

Rotary Table/Rack & Pinion Style

Series *MSQ*

Size: 10, 20, 30, 50, 70, 100, 200

How to Order

High Precision Type MSQ A 10 A - M9BW [] []

Basic Type MSQ B 10 A - M9BW [] []

Size

10
20
30
50

Size

10
20
30
50
70
100
200

Thread type

End port type	Size
Nil	M 5
Nil	Rc 1/8
-XF	G 1/8
-XN	NPT 1/8

* Side ports are all M5.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	n pcs.

Auto switch type

Nil	Without auto switch (built-in magnet)
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* Refer to the table below for auto switch types.

With adjustment bolt

A	With adjustment bolt
R	With internal shock absorber

CRB2

CRBU2

CRB1

MSU

CRJ

CRA1

CRQ2

MSQ

MSZ

CRQ2X

MSQX

MRQ

Applicable Auto Switch/Refer to pages 761 to 809 for detailed auto switch specification.

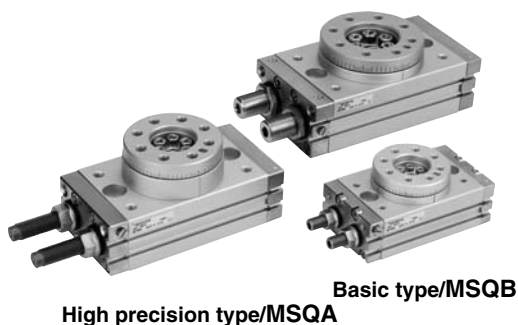
Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length (m)				Pre-wired connector	Applicable load	
					DC		AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)			
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				M9PV	M9P	●	●	●	○	○		
	2-wire			12 V		M9BV		M9B	●	●	●	○	○	—		
	3-wire (NPN)					5 V, 12 V		M9NWV	M9NW	●	●	●	○		○	
	3-wire (PNP)			5 V, 12 V		M9PWV		M9PW	●	●	●	○	○	—		
	2-wire			12 V		M9BWV		M9BW	●	●	●	○	○		IC circuit	
	3-wire (NPN)			5 V, 12 V		M9NAV**		M9NA**	○	○	●	○	○	—		
	3-wire (PNP)					M9PAV**		M9PA**	○	○	●	○	○		—	
	2-wire			12 V		M9BAV**		M9BA**	○	○	●	○	○	—		
Reed switch	—	Grommet	Yes	3-wire (NPN equiv.)	—	5 V	—	A96V	A96	●	—	●	—		—	IC circuit
				No				2-wire	24 V	12 V	100 V	A93V	A93	●	—	●
			100 V or less		A90V	A90	●				—	●	—	—	—	IC circuit

- ** Although it is possible to mount water resistant type auto switches, note that the rotary actuator itself is not of water resistant construction.
- * Lead wire length symbols: 0.5 m Nil (Example) M9NW
 1 m M (Example) M9NWM
 3 m L (Example) M9NWL
 5 m Z (Example) M9NWZ
- * Auto switches are shipped together, (but not assembled).
- * Auto switches marked with a "○" are produced upon receipt of orders.

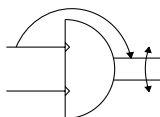


Refer to pages 796 and 797 for the details of solid state auto switch with pre-wired connector.

D-□



JIS symbol



Specifications

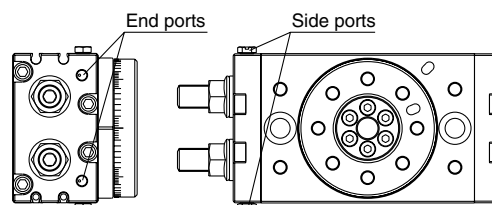
Size		10	20	30	50	70	100	200
Fluid		Air (non-lube)						
Maximum operating pressure	With adjustment bolt	1 MPa						
	With internal shock absorber	0.6 MPa ^{Note 1)}						
Minimum operating pressure	Basic type	0.1 MPa						
	High precision type	0.2 MPa	0.1 MPa			—		
Ambient and fluid temperature		0 to 60°C (with no freezing)						
Cushion	With adjustment bolt	Rubber bumper						
	With internal shock absorber	Shock absorber						
	Shock absorber model	RBA0805-X692	RBA1006-X692	RBA1411-X692	RBA2015-X821	RBA2725-X821		
Angle adjustment range		0 to 190° ^{Note 2)}						
Maximum rotation		190°						
Cylinder bore size		ø15	ø18	ø21	ø25	ø28	ø32	ø40
Port size	End ports	M5 x 0.8		Rc 1/8, G 1/8, NPT 1/8				
	Side ports	M5 x 0.8						

Note 1) The maximum operating pressure of the actuator is restricted by the maximum allowable thrust of the shock absorber.

Note 2) Be careful if the rotation angle of a type with internal shock absorber is set below the value in the table below, the piston stroke will be smaller than the shock absorber's effective stroke, resulting in decreased energy absorption ability.

Size	10	20	30	50	70	100	200
Minimum rotation angle that will not allow decrease of energy absorption ability	52°	43°	40°	60°	71°	62°	82°

The service life of the shock absorber may be different from the rotary table body depending on the operating conditions. Refer to Specific Product Precautions for the suitable replacement period.



Allowable Kinetic Energy and Rotation Time Adjustment Range

Size	Allowable kinetic energy (J) ^{Note 1)}		Rotation time adjustment range for stable operation (s/90°)	
	With adjustment bolt	With internal shock absorber	With adjustment bolt	With ^{Note 2)} internal shock absorber
10	0.007	0.039	0.2 to 1.0	0.2 to 0.7
20	0.025	0.116		
30	0.048	0.116		
50	0.081	0.294	0.2 to 1.5	0.2 to 1.0
70	0.240	1.100		
100	0.320	1.600	0.2 to 2.0	
200	0.560	2.900	0.2 to 2.5	

Note 1) If operated where the kinetic energy exceeds the allowable value, this may cause damage to the internal parts and result in product failure. Please pay special attention to the kinetic energy levels when designing and during operation to avoid exceeding the allowable limit.

Note 2) When the rotation time of the type with an internal absorber is set longer than the time shown in the table above, energy absorption of the shock absorber greatly decreases.

Mass

(g)

Size		10	20	30	50	70	100	200
Basic type	With adjustment bolt	530	990	1290	2080	2880	4090	7580
	With internal shock absorber	540	990	1290	2100	2890	4100	7650
High precision type	With adjustment bolt	560	1090	1410	2240	—		
	With internal shock absorber	570	1090	1410	2260			

Note) Values above do not include auto switch mass.