

The spindle motor SJ-D Series, an integration of new-generation functionality and design

Eco-conscious new-generation spindle motor for energy savings, higher durability and shorter machining times.

With the increasing demand for environmental protection, we have developed high performance motors focused on energy and resource savings as well as safety and reliability.

Aiming at a design that enhances product reliability, our new motors feature a perfect harmony of design and functionality.

As most industrial products have a decade-long service life, we sought a design that is not affected by trends and that will not be obsolete in the next 15 years.



Awarded "Good Design Gold Award"

Sophisticated design saves energy and resources, and offers a lightweight body and high reliability.

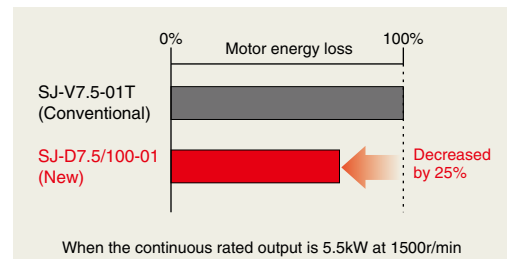
A perfect balance of design and performance.

This product was awarded Good Design Gold Award in 2009.

High efficiency (energy savings)

The optimized electrical design lowers the motor energy loss by approximately 25% as compared to our conventional model and reduces power consumption, resulting in lower electrical cost. Thermal displacement is also reduced, contributing to higher machine accuracy.

Comparison of motor energy loss



High speed

The maximum rotation speed is increased by incorporating a high-speed specification bearing as standard. This offers a wider variety of machining conditions and enables process consolidation, resulting in shorter machining times.

Lightweight / Low vibration

To enhance machine accuracy, motor vibration is lowered to the vibration level of V3 (SJ-D Series (normal specifications)) by reducing the motor mass and improving the rigidity. This motor enables higher machining accuracy.

Enhanced reliability

Part degradation is suppressed and service life is prolonged as the internal temperature rise is reduced due to the lower energy loss, and as a new grease-filled bearing is incorporated in the motor.

Explanation of type

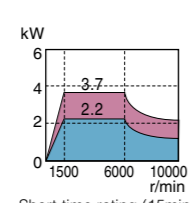
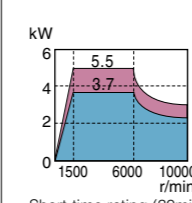
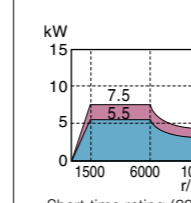
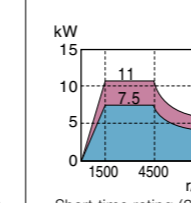
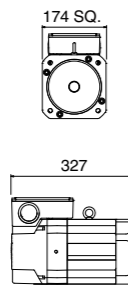
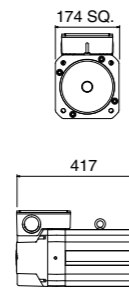
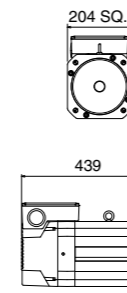
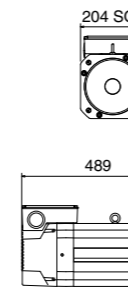
SJ-D Series (for 200V) SJ-D ①② / ③-④⑤-⑥

① Motor Series		② Short-time (or %ED) rated output		③ Maximum rotation speed		⑤ Detector		⑥ Option ^(Note)	
Symbol	Motor Series	Symbol	Short-time rated output	Indicates the hundreds place and higher order digits.		Symbol	Type	Symbol	Option
None	Normal specifications	3.7	3.7 kW			None	Type 1	None	Standard (flange type, without oil seal, without key, coil changeover unavailable, air-cooling, solid shaft)
J	Compact & lightweight specifications	5.5	5.5 kW			T	Type 2	C	With key
L	Low inertia specifications	7.5	7.5 kW					J	Oil seal
		11	11 kW					X	Reversed cooling air
		15	15 kW						

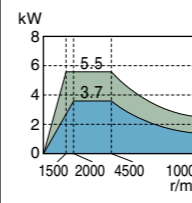
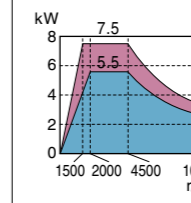
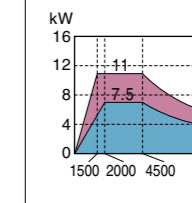
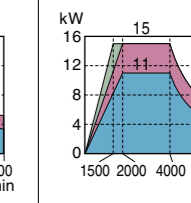
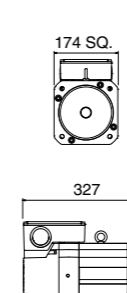
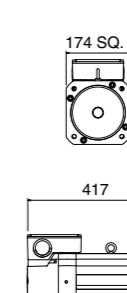
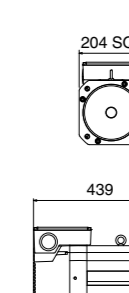
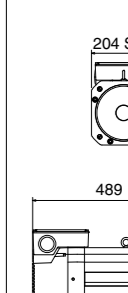
④ Specification code
Indicates a specification code (01 to 99).

