5 SLS (Safely Limited Speed) function (Note 1)	●	●	●	●
	4.6 Fan stop detection	●	●	●	●
	4.9 STO (Safe Torque Off) function	●	●	●	●
	4.10 SBC (Safe Brake Control) function	●	●	●	●
5 Sequence function	5.2 Motor brake control function	●	●	●	●
	5.4 Specified speed output	●	●	●	–
	5.5 Quick READY ON sequence	●	●	●	–
6 Diagnosis function	6.1 Monitor output function	●	●	●	●
	6.2 Machine resonance frequency display function	●	●	●	●
	6.3 Machine inertia display function	●	●	●	●

(Note 1) 4.5 SLS (Safely Limited Speed) function is set on NC side.
(Note 2) Always set L-axis as primary axis and M-axis as secondary axis for the speed command synchronous control using MDS-E-V3. Other settings cause the initial parameter error alarm.

<Spindle specification>

Item		MDS-E-SP	MDS-EH-SP	MDS-E-SP2	MDS-EM-SPV3	MDS-EJ-SP
1 Base control functions	1.1 Full closed loop control	●	●	●	●	●
	1.5 Spindle's continuous position loop control	●	●	●	●	●
	1.6 Coil changeover control	●	●	–	●	–
	1.7 Gear changeover control	●	●	●	●	●
	1.8 Orientation control	●	●	●	●	●
	1.9 Indexing control	●	●	●	●	●
	1.10 Synchronous tapping control	●	●	●	●	●
	1.11 Spindle synchronous control	●	●	●	●	●
	1.12 Spindle/C axis control	●	●	●	●	●
	1.13 Proximity switch orientation control	●	●	● (Note 1)	●	●
2 Spindle control functions	2.1 Torque limit function	●	●	●	●	●
	2.2 Variable speed loop gain control	●	●	●	●	●
	2.5 Disturbance torque observer	●	●	●	●	●
	2.6 Smooth High Gain control (SHG control)	●	●	●	●	●
	2.7 High-speed synchronous tapping control (OMR-DD control)	●	●	●	●	●
	2.8 Dual feedback control	●	●	●	●	●
	2.11 Control loop gain changeover	●	●	●	●	●
	2.12 Spindle output stabilizing control	●	●	●	●	●
	2.13 High-response spindle acceleration/deceleration function	●	●	●	●	●
3 Compensation control function	3.1 Jitter compensation	●	●	●	●	●
	3.2 Notch filter	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1
	3.3 Adaptive tracking-type notch filter	●	●	●	●	●
	3.4 Overshooting compensation	●	●	●	●	●
	3.6 Lost motion compensation type 2	●	●	●	●	●
	3.9 Spindle motor temperature compensation function	●	●	●	●	●
4 Protection function	4.1 Deceleration control at emergency stop	●	●	●	●	●
	4.3 Earth fault detection	●	●	●	●	●
	4.5 SLS (Safely Limited Speed) function	●	●	●	●	●
	4.6 Fan stop detection	●	●	●	●	●
	4.9 STO (Safe Torque Off) function	●	●	●	●	●
5 Sequence function	5.4 Specified speed output	●	●	●	●	–
	5.5 Quick READY ON sequence	●	●	●	●	–
6 Diagnosis function	6.1 Monitor output function	●	●	●	●	●
	6.2 Machine resonance frequency display function	●	●	●	●	●
	6.3 Machine inertia display function	●	●	●	●	●
	6.4 Motor temperature display function	●	●	●	●	●
	6.5 Load monitor output function	●	●	●	●	●
	6.6 Open loop control function	●	●	●	●	●

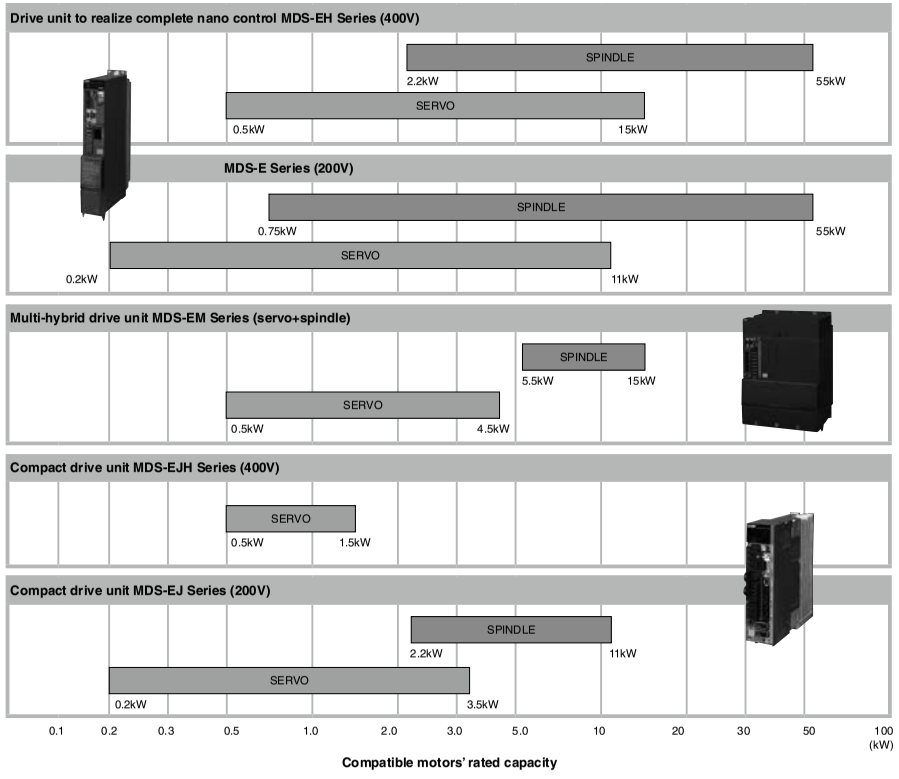
(Note 1) As for 2-axis spindle drive unit, setting is available only for one of the axes.
(Note 2) 4.5 SLS (Safely Limited Speed) function is set on NC side.

<Power Supply>

Item		MDS-E-CV	MDS-EH-CV	MDS-EM built-in converter	MDS-EJ/EJH-V1 built-in converter	MDS-EJ-SP built-in converter
1 Base control functions	1.14 Power regeneration control	●	●	●	–	–
	1.15 Resistor regeneration control	–	–	–	●	●
4 Protection function	4.6 Fan stop detection	●	●	●	●	●
	4.7 Open-phase detection	●	●	●	–	–
	4.8 Contactor weld detection	●	●	●	●	●
	4.11 Deceleration and stop function at power failure (Note 1)	●	●	●	–	–
	4.12 Retraction function at power failure (Note 2)	●	●	–	–	–
5 Sequence function	5.1 Contactor control function	●	●	●	●	●
	5.3 External emergency stop function	●	●	●	●	●
	5.5 High-speed ready ON sequence	●	●	●	–	–
6 Diagnosis function	6.7 Power supply voltage display function	●	●	●	–	–
	6.8 Drive Unit Diagnosis Display Function	●	●	●	●	●

(Note 1) The power backup unit and resistor unit option are required.
(Note 2) The power backup unit and capacitor unit option are required.

■MITSUBISHI CNC DRIVE SYSTEM LINES



SPECIFICATIONS

3 SPECIFICATIONS

TYPE

■200V HG servo motor

<HG Series>

HG ① ② ③ – ④ – ⑤

①Rated output and maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size(mm)
46	0.2 kW	6000 r/min	60 SQ.
56	0.4 kW	6000 r/min	60 SQ.
96	0.75 kW	6000 r/min	80 SQ.
75	0.75 kW	5000 r/min	90 SQ.
105	1.0 kW	5000 r/min	90 SQ.
54	0.5 kW	4000 r/min	130 SQ.
104	1.0 kW	4000 r/min	130 SQ.
154	1.5 kW	4000 r/min	130 SQ.
224	2.2 kW	4000 r/min	130 SQ.
204	2.0 kW	4000 r/min	176 SQ.
354	3.5 kW	4000 r/min	176 SQ.
123	1.2 kW	3000 r/min	130 SQ.
223	2.2 kW	3000 r/min	130 SQ.
303	3.0 kW	3000 r/min	176 SQ.
453	4.5 kW	3500 r/min	176 SQ.
703	7.0 kW	3000 r/min	176 SQ.
903	9.0 kW	3000 r/min	204 SQ.
142	1.4 kW	2000 r/min	130 SQ.
302	3.0 kW	2000 r/min	176 SQ.

②Magnetic brake

Symbol	Magnetic brake
None	None
B	With magnetic brake

③Shaft end structure

Symbol	Shaft end structure
S	Straight
T	Taper

(Note) "Taper" is available for the motor whose flange size is 90 SQ. mm or 130 SQ. mm.

④Power connector

Symbol	Connector
None	Normal
S105010	Compact (horizontal direction)

(Note) S105010 can only be used with HG75/105.

⑤Encoder

Symbol	Type	Detection method	Resolution
D47	OSA24RS-120	Absolute position	1,048,576 p/rev
D48	OSA24RS		1,048,576 p/rev
D51	OSA405S5AS		4,194,304 p/rev
D74	OSA676S5AS		67,108,864 p/rev

(Note) Encoder D47 can only be used with HG46/56/96.

■200V Direct-drive motor

<TM-RB Series>

Primary side [coil side]

TM-RBP ① ② ③

Secondary side [magnet side]

TM-RBS ① ② ③

①Rated torque

Symbol	Rated torque
012	12 N·m
036	36 N·m
048	48 N·m
105	105 N·m
150	150 N·m
340	340 N·m
500	500 N·m

②Stator dimensions

Symbol	Dimension
C	DIA 130 mm
E	DIA 180 mm
G	DIA 230 mm
J	DIA 330 mm

③Rated rotation speed

Symbol	Speed
10	100 r/min
20	200 r/min

(Note) This explains the model name system of a direct-drive motor, and all combinations of motor types listed above do not exist.

■200V Linear servo motor

<LM-F Series>

Primary side [coil side]

LM-FP ① ② – ③ M-1WW0

①Width

Symbol	Width (nominal)
2	120 mm
4	200 mm

②Length

Symbol	Length (nominal)
A	170 mm
B	290 mm
D	530 mm
F	770 mm
H	1010 mm

③Rated thrust

Symbol	Rated thrust
03	300 N
06	600 N
12	1200 N
18	1800 N
24	2400 N
36	3600 N
48	4800 N

Secondary side [magnet side]

LM-FS ① 0- ② -1WW0

①Width

Symbol	Width (nominal)
2	120 mm
4	200 mm

②Length

Symbol	Length (nominal)
384	384 mm
480	480 mm
576	576 mm

(Note) The linear dimension of 384mm is available for LM-FS20 only.

(Note) This explains the model name system of a linear servo motor, and all combinations of motor types listed above do not exist.

■200V SJ-D spindle motor

<SJ-D Series (for 200V)> SJ-D ① ② / ③ – ④ ⑤ – ⑥

①Motor Series

Symbol	Motor Series
None	Normal specifications
G	High-output specifications
J	Compact &light weight specifications
L	Low-inertia specifications

②Short-time (or %ED) rated output

Symbol	Short-time rated output
0.75	0.75 kW
1.5	1.5 kW
3.7	3.7 kW
5.5	5.5 kW
7.5	7.5 kW
11	11 kW
15	15 kW

③Maximum rotation speed

Indicates the hundreds place and higher order digits.

④Specification code

Indicates a specification code (01 to 99).

⑤Encoder

Symbol	Type
None	Type 1
T	Type 2

⑥Option (Note)

Symbol	Option
None	Standard
A	With leg
C	Shaft with key
J	Oil seal
S	Hollow shaft
X	Reversed cooling air

(Note) If more than one option is included, the symbols are in alphabetical order.

■200V SJ-V spindle motor

<SJ-V/VL Series> SJ- ① ② ③ ④ – ⑤ ⑥ T

①Motor Series

Symbol	Motor Series
V	Medium inertia Series
VL	Low inertia Series

②Coil changeover

Symbol	Coil changeover
None	Unavailable
K	Available

③Shaft configuration

Symbol	Shaft configuration
None	Standard

④Short-time rated output (Standard specification)

Symbol	Short-time rated output
0.75	0.75 kW
1.5	1.5 kW
2.2	2.2 kW
3.7	3.7 kW
5.5	5.5 kW
7.5	7.5 kW
11	11 kW
15	15 kW
18.5	18.5 kW
22	22 kW
26	26 kW
37	37 kW
45	45 kW
55	55 kW

⑤Specification code

The SJ-V/VLSeries is indicated with a specification code (01 to 99).

⑥Special specifications

Symbol	Special specifications
None	Standard
Z	High-speed bearing
FZ	High-speed bearing front-lock

(Note) This explains the model name system of a spindle motor, and all combinations of motor types listed above do not exist.

■200V Built-in spindle motor

<SJ-BG Series> SJ-BG ① ② / ③ – ④ ⑤ ⑥ ⑦

①Stator dimensions

Symbol	Stator dimensions
150	ϕ150mm
160	ϕ160mm

②Core width(A to Z)

③Maximum rotation speed
Indicates the hundreds place and higher order digits.

④Specification code (01 to 99)

⑤Power line

Symbol	Length of lead
1	500mm
2	1000mm
3	1500mm
4	2000mm

⑥Coil changeover

Symbol	Coil changeover
None	Unavailable
D	Available (Δ-2//Δ)
K	Available (人-Δ)

⑦Option

Symbol	Stator dimensions
None	Standard
J	With cooling jacket
S	Mold with cooling jacket
L	Mold without cooling jacket
R	Zoom in rotor inner diameter

<SJ-B Series> SJ- ① B ② ③ ④ ⑤ ⑥

①Voltage

Symbol	Voltage
2	200V
4	400V

* 400V is available by special order.

②Number of poles

Symbol	Number of poles
2	2 poles
4	4 poles
6	6 poles

③Motor size

Symbol	Stator dimensions
0	ϕ110
1	ϕ128
2	ϕ160
3	ϕ180
4	ϕ210
5	ϕ230
6	ϕ255
7	ϕ300
9	ϕ370
A	ϕ90
B	ϕ115

Stator outline (frame No.) is indicated with 0 to 9, A, B.

④Specification code
Specification code (01 to 99)

⑤Overheat protection sensor

Symbol	Overheat protection sensor
T	Thermistor

⑥Coil changeover

Symbol	Coil changeover
None	Unavailable
D	Available (Δ-2//Δ)
K	Available (人-Δ)

<SJ-PMB Series> SJ- ① PMB ② ③ ④ – ⑤

①Voltage

Symbol	Voltage
None	200V
4	400V

* 400V is available by special order.

②Continuous rated torque
Indicates with 3 digits.
For 1000 [N·m] or more (for 9999 [N·m] or less), the upper digit is indicated by alphabetic character and the others are indicated by the carried number.
Example) 020 : 20 [N·m] A55 : 1550 [N·m]

③Base rotation speed
Indicates the thousands and the hundreds places (the ten places are rounded off.)
Example) 03 : 250 to 349 [r/min] 15 : 1450 to 1549 [r/min]

④Overheat protection sensor

Symbol	Overheat protection sensor
T	Thermistor

⑤Design management No.
Indicates with 2 digits number or alphabetic characters Example) 00, A1

(Note) This explains the model name system of a spindle motor, and all combinations of motor types listed above do not exist.

■200V Tool spindle motor

<HG Series> HG ① ② – ③ – ④

①Rated output · Maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size(mm)
46	0.4 kW	6000 r/min	60 SQ.
56	0.5 kW	6000 r/min	60 SQ.
96	0.9 kW	6000 r/min	80 SQ.
75	0.75 kW	4000 r/min	90 SQ.
105	1.0 kW	4000 r/min	90 SQ.
54	0.5 kW	3000 r/min	130 SQ.
104	1.0 kW	3000 r/min	130 SQ.
154	1.5 kW	3000 r/min	130 SQ.
224	2.2 kW	3000 r/min	130 SQ.
204	2.0 kW	3000 r/min	176 SQ.
354	3.5 kW	3000 r/min	176 SQ.
453	4.5 kW	3000 r/min	176 SQ.
703	7.0 kW	3000 r/min	176 SQ.
903	9.0 kW	3000 r/min	204 SQ.

②Shaft end structure

Symbol	Shaft end structure
S	Straight
K	With keyway (with key)

(Note) "K: With keyway (with key)" is only available for HG46/56/96.

③Power connector

Symbol	Connector
None	Normal
S105010	Compact (horizontal direction)

(Note) S105010 can only be used with HG75/105.

