



Mini cylinder(Stainless steel)—MF Series

■ Installation and application

- 1、When load changes in the work, the cylinder with abundant output capacity shall be selected;
- 2、Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion;
- 3、Necessary protection measure shall be taken in the environment with larger humidity, much dust or water drops, oil dust and welding dregs;
- 4、Dirty substances in the pipe must be cleared away before cylinder is connected with pipeline to prevent the entrance of sundries into the cylinder;
- 5、The medium used by cylinder shall be filtered by the filter core of above 40um;
- 6、Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing;
- 7、The cylinder shall be carried out test run without load before application. Prior to run, buffer shall be turned to the minimum and gradually released to avoid the damage on cylinder caused by excessive impact;
- 8、To avoid side load, otherwise, piston rod will be bent and deformed and damage the thread at the end of the rod. Single-acting type can not be added in return;
- 9、If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust jam cap shall be added in air intake and outlet orifices. The front and back cover can not be dismantled, which shall be especially noticed.

■ Criteria for selection: Cylinder thrust

Unit: Newton (N)

Bore size (mm)	Rod size (mm)	Acting type	Pressure area (mm ²)	Operating pressure MPa						
				0.1	0.2	0.3	0.4	0.5	0.6	0.7
20	8	Single acting-Push type	314.0	—	24.3	55.7	87.1	118.5	149.9	181.3
		Single acting-Pull type	263.8	—	14.3	40.6	67.0	93.4	119.8	146.1
		Double acting	Push side	314.0	31.4	62.8	94.2	125.6	157.0	188.4
			Pull side	263.8	26.4	52.8	79.1	105.5	131.9	158.3
25	10	Single acting-Push type	490.6	—	45.6	94.7	143.8	192.8	241.9	290.9
		Single acting-Pull type	412.1	—	29.9	71.1	112.4	153.6	194.8	236.0
		Double acting	Push side	490.6	49.1	98.1	147.2	196.3	245.3	294.4
			Pull side	412.1	41.2	82.4	123.6	164.9	206.1	247.3
32	12	Single acting-Push type	803.8	—	82.2	162.6	242.9	323.3	403.7	484.1
		Single acting-Pull type	690.8	—	59.6	128.6	197.7	266.8	335.9	405.0
		Double acting	Push side	803.8	80.4	160.8	241.2	321.5	401.9	482.3
			Pull side	690.8	69.1	138.2	207.2	276.3	345.4	414.5
40	16	Single acting-Push type	1256.0	—	158.5	284.1	409.7	535.3	660.9	786.5
		Single acting-Pull type	1055.0	—	118.3	223.8	329.3	434.8	540.3	645.8
		Double acting	Push side	1256.0	125.6	251.2	376.8	502.4	628.0	753.6
			Pull side	1055.0	105.5	211.0	316.5	422.0	527.5	633.0

■ Product series

Series name	Mounting type					Acting type	Bore size	Collocation of sensor switch			
	Basic	FA	LB	TC	SDB			CS1-M	CS1-MX	CS1-MN	CS1-MP
Double acting type: MF Double acting with cushion: MFC		●	●	●	●	Double acting	20 25 32 40	●	●	●	●
Single acting type: MSF、MTF		●	●	●	●	Single acting		●	●	●	●
Double rod type: MFD、MFCD		●	●	●	●	Double acting		●	●	●	●
Adjustable stroke type: MFJ、MFCJ		●	●	●	●	Double acting (with cushion)		●	●	●	●
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Mini cylinder(Stainless steel)

