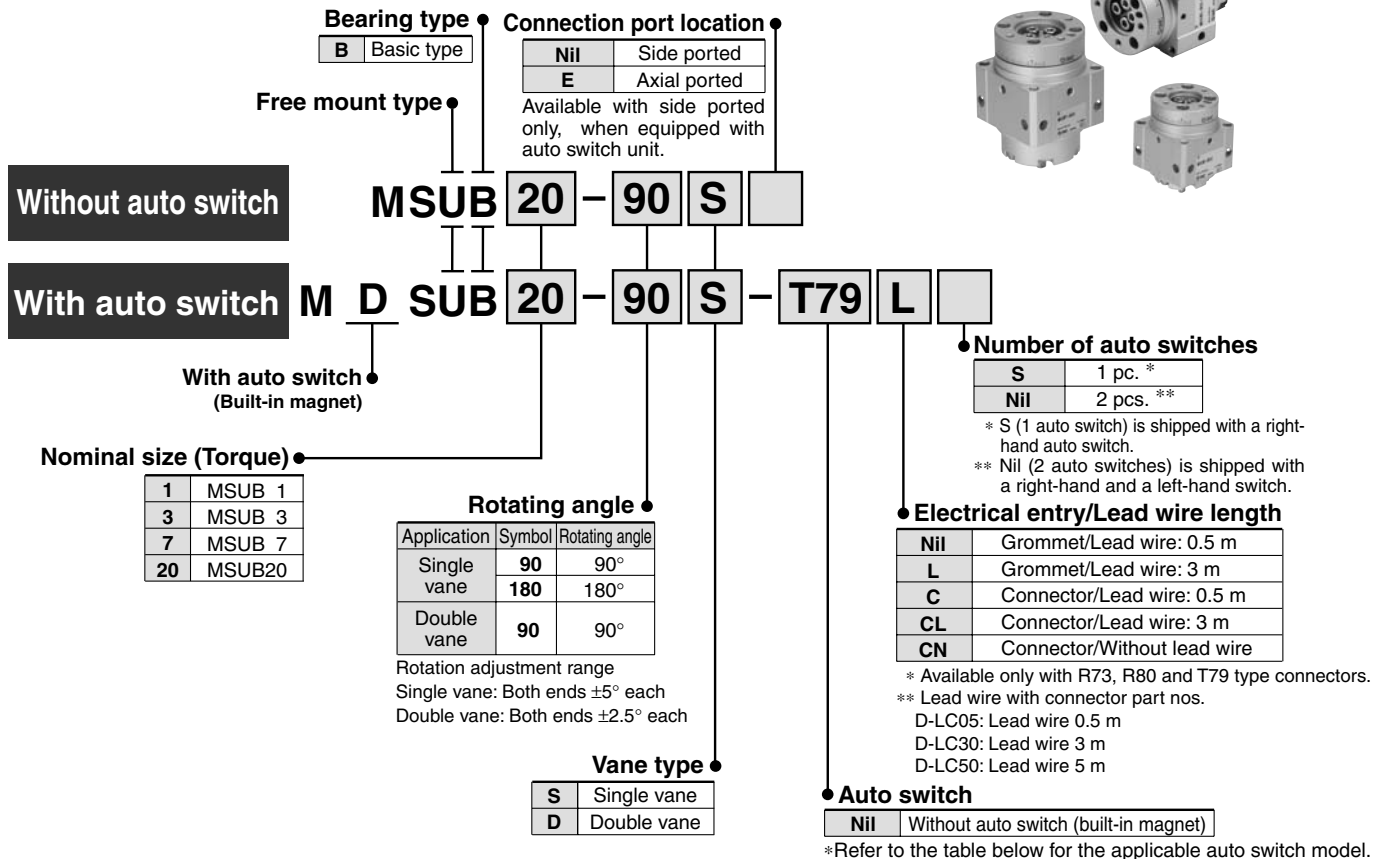


Size: 1, 3, 7, 20



How to Order



Applicable Auto Switch/Refer to pages 761 to 809 for further information on auto switches.

Applicable model	Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire type	Lead wire length (m) *				Pre-wired connector	Applicable load				
						DC	AC	Auto switch model			0.5 (Nil)	3 (L)	5 (Z)	None (N)						
								Perpendicular	In-line											
MDSUB1 MDSUB3	Solid state switch	—	Grommet	Yes	3-wire (NPN) 3-wire (PNP)	24 V	5V,12V	—	S99V	S99	Heavy-duty cord	●	●	—	—	○	IC circuit	Relay, PLC		
									S9PV	S9P		●	●	—	—	○			—	
	T99V	T99		●	●		—	—	○	—										
	Reed switch	—		No	2-wire		5 V, 12 V, 100 V	5 V, 12 V, 24 V, 100 V	—	90	Parallel cord	●	●	●	—	—	IC circuit			
									—	90A	Heavy-duty cord	●	●	●	—				—	
									—	97	Parallel cord	●	●	●	—		—			
—			93A			Heavy-duty cord			●	●	●	—	—							
MDSUB7 MDSUB20	Solid state switch	—	Grommet	Yes	3-wire (NPN) 3-wire (PNP)	24 V	5V,12V	—	—	S79	Heavy-duty cord	●	●	—	—	○	IC circuit	Relay, PLC		
									—	S7P		●	●	—	—	○			—	
							12V	—	T79	●		●	—	—	○	—				
								—	100 V	—		T79C	●	●	●	●	—		—	
	Reed switch	—	No	2-wire	48V,100V		100 V	—	R73	●		●	—	—	—	—				
								—	R73C	●		●	—	●			IC circuit			
								—	24 V or less	—		R80C	●	●		●			●	—

* Lead wire length symbols: 0.5 m Nil (Example) R73C
3 m L (Example) R73CL
5 m Z (Example) R73CZ
None N (Example) R73CN

* Auto switches are shipped together (but not assembled).