④Encoder

Symbol	Type	Resolution
D47	OSA24RS-120	1,048,576 p/rev
D48	OSA24RS	1,048,576 p/rev

(Note 1) Encoder D51 and D74 can not be used with the tool spindle motor.
(Note 2) Encoder D47 can only be used with HG46/56/96.

<HG-JR Series> HG-JR ① E1 ② W9C – ③

①Rated output · Maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size (mm)
73	0.75 kW	8000 r/min	90 SQ.
153	1.5 kW	8000 r/min	90 SQ.

②Shaft end structure

Symbol	Shaft end structure
None	Straight
K	With keyway (without key)

③Power connector

Symbol	Connector
S105003	Normal (vertical direction)
S105010	Compact (horizontal direction)

■400V HG-H servo motor

<HG-H Series>

HG-H ① ② ③ – ④ – ⑤

①Rated output · Maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size(mm)
75	0.75 kW	5000r/min	90 SQ.
105	1.0 kW	5000r/min	90 SQ.
54	0.5 kW	4000 r/min	130 SQ.
104	1.0 kW	4000 r/min	130 SQ.
154	1.5 kW	4000 r/min	130 SQ.
204	2.0 kW	4000 r/min	176 SQ.
354	3.5 kW	4000 r/min	176 SQ.
453	4.5 kW	3500 r/min	176 SQ.
703	7.0 kW	3000 r/min	176 SQ.
903	9.0 kW	3000 r/min	204 SQ.
1502	15.0kW	2500r/min	250 SQ.

②Magnetic brake

Symbol	Magnetic brake
None	None
B	With magnetic brake

③Shaft end structure

Symbol	Shaft end structure
S	Straight
T	Taper

(Note) "Taper" is available for the motor whose flange size is 90 SQ. mm or 130 SQ. mm.

④Power connector

Symbol	Connector
None	Normal
S105010	Compact (horizontal direction)

(Note) S105010 can only be used with HG-H75/105.

⑤Encoder

Symbol	Type	Detection method	Resolution
D48	OSA24RS	Absolute position	1,048,576 p/rev
D51	OSA405S5AS		4,194,304 p/rev
D74	OSA676S5AS		67,108,864 p/rev

<HQ-H Series>

HQ-H ① ② S – ③

①Rated output · Maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size(mm)
903	9.0kW	3000 r/min	220 SQ.
1103	11.0kW	3000 r/min	220 SQ.

②Magnetic brake

Symbol	Magnetic brake
None	None
B	With magnetic brake

③Encoder

Symbol	Type	Detection method	Resolution
D48	OSA24RS	Absolute position	1,048,576 p/rev
D51	OSA405S5AS		4,194,304 p/rev
D74	OSA676S5AS		67,108,864 p/rev

■400V Linear servo motor

<LM-F Series>

Primary side [coil side]

LM-FP ① ② – ③ M-1WW0

①Width

Symbol	Width (nominal)
5	240 mm

②Length

Symbol	Length (nominal)
H	1010 mm

③Rated thrust

Symbol	Rated thrust
60	6000 N

Secondary side [magnet side]

LM-FS ① 0- ② -1WW0

①Width

Symbol	Width (nominal)
5	240 mm

②Length

Symbol	Length (nominal)
480	480 mm
576	576 mm

■400V SJ-4-V spindle motor

<SJ-V Series>

SJ-4- ① ② ③ ④ – ⑤ ⑥ T

①Motor Series

Symbol	Motor Series
V	Medium inertia Series

②Coil changeover

Symbol	Coil changeover
None	Unavailable

③Shaft configuration

Symbol	Shaft configuration
None	Standard

④Short-time rated output (Standard specification)

Symbol	Short-time rated output
2.2	2.2kW
3.7	3.7kW
5.5	5.5kW
7.5	7.5kW
11	11kW
15	15kW
18.5	18.5kW
22	22kW
26	26kW
45	45kW
55	55kW

⑤Specification code

The SJ-4-V Series is indicated with a specification code (01 to 99).

⑥Special specifications

Symbol	Special specifications
None	None
Z	High-speed bearing

(Note 1) The built-in spindle motor is available by special order.
(Note 2) This explains the model name system of a spindle motor, and all combinations of motor types listed above do not exist.

■400V Tool spindle motor

<HG-JR Series>

HG-JR ① E1 ② W9C– ③

①Rated output · Maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size (mm)
734	0.75 kW	8000 r/min	90 SQ.
1534	1.5 kW	8000 r/min	90 SQ.

②Shaft end structure

Symbol	Shaft end structure
None	Straight
K	With keyway (without key)

③Power connector

Symbol	Connector
S105003	Normal (vertical direction)
S105010	Compact (horizontal direction)

SERVO MOTOR 200V

■HG Series

Motor type			HG46	HG56	HG96
Compatible drive unit	1-axis type	MDS-E-V1-	20	20	20
	2-axis type	MDS-E-V2-	20	20	20 40
	3-axis type	MDS-E-V3-	20	20	20 40
	Multi-hybrid type	MDS-EM-SPV3-	–	–	xxx40
	Regenerative resistor type	MDS-EJ-V1-	10	15	30
Output Stall torque ■ Max. torque □		[N·m]	8 6 4 2 0 0.64 2.5	8 6 4 2 0 1.3 5.0	8 6 4 2 0 2.4 7.2
Rated output		[kW]	0.2	0.4	0.75
Max. rotation speed		[r/min]	6000		
Motor inertia		[×10⁻⁴kg·m²]	0.234	0.379	1.27
Motor inertia with a brake		[×10⁻⁴kg·m²]	0.261	0.407	1.37
Degree of protection (The shaft-through portion, power connector portion and brake connector portion are excluded.)			IP67		
Outline dimension drawing (Without a brake, Straight shaft)		[mm]	60 SQ. 117.2	60 SQ. 138.9	80 SQ. 147.8
Flange fitting diameter		[mm]	ϕ50	ϕ50	ϕ70
Shaft diameter		[mm]	ϕ14	ϕ14	ϕ19
Mass (with a brake)		[kg]	1.2(1.6)	1.6(2.0)	2.9(3.7)
Absolute position encoder compatible drive unit	1,048,576[p/rev](D47)		E, EJ	E, EJ	E, EM, EJ

Motor type			HG75	HG105	HG54	HG104	HG154	
Compatible drive unit	1-axis type	MDS-E-V1-	20	20	40	40	80	–
	2-axis type	MDS-E-V2-	20 40	20 40	40 80	40 80	80 160	–
	3-axis type	MDS-E-V3-	20 40	20 40	40	40	–	40
	Multi-hybrid type	MDS-EM-SPV3-	xxx40	xxx40	xxx40* xxx80*	xxx40* xxx80*	xxx80* 200120	–
	Regenerative resistor type	MDS-EJ-V1-	30	30	30	40	80	
Output Stall torque ■ Max. torque □		[N·m]	50 40 30 20 10 0 2.0 8.0	50 40 30 20 10 0 3.0 11.0	50 40 30 20 10 0 2.9 13.0	50 40 30 20 10 0 5.9 23.3	50 40 30 20 10 0 9.0 42.0	50 40 30 20 10 0 7.0 23.7
Rated output		[kW]	0.75	1.0	0.5	1.0	1.5	
Max. rotation speed		[r/min]	5000	5000	4000	4000	4000	
Motor inertia		[×10⁻⁴kg·m²]	2.62	5.12	6.13	11.9	17.8	
Motor inertia with a brake		[×10⁻⁴kg·m²]	2.70	5.20	8.26	14.0	20.0	
Degree of protection (The shaft-through portion is excluded.)			IP67	IP67	IP67	IP67	IP67	
Outline dimension drawing (Without a brake, Straight shaft, D48 encoder) (Note) The total length will be 3.5mm longer when using a D51or D74 encoder.		[mm]	90 SQ. 127.5	90 SQ. 163.5	130 SQ. 118.5	130 SQ. 140.5	130 SQ. 162.5	
Flange fitting diameter		[mm]	ϕ80	ϕ80	ϕ110	ϕ110	ϕ110	
Shaft diameter		[mm]	ϕ14	ϕ14	ϕ24	ϕ24	ϕ24	
Mass (with a brake)		[kg]	2.6(3.6)	4.4(5.3)	4.8(6.7)	6.5(8.5)	8.3(11.0)	
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		E	E	E	E	E	E
	4,194,304 [p/rev] (D51)		E	E	E	E	E	
	1,048,576 [p/rev] (D48)		EM, EJ	EM, EJ	EM, EJ	EM, EJ	EM, EJ	

*Refer to "MDS-EM Series Multi-hybrid drive" in this book for compatible drive unit type.
(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

■HG Series

Motor type			HG224	HG204		HG354		
Compatible drive unit	1-axis type	MDS-E-V1-	80	–	80	–	–	160
	2-axis type	MDS-E-V2-	80 160	–	80 160	–	–	160 160W
	3-axis type	MDS-E-V3-	–	–	–	–	–	–
	Multi-hybrid type	MDS-EM-SPV3-	xxx80* 200120	–	xxx80* 200120	–	200120	–
	Regenerative resistor type	MDS-EJ-V1-	80	80	–	100	–	–
Output Stall torque ☐ Max. torque ☐		[N·m]	50 40 30 20 10 0	46.5 12.0	42.0 13.7	47.0 13.7	65.0 22.5	75.0 22.5	90.0 22.5
Rated output		[kW]	2.2	2.0		3.5		
Max. rotation speed		[r/min]	4000	4000		3500	4000	
Motor inertia		[×10⁻⁴kg·m²]	23.7	38.3		75.0		
Motor inertia with a brake		[×10⁻⁴kg·m²]	25.9	47.9		84.7		
Degree of protection (The shaft-through portion is excluded.)			IP67	IP67		IP67		
Outline dimension drawing (Without a brake, Straight shaft, D48 encoder) (Note) The total length will be 3.5mm longer when using a D51or D74 encoder.		[mm]	130 SQ. 184.5	176 SQ. 143.5		176 SQ. 183.5		
Flange fitting diameter		[mm]	ϕ110	ϕ114.3		ϕ114.3		
Shaft diameter		[mm]	ϕ24	ϕ35		ϕ35		
Mass (with a brake)		[kg]	10.0(12.0)	12.0(18.0)		19.0(25.0)		
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		E	–	E	–	–	
	4,194,304 [p/rev] (D51)		E EM, EJ	EJ	E EM	EJ	EM	E
	1,048,576 [p/rev] (D48)							

Motor type			HG123	HG223	HG303	HG453	
Compatible drive unit	1-axis type	MDS-E-V1-	20	40	80	–	160
	2-axis type	MDS-E-V2-	20 40	40 80	80 160	–	160 160W
	3-axis type	MDS-E-V3-	20 40	40	–	–	–
	Multi-hybrid type	MDS-EM-SPV3-	xxx40*	xxx40* xxx80*	xxx80* 200120	200120	–
	Regenerative resistor type	MDS-EJ-V1-	40	40	80	–	–
Output Stall torque ☐ Max. torque ☐		[N·m]	100 80 60 40 20 0	7.0 17.0	12.0 32.0	22.5 64.0	37.2 90.0	37.2 122.0
Rated output		[kW]	1.2	2.2	3.0	4.5	
Max. rotation speed		[r/min]	3000	3000	3000	3500	
Motor inertia		[×10⁻⁴kg·m²]	11.9	23.7	75.0	112.0	
Motor inertia with a brake		[×10⁻⁴kg·m²]	14.0	25.9	84.7	122.0	
Degree of protection (The shaft-through portion is excluded.)			IP67	IP67	IP67	IP67	
Outline dimension drawing (Without a brake, Straight shaft, D48 encoder) (Note) The total length will be 3.5mm longer when using a D51or D74 encoder.		[mm]	130 SQ. 140.5	130 SQ. 184.5	176 SQ. 183.5	176 SQ. 223.5	
Flange fitting diameter		[mm]	ϕ110	ϕ110	ϕ114.3	ϕ114.3	
Shaft diameter		[mm]	ϕ24	ϕ24	ϕ35	ϕ35	
Mass (with a brake)		[kg]	6.5(8.5)	10.0(12.0)	19.0(25.0)	25.0(31.0)	
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		E	E	E	–	
	4,194,304 [p/rev] (D51)		E EM, EJ	E EM, EJ	E EM, EJ	EM	E
	1,048,576 [p/rev] (D48)						

*Refer to "MDS-EM Series Multi-hybrid drive" in this book for compatible drive unit type.
(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

■HG Series

Motor type			HG703	HG903	HG142	HG302
Compatible drive unit	1-axis type	MDS-E-V1-	160W	320	20	40
	2-axis type	MDS-E-V2-	160W	–	20 40	40 80
	3-axis type	MDS-E-V3-	–	–	20 40	40
	Multi-hybrid type	MDS-EM-SPV3-	–	–	xxx40*	xxx40* xxx80*
	Regenerative resistor type	MDS-EJ-V1-	–	–	40	40
Output Stall torque ☐ Max. torque ☐		[N·m]	200 150 100 50 0	152.0 49.0	208.0 58.8	26.5 11.0	50.0 20.0
Rated output		[kW]	7.0	9.0	1.4	3.0
Max. rotation speed		[r/min]	3000	3000	2000	2000
Motor inertia		[×10⁻⁴kg·m²]	154.0	196.0	17.8	75.0
Motor inertia with a brake		[×10⁻⁴kg·m²]	164.0	206.0	20.0	84.7
Degree of protection (The shaft-through portion is excluded.)			IP67	IP67	IP67	IP67
Outline dimension drawing (Without a brake, Straight shaft, D48 encoder) (Note) The total length will be 3.5mm longer when using a D51or D74 encoder.		[mm]	176 SQ. 263.5	204 SQ. 330	130 SQ. 162.5	176 SQ. 183.5
Flange fitting diameter		[mm]	ϕ114.3	ϕ180	ϕ110	ϕ114.3
Shaft diameter		[mm]	ϕ35	ϕ42	ϕ24	ϕ35
Mass (with a brake)		[kg]	32.0(38.0)	43.0(49.0)	8.3(11.0)	19.0(25.0)
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		E	E	E	E
	4,194,304 [p/rev] (D51)				E, EM, EJ	E, EM, EJ
	1,048,576 [p/rev] (D48)					

*Refer to "MDS-EM Series Multi-hybrid drive" in this book for compatible drive unit type.
(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

DIRECT-DRIVE MOTOR 200V

■TM-RB Series

Direct-drive motor type	Primary side type	TM-RBP012C20	TM-RBP036E20	TM-RBP048G20	TM-RBP105G10
	Secondary side type	TM-RBS012C20	TM-RBS036E20	TM-RBS048G20	TM-RBS105G10
Compatible drive unit	1-axis type MDS-E-V1-	40	80	80	160
	2-axis type MDS-E-V2-	40	80	80	160
	Regenerative resistor type MDS-EJ-V1-	40	80	80	100
Output Rated torque (liquid-cooling) ■ Max. torque □	[N·m]	12 / 36	36 / 108	48 / 144	105 / 260
Rated output	[W]	252	754	1005	1100
Max. rotation speed	[r/min]	500	500	500	250
Motor inertia	[×10⁻⁴kg·m²]	22	127	280	395
Degree of protection		IP00	IP00	IP00	IP00
Outline dimension drawing	[mm]	76, DIA 56, DIA 130	91, DIA 100, DIA 180	80, DIA 130, DIA 230	105, DIA 130, DIA 230
Mass [kg]	Primary side (coil)	3.9	7.1	10	13
	Secondary side (magnet)	1.7	3.7	5	7

Motor type	Primary side type	TM-RBP105G20	TM-RBP150G20	TM-RBP340J20	TM-RBP500J20
	Secondary side type	TM-RBS105G20	TM-RBS150G20	TM-RBS340J20	TM-RBS500J20
Compatible drive unit	1-axis type MDS-E-V1-	160	160	320	320W
	2-axis type MDS-E-V2-	160	160	–	–
	Regenerative resistor type MDS-EJ-V1-	–	–	–	–
Output Rated torque (liquid-cooling) ■ Max. torque □	[N·m]	105 / 260	150 / 375	340 / 850	500 / 1280
Rated output	[W]	2199	3141	7120	10471
Max. rotation speed	[r/min]	500	500	400	400
Motor inertia	[×10⁻⁴kg·m²]	395	510	2778	3538
Degree of protection		IP00	IP00	IP00	IP00
Outline dimension drawing	[mm]	105, DIA 130, DIA 230	130, DIA 130, DIA 230	15, DIA 205, DIA 330	19, DIA 205, DIA 330
Mass [kg]	Primary side (coil)	13	16	33	41
	Secondary side (magnet)	7	9	20	26

(Note 1) The encoder should be procured by the user.
(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