Airtac

MF Series

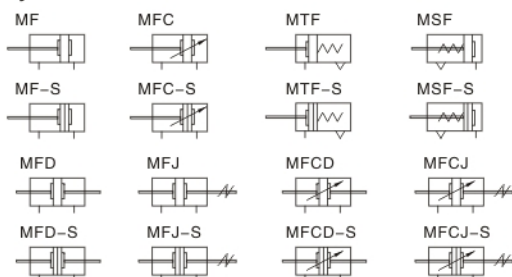


Specification

Bore size (mm)		20	25	32	40
Acting type		Double acting type、Double acting with cushion type Single acting-Push type、Single acting-Pull type			
Fluid		Air(to be filtered by 40um filter element)			
Operating pressure	Double acting	0.1~1.0MPa(15 ~145Psi)			
	Single acting	0.2~1.0MPa(28 ~145Psi)			
Proof pressure		1.5MPa(215Psi)			
Temperature ℃		-20~70			
Speed range		Single acting type: 50~800 mm/s		Double acting type: 30~800mm/s	
Stroke tolerance		0~150 ^{+1.0} ₀		> 150 ^{+1.4} ₀	
Cushion type		MFC、MFCD、MFCJ Series: Variable cushion; Other series: Bumper			
Port size ①		1/8"			1/4"

① PT thread, NPT thread and G thread are available;
Add: Refer to PVI-39~VI-50 for detail of sensor switch.

Symbol



Product feature

- 1、JIS standard is implemented;
- 2、Piston adopts heterogeneous two way seal structure.
It has compact size and has the function of oil reservation;
- 3、Front cover owns fixed anti-impact pad which can reduce the impact of direction-change of the cylinder;
- 4、There are several modes of back cover, which makes the installation of cylinder more convenient;
- 5、Front and back cover and stainless steel block adopt riveted rolling packed structure to form a reliable connection;
- 6、The cylinder body has stainless steel pipes with high precision to produce high strength and corrosion resistance;
- 7、With the same bore size and stroke, cylinders of MF series are shorter than ISO6432 standard cylinders;
- 8、There are cylinders and mounting accessories with several specifications for your choice.

Stroke

Bore size (mm)		Standard stroke (mm)	Max. stroke	Available stroke
Double acting	20	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200 250 300 350 400 450 500	500	600
	25		600	700
	32	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600	600	700
	40		600	700
Single acting	20		—	—
	25	10 15 20 25 30 40 50 60 75 80 100 125 150	—	—
	32		—	—
	40		—	—

Remark: Contact us for non-standard stroke.

Ordering code of MF, MFC, MSF, MTF

MF — 32 × 50 — S — CM — □ — P									
Bore size		Stroke		Back cover		Magnet		Thread type	
Model		MFC: Mini cylinder(Double acting with cushion type)		CM: Round-end type		S: With magnet		P: PT	
MF: Mini cylinder(Double acting type)		MSF: Mini cylinder(Single acting-Push type)		CA: Pivot type		Blank: Without magnet		T: NPT	
MTF: Mini cylinder(Single acting-Pull type)		U: Flat-end type		① Mounting type		Blank: No accessories		G: G	
								FA: FA type	
								SDB: SDB type	
								LB: LB type	
								TC: TC type	

① Please refer to PIV-17 for accessory parts.

Ordering code of MFD, MFCD, MFJ, MFCJ

MFD — 32 × 50 — S — □ — P									
Bore size		Stroke		Adjustable stroke		Magnet		Thread type	
Model		MFCJ: Mini cylinder(Adjustable stroke with cushion type)		10: 10mm		S: With magnet		P: PT	
MFD: Mini cylinder(Double rod type)		MFCD: Mini cylinder(Double rod with cushion type)		20: 20mm		Blank: Without magnet		T: NPT	
MFJ: Mini cylinder(Adjustable stroke type)				30: 30mm				G: G	
				40: 40mm				① Mounting type	
				50: 50mm				Blank: No accessories	
				75: 75mm				FA: FA type	
				100: 100mm				LB: LB type	
								TC: TC type	

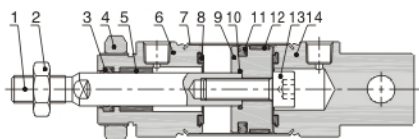
① Please refer to PIV-17 for accessory parts.