* Auto switches marked with "○" are made-to-order specifications.

Order example: MSUB20 single vane type
(connection port side location selected)

1. Standard type (Without auto switches), Rotation 90°, side port location MSUB20-90S
2. With auto switch unit (Without auto switches), Rotation 180°, Side port location MDSUB20-180S
3. With auto switch unit + Auto switch R73, Rotation 180°, Side port location MDSUB20-180S-R73

Specifications

Model *3		MSUB1			MSUB3			MSUB7			MSUB20		
Vane type		Single vane		Double vane	Single vane		Double vane	Single vane		Double vane	Single vane		Double vane
Rotating angle *1		90° ± 10°	180° ± 10°	90° ± 5°	90° ± 10°	180° ± 10°	90° ± 5°	90° ± 10°	180° ± 10°	90° ± 5°	90° ± 10°	180° ± 10°	90° ± 5°
Fluid		Air (Non-lube)											
Proof pressure (MPa)		1.05									1.5		
Ambient and fluid temperature		5 to 60°C											
Operating pressure range (MPa)		0.2 to 0.7			0.15 to 0.7						0.15 to 1.0		
Rotation time adjustment range (s/90°)		0.07 to 0.3 (0.5 MPa)											
Shaft load	Allowable radial load	20 N			40 N			50 N			60 N		
	Allowable thrust load *2	15 N			30 N			60 N			80 N		
		10 N			15 N			30 N			40 N		
	Allowable moment	0.3 N·m			0.7 N·m			0.9 N·m			2.9 N·m		
Bearing		Bearing											
Port location		Side ported or Top ported											
Port size	Side ported	M3 x 0.5			M5 x 0.8								
	Top ported	M3 x 0.5						M5 x 0.8					

*1 Single vane 90° can be adjusted to 90° ± 10° (both ends of rotation ± 5° each)
Single vane 180° can be adjusted to 180° ± 10° (both ends of rotation ± 5° each)
Double vane 90° type can be adjusted to 90° ± 5° (both ends of rotation ± 2.5° each)
• Rotation angles other than 90° and 180° (single vane) are available by special order.
*2 The allowable thrust load is directional. Refer to the allowable load table below for details.

*3 Correspondence to equivalent conventional free-mount types

Rotary table	Free-mount rotary actuator
MSUB 1	CRBU2W10
MSUB 3	CRBU2W15
MSUB 7	CRBU2W20
MSUB20	CRBU2W30

JIS Symbol

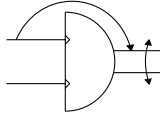
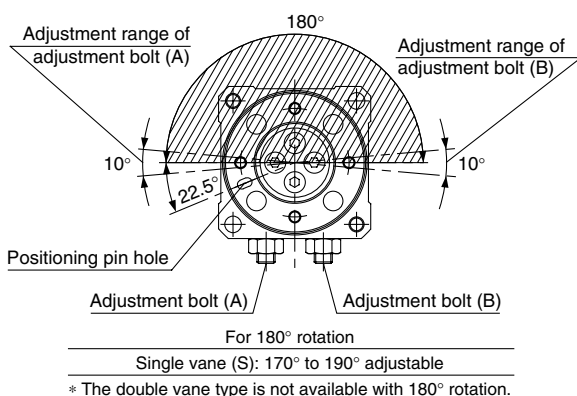
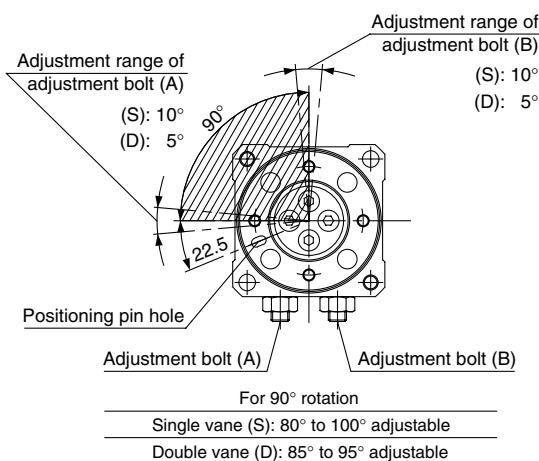


Table Rotation Range

Angle adjustment is possible as shown in the drawings below using adjustment bolts (A) and (B).



Mass

Size	Rotation angle	Basic mass		Auto switch unit + Auto switch 2 pcs.
		Single vane	Double vane	
1	90°	145	150	25
	180°	140	—	
3	90°	230	240	30
	180°	225	—	
7	90°	360	375	50
	180°	355	—	
20	90°	510	580	60
	180°	505	—	

Allowable Load

Do not permit the load and moment applied to the table to exceed the allowable values shown in the table below. (Operation above the allowable values can cause adverse effects on service life, such as play in the table and loss of accuracy.)

Size	Allowable radial load (N)	Allowable thrust load (N)		Allowable moment (N·m)
1	20	(A) 15	(B) 10	0.3
3	40	30	15	0.7
7	50	60	30	0.9
20	60	80	40	2.9