LINEAR SERVO MOTOR 200V

■LM-F Series

Linear servo motor type	Primary side type	LM-FP2A-03M-1WW0	LM-FP2B-06M-1WW0	LM-FP2D-12M-1WW0	LM-FP2F-18M-1WW0
	Secondary side type	LM-FS20-□-1WW0	LM-FS20-□-1WW0	LM-FS20-□-1WW0	LM-FS20-□-1WW0
Compatible drive unit	1-axis type MDS-E-V1-	40	40	80	160
	2-axis type MDS-E-V2-	40	40	80	160
	3-axis type MDS-E-V3-	40	40	–	–
	Regenerative resistor type MDS-EJ-V1-	40	40	80	–
Thrust force Continuous (natural-cooling) ■ Continuous (liquid-cooling) □ Maximum ■	[N]	150 / 300 / 900	300 / 600 / 1800	600 / 1200 / 3600	900 / 1800 / 5400
Rated thrust	[N]	300	600	1200	1800
Maximum speed (Note 1)	[m/s]	2.0	2.0	2.0	2.0
Magnetic attraction force	[N]	2500	4500	9000	13500
Degree of protection		IP00	IP00	IP00	IP00
Outline dimension drawing	[mm]	Primary side / Secondary side: 170, 1000, 384, 480, 576, 50, 120, 19.5	290, 1000, 480, 576, 50, 120, 19.5	530, 1000, 480, 576, 50, 120, 19.5	770, 1000, 480, 576, 50, 120, 19.5
Mass [kg]	Primary side (coil)	5	9	18	27
	Secondary side (magnet)	5.8(384mm) 7.1(480mm) 9.0(576mm)	7.1(480mm) 9.0(576mm)	7.1(480mm) 9.0(576mm)	7.1(480mm) 9.0(576mm)

Motor type	Primary side type	LM-FP4B-12M-1WW0	LM-FP4D-24M-1WW0	LM-FP4F-36M-1WW0	LM-FP4H-48M-1WW0
	Secondary side type	LM-FS40-□-1WW0	LM-FS40-□-1WW0	LM-FS40-□-1WW0	LM-FS40-□-1WW0
Compatible drive unit	1-axis type MDS-E-V1-	80	160	320	320
	2-axis type MDS-E-V2-	80	160	–	–
	3-axis type MDS-E-V3-	–	–	–	–
	Regenerative resistor type MDS-EJ-V1-	80	–	–	–
Thrust force Continuous (natural-cooling) ■ Continuous (liquid-cooling) □ Maximum ■	[N]	600 / 1200 / 3600	1200 / 2400 / 7200	1800 / 3600 / 10800	2400 / 4800 / 14400
Rated thrust	[N]	1200	2400	3600	4800
Maximum speed (Note 1)	[m/s]	2.0	2.0	2.0	2.0
Magnetic attraction force	[N]	9000	18000	27000	36000
Degree of protection		IP00	IP00	IP00	IP00
Outline dimension drawing	[mm]	Primary side / Secondary side: 290, 1000, 480, 576, 50, 200, 19.5	530, 1000, 480, 576, 50, 200, 19.5	770, 1000, 480, 576, 50, 200, 19.5	1010, 1000, 480, 576, 50, 200, 19.5
Mass [kg]	Primary side (coil)	14	28	42	56
	Secondary side (magnet)	13.5(480mm) 16.0(576mm)	13.5(480mm) 16.0(576mm)	13.5(480mm) 16.0(576mm)	13.5(480mm) 16.0(576mm)

(Note 1) The maximum speed in actual use is either the linear scale's maximum speed or this specified value, whichever is smaller.
(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

■LM-F Series (Dual-axis drive unit)

Motor type	Primary side type	LM-FP2A-03M-1WW0	LM-FP2B-06M-1WW0	LM-FP2D-12M-1WW0	LM-FP2F-18M-1WW0
	Secondary side type	LM-FS20-□-1WW0	LM-FS20-□-1WW0	LM-FS20-□-1WW0	LM-FS20-□-1WW0
Compatible drive unit	1-axis type MDS-E-V1-	80	80	160	320
	2-axis type MDS-E-V2-	80	80	160	–
	Regenerative resistor type MDS-EJ-V1-	80	80	–	–
Thrust force Continuous (natural-cooling) Continuous (liquid-cooling) Maximum	[N]	300 600 1800	600 1200 3600	1200 2400 7200	1800 3600 10800
Rated thrust	[N]	600	1200	2400	3600
Maximum speed (Note 1)	[m/s]	2.0	2.0	2.0	2.0
Magnetic attraction force (per motor)	[N]	2500	4500	9000	13500
Degree of protection		IP00	IP00	IP00	IP00
Outline dimension drawing	[mm]	Primary side Secondary side	Primary side Secondary side	Primary side Secondary side	Primary side Secondary side
Mass [kg]	Primary side (coil)	5×2	9×2	18×2	27×2
	Secondary side (magnet)	5.8(384mm) 7.1(480mm) 9.0(576mm)	7.1(480mm) 9.0(576mm)	7.1(480mm) 9.0(576mm)	7.1(480mm) 9.0(576mm)

Motor type	Primary side type	LM-FP4B-12M-1WW0	LM-FP4D-24M-1WW0
	Secondary side type	LM-FS40-□-1WW0	LM-FS40-□-1WW0
Compatible drive unit	1-axis type MDS-E-V1-	160	320
	2-axis type MDS-E-V2-	160	–
	Regenerative resistor type MDS-EJ-V1-	–	–
Thrust force Continuous (natural-cooling) Continuous (liquid-cooling) Maximum	[N]	1200 2400 7200	2400 4800 14400
Rated thrust	[N]	2400	4800
Maximum speed (Note 1)	[m/s]	2.0	2.0
Magnetic attraction force (per motor)	[N]	9000	18000
Degree of protection		IP00	IP00
Outline dimension drawing	[mm]	Primary side Secondary side	Primary side Secondary side
Mass [kg]	Primary side (coil)	14×2	28×2
	Secondary side (magnet)	13.5(480mm) 16.0(576mm)	13.5(480mm) 16.0(576mm)

(Note 1) The maximum speed in actual use is either the linear scale's maximum speed or this specified value, whichever is smaller.
(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

SPINDLE MOTOR 200V

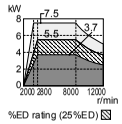
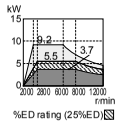
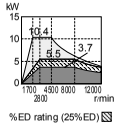
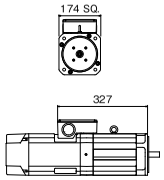
■SJ-D Series (Normal specifications)

Motor type		SJ-D3.7/100-01	SJ-D5.5/100-01	SJ-D5.5/120-01	SJ-D7.5/100-01	SJ-D7.5/120-01
Compatible drive unit	1-axis type MDS-E-SP-	80	80	80	160	160
	2-axis type MDS-E-SP2-	80 16080(M)	80 16080(M)	80 16080(M)	16080(L)	16080(L)
	Multi-hybrid type MDS-EM-SPV3-	–	100xx	100xx	100xx	100xx
	Regenerative resistor type MDS-EJ-SP-	80	100	100	120	120
Output Short-time rating Continuous rating		kW 3.7 2.2 1500 6000 10000 r/min Short-time (15min)	kW 5.5 3.7 1500 6000 10000 r/min Short-time (30min)	kW 5.5 3.7 1500 6000 12000 r/min Short-time (30min)	kW 7.5 5.5 1500 6000 10000 r/min Short-time (30min)	kW 7.5 5.5 1500 6000 12000 r/min Short-time (30min)
Standard output during acceleration/deceleration	[kW]	3.7	5.5	5.5	7.5	7.5
Actual acceleration/deceleration output (Note 2)	[kW]	4.4	6.6	6.6	9	9
Base rotation speed	[r/min]	1500	1500	1500	1500	1500
Max. rotation speed in constant output range	[r/min]	6000	6000	6000	6000	6000
Maximum rotation speed	[r/min]	10000	10000	12000	10000	12000
Continuous rated torque	[N·m]	14.0	23.6	23.6	35.0	35.0
Motor inertia	[×10⁻⁴kg·m²]	0.0074	0.013	0.013	0.023	0.023
Degree of protection (The shaft-through portion is excluded.)		IP54	IP54	IP54	IP54	IP54
Outline dimension drawing(flange type)	[mm]	174 SQ. 327	174 SQ. 417	174 SQ. 417	204 SQ. 439	204 SQ. 439
Flange fitting diameter	[mm]	ϕ150	ϕ150	ϕ150	ϕ180	ϕ180
Shaft diameter	[mm]	ϕ28	ϕ28	ϕ28	ϕ32	ϕ32
Mass	[kg]	26	39	39	53	53

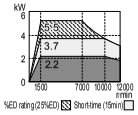
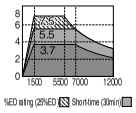
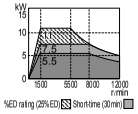
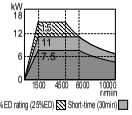
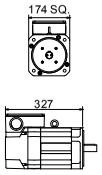
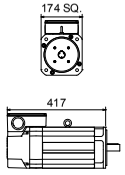
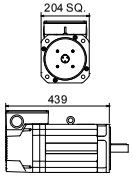
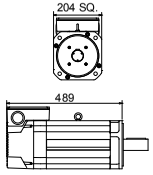
Motor type		SJ-D11/100-01	SJ-D5.5/120-02		
Compatible drive unit	1-axis type MDS-E-SP-	160	–	160	200
	2-axis type MDS-E-SP2-	16080(L)	–	16080(L)	–
	Multi-hybrid type MDS-EM-SPV3-	160xx	100xx	160xx	200xx
	Regenerative resistor type MDS-EJ-SP-	160	–	–	–
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating		kW 11 7.5 1500 4500 10000 r/min Short-time (30min)	kW 7.5 5.5 3.7 2000 2800 8000 12000 r/min %ED rating (25%ED)	kW 9.2 5.5 3.7 2000 2800 6000 8000 12000 r/min %ED rating (25%ED)	kW 10.4 4.5 3.7 1700 4500 8000 12000 2800 r/min %ED rating (25%ED)
Standard output during acceleration/deceleration	[kW]	11	7.5	9.2	10.4
Actual acceleration/deceleration output (Note 2)	[kW]	13.2	9	11.0	12.5
Base rotation speed	[r/min]	1500	2800		
Max. rotation speed in constant output range	[r/min]	4500	8000		
Maximum rotation speed	[r/min]	10000	12000		
Continuous rated torque	[N·m]	47.7	12.6		
Motor inertia	[×10⁻⁴kg·m²]	0.031	0.0074		
Degree of protection (The shaft-through portion is excluded.)		IP54	IP54		
Outline dimension drawing(flange type)	[mm]	204 SQ. 489	174 SQ. 327		
Flange fitting diameter	[mm]	ϕ180	ϕ150		
Shaft diameter	[mm]	ϕ48	ϕ28		
Mass	[kg]	64	26		

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

■SJ-D Series (Hollow shaft specifications)

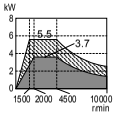
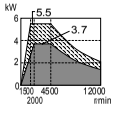
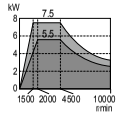
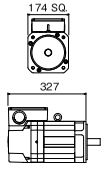
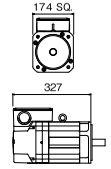
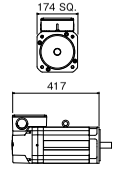
Motor type			SJ-D5.5/120-02T-S		
Compatible drive unit	1-axis type	MDS-E-SP-	–	160	200
	2-axis type	MDS-E-SP2-	–	16080(L)	–
	Multi-hybrid type	MDS-EM-SPV3-	100xx	160xx	200xx
	Regenerative resistor type	MDS-EJ-SP-	–	–	–
Output Acceleration/Deceleration ☐ %ED rating ▨ Short-time rating ☐ Continuous rating ■			 %ED rating (25%ED) ▨	 %ED rating (25%ED) ▨	 %ED rating (25%ED) ▨
Standard output during acceleration/deceleration [kW]			7.5	9.2	10.4
Actual acceleration/deceleration output (Note 2) [kW]			9	11.0	12.5
Base rotation speed [r/min]			2800		
Max. rotation speed in constant output range [r/min]			8000		
Maximum rotation speed [r/min]			12000		
Continuous rated torque [N·m]			12.6		
Motor inertia [×10⁻⁴kg·m²]			0.0075		
Degree of protection (The shaft-through portion is excluded.)			IP54		
Outline dimension drawing (flange type) [mm]					
Flange fitting diameter [mm]			ϕ150		
Shaft diameter [mm]			ϕ28		
Mass [kg]			24		

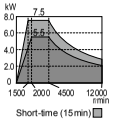
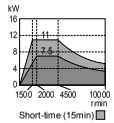
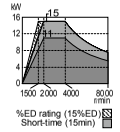
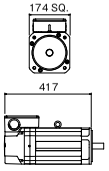
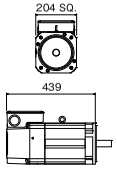
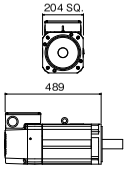
■SJ-DG Series (High-output specifications)

Motor type			SJ-DG3.7/120-03T	SJ-DG5.5/120-04T	SJ-DG7.5/120-05T	SJ-DG11/100-03T
Compatible drive unit	1-axis type	MDS-E-SP-	160	160	160	200
	2-axis type	MDS-E-SP2-	–	–	–	–
	Multi-hybrid type	MDS-EM-SPV3-	160xx	160xx	160xx	200xx
	Regenerative resistor type	MDS-EJ-SP-	–	–	–	–
Output %ED rating ▨ Short-time rating ☐ ☐ Continuous rating ■			 %ED rating (25%ED) ▨ Short-time (15min) ☐	 %ED rating (25%ED) ▨ Short-time (30min) ■	 %ED rating (25%ED) ▨ Short-time (30min) ■	 %ED rating (25%ED) ▨ Short-time (30min) ■
Standard output during acceleration/deceleration [kW]			5.5	7.5	11.0	15.0
Actual acceleration/deceleration output (Note 2) [kW]			6.6	9.0	13.2	18.0
Base rotation speed [r/min]			1500	1500	1500	1500
Max. rotation speed in constant output range [r/min]			10000	7000	8000	6000
Maximum rotation speed [r/min]			12000	12000	12000	10000
Continuous rated torque [N·m]			14.0	23.6	35.0	47.7
Motor inertia [x10⁻⁴kg·m²]			0.0066	0.012	0.022	0.029
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54	IP54	IP54
Outline dimension drawing (flange type) [mm]						
Flange fitting diameter [mm]			ϕ150	ϕ150	ϕ180	ϕ180
Shaft diameter [mm]			ϕ28	ϕ28	ϕ32	ϕ48
Mass [kg]			24	37	50	61

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

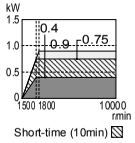
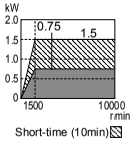
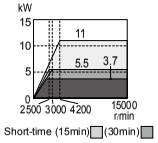
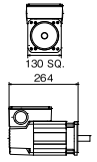
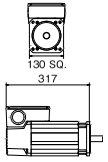
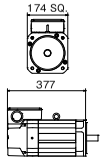
■SJ-DJ Series (Compact & lightweight specifications)

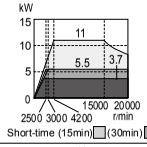
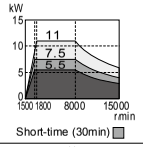
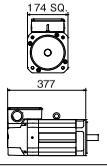
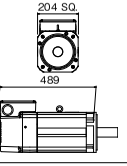
Motor type			SJ-DJ5.5/100-01	SJ-DJ5.5/120-01	SJ-DJ7.5/100-01
Compatible drive unit	1-axis type	MDS-E-SP-	80	80	160
	2-axis type	MDS-E-SP2-	80 16080(M)	80 16080(M)	16080(M)
	Multi-hybrid type	MDS-EM-SPV3-	100xx	100xx	100xx
	Regenerative resistor type	MDS-EJ-SP-	100	100	120
Output %ED rating ▨ Short-time rating ☐ Continuous rating ■			 %ED rating (25%ED) ▨	 %ED rating (25%ED) ▨	 Short-time (15min) ■
Standard output during acceleration/deceleration [kW]			5.5	5.5	7.5
Actual acceleration/deceleration output (Note 2) [kW]			6.6	6.6	9
Base rotation speed	Short-time	[r/min]	1500	1500	1500
	Continuous	[r/min]	2000	2000	2000
Max. rotation speed in constant output range [r/min]			4500	4500	4500
Maximum rotation speed [r/min]			10000	12000	10000
Continuous rated torque [N·m]			17.7	17.7	26.3
Motor inertia [kg·m²]			0.0074	0.0074	0.013
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54	IP54
Outline dimension drawing (flange type) [mm]					
Flange fitting diameter [mm]			ϕ150	ϕ150	ϕ150
Shaft diameter [mm]			ϕ28	ϕ28	ϕ28
Mass [kg]			26	26	39

Motor type			SJ-DJ7.5/120-01	SJ-DJ11/100-01	SJ-DJ15/80-01
Compatible drive unit	1-axis type	MDS-E-SP-	160	160	200
	2-axis type	MDS-E-SP2-	16080(L)	16080(L)	–
	Multi-hybrid type	MDS-EM-SPV3-	100xx	160xx	200xx
	Regenerative resistor type	MDS-EJ-SP-	120	160	–
Output %ED rating ▨ Short-time rating ☐ Continuous rating ■			 Short-time (15min) ■	 Short-time (15min) ■	 %ED rating (15%ED) ▨ Short-time (15min) ■
Standard output during acceleration/deceleration [kW]			7.5	11	15
Actual acceleration/deceleration output (Note 2) [kW]			9	13.2	18
Base rotation speed	Short-time	[r/min]	1500	1500	1500
	Continuous	[r/min]	2000	2000	2000
Max. rotation speed in constant output range [r/min]			4500	4500	4000
Maximum rotation speed [r/min]			12000	10000	8000
Continuous rated torque [N·m]			26.3	35.8	52.5
Motor inertia [kg·m²]			0.013	0.023	0.031
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54	IP54
Outline dimension drawing (flange type) [mm]					
Flange fitting diameter [mm]			ϕ150	ϕ180	ϕ180
Shaft diameter [mm]			ϕ28	ϕ32	ϕ48
Mass [kg]			39	53	64

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".
(Note 3) %ED is a load time ratio of operating time relative to a 10-minute cycle time. At 25%ED, for example, the operating time is 2.5 minutes and non-operation time is 7.5 minutes of a 10-minute cycle time.

