

MITSUBISHI CNC Built-in Spindle Motors SJ-BG Series

The SJ-BG Series (50Fr), the new built-in spindle motors supporting high-quality tapping and machining



*Photo shows the SJ-BG090D/300-01S with the mold with cooling jacket specification.

Higher torque (downsizing)

The optimized electrical design increases the continuous rated torque by approximately 20% per unit volume compared to our conventional model, contributing to downsizing of the spindle unit.

Higher speed

The rotor rigidity is improved, resulting in shorter machining times and higher machining accuracy.

Enhanced optional specifications

The cooling jacket is available as optional features, enabling flexible machining conditions and improved productivity.

Description of the type name

SJ-BG Series (for 200V) SJ-BG ① ② - ③ - ④ ⑤ ⑥

① **Stator external dimensions^(Note)**

symbol	Stator outline dimensions
090	90mm

(Note) Rounded off to the nearest whole number.

② **Core width**

symbol	Core width
B	50mm
D	100mm

③ **Maximum rotation speed**

Indicates the hundreds place and higher order digits.

④ **Specification code**

Indicates a specification code (01 to 99).

⑤ **Coil switch specification**

symbol	Type
None	None

⑥ **Option^(Note)**

symbol	Option
None	Standard (without rotor sleeve, mold or cooling jacket)
S	mold with cooling jacket

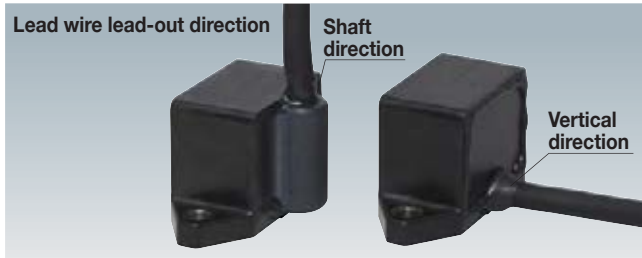
(Note) If more than one option is included, the symbols are in alphabetical order.

SJ-BG Series

Built-in spindle motor type		SJ-BG090B/300-01	SJ-BG090B/300-02	SJ-BG090D/300-01	SJ-BG090D/300-01S	SJ-BG090D/300-02S
Compatible spindle drive unit	MDS-D2-SP-	40	80	160	160	200
Output %ED rating						
Continuous base rotation speed [r/min]		6000	10000	9700	9700	9700
Maximum rotation speed [r/min]		30000	30000	30000	30000	30000
Continuous rated torque [N·m]		1.6	1.6	3.5	4.5	4.5
Rotor inertia [kg·m ²]		0.00043	0.00043	0.00091	0.00091	0.00091
Outline dimension drawing	[mm]					
Mass	Stator [kg]	1.4	1.4	2.8	5.2	5.2
	Rotor [kg]	0.74	0.74	1.5	1.5	1.5

(Note) These dimensions are the dimensions after machine machining.

Detector



Compact size and increased design versatility

- Downsized sensor section compared to the conventional model (volume reduced by 50%)
- The cable now leads out in two directions: the vertical direction or the shaft direction

Sensor	Series type	TS5690N64xx			
	xx (The end of the type name)	22	32	27	37
	Length of lead [mm]	800 ±20	1200 ±20	800 ±20	1200 ±20
	Lead wire lead-out direction	Vertical direction		Shaft direction	
Detection gear	Type	MU1606N601			
	The number of teeth	64			
	Outer diameter [mm]	φ52.8			
	Inner diameter [mm]	φ40H5			
	Thickness [mm]	12			
Notched fitting section	Shrink fitting [mm]	0.020 to 0.040			
	Outer diameter [mm]	φ72.0			
The number of output pulse	Outer diameter tolerance [mm]	+0.010 to +0.060			
	A/B phase	64			
Detection resolution [p/rev]	Z phase	1			
	Absolute accuracy at stop	2 million			
Tolerable speed [r/min]	150°				
Signal output	40,000				
		Mitsubishi high-speed serial			

Please contact your Mitsubishi Electric dealer regarding the special products not listed above.

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