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

SJ-D Series (normal specifications)

Spindle motor type	SJ-D3.7/100-01	SJ-D5.5/100-01	SJ-D7.5/100-01	SJ-D11/80-01	
Compatible drive unit	1-axis type	MDS-D-SP-80	MDS-D-SP-80	MDS-D-SP-160	
	2-axis type	MDS-D-SP2-8040 MDS-D-SP2-8080 MDS-D-SP2-16080	MDS-D-SP2-8040 MDS-D-SP2-8080 MDS-D-SP2-16080	MDS-D-SP2-16080	
	Multi axis integrated type	-	MDS-DM-SPV2F-10080 MDS-DM-SPV3F-10080	MDS-DM-SPV2F-10080 MDS-DM-SPV3F-10080	
	Regenerative resistor type	MDS-D-SPJ3-37	MDS-D-SPJ3-55	MDS-D-SPJ3-75	
Output					
Base rotation speed	[r/min]	1500	1500	1500	
Max. rotation speed in constant output range	[r/min]	6000	6000	4500	
Maximum rotation speed	[r/min]	10000	10000	8000	
Continuous rated torque	[N·m]	14.0	23.6	35.0	
Motor inertia	[kg·m ²]	0.0074	0.013	0.023	
Outline dimension drawing (flange type)	[mm]				
Flange fitting diameter	[mm]	Ø150	Ø150	Ø180	
Shaft diameter	[mm]	Ø28	Ø28	Ø32	
Mass	[kg]	26	39	53	

SJ-DJ Series (compact & lightweight specifications)

Spindle motor type	SJ-DJ5.5/100-01	SJ-DJ7.5/100-01	SJ-DJ11/100-01	SJ-DJ15/80-01	
Compatible drive unit	1-axis type	MDS-D-SP-80	MDS-D-SP-160	MDS-D-SP-160	
	2-axis type	MDS-D-SP2-8040 MDS-D-SP2-8080 MDS-D-SP2-16080	MDS-D-SP2-16080	MDS-D-SP2-16080	
	Multi axis integrated type	MDS-DM-SPV2F-10080 MDS-DM-SPV3F-10080	MDS-DM-SPV2F-10080 MDS-DM-SPV3F-10080	MDS-DM-SPV2F-16080 MDS-DM-SPV3F-16080	
	Regenerative resistor type	MDS-D-SPJ3-55	MDS-D-SPJ3-75	MDS-D-SPJ3-110	
Output					
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	10000	8000	
Continuous rated torque	[N·m]	17.7	26.3	35.8	
Motor inertia	[kg·m ²]	0.0074	0.013	0.023	
Outline dimension drawing (flange type)	[mm]				
Flange fitting diameter	[mm]	Ø150	Ø150	Ø180	
Shaft diameter	[mm]	Ø28	Ø28	Ø32	
Mass	[kg]	26	39	53	

(Note) %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 specifications)

Spindle motor type	SJ-DL5.5/150-01T	SJ-DL5.5/200-01T	SJ-DL7.5/120-01T	SJ-DL7.5/150-01T
Compatible drive unit	1-axis type	MDS-D-SP-160	MDS-D-SP-160	MDS-D-SP-160
	2-axis type	MDS-D-SP2-16080	MDS-D-SP2-16080	MDS-D-SP2-16080
	Multi axis integrated type	MDS-DM-SPV2F-16080 MDS-DM-SPV3F-16080	-	MDS-DM-SPV2F-16080 MDS-DM-SPV3F-16080
	Regenerative resistor type	-	-	-
Output Acceleration/Deceleration 15-minute rating 30-minute rating Continuous rating				
Base rotation speed [r/min]	2500	2500	1500	1500
Max. rotation speed in constant output range [r/min]	15000	20000	12000	15000
Maximum rotation speed [r/min]	15000	20000	12000	15000
Continuous rated torque [N·m]	11.7	11.7	35.0	35.0
Motor inertia [kg·m ²]	0.0046	0.0046	0.016	0.016
Outline dimension drawing (flange type) [mm]				
Flange fitting diameter [mm]	Ø150	Ø150	Ø180	Ø180
Shaft diameter [mm]	Ø28	Ø28	Ø32	Ø32
Mass [kg]	30	30	56	56


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BNP-A1219-C[ENG]
(ENGLISH)

Revised publication, effective Oct. 2010.
Superseding publication of K-KL2-0-C0068-C Mar. 2010.
Specifications are subject to change without notice.