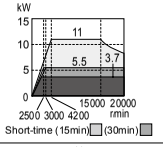
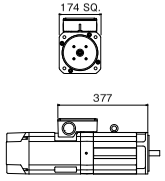
■SJ-DL Series (Low-inertia specification)

Motor type			SJ-DL0.75/100-01	SJ-DL1.5/100-01	SJ-DL5.5/150-01T
Compatible drive unit	1-axis type	MDS-E-SP-	20	40	160
	2-axis type	MDS-E-SP2-	20	40	16080(L)
	Multi-hybrid type	MDS-EM-SPV3-	–	–	160xx
	Regenerative resistor type	MDS-EJ-SP-	–	–	–
Output Acceleration/Deceleration □ Short-time rating ▨□□ Continuous rating ■			 Short-time (10min) ▨	 Short-time (10min) ▨	 Short-time (15min)□ (30min)■
Standard output during acceleration/deceleration [kW]			0.9	1.5	11
Actual acceleration/deceleration output (Note 2) [kW]			1.1	1.8	13.2
Base rotation speed		[r/min]	1500	1500	2500
Max. rotation speed in constant output range [r/min]			10000	10000	15000
Maximum rotation speed		[r/min]	10000	10000	15000
Continuous rated torque		[N·m]	2.6	4.8	14.1
Motor inertia		[kg·m²]	0.0011	0.0019	0.0046
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54	IP54
Outline dimension drawing (flange type)		[mm]			
Flange fitting diameter		[mm]	ϕ110	ϕ110	ϕ150
Shaft diameter		[mm]	ϕ22	ϕ22	ϕ28
Mass		[kg]	10	14	30

Motor type			SJ-DL5.5/200-01T	SJ-DL7.5/150-01T
Compatible drive unit	1-axis type	MDS-E-SP-	160	160
	2-axis type	MDS-E-SP2-	16080(L)	16080(L)
	Multi-hybrid type	MDS-EM-SPV3-	–	160xx
	Regenerative resistor type	MDS-EJ-SP-	–	–
Output Acceleration/Deceleration □ Short-time rating □□ Continuous rating ■			 Short-time (15min)□ (30min)■	 Short-time (30min)■
Standard output during acceleration/deceleration [kW]			11	11
Actual acceleration/deceleration output (Note 2) [kW]			13.2	13.2
Base rotation speed		[r/min]	2500	1500
Max. rotation speed in constant output range [r/min]			20000	8000
Maximum rotation speed		[r/min]	20000	15000
Continuous rated torque		[N·m]	14.1	35.0
Motor inertia		[kg·m²]	0.0046	0.016
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54
Outline dimension drawing (flange type)		[mm]		
Flange fitting diameter		[mm]	ϕ150	ϕ180
Shaft diameter		[mm]	ϕ28	ϕ32
Mass		[kg]	30	56

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

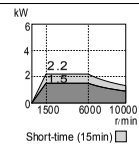
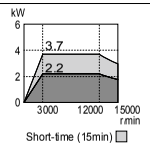
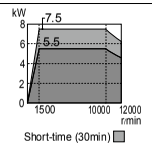
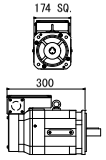
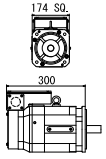
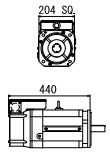
■SJ-DL Series (Hollow shaft specifications)

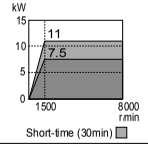
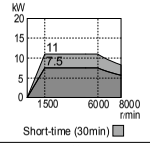
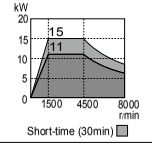
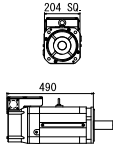
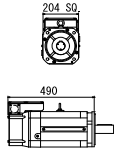
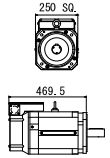
Motor type			SJ-DL5.5/200-01T-S
Compatible drive unit	1-axis type	MDS-E-SP-	160
	2-axis type	MDS-E-SP2-	16080(L)
	Multi-hybrid type	MDS-EM-SPV3-	–
	Regenerative resistor type	MDS-EJ-SP-	–
Output Acceleration/Deceleration □ Short-time rating □□ Continuous rating ■			 Short-time (15min)□ (30min)■
Standard output during acceleration/deceleration [kW]			11
Actual acceleration/deceleration output (Note 2) [kW]			13.2
Base rotation speed		[r/min]	2500
Max. rotation speed in constant output range [r/min]			20000
Maximum rotation speed		[r/min]	20000
Continuous rated torque		[N·m]	14.1
Motor inertia		[kg·m²]	0.0046
Degree of protection (The shaft-through portion is excluded.)			IP54
Outline dimension drawing (flange type)		[mm]	
Flange fitting diameter		[mm]	ϕ150
Shaft diameter		[mm]	ϕ22
Mass		[kg]	28

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

200V SJ-DL Series
8 SPINDLE MOTOR 200V

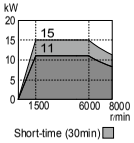
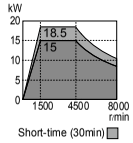
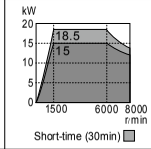
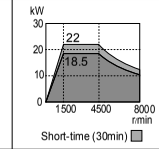
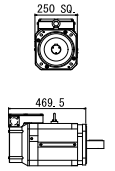
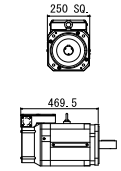
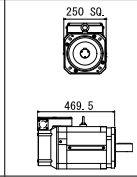
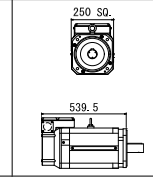
■SJ-V Series (Normal specification)

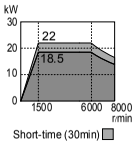
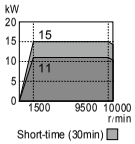
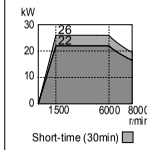
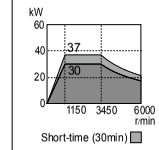
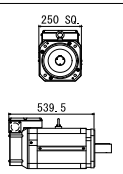
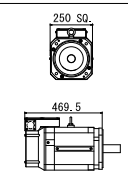
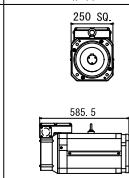
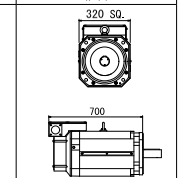
Motor type			SJ-V2.2-01T	SJ-V3.7-02ZT	SJ-V7.5-03ZT
Compatible drive unit	1-axis type	MDS-E-SP-	40	80	160
	2-axis type	MDS-E-SP2-	40	80 16080(M)	16080(L)
	Multi-hybrid type	MDS-EM-SPV3-	–	–	160xx
Output Short-time rating □ Continuous rating ■			 Short-time (15min) ■	 Short-time (15min) ■	 Short-time (30min) ■
Standard output during acceleration/deceleration [kW]			2.2	3.7	7.5
Actual acceleration/deceleration output (Note 2) [kW]			2.6	4.4	9
Base rotation speed		[r/min]	1500	3000	1500
Max. rotation speed in constant output range [r/min]			6000	12000	10000
Maximum rotation speed		[r/min]	10000	15000	12000
Continuous rated torque		[N·m]	9.5	7.0	35
Motor inertia		[kg·m²]	0.00675	0.00675	0.0245
Degree of protection			IP44	IP44	IP44
Outline dimension drawing (flange type)		[mm]			
Flange fitting diameter		[mm]	ϕ150	ϕ150	ϕ180
Shaft diameter		[mm]	ϕ28	ϕ28	ϕ32
Mass		[kg]	25	25	60

Motor type			SJ-V11-08ZT	SJ-V11-13ZT	SJ-V15-01ZT
Compatible drive unit	1-axis type	MDS-E-SP-	200	200	200
	2-axis type	MDS-E-SP2-	–	–	–
	Multi-hybrid type	MDS-EM-SPV3-	200xx	200xx	200xx
Output Short-time rating □ Continuous rating ■			 Short-time (30min) ■	 Short-time (30min) ■	 Short-time (30min) ■
Standard output during acceleration/deceleration [kW]			11	11	15
Actual acceleration/deceleration output (Note 2) [kW]			13.2	13.2	18
Base rotation speed		[r/min]	1500	1500	1500
Max. rotation speed in constant output range [r/min]			8000	6000	4500
Maximum rotation speed		[r/min]	8000	8000	8000
Continuous rated torque		[N·m]	47.7	47.7	70
Motor inertia		[kg·m²]	0.03	0.03	0.0575
Degree of protection			IP44	IP44	IP44
Outline dimension drawing (flange type)		[mm]			
Flange fitting diameter		[mm]	ϕ180	ϕ180	ϕ230
Shaft diameter		[mm]	ϕ48	ϕ48	ϕ48
Mass		[kg]	70	70	110

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

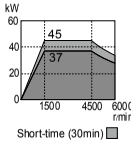
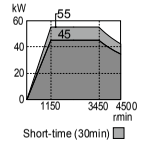
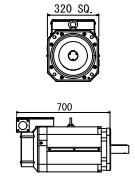
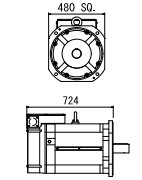
■SJ-V Series (Normal specification)

Motor type			SJ-V15-09ZT	SJ-V18.5-01ZT	SJ-V18.5-04ZT	SJ-V22-01ZT
Compatible drive unit	1-axis type	MDS-E-SP-	200	200	240	240
	2-axis type	MDS-E-SP2-	–	–	–	–
	Multi-hybrid type	MDS-EM-SPV3-	200xx	200xx	–	–
Output Short-time rating □ Continuous rating ■			 Short-time (30min) ■	 Short-time (30min) ■	 Short-time (30min) ■	 Short-time (30min) ■
Standard output during acceleration/deceleration [kW]			15	18.5	18.5	22
Actual acceleration/deceleration output (Note 2) [kW]			18	22.2	22.2	26.4
Base rotation speed		[r/min]	1500	1500	1500	1500
Max. rotation speed in constant output range [r/min]			6000	4500	6000	4500
Maximum rotation speed		[r/min]	8000	8000	8000	8000
Continuous rated torque		[N·m]	70	95.5	95.5	118
Motor inertia		[kg·m²]	0.0575	0.0575	0.0575	0.08
Degree of protection			IP44	IP44	IP44	IP44
Outline dimension drawing (flange type)		[mm]				
Flange fitting diameter		[mm]	ϕ230	ϕ230	ϕ230	ϕ230
Shaft diameter		[mm]	ϕ48	ϕ48	ϕ48	ϕ55
Mass		[kg]	110	110	110	135

Motor type			SJ-V22-04ZT	SJ-V22-06ZT	SJ-V26-01ZT	SJ-V37-01ZT
Compatible drive unit	1-axis type	MDS-E-SP-	320	240	320	400
	2-axis type	MDS-E-SP2-	–	–	–	–
	Multi-hybrid type	MDS-EM-SPV3-	–	–	–	–
Output Short-time rating □ Continuous rating ■			 Short-time (30min) ■	 Short-time (30min) ■	 Short-time (30min) ■	 Short-time (30min) ■
Standard output during acceleration/deceleration [kW]			22	15	26	37
Actual acceleration/deceleration output (Note 2) [kW]			26.4	18	31.2	44.4
Base rotation speed		[r/min]	1500	1500	1500	1150
Max. rotation speed in constant output range [r/min]			6000	10000	6000	3450
Maximum rotation speed		[r/min]	8000	10000	8000	6000
Continuous rated torque		[N·m]	118	70.0	140	249
Motor inertia		[kg·m²]	0.08	0.0575	0.0925	0.34
Degree of protection			IP44	IP44	IP44	IP44
Outline dimension drawing (flange type)		[mm]				
Flange fitting diameter		[mm]	ϕ230	ϕ230	ϕ230	ϕ300
Shaft diameter		[mm]	ϕ55	ϕ48	ϕ55	ϕ60
Mass		[kg]	135	110	155	300

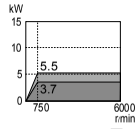
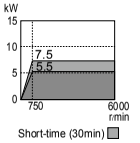
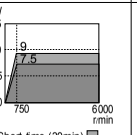
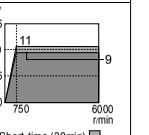
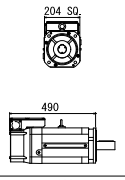
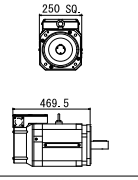
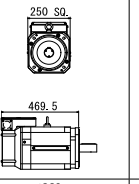
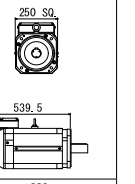
(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

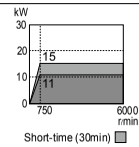
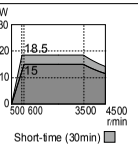
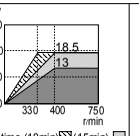
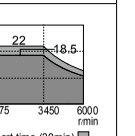
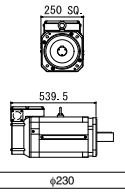
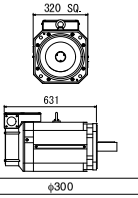
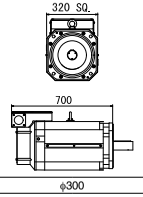
■SJ-V Series (Normal specification)

Motor type			SJ-V45-01ZT	SJ-V55-01ZT
Compatible drive unit	1-axis type	MDS-E-SP-	640	640
	2-axis type	MDS-E-SP2-	–	–
	Multi-hybrid type	MDS-EM-SPV3-	–	–
Output Short-time rating □ Continuous rating □			 Short-time (30min) □	 Short-time (30min) □
Standard output during acceleration/deceleration [kW]			45	55
Actual acceleration/deceleration output (Note 2) [kW]			54	66
Base rotation speed		[r/min]	1500	1150
Max. rotation speed in constant output range [r/min]			4500	3450
Maximum rotation speed		[r/min]	6000	4500
Continuous rated torque		[N·m]	236	374
Motor inertia		[kg·m²]	0.34	0.8475
Degree of protection			IP44	IP44
Outline dimension drawing (flange type)		[mm]		
Flange fitting diameter		[mm]	ϕ300	ϕ450
Shaft diameter		[mm]	ϕ60	ϕ75
Mass		[kg]	300	450

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

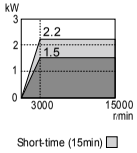
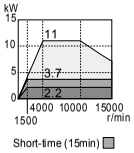
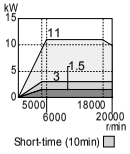
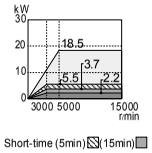
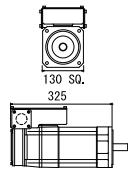
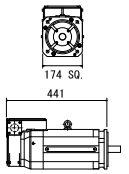
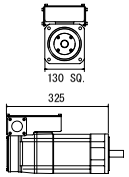
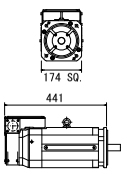
■SJ-V Series (Wide range constant output specification)

