

Specifications

Series	MIW (Double finger)	MIS (Single finger)
Fluid	Air	
Operating pressure	0.2 to 0.7 MPa	
Ambient temperature and fluid temperature	-10 to 60°C (No freezing)	
Lubrication	Non-lube	
Action	Double acting	
Auto switch (optional) ^{Note)}	Solid state auto switch (3-wire, 2-wire)	
Stroke tolerance	$^{+1}_0$ mm	

Option

Finger options	Standard, Tapped on upper and lower faces, Tapped on all faces (5 surfaces including end surface)
Stroke adjuster (Rear end stroke only)	MI□8: Arrangement range 4 mm
	MI□12: Arrangement range 6 mm
	MI□20: Arrangement range 12 mm
	MI□25: Arrangement range 15 mm
	MI□32: Arrangement range 20 mm
Scraper	Can be mounted on standard products

RSQ

RSG

RS□

MI□

Theoretical Output

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure MPa					
				0.2	0.3	0.4	0.5	0.6	0.7
8	4	OUT	50	10	15	20	26	31	36
		IN	38	7	11	15	19	23	26
12	6	OUT	113	23	34	45	57	68	79
		IN	85	17	26	34	43	51	60
20	10	OUT	314	63	94	126	157	188	220
		IN	236	47	71	94	118	142	165
25	10	OUT	491	98	147	196	245	295	344
		IN	412	82	124	165	206	247	288
32	12	OUT	804	161	241	322	402	482	563
		IN	691	138	207	276	346	415	484

Unit: N

Standard Stroke

Double finger type/MIW (mm)

Bore size	Stroke
8	8 mm
12	12 mm
20	20 mm
25	25 mm
32	32 mm

* For MIW, same stroke as bore size

Single finger type/MIS (mm)

Bore size	Stroke
8	10, 20 mm
12	10, 20, 30 mm
20	10, 20, 30 mm
25	30, 50 mm
32	30, 50 mm



Made to Order
(For details, refer to page 2020.)

Symbol	Specifications
-X4	Heat resistant (-10 to 100°C)
-X5	Fluororubber seal
-X63	Fluorine grease
-X79	Grease for food

Mass

Model	Model	Stroke (mm)	Mass (g)	Increase by stroke adjuster (g)	Increase by scraper (g)
MIW	MIW8-8D	8	110	6	3
	MIW12-12D	12	240	10	5
	MIW20-20D	20	650	30	10
	MIW25-25D	25	1550	30	20
	MIW32-32D	32	2650	100	35
MIS	MIS8-10D	10	62	3	2
	MIS8-20D	20	80		
	MIS12-10D	10	130	5	3
	MIS12-20D	20	160		
	MIS12-30D	30	190		
	MIS20-10D	10	300	15	5
	MIS20-20D	20	355		
	MIS20-30D	30	410		
	MIS25-30D	30	800	15	10
	MIS25-50D	50	1000		
	MIS32-30D	30	1350		
	MIS32-50D	50	1650	50	18

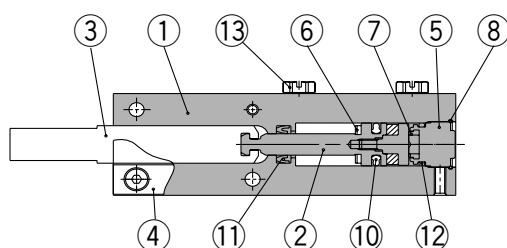
D-□

-X□

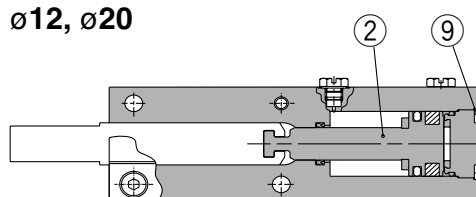
Individual
-X□

Construction/Single Finger Type (MIS)

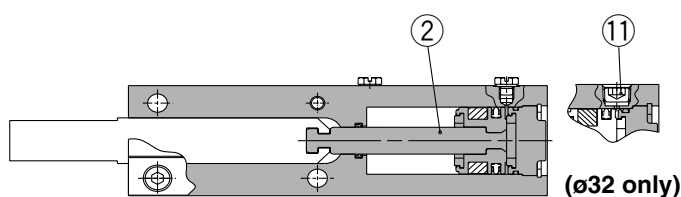
ø8



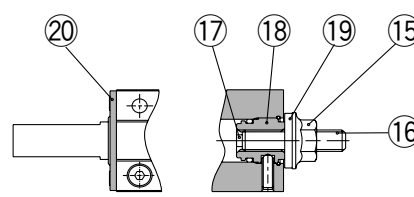
ø12, ø20



ø25, ø32



Option



Scraper

Stroke adjuster

RSQ

RSG

RS□

MI□

Component parts

No.	Description	Material	Note
1	Body	Aluminium alloy	Hard anodized
2	Piston assembly		
3	Finger	Carbon steel	Heat treatment/Special treatment
4	Cover	Aluminium alloy	Hard anodized
5	Cap (S)	Aluminium alloy	White anodized
6	Bumper	Urethane rubber	
7	Head bumper	Urethane rubber	
8	Clip	Carbon steel	(MIS8)
9	R shape retaining ring	Carbon steel	(MIS12 to 32)

No.	Description	Material	Note
10	Piston seal	NBR	
11	Rod seal	NBR	
12	Gasket	NBR	
13	Plug		(MIS8 ... M-3P) (MIS12 to 25 ... M-5P)
14	Hexagon socket taper plug		(MIS32 ... Rc1/8)