Motor type			SJ-V11-01T	SJ-V11-09T	SJ-V15-03T	SJ-V18.5-03T
Compatible drive unit	1-axis type	MDS-E-SP-	160	160	200	240
	2-axis type	MDS-E-SP2-	16080(L)	16080(L)	–	–
	Multi-hybrid type	MDS-EM-SPV3-	160xx	160xx	200xx	–
Output Short-time rating □ Continuous rating □			 Short-time (30min) □	 Short-time (30min) □	 Short-time (30min) □	 Short-time (30min) □
Standard output during acceleration/deceleration [kW]			5.5	7.5	9	11
Actual acceleration/deceleration output (Note 2) [kW]			6.6	9	10.8	13.2
Base rotation speed		[r/min]	750	750	750	750
Max. rotation speed in constant output range [r/min]			6000	6000	6000	6000
Maximum rotation speed		[r/min]	6000	6000	6000	6000
Continuous rated torque		[N·m]	47.1	70.0	95.5	115
Motor inertia		[kg·m²]	0.03	0.0575	0.0575	0.08
Degree of protection			IP44	IP44	IP44	IP44
Outline dimension drawing (flange type)		[mm]				
Flange fitting diameter		[mm]	ϕ180	ϕ230	ϕ230	ϕ230
Shaft diameter		[mm]	ϕ48	ϕ48	ϕ48	ϕ55
Mass		[kg]	70	110	110	135

Motor type			SJ-V22-05T	SJ-V22-09T	SJ-VK22-19ZT	
Compatible drive unit	1-axis type	MDS-E-SP-	320	320	320	
	2-axis type	MDS-E-SP2-	–	–	–	
	Multi-hybrid type	MDS-EM-SPV3-	–	–	–	
Output Short-time rating □□□ Continuous rating □			 Short-time (30min) □	 Short-time (30min) □	 Short-time (10min) ▨ (15min) □	 Short-time (30min) □
Standard output during acceleration/deceleration [kW]			15	18.5	18.5	22
Actual acceleration/deceleration output (Note 2) [kW]			18	22.2	22.2	26.4
Base rotation speed		[r/min]	750	500	330	575
Max. rotation speed in constant output range [r/min]			6000	3500	750	3450
Maximum rotation speed		[r/min]	6000	4500	750	6000
Continuous rated torque		[N·m]	140	239	310	307.3
Motor inertia		[kg·m²]	0.08	0.31	0.34	
Degree of protection			IP44	IP44	IP44	
Outline dimension drawing (flange type)		[mm]				
Flange fitting diameter		[mm]	ϕ230	ϕ300	ϕ300	
Shaft diameter		[mm]	ϕ55	ϕ60	ϕ60	
Mass		[kg]	135	280	300	

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

■SJ-VL Series (Low-inertia specification)

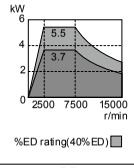
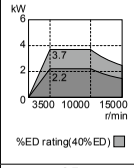
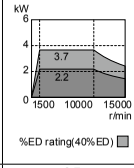
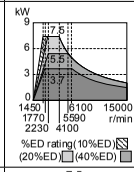
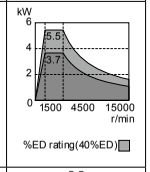
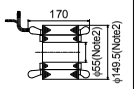
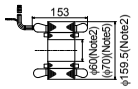
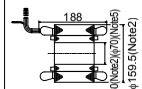
Motor type			SJ-VL2.2-02ZT	SJ-VL11-02FZT	SJ-VL11-05FZT-S01 *1	SJ-VL18.5-05FZT
Compatible drive unit	1-axis type	MDS-E-SP-	40	160	160	240
	2-axis type	MDS-E-SP2-	40	16080(L)	16080(L)	–
	Multi-hybrid type	MDS-EM-SPV3-	–	160xx	160xx *2	–
Output Acceleration/Deceleration □ Short-time rating ▨□□ Continuous rating ■			 Short-time (15min) ■	 Short-time (15min) ■	 Short-time (10min) ■	 Short-time (5min) ▨(15min) ■
Standard output during acceleration/deceleration [kW]			2.2	11	11	18.5
Actual acceleration/deceleration output (Note 2) [kW]			2.6	13.2	13.2	22.2
Base rotation speed		[r/min]	3000	1500	5000	3000
Max. rotation speed in constant output range		[r/min]	15000	15000	20000	15000
Maximum rotation speed		[r/min]	15000	15000	20000	15000
Continuous rated torque		[N·m]	4.8	14.0	2.9	7.0
Motor inertia		[×10⁻⁴kg·m²]	0.0024	0.003	0.0024	0.00525
Degree of protection			IP44	IP44	IP44	IP44
Outline dimension drawing (flange type)		[mm]				
Flange fitting diameter		[mm]	ϕ110	ϕ150	ϕ110	ϕ150
Shaft diameter		[mm]	ϕ22	ϕ28	ϕ22	ϕ28
Mass		[kg]	20	42	20	40

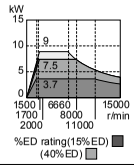
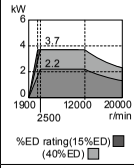
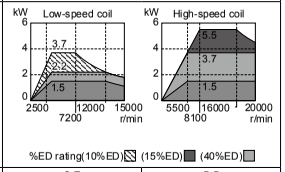
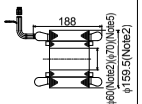
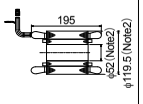
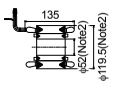
*1 The acceleration/deceleration frequency is limited by the regenerative resistor.
*2 The maximum rotation speed is 15000r/min.

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

BUILT-IN SPINDLE MOTOR 200V

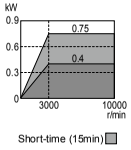
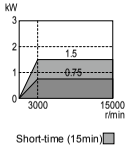
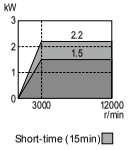
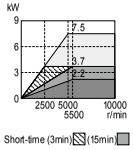
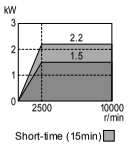
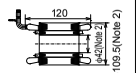
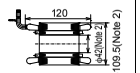
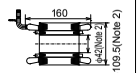
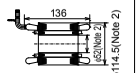
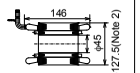
■SJ-BG Series

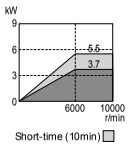
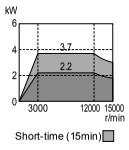
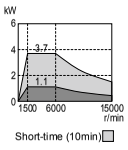
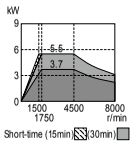
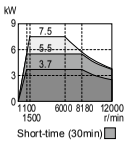
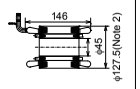
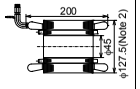
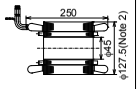
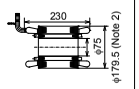
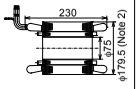
Motor type (Note 1)			SJ-BG150B/150-01□	SJ-BG160B/150-01□(R)			SJ-BG160D/150-01□(R)
Compatible drive unit	MDS-E-SP-		80	40	80	160	80
Output %ED rating ▨□□ Continuous rating ■			 %ED rating(40%ED) ■	 %ED rating(40%ED) ■	 %ED rating(40%ED) ■	 %ED rating(10%ED) ▨ (20%ED) □ (40%ED) ■	 %ED rating(40%ED) ■
Standard output during acceleration/deceleration [kW]			5.5	3.7	3.7	7.5	5.5
Actual acceleration/deceleration output (Note 4) [kW]			6.6	4.44	4.44	9	6.6
Continuous base rotation speed		[r/min]	2500	3500	1300	1770	1500
Maximum rotation speed		[r/min]	15000	15000	15000	15000	15000
Continuous rated torque		[N·m]	14.1	6.0	16.2	20.0	23.6
Rotor inertia		[kg·m²]	0.00575	0.005(0.0042)	0.005(0.0042)	0.005(0.0042)	0.0075(0.0061)
Outline dimension drawing		[mm]					
Mass	Stator	[kg]	6.3	7.1	7.1	7.1	10.0
	Rotor	[kg]	3.7	2.9(2.3)	2.9(2.3)	2.9(2.3)	4.3(3.3)

Motor type (Note 1)			SJ-BG160D/150-02□(R)	SJ-BG120C/200-011R	SJ-BG120A/200-011KR	
Compatible drive unit	MDS-E-SP-		160	80	80	
Output Acceleration/Deceleration □ %ED rating ▨□■ Continuous rating ■			 %ED rating(15%ED) ■ (40%ED) ■	 %ED rating(15%ED) ■ (40%ED) ■	 %ED rating(10%ED) ▨ (15%ED) ■ (40%ED) ■	
Standard output during acceleration/deceleration [kW]			7.5	3.7	3.7	5.5
Actual acceleration/deceleration output (Note 4) [kW]			9	4.4	4.4	6.6
Continuous base rotation speed		[r/min]	1500	2500	2500	5500
Maximum rotation speed		[r/min]	15000	20000	15000	20000
Continuous rated torque		[N·m]	23.6	8.4	5.7	2.6
Rotor inertia		[kg·m²]	0.0075(0.0061)	0.0027	0.0014	
Outline dimension drawing		[mm]				
Mass	Stator	[kg]	11.0	5.9	3.0	
	Rotor	[kg]	4.3(3.3)	2.5	1.3	

(Note 1) Please contact your Mitsubishi Electric dealer for the special products not listed above.
(Note 2) These dimensions are the dimensions after machine machining.
(Note 3) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".
(Note 5) A value in brackets is for the motor type which have (R) in the end of the type name.

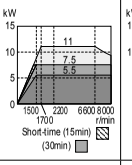
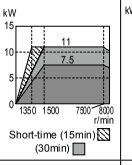
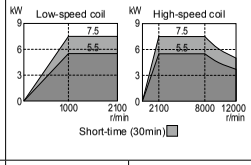
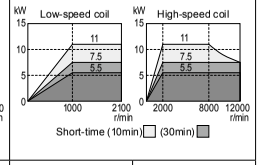
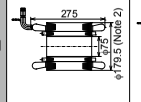
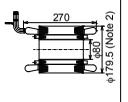
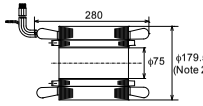
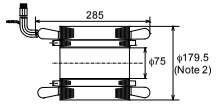
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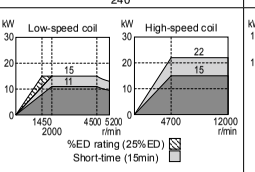
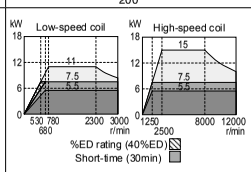
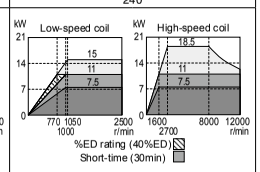
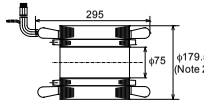
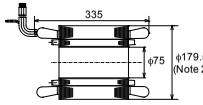
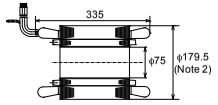
Motor type (Note 1)		SJ-2B4002T	SJ-2B4004T	SJ-2B4003T	SJ-2B4B03T	SJ-2B4112T
Compatible drive unit	MDS-E-SP-	20	40	40	160	40
Output Acceleration/Deceleration □ Short-time rating ▨□□ Continuous rating ■						
Standard output during acceleration/deceleration [kW]		0.75	1.5	2.2	7.5	2.2
Actual acceleration/deceleration output (Note 4) [kW]		0.9	1.8	2.64	9	2.64
Continuous base rotation speed	[r/min]	3000	3000	3000	5500	2500
Maximum rotation speed	[r/min]	10000	15000	12000	10000	10000
Continuous rated torque	[N·m]	1.27	2.39	4.77	3.82	5.73
Rotor inertia	[kg·m²]	0.00078	0.00078	0.00138	0.00163	0.00168
Outline dimension drawing	[mm]					
Mass	Stator [kg]	2.2	2.2	3.9	3.0	4.1
	Rotor [kg]	0.9	0.9	1.7	1.5	1.7

Motor type (Note 1)		SJ-2B4111T	SJ-2B4105T	SJ-2B4102T	SJ-2B4310T	SJ-2B4301T
Compatible drive unit	MDS-E-SP-	80	80	80	80	160
Output Short-time rating □□ Continuous rating ■						
Standard output during acceleration/deceleration [kW]		5.5	3.7	3.7	5.5	7.5
Actual acceleration/deceleration output (Note 4) [kW]		6.6	4.44	4.44	6.6	9
Continuous base rotation speed	[r/min]	6000	3000	1500	1750	1100
Maximum rotation speed	[r/min]	10000	15000	15000	8000	12000
Continuous rated torque	[N·m]	5.89	7.00	7.00	20.2	32.1
Rotor inertia	[kg·m²]	0.00168	0.003	0.00425	0.0128	0.0128
Outline dimension drawing	[mm]					
Mass	Stator [kg]	4.1	7.4	10	15	15
	Rotor [kg]	1.7	3.0	4.3	5.6	5.6

(Note 1) Please contact your Mitsubishi Electric dealer for the special products not listed above.
(Note 2) These dimensions are the dimensions after machine machining.
(Note 3) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

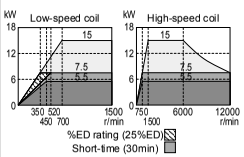
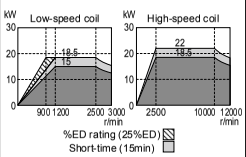
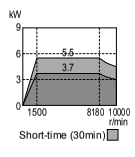
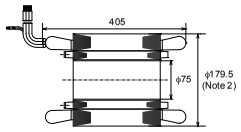
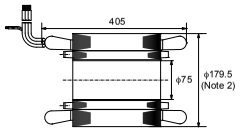
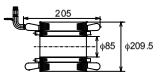
■SJ-B Series

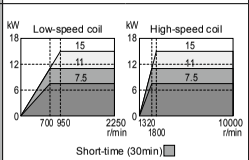
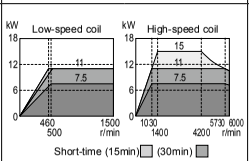
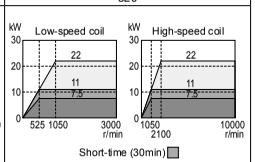
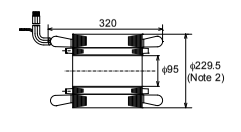
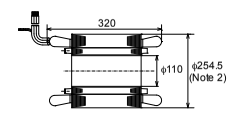
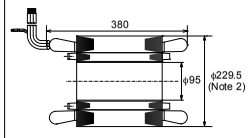
Motor type (Note 1)		SJ-2B4327T	SJ-2B4340T	SJ-2B4313TK		SJ-2B4323TK	
Compatible drive unit	MDS-E-SP-	160	200	160		200	
Output Acceleration/Deceleration □ Short-time rating ▨□ Continuous rating ■					
Standard output during acceleration/deceleration	[kW]	11	11	7.5	7.5	11	11
Actual acceleration/deceleration output (Note 4)	[kW]	13.2	13.2	9	9	13.2	13.2
Continuous base rotation speed	[r/min]	1700	1500	1000	2100	1000	2000
Maximum rotation speed	[r/min]	8000	8000	2100	12000	2000	12000
Continuous rated torque	[N·m]	30.9	47.7	52.5	25.0	52.5	26.3
Rotor inertia	[kg·m²]	0.0175	0.0175	0.0175		0.0175	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	20	20	20		20	
	Rotor [kg]	7.6	7.6	7.6		7.6	

Motor type (Note 1)		SJ-2B4325TK	SJ-2B4303TK		SJ-2B4326TK	
Compatible drive unit	MDS-E-SP-	240	200		240	
Output %ED rating ▨ Short-time rating □□ Continuous rating ■						
Standard output during acceleration/deceleration	[kW]	15	22	11	15	15	18.5
Actual acceleration/deceleration output (Note 4)	[kW]	18	26.4	13.2	18	18	22.2
Continuous base rotation speed	[r/min]	2000	4700	680	1250	1000	1600
Maximum rotation speed	[r/min]	5200	12000	3000	12000	2500	12000
Continuous rated torque	[N·m]	52.5	30.5	77.2	42.0	71.6	44.8
Rotor inertia	[kg·m²]	0.0175		0.0225		0.0225	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	20		26		26	
	Rotor [kg]	7.6		9.8		9.8	

(Note 1) Please contact your Mitsubishi Electric dealer for the special products not listed above.
(Note 2) These dimensions are the dimensions after machine machining.
(Note 3) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

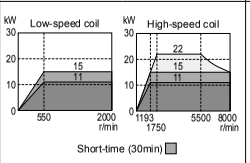
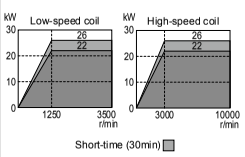
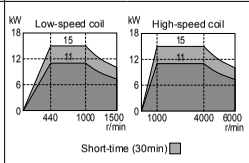
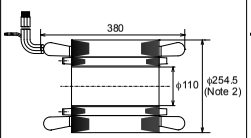
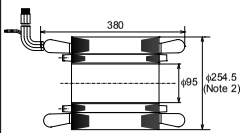
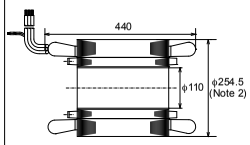
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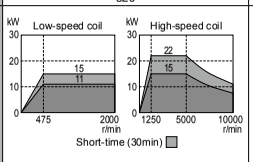
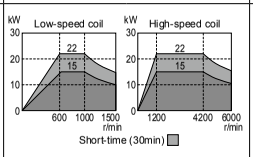
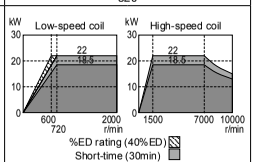
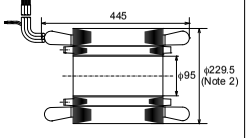
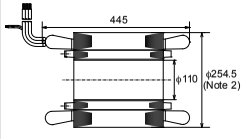
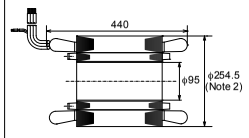
Motor type (Note 1)		SJ-2B4304TK		SJ-2B4318TK		SJ-2B4412T
Compatible drive unit	MDS-E-SP-	320		320		160
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating						
Standard output during acceleration/deceleration [kW]		15	15	18.5	22	5.5
Actual acceleration/deceleration output (Note 4) [kW]		18	18	22.2	26.4	6.6
Continuous base rotation speed [r/min]		450	750	1200	2500	1500
Maximum rotation speed [r/min]		1500	12000	3000	12000	10000
Continuous rated torque [N·m]		117	70.0	119	70.7	23.6
Rotor inertia	[kg·m²]	0.028		0.028		0.0193
Outline dimension drawing	[mm]					
Mass	Stator [kg]	33		33		15
	Rotor [kg]	12		12		6.2

Motor type (Note 1)		SJ-2B4501TK		SJ-2B6611TK		SJ-2B4502TK	
Compatible drive unit	MDS-E-SP-	200		200		320	
Output Acceleration/Deceleration Short-time rating Continuous rating							
Standard output during acceleration/deceleration [kW]		15	15	11	15	22	22
Actual acceleration/deceleration output (Note 4) [kW]		18	18	13.2	18	26.4	26.4
Continuous base rotation speed [r/min]		700	1320	500	1030	525	1050
Maximum rotation speed [r/min]		2250	10000	1500	6000	3000	10000
Continuous rated torque [N·m]		102	54.3	143	69.5	136	68.2
Rotor inertia	[kg·m²]	0.08		0.102		0.105	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	29		37		37	
	Rotor [kg]	18		19		24	

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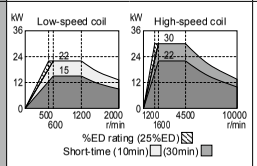
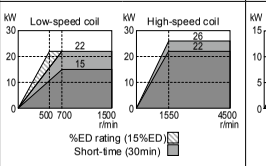
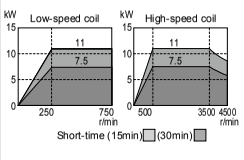
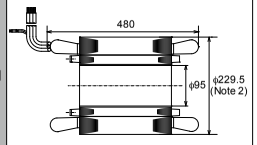
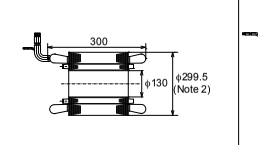
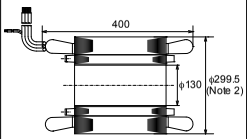
■SJ-B Series

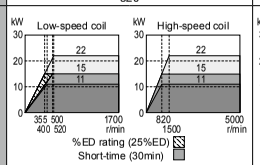
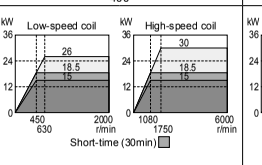
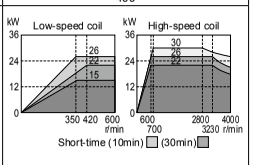
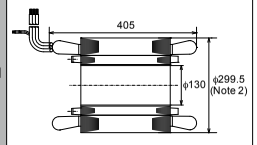
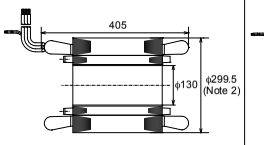
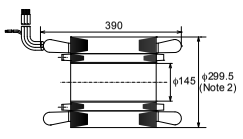
Motor type (Note 1)		SJ-2B6602TK		SJ-2B4601TK		SJ-2B6605TK	
Compatible drive unit	MDS-E-SP-	320		320		240	
Output Acceleration/Deceleration Short-time rating Continuous rating							
Standard output during acceleration/deceleration [kW]		15	22	26	26	15	15
Actual acceleration/deceleration output (Note 4) [kW]		18	26.4	31.2	31.2	18	18
Continuous base rotation speed [r/min]		550	1193	1250	3000	440	1000
Maximum rotation speed [r/min]		2000	8000	3500	10000	1500	6000
Continuous rated torque [N·m]		191	88.0	168	70.0	239	105
Rotor inertia	[kg·m²]	0.133		0.105		0.173	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	49		55		63	
	Rotor [kg]	25		24		33	

Motor type (Note 1)		SJ-2B4503TK		SJ-2B6603TK		SJ-2B4602TK	
Compatible drive unit	MDS-E-SP-	320		320		320	
Output %ED rating Short-time rating Continuous rating							
Standard output during acceleration/deceleration [kW]		15	22	22	22	22	22
Actual acceleration/deceleration output (Note 4) [kW]		18	26.4	26.4	26.4	26.4	26.4
Continuous base rotation speed [r/min]		475	1250	600	1200	720	1500
Maximum rotation speed [r/min]		2000	10000	1500	6000	2000	10000
Continuous rated torque [N·m]		221	115	239	119	245	118
Rotor inertia	[kg·m²]	0.135		0.173		0.135	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	48		63		71	
	Rotor [kg]	31		33		31	

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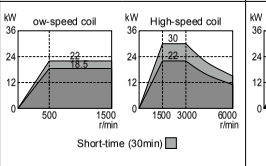
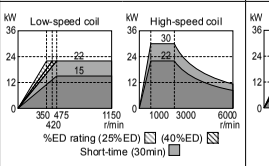
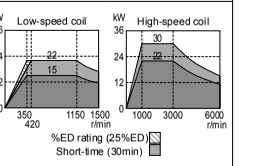
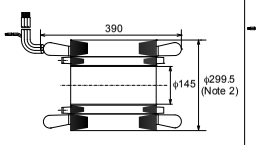
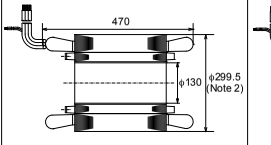
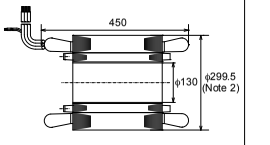
■SJ-B Series

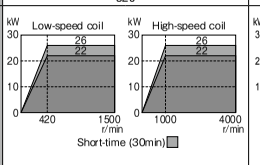
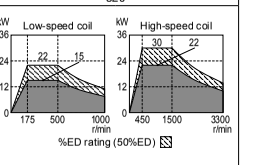
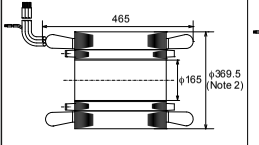
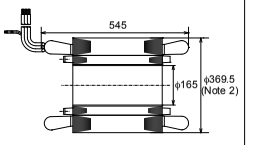
Motor type (Note 1)		SJ-2B4511TK		SJ-2B6720TK		SJ-2B6705TK	
Compatible drive unit	MDS-E-SP-	320		320		200	
Output %ED rating Short-time rating Continuous rating							
Standard output during acceleration/deceleration [kW]		22	30	22	26	11	11
Actual acceleration/deceleration output (Note 4) [kW]		26.4	36	26.4	31.2	13.2	13.2
Continuous base rotation speed [r/min]		600	1600	700	1550	250	500
Maximum rotation speed [r/min]		2000	10000	1500	4500	750	4500
Continuous rated torque [N·m]		239	131	205	136	286	133
Rotor inertia	[kg·m²]	0.15		0.20		0.288	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	54		45		65	
	Rotor [kg]	34		26		38	

Motor type (Note 1)		SJ-2B6711TK		SJ-2B6706TK		SJ-2B6716TK	
Compatible drive unit	MDS-E-SP-	320		400		400	
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating							
Standard output during acceleration/deceleration [kW]		22	22	26	30	26	30
Actual acceleration/deceleration output (Note 4) [kW]		26.4	26.4	31.2	36	31.2	36
Continuous base rotation speed [r/min]		400	820	450	1080	350	600
Maximum rotation speed [r/min]		1700	5000	2000	6000	600	4000
Continuous rated torque [N·m]		263	114	318	133	409	350
Rotor inertia	[kg·m²]	0.280		0.288		0.283	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	65		65		70	
	Rotor [kg]	37		38		35	

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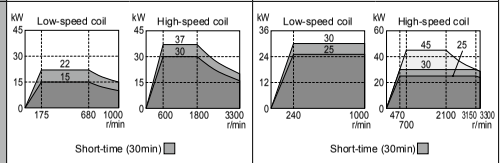
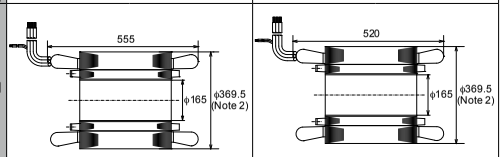
■SJ-B Series

Motor type (Note 1)		SJ-2B6721TK		SJ-2B6704TK		SJ-2B6709TK	
Compatible drive unit	MDS-E-SP-	320		320		400	
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating							
Standard output during acceleration/deceleration [kW]		22	30	22	30	22	30
Actual acceleration/deceleration output (Note 4) [kW]		26.4	36	26.4	36	26.4	36
Continuous base rotation speed [r/min]		500	1500	475	1000	350	1000
Maximum rotation speed [r/min]		1500	6000	1150	6000	1500	6000
Continuous rated torque [N·m]		353	140	302	175	409	210
Rotor inertia	[kg·m²]	0.283		0.37		0.37	
Outline dimension drawing	[mm]						
Mass	Stator [kg]	70		83		83	
	Rotor [kg]	35		49		49	

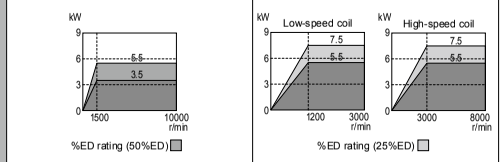
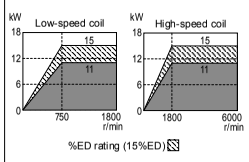
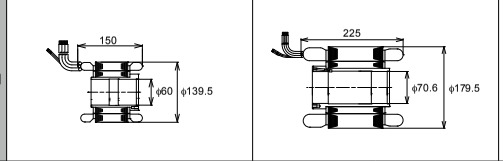
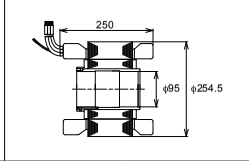
Motor type (Note 1)		SJ-2B6905TK		SJ-2B6908TK	
Compatible drive unit	MDS-E-SP-	320		320	
Output %ED rating Short-time rating Continuous rating					
Standard output during acceleration/deceleration [kW]		26	26	22	30
Actual acceleration/deceleration output (Note 4) [kW]		31.2	31.2	26.4	36
Continuous base rotation speed [r/min]		420	1000	175	450
Maximum rotation speed [r/min]		1500	4000	1000	3300
Continuous rated torque [N·m]		500	210	819	467
Rotor inertia	[kg·m²]	0.853		1.105	
Outline dimension drawing	[mm]				
Mass	Stator [kg]	110		143	
	Rotor [kg]	70		91	

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■SJ-B Series

Motor type (Note 1)		SJ-2B6906TK		SJ-2B6914TK	
Compatible drive unit	MDS-E-SP-	400		640	
Output Acceleration/Deceleration □ Short-time rating □ Continuous rating □					
Standard output during acceleration/deceleration [kW]		22	37	30	45
Actual acceleration/deceleration output (Note 4) [kW]		26.4	44.4	36	54
Continuous base rotation speed [r/min]		175	600	240	470
Maximum rotation speed [r/min]		1000	3300	1000	3300
Continuous rated torque [N·m]		819	477	995	508
Rotor inertia [kg·m²]		1.105		1.105	
Outline dimension drawing [mm]					
Mass	Stator [kg]	143		143	
	Rotor [kg]	91		91	

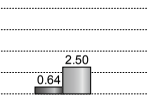
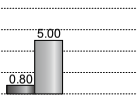
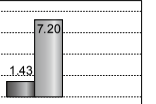
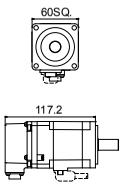
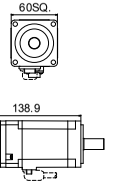
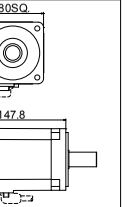
■SJ-PMB Series

Motor type (Note 1)		SJ-PMB02215T-02	SJ-PMB04412T-B0		SJ-PMB14007T-01	
Compatible drive unit	MDS-E-SP-	240	200		320	
Output %ED rating □□□ Continuous rating □						
Standard output during acceleration/deceleration [kW]		5.5	7.5	7.5	15	15
Actual acceleration/deceleration output (Note 4) [kW]		6.6	9	9	18	18
Continuous base rotation speed [r/min]		1500	1200	3000	750	1800
Maximum rotation speed [r/min]		10000	3000	8000	1800	6000
Continuous rated torque [N·m]		22.3	43.8	17.5	140	58.4
Rotor inertia [kg·m²]		0.006	0.0162		0.0633	
Outline dimension drawing [mm]						
Mass	Stator [kg]	4.4	14.0		30	
	Rotor [kg]	3.7	8.0		15	

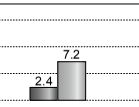
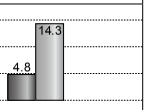
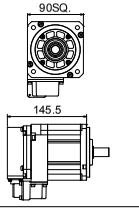
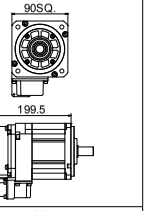
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(Note 2) These dimensions are the dimensions after machine machining.
(Note 3) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

TOOL SPINDLE MOTOR 200V

■HG Series

Motor type			HG Series HG□-D47		
			HG46	HG56	HG96
Compatible drive unit	1-axis type	MDS-E-SP-	20	20	20
	2-axis type	MDS-E-SP2-	20	20	20
	Regenerative resistor type	MDS-EJ-SP-	20	20	20
Output Rated torque □ Max. torque □		[N·m]			
Rated output		[kW]	0.40	0.50	0.90
Max. rotation speed		[r/min]	6000	6000	6000
Motor inertia		[×10⁻⁴kg·m²]	0.234	0.379	1.27
Degree of protection (The shaft-through portion, power connector portion and brake connector portion are excluded.)			IP67	IP67	IP67
Outline dimension drawing		[mm]			
Flange fitting diameter		[mm]	ϕ50	ϕ50	ϕ70
Shaft diameter		[mm]	ϕ14	ϕ14	ϕ19
Mass		[kg]	1.2	1.6	2.9

■HG-JR Series

Motor type			HG-JR Series	
			HG-JR73	HG-JR153
Compatible drive unit	1-axis type	MDS-E-SP-	40	80
	2-axis type	MDS-E-SP2-	40	80
	Regenerative resistor type	MDS-EJ-SP-	40	80
Output Rated torque □ Max. torque □		[N·m]		
Rated output		[kW]	0.75	1.5
Max. rotation speed		[r/min]	8000	8000
Motor inertia		[×10⁻⁴kg·m²]	2.09	3.79
Degree of protection (The shaft-through portion is excluded.)			IP67	IP67
Outline dimension drawing		[mm]		
Flange fitting diameter		[mm]	ϕ80	ϕ80
Shaft diameter		[mm]	ϕ16	ϕ16
Mass		[kg]	3.7	5.9