Option: adjuster

No.	Description	Material	Note
15	Hexagon nut with flange	Carbon steel	Nickel plated
16	Adjustment bolt	Carbon steel	Nickel plated
17	Adjustment bumper	Urethane rubber	
18	Adjustment cap	Aluminium alloy	White anodized
19	Die thread		

Option: scraper

No.	Description	Material	Note
20	Scraper	Stainless steel + NBR	

Replacement parts

Description Model	Finger			Seal kit	Scraper assembly	Grease pack
	Standard	Tapped on upper and lower faces	Tapped on all faces			
MIS8-10D	MI-A0801-10	MI-A0802-10	MI-A0803-10	MIS8-PS	MIS-A0804	MH-G01 (contents quantity 30 g)
MIS8-20D	MI-A0801-20	MI-A0802-20	MI-A0803-20			
MIS12-10D	MI-A1201-10	MI-A1202-10	MI-A1203-10	MIS12-PS	MIS-A1204	
MIS12-20D	MI-A1201-20	MI-A1202-20	MI-A1203-20			
MIS12-30D	MI-A1201-30	MI-A1202-30	MI-A1203-30	MIS20-PS	MIS-A2004	
MIS20-10D	MI-A2001-10	MI-A2002-10	MI-A2003-10			
MIS20-20D	MI-A2001-20	MI-A2002-20	MI-A2003-20			
MIS20-30D	MI-A2001-30	MI-A2002-30	MI-A2003-30	MIS25-PS	MIS-A2504	
MIS25-30D	MI-A2501-30	MI-A2502-30	MI-A2503-30			
MIS25-50D	MI-A2501-50	MI-A2502-50	MI-A2503-50	MIS32-PS	MIS-A3204	
MIS32-30D	MI-A3201-30	MI-A3202-30	MI-A3203-30			
MIS32-50D	MI-A3201-50	MI-A3202-50	MI-A3203-50			
Main parts No.	③ (1 pc.)			⑩, ⑪, ⑫	⑳	

D-□

-X□

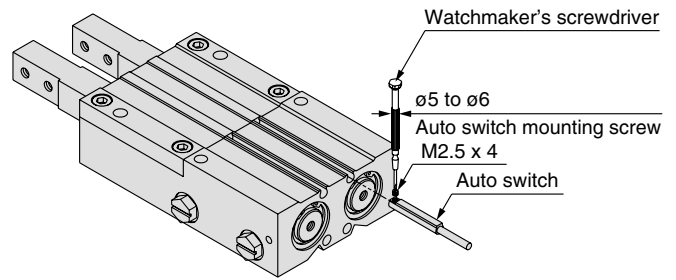
Individual

-X□

Auto Switch Mounting

When mounting an auto switch, insert the auto switch in the switch mounting groove on the escapement from the direction as below figure. Having set the mounting position, tighten the attached auto switch mounting screws with a flat head watchmaker's screwdriver.

- * When adjusting the auto switch mounting screws, use a watchmaker's screwdriver with a handle 5 to 6 mm in diameter. (This is to prevent fracture due to an excessive torque.) The guideline of the tightening torque is 0.1 to 0.15 N·m.



Proper mounting position for stroke end detection

Model	Electrical entry is in the → direction
M9□ M9□V M9□W (V)	
	Electrical entry is in the ← direction

Auto Switch Operating Range

MIW	(mm)				
Auto switch model	ø8	ø12	ø20	ø25	ø32
D-M9□(V) D-M9□W(V)	3	2.5	4	5.5	7

MIS	(mm)				
Auto switch model	ø8	ø12	ø20	ø25	ø32
D-M9□(V) D-M9□W(V)	3	3.5	4.5	5.5	7

Note) The operating ranges are provided as guidelines including hysteresis and are not guaranteed values (with ±30% variations). Hysteresis may fluctuate due to the operating environments.

(mm)

Model		Proper mounting position		Model		Proper mounting position		Model		Proper mounting position	
		D-M9□	D-M9□V			D-M9□	D-M9□V			D-M9□	D-M9□V
		D-M9□W	D-M9□WV			D-M9□W	D-M9□WV			D-M9□W	D-M9□WV
MIW8-8D	A	16.5		MIS12-30D	A	18.5		MIS25-30D	A	7.5	
	B	25			B	49			B	38	
	C	4.5			C	6.5			C	21	
	D	—			D	—			D	—	
	E	6	4		E	3.5	1.5		E	—	—
MIS8-10D	A	16.5		MIW20-20D	A	20.5		MIS25-50D	A	7.5	
	B	27			B	41			B	38	
	C	4.5			C	8.5			C	21	
	D	—			D	—			D	—	
	E	6	4		E	4	2		E	—	—
MIS8-20D	A	16.5		MIS20-10D	A	20.5		MIW32-32D	A	8.5	
	B	37			B	31			B	41	
	C	4.5			C	8.5			C	29	
	D	—			D	—			D	—	
	E	6	4		E	4	2		E	—	—
MIW12-12D	A	18.5		MIS20-20D	A	20.5		MIS32-30D	A	8.5	
	B	31			B	51			B	39	
	C	6.5			C	8.5			C	29	
	D	—			D	—			D	—	
	E	3.5	1.5		E	4	2		E	—	—
MIS12-10D	A	18.5		MIS20-30D	A	20.5		MIS32-50D	A	8.5	
	B	29			B	61			B	59	
	C	6.5			C	8.5			C	29	
	D	—			D	—			D	—	
	E	3.5	1.5		E	4	2		E	—	—
MIS12-20D	A	18.5		MIW25-25D	A	7.5		Note) Adjust the auto switch after confirming the operating conditions in the actual setting.			
	B	39			B	33					
	C	6.5			C	21					
	D	—			D	—					
	E	3.5	1.5		E	—	—				