(Note 1) The above characteristics values are representative values. The maximum current and maximum torque are the values when combined with the drive unit.
(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

■HG Series

Motor type			HG Series HG□-D48					
			HG75	HG105	HG54	HG104	HG154	HG224
Compatible drive unit	1-axis type	MDS-E-SP-	20	20	40	40	80	80
	2-axis type	MDS-E-SP2-	20 40	20 40	40 80	40 80	80 16080	80 16080
	Regenerative resistor type	MDS-EJ-SP-	20	20	20	40	80	80
Output Rated torque ■ Max. torque □	[N·m]		1.8 / 7.0	2.4 / 8.1	1.6 / 12.1	3.2 / 23.3	4.8 / 33.9	7.0 / 46.5
Rated output	[kW]		0.75	1.0	0.5	1.0	1.5	2.2
Rated rotation speed	[r/min]		4000		3000			
Max. rotation speed	[r/min]		4000		3000			
Motor inertia	[×10⁻⁴kg·m²]		2.62	5.12	6.13	11.9	17.8	23.7
Degree of protection (The shaft-through portion is excluded.)			IP67					
Outline dimension drawing (flange type)	[mm]		90 SQ. / 127.5	90 SQ. / 163.5	130 SQ. / 118.5	130 SQ. / 140.5	130 SQ. / 162.5	130 SQ. / 184.5
Flange fitting diameter	[mm]		ϕ80	ϕ80	ϕ110	ϕ110	ϕ110	ϕ110
Shaft diameter	[mm]		ϕ14	ϕ14	ϕ24	ϕ24	ϕ24	ϕ24

Motor type			HG Series HG□-D48				
			HG204	HG354	HG453	HG703	HG903
Compatible drive unit	1-axis type	MDS-E-SP-	80	160	160	160	320
	2-axis type	MDS-E-SP2-	80 16080	16080	16080	16080	–
	Regenerative resistor type	MDS-EJ-SP-	80	–	–	–	–
Output Rated torque ■ Max. torque □	[N·m]		6.4 / 46.5	11.1 / 74.5	14.3 / 89.3	22.3 / 116.5	28.6 / 171.0
Rated output	[kW]		2.0	3.5	4.5	7.0	9.0
Rated rotation speed	[r/min]		3000				
Max. rotation speed	[r/min]		3000				
Motor inertia	[×10⁻⁴kg·m²]		38.3	75.0	112.0	154.0	196.0
Degree of protection (The shaft-through portion is excluded.)			IP67				
Outline dimension drawing (flange type)	[mm]		176 SQ. / 143.5	176 SQ. / 183.5	176 SQ. / 223.5	176 SQ. / 263.5	204 SQ. / 330
Flange fitting diameter	[mm]		ϕ114.3	ϕ114.3	ϕ114.3	ϕ114.3	ϕ180
Shaft diameter	[mm]		ϕ35	ϕ35	ϕ35	ϕ35	ϕ42

(Note 1) The above characteristics values are representative values. The maximum current and maximum torque are the values when combined with the drive unit.

(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

SERVO MOTOR 400V

■HG-H Series

Motor type			HG-H75	HG-H105	HG-H54	HG-H104	HG-H154
Compatible drive unit	1-axis type	MDS-EH-V1-	10	10	20	20	40
	2-axis type	MDS-EH-V2-	10 20	10 20	20 40	20 40	40 80
	Regenerative resistor type	MDS-EJH-V1	15	20	20	20	40
Output Stall torque ■ Max. torque □	[N·m]		2.0 / 8.0	3.0 / 11.0	2.9 / 13.0	5.9 / 23.3	9.0 / 42.0
Rated output	[kW]		0.75	1.0	0.5	1.0	1.5
Max. rotation speed	[r/min]		5000		4000		
Motor inertia	[×10⁻⁴kg·m²]		2.62	5.12	6.13	11.9	17.8
Motor inertia with a brake	[×10⁻⁴kg·m²]		2.70	5.20	8.26	14.0	20.0
Degree of protection (The shaft-through portion is excluded.)			IP67				
Outline dimension drawing (flange type) (Without a brake, Straight shaft, D48 encoder) (Note) The total length will be 3.5mm longer when using a D51 or D74 encoder.	[mm]		90 SQ. / 127.5	90 SQ. / 163.5	130 SQ. / 118.5	130 SQ. / 140.5	130 SQ. / 162.5
Flange fitting diameter	[mm]		ϕ80	ϕ80	ϕ110	ϕ110	ϕ110
Shaft diameter	[mm]		ϕ14	ϕ14	ϕ24	ϕ24	ϕ24
Mass (with a brake)	[kg]		2.6(3.6)	4.4(5.3)	4.8(6.7)	6.5(8.5)	8.3(11.0)
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		EH	EH	EH	EH	EH
	4,194,304 [p/rev] (D51)		EH, EJH	EH, EJH	EH, EJH	EH, EJH	EH, EJH
	1,048,576 [p/rev] (D48)						

Motor type			HG-H204	HG-H354	HG-H453	HG-H703	HG-H903
Compatible drive unit	1-axis type	MDS-EH-V1-	40	80	80	80W	160
	2-axis type	MDS-EH-V2-	40 80	80 80W	80 80W	80W	–
	Regenerative resistor type	MDS-EJH-V1	–	–	–	–	–
Output Stall torque ■ Max. torque □	[N·m]		13.7 / 47.0	22.5 / 90.0	37.2 / 122.0	49.0 / 152.0	58.8 / 208.0
Rated output	[kW]		2.0	3.5	4.5	7.0	9.0
Max. rotation speed	[r/min]		4000		3500	3000	
Motor inertia	[×10⁻⁴kg·m²]		38.3	75.0	112.0	154.0	196.0
Motor inertia with a brake	[×10⁻⁴kg·m²]		47.9	84.7	122.0	164.0	206.0
Degree of protection (The shaft-through portion is excluded.)			IP67				
Outline dimension drawing (flange type) (Without a brake, Straight shaft, D48 encoder) (Note) The total length will be 3.5mm longer when using a D51 or D74 encoder.	[mm]		176 SQ. / 143.5	176 SQ. / 183.5	176 SQ. / 223.5	176 SQ. / 263.5	204 SQ. / 330
Flange fitting diameter	[mm]		ϕ114.3	ϕ114.3	ϕ114.3	ϕ114.3	ϕ180
Shaft diameter	[mm]		ϕ35	ϕ35	ϕ35	ϕ35	ϕ42
Mass (with a brake)	[kg]		12.0(18.0)	19.0(25.0)	25.0(31.0)	32.0(38.0)	43.0(49.0)
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		EH	EH	EH	EH	EH
	4,194,304 [p/rev] (D51)						
	1,048,576 [p/rev] (D48)						

(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

■HG-H Series

Motor type			HG-H1502
Compatible drive unit	1-axis type	MDS-EH-V1-	200
	2-axis type	MDS-EH-V2-	–
	Regenerative resistor type	MDS-EJH-V1	–
Output Stall torque ■ Max. torque □		[N·m]	350 300 250 200 150 100 50 0 320.0 152.1
Rated output		[kW]	15.0
Max. rotation speed		[r/min]	2500
Motor inertia		[×10⁻⁴kg·m²]	489.0
Motor inertia with a brake		[×10⁻⁴kg·m²]	–
Degree of protection (The shaft-through portion is excluded.)			IP44
Outline dimension drawing (flange type)		[mm]	250SQ. 476
Flange fitting diameter		[mm]	ϕ230
Shaft diameter		[mm]	ϕ65
Mass (with a brake)		[kg]	120
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		EH
	4,194,304 [p/rev] (D51)		
	1,048,576 [p/rev] (D48)		

(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

■HQ-H Series

Motor type			HQ-H903	HQ-H1103
Compatible drive unit	1-axis type	MDS-EH-V1-	160	160W
Stall torque			70.0	110.0
Output Stall torque ■ Max. torque □		[N·m]	300 250 200 150 100 50 170 70	260 110
Max. rotation speed		[r/min]	3000	3000
Motor inertia		[×10⁻⁴kg·m²]	230.0	350.0
Motor inertia with a brake		[×10⁻⁴kg·m²]	254.0	374.0
Degree of protection (The shaft-through portion is excluded.)			IP67	IP67
Outline dimension drawing (flange type) (Without a brake, Straight shaft, D48 encoder) (Note) The total length will be 3.5mm longer when using a D51 or D74 encoder.		[mm]	346.5 220 SQ.	468.5 220 SQ.
Flange fitting diameter		[mm]	ϕ200	ϕ200
Shaft diameter		[mm]	ϕ55	ϕ55
Mass (with a brake)		[kg]	51.0(61.4)	74.0(84.4)
Absolute position encoder compatible drive unit	67,108,864 [p/rev] (D74)		EH	EH
	4,194,304 [p/rev] (D51)			
	1,048,576 [p/rev] (D48)			

(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

LINEAR SERVO MOTOR 400V

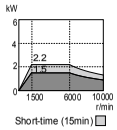
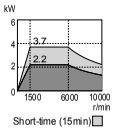
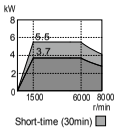
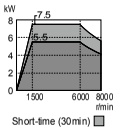
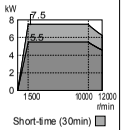
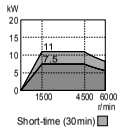
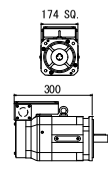
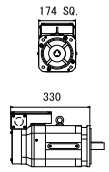
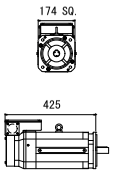
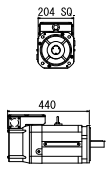
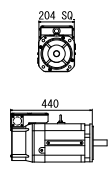
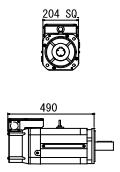
■LM-F Series

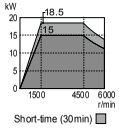
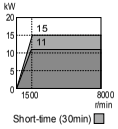
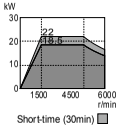
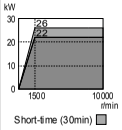
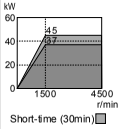
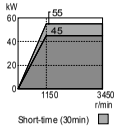
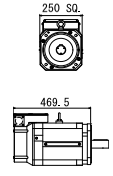
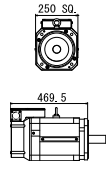
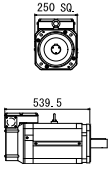
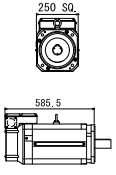
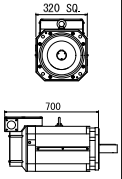
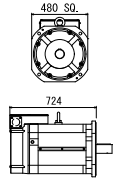
Motor type	Primary side type		LM-FP5H-60M-1WW0
	Secondary side type		LM-FS50-□-1WW0
Compatible drive unit	1-axis type	MDS-EH-V1-	200
	2-axis type	MDS-EH-V2-	–
	Regenerative resistor type	MDS-EJH-V1-	–
Thrust force Continuous (natural-cooling) ■ Continuous (liquid-cooling) □ Maximum ■		[N]	20000 15000 10000 5000 0 18000 6000 3000
Rated thrust		[N]	6000
Maximum speed (Note 1)		[m/s]	2.0
Magnetic attraction force		[N]	45000
Degree of protection			IP00
Outline dimension drawing		[mm]	Primary side / Secondary side 1010 480 576 1000 50 25 240 240
Mass [kg]	Primary side (coil)		67
	Secondary side (magnet)		20.0(480mm) 26.0(576mm)

(Note 1) The maximum speed in actual use is either the linear scale's maximum speed or this specified value, whichever is smaller.

SPINDLE MOTOR 400V

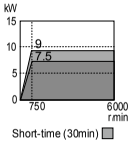
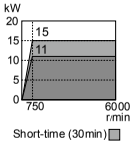
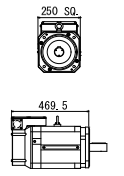
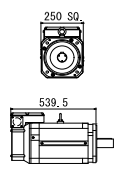
■SJ-4-V Series (Normal)

Motor type	SJ-4-V2.2-03T	SJ-4-V3.7-03T	SJ-4-V5.5-07T	SJ-4-V7.5-12T	SJ-4-V7.5-13ZT	SJ-4-V11-18T
Compatible drive unit MDS-EH-SP-	20	20	40	40	80	80
Output Short-time rating □ Continuous rating □						
	Short-time (15min) □	Short-time (15min) □	Short-time (30min) □	Short-time (30min) □	Short-time (30min) □	Short-time (30min) □
Standard output during acceleration/deceleration [kW]	2.2	3.7	5.5	7.5	7.5	11
Actual acceleration/deceleration output (Note 2) [kW]	2.64	4.44	6.6	9	9	13.2
Base rotation speed [r/min]	1500		1500			
Maximum rotation speed [r/min]	10000		8000		12000	6000
Continuous rated torque [N·m]	9.5	14.0	23.6	35.0	35.0	47.7
Inertia [kg·m²]	0.007	0.009	0.015	0.025	0.025	0.03
Degree of protection	IP44	IP44	IP44	IP44	IP44	IP44
Outline dimension drawing (flange type) [mm]						
Flange fitting diameter [mm]	ϕ150	ϕ150	ϕ150	ϕ180	ϕ180	ϕ180
Shaft diameter [mm]	ϕ28	ϕ28	ϕ28	ϕ32	ϕ32	ϕ48
Mass [kg]	25	30	49	60	60	70

Motor type	SJ-4-V18.5-14T	SJ-4-V22-18ZT	SJ-4-V22-15T	SJ-4-V26-08ZT	SJ-4-V45-02T	SJ-4-V55-03T
Compatible drive unit MDS-EH-SP-	100	160	160	160	320	320
Output Short-time rating □ Continuous rating □						
	Short-time (30min) □	Short-time (30min) □	Short-time (30min) □	Short-time (30min) □	Short-time (30min) □	Short-time (30min) □
Standard output during acceleration/deceleration [kW]	18.5	15	22	26	45	55
Actual acceleration/deceleration output (Note 2) [kW]	22.2	18	26.4	31.2	54	66
Base rotation speed [r/min]			1500			1150
Maximum rotation speed [r/min]	6000	8000	6000	10000	4500	3450
Continuous rated torque [N·m]	95.5	70.0	118	140	236	374
Inertia [kg·m²]	0.06	0.06	0.08	0.10	0.34	0.85
Degree of protection	IP44	IP44	IP44	IP44	IP44	IP44
Outline dimension drawing (flange type) [mm]						
Flange fitting diameter [mm]	ϕ230	ϕ230	ϕ230	ϕ230	ϕ300	ϕ450
Shaft diameter [mm]	ϕ48	ϕ48	ϕ55	ϕ55	ϕ60	ϕ75
Mass [kg]	110	110	135	155	300	450

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".
(Note 3) The rated output is guaranteed at the rated input voltage (380 to 440VAC 50Hz / 380 to 480VAC 60Hz) to the power supply unit.
If the input voltage fluctuates and drops below 380VAC, the rated output may not be attained.

■SJ-4-V Series (Wide range constant output)

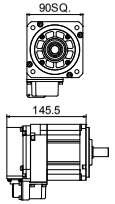
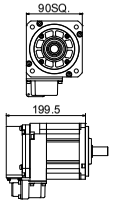
Motor type	SJ-4-V15-20T	SJ-4-V22-16T
Compatible drive unit MDS-EH-SP-	100	160
Output Short-time rating □ Continuous rating □		
	Short-time (30min) □	Short-time (30min) □
Standard output during acceleration/deceleration [kW]	9	15
Actual acceleration/deceleration output (Note 2) [kW]	10.8	18
Base rotation speed [r/min]	750	
Maximum rotation speed [r/min]	6000	
Continuous rated torque [N·m]	95.5	140
Inertia [kg·m²]	0.06	0.08
Degree of protection	IP44	IP44
Outline dimension drawing (flange type) [mm]		
Flange fitting diameter [mm]	ϕ230	ϕ230
Shaft diameter [mm]	ϕ48	ϕ55
Mass [kg]	110	135

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".
(Note 3) The rated output is guaranteed at the rated input voltage (380 to 440VAC 50Hz / 380 to 480VAC 60Hz) to the power supply unit.
If the input voltage fluctuates and drops below 380VAC, the rated output may not be attained.

400V SJ-4-V Series
13 SPINDLE MOTOR 400V

TOOL SPINDLE MOTOR 400V

■HG-JR Series

Motor type		HG-JR734	HG-JR1534
Compatible drive unit	1-axis type MDS-EH-SP-	20	40
Output Rated torque Max. torque	[N·m]	2.4 / 7.2	4.8 / 14.3
Rated output	[kW]	0.75	1.5
Max. rotation speed	[r/min]	8000	
Motor inertia	[×10⁻⁴kg·m²]	2.09	3.79
Degree of protection (The shaft-through portion is excluded.)		IP67	
Outline dimension drawing	[mm]		
Flange fitting diameter	[mm]	ϕ80	ϕ80
Shaft diameter	[mm]	ϕ16	ϕ16
Mass	[kg]	3.7	5.9

(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

DRIVE UNIT

■MDS-E Series

1-axis servo drive unit

Drive unit type			MDS-E-V1-20	MDS-E-V1-40	MDS-E-V1-80	MDS-E-V1-160	MDS-E-V1-160W	MDS-E-V1-320	MDS-E-V1-320W
Drive unit category			1-axis servo						
Nominal maximum current (peak)		[A]	20	40	80	160	160	320	320
Power input	Rated voltage	[V]	270 to 324DC						
	Rated current	[A]	7	7	14	30	35	45	55
Control power input	Voltage	[V]	200 to 240AC Tolerable fluctuation: between +10% and -15%						
	Current	[A]	MAX. 0.2						
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +5% and -5%						
Control method			Sine wave PWM control method						
Dynamic brakes			Built-in						External (MDS-D-DBU)
Machine end encoder			Compatible						
Degree of protection			IP20 (excluding terminal block)						
Cooling method			Forced air cooling						
Mass		[kg]	3.8	3.8	3.8	3.8	4.5	5.8	7.5
Unit outline dimension drawing			A1	A1	A1	A1	B1	C1	D1

2-axis servo drive unit

Drive unit type			MDS-E-V2-20	MDS-E-V2-40	MDS-E-V2-80	MDS-E-V2-160	MDS-E-V2-160W
Drive unit category			2-axis servo				
Nominal maximum current (peak)		[A]	20/20	40/40	80/80	160/160	160/160
Power input	Rated voltage	[V]	270 to 324DC				
	Rated current	[A]	14 (7/7)	14 (7/7)	28 (14/14)	60 (30/30)	70 (35/35)
Control power input	Voltage	[V]	200 to 240AC Tolerable fluctuation: between +10% and -15%				
	Current	[A]	MAX. 0.2				
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +5% and -5%				
Control method			Sine wave PWM control method				
Dynamic brakes			Built-in				
Machine end encoder			Compatible				
Degree of protection			IP20 (excluding terminal block)				
Cooling method			Forced air cooling				
Mass		[kg]	3.8	3.8	3.8	5.2	6.3
Unit outline dimension drawing			A1	A1	A1	B1	C1

3-axis servo drive unit

Drive unit type			MDS-E-V3-20	MDS-E-V3-40
Drive unit category			3-axis servo	
Nominal maximum current (peak)		[A]	20/20/20	40/40/40
Power input	Rated voltage	[V]	270 to 324DC	
	Rated current	[A]	21(7/7/7)	21(7/7/7)
Control power input	Voltage	[V]	200 to 240AC Tolerable fluctuation: between +10% and -15%	
	Current	[A]	MAX. 0.2	
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +5% and -5%	
Control method			Sine wave PWM control method	
Dynamic brakes			Built-in	
Machine end encoder			Compatible	
Degree of protection			IP20 [over all]	
Cooling method			Forced air cooling	
Mass		[kg]	3.8	
Unit outline dimension drawing			A1	

■MDS-E Series

1-axis spindle drive unit

Drive unit type		MDS-E-SP-20	MDS-E-SP-40	MDS-E-SP-80	MDS-E-SP-160	MDS-E-SP-200	MDS-E-SP-240	MDS-E-SP-320	MDS-E-SP-400	MDS-E-SP-640
Drive unit category		1-axis spindle								
Nominal maximum current (peak) [A]		20	40	80	160	200	240	320	400	640
Power input	Rated voltage [V]	270 to 324DC								
	Rated current [A]	7	13	20	41	76	95	140	150	210
Control power input	Voltage [V]	200 to 240AC Tolerable fluctuation: between +10% and -15%								
	Current [A]	MAX. 0.2								
	Frequency [Hz]	50/60 Tolerable fluctuation: between +5% and -5%								
Control method		Sine wave PWM control method								
Degree of protection		IP20 (excluding terminal block)								
Cooling method		Forced air cooling								
Mass [kg]		3.8	3.8	3.8	4.5	5.8	6.5	7.5	16.5	16.5
Unit outline dimension drawing		A1	A1	A1	B1	C1	D1	D2	E1	F1

2-axis spindle drive unit

Drive unit type		MDS-E-SP2-20	MDS-E-SP2-40	MDS-E-SP2-80	MDS-E-SP2-16080
Drive unit category		2-axis spindle			
Nominal maximum current (peak) [A]		20/20	40/40	80/80	160/80
Power input	Rated voltage [V]	270 to 324DC			
	Rated current [A]	14 (7/7)	26 (13/13)	40 (20/20)	61 (41/20)
Control power input	Voltage [V]	200 to 240AC Tolerable fluctuation: between +10% and -15%			
	Current [A]	MAX. 0.2			
	Frequency [Hz]	50/60 Tolerable fluctuation: between +5% and -5%			
Control method		Sine wave PWM control method			
Degree of protection		IP20 (excluding terminal block)			
Cooling method		Forced air cooling			
Mass [kg]		4.5	4.5	6.5	5.2
Unit outline dimension drawing		A1	A1	B1	B1

Power supply unit

Power supply unit		MDS-E-CV-37	MDS-E-CV-75	MDS-E-CV-110	MDS-E-CV-185	MDS-E-CV-300	MDS-E-CV-370	MDS-E-CV-450	MDS-E-CV-550
30-minute rated output [kW]		3.7	7.5	11.0	18.5	30.0	37.0	45.0	55.0
Continuous rated output [kW]		2.2	5.5	7.5	15.0	26.0	30.0	37.0	45.0
Power input	Rated voltage [V]	200 to 240AC Tolerable fluctuation: between +10% and -15%							
	Rated current [A]	15	26	35	65	107	121	148	200
Control power input	Voltage [V]	200 to 240AC Tolerable fluctuation: between +10% and -15%							
	Current [A]	MAX. 0.2							
	Frequency [Hz]	50/60 Tolerable fluctuation: between +5% and -5%							
Regeneration method		Power regeneration method							
Degree of protection		IP20 (excluding terminal block)							
Cooling method		Natural-cooling		Forced air cooling					
Mass [kg]		4.0	4.0	6.0	6.0	10.0	10.0	10.0	25.5
Unit outline dimension drawing		A2	A2	B1	B1	D1	D1	D2	F1

AC reactor

AC reactor model		D-AL-7.5K	D-AL-11K	D-AL-18.5K	D-AL-30K	D-AL-37K	D-AL-45K	D-AL-55K
Compatible power supply unit type	MDS-E-CV-	37, 75	110	185	300	370	450	550
Rated capacity [kW]		7.5	11	18.5	30	37	45	55
Rated voltage [V]		200 to 240AC Tolerable fluctuation: between +10% and -15%						
Rated current [A]		27	40	66	110	133	162	200
Frequency [Hz]		50/60 Tolerable fluctuation: between +5% and -5%						
Mass [kg]		4.2	3.7	5.3	6.1	8.6	9.7	11.5
Unit outline dimension drawing		R1	R1	R2	R2	R3	R3	R4

■MDS-EH Series

1-axis servo drive unit

Drive unit type		MDS-EH-V1-10	MDS-EH-V1-20	MDS-EH-V1-40	MDS-EH-V1-80	MDS-EH-V1-80W	MDS-EH-V1-160	MDS-EH-V1-160W	MDS-EH-V1-200
Drive unit category		1-axis servo							
Nominal maximum current (peak) [A]		10	20	40	80	80	160	160	200
Power input	Rated voltage [V]	513 to 648DC							
	Rated current [A]	0.9	1.6	2.9	6.0	8.0	11.9	16.7	39.0
Control power input	Voltage [V]	380 to 480AC Tolerable fluctuation: between +10% and -15%							
	Current [A]	MAX. 0.1							
	Frequency [Hz]	50/60 Tolerable fluctuation: between +5% and -5%							
Control method		Sine wave PWM control method							
Dynamic brakes		Built-in						External (MDS-D-DBU)	
Degree of protection		IP20 ([over all] / IP00 [Terminal block TE1])							
Cooling method		Natural-cooling	Forced air cooling						
Mass [kg]		3.8	3.8	3.8	3.8	4.5	5.8	7.5	16.5
Unit outline dimension drawing		A1	A1	A1	A1	B1	C1	D1	E1

2-axis servo drive unit

Drive unit type		MDS-EH-V2-10	MDS-EH-V2-20	MDS-EH-V2-40	MDS-EH-V2-80	MDS-EH-V2-80W
Drive unit category		2-axis servo				
Nominal maximum current (peak) [A]		10/10	20/20	40/40	80/80	80/80
Power input	Rated voltage [V]	513 to 648DC				
	Rated current [A]	1.8 (0.9/0.9)	3.2 (1.6 /1.6)	5.8 (2.9/2.9)	12 (6.0/6.0)	16 (8.0/8.0)
Control power input	Voltage [V]	380 to 480AC Tolerable fluctuation: between +10% and -15%				
	Current [A]	MAX. 0.1				
	Frequency [Hz]	50/60 Tolerable fluctuation: between +5% and -5%				
Control method		Sine wave PWM control method · Current control method				
Dynamic brakes		Built-in				
Degree of protection		IP20				
Cooling method		Natural-cooling	Forced air cooling			
Mass [kg]		3.8	3.8	3.8	5.2	6.3
Unit outline dimension drawing		A1	A1	A1	B1	C1

1-axis spindle drive unit

Drive unit type		MDS-EH-SP-20	MDS-EH-SP-40	MDS-EH-SP-80	MDS-EH-SP-100	MDS-EH-SP-160	MDS-EH-SP-200	MDS-EH-SP-320	MDS-EH-SP-480	MDS-EH-SP-600
Drive unit category		1-axis spindle								
Nominal maximum current (peak) [A]		20	40	80	100	160	200	320	480	600
Power input	Rated voltage [V]	513 to 648DC								
	Rated current [A]	10	15	21	38	72	82	119	150	210
Control power input	Voltage [V]	380 to 480AC Tolerable fluctuation: between +10% and -15%								
	Current [A]	MAX. 0.1								
	Frequency [Hz]	50/60 Tolerable fluctuation: between +5% and -5%								
Control method		Sine wave PWM control method								
Degree of protection		IP20 ([over all] / IP00 [Terminal block TE1])								
Cooling method		Forced air cooling								
Mass [kg]		3.8	4.5	4.5	5.8	7.5	16.5	16.5	22.5	23.0
Unit outline dimension drawing		A1	A1	B1	C1	D1	E1	E1	F1	F1

(Note) Rated output capacity and rated speed of the motor used in combination with the drive unit are as indicated when using the power supply voltage and frequency listed. The torque drops when the voltage is less than specified.

Power supply unit

Power supply unit type		MDS-EH-CV-37	MDS-EH-CV-75	MDS-EH-CV-110	MDS-EH-CV-185	MDS-EH-CV-300	MDS-EH-CV-370	MDS-EH-CV-450	MDS-EH-CV-550	MDS-EH-CV-750
30-minute rated output [kW]		3.7	7.5	11.0	18.5	30.0	37.0	45.0	55.0	75.0
Continuous rated output [kW]		2.2	5.5	7.5	15	26	30	37	45	55
Power input	Rated voltage [V]	380 to 480AC Tolerable fluctuation: between +10% and -15%								
	Rated current [A]	5.2	13	18	35	61	70	85	106	130
Control power input	Voltage [V]	380 to 480AC Tolerable fluctuation: between +10% and -15%								
	Current [A]	MAX. 0.1								
	Frequency [Hz]	50/60 Tolerable fluctuation: between +5% and -5%								
Main circuit method		Converter with power regeneration circuit								
Degree of protection		IP20 (excluding terminal block)								
Cooling method		Forced air cooling								
Mass [kg]		6.0	6.0	6.0	6.0	10.0	10.0	10.0	25.5	25.5
Unit outline dimension drawing		B1	B1	B1	B1	D1	D1	D1	F1	F1

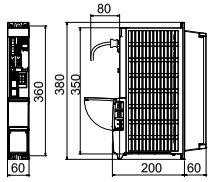
AC reactor

AC reactor model		DH-AL-7.5K	DH-AL-11K	DH-AL-18.5K	DH-AL-30K	DH-AL-37K	DH-AL-45K	DH-AL-55K	DH-AL-75K
Compatible power supply unit type	MDS-EH-CV-	37, 75	110	185	300	370	450	550	750
Rated capacity [kW]		7.5	11	18.5	30	37	45	55	75
Rated voltage [V]		380 to 480AC Tolerable fluctuation: between +10% and -15%							
Rated current [A]		14	21	37	65	75	85	106	142
Frequency [Hz]		50/60 Tolerable fluctuation: between +5% and -5%							
Mass [kg]		4.0	3.7	5.3	6.0	8.5	9.8	10.5	13.0
Unit outline dimension drawing		R1	R1	R2	R2	R3	R3	R5	R6

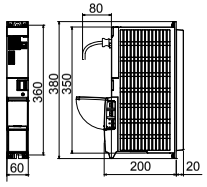
Unit Outline Dimension Drawing

[Unit : mm]

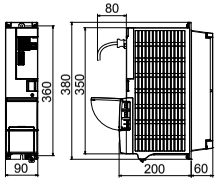
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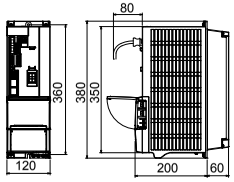
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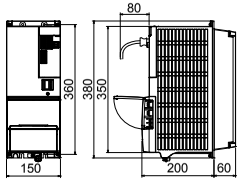
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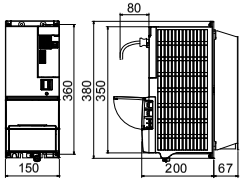
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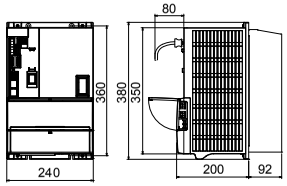
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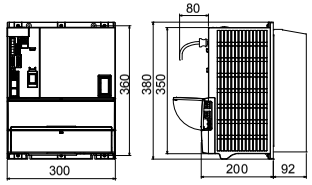
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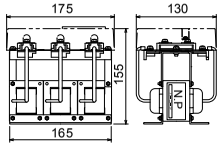
E1



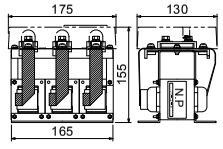
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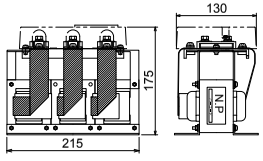
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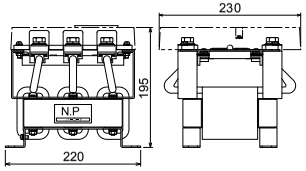
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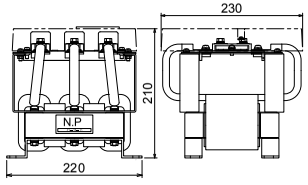
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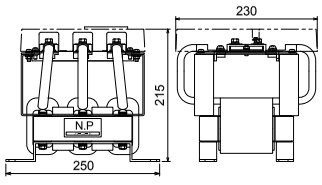
R4



R5



R6



■MDS-EM Series

Multi-hybrid drive unit

Drive unit type			MDS-EM-SPV3-10040	MDS-EM-SPV3-10080	MDS-EM-SPV3-16040	MDS-EM-SPV3-16080	MDS-EM-SPV3-20080	MDS-EM-SPV3-200120
Drive unit category			3-axis servo, 1-axis spindle (with converter)					
Nominal maximum current (spindle/servo)		[A]	100/40×3	100/80×3	160/40×3	160/80×3	200/80×3	200/120×3
Power input	Rated voltage	[V]	200 to 240AC Tolerable fluctuation: between +10% and -15%					
	Rated current	[A]	36	38	45	48	60	65
Control power input	Voltage	[V]	24DC Tolerable fluctuation: between +10% and -10%					
	Current	[A]	MAX. 4					
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +5% and -5%					
Control method			Sine wave PWM control method					
Regeneration method			Power regeneration method					
Dynamic brakes (servo)			Built-in					
Machine end encoder (servo)			Compatible					
Degree of protection			IP20 (excluding terminal block)					
Cooling method			Forced air cooling					
Mass		[kg]	15	15	15	15	15	15

Unit outline dimension drawing

Drive unit MDS-EM-SPV3-□

[Unit : mm]