Mini cylinder(Stainless steel)

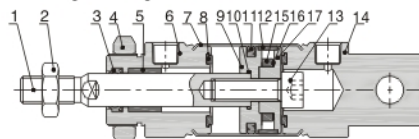
MF Series

Inner structure and material of major parts

Double acting without magnet type



Double acting with magnet

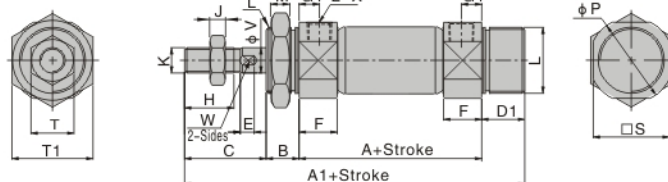


NO.	Item	Material
1	Piston rod	Carbon steel with 20um chrome plated
2	Rod nut	Carbon steel
3	Front cover packing	NBR
4	Front cover nut	Carbon steel
5	Bushing	Wear resistant material
6	Front cover	Aluminum alloy
7	Barrel	SUS304
8	Bumper	TPU
9	Piston	Aluminum alloy
10	O-ring	NBR
11	Piston O-ring	NBR
12	Wear ring	Wear resistant material
13	Screw	Carbon steel
14	Back cover	Aluminum alloy
15	Magnet	Sintered metal(Neodymium-iron-boron)
16	Magnet washer	NBR
17	Magnet holder	Aluminum alloy

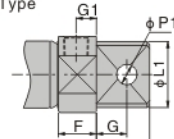
Dimensions

MF
MFC

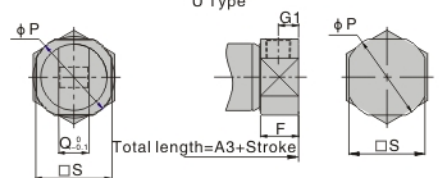
CM Type



CA Type



U Type



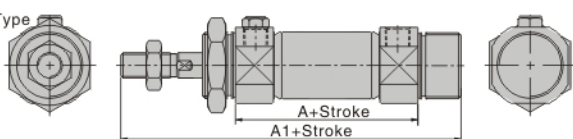
Bore size/Item	A	A1	A2	A3	B	C	D	D1	E	F		G	G1		H	J
										U Type	Other		U Type	Other		
20	62	116	124	103	14	27	21	13	5	14.5	14.5	12	7.5	7.5	15.5	5
25	62	120	128	108	14	31	21	13	5.5	15.5	14.5	12	8	7.5	19.5	6
32	64	122	136	110	14	31	27	13	5.5	15.5	14.5	15	8	7.5	19.5	6
40	88	154	165	138.5	16	34	27	16	7	22	21.5	15	11.5	11	21	8

Bore size/Item	K	L	L1	M	P	P1	Q	S	T	T1	X	V
20	M8 × 1.25	M20 × 1.5	20	8	29	8	12	25	13	26	1/8"	8
25	M10 × 1.25	M26 × 1.5	26	8	33.5	8	12	30	17	32	1/8"	10
32	M10 × 1.25	M26 × 1.5	26	8	37.5	10	20	34.5	17	32	1/8"	12
40	M14 × 1.5	M32 × 2.0	32	10	46.5	10	20	42.5	19	41	1/4"	16

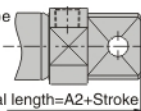
Remark: 1、The dimensions of magnet type cylinder are the same as non-magnet type cylinder;
2、The dimensions of MFC series are the same as MF series.

MSF

CM Type



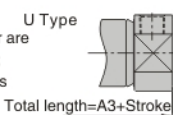
CA Type



Remark:

- The dimensions of magnet type cylinder are the same as non-magnet type cylinder;
- The unmarked dimension is the same as MF standard type.

U Type

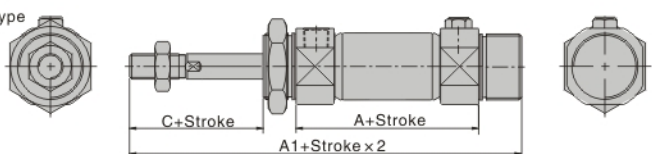


Item	A			A1		
Bore size	1~50	51~100	101~150	1~50	51~100	101~150
Stroke	1~50	51~100	101~150	1~50	51~100	101~150
20	87	112	137	141	166	191
25	87	112	137	145	170	195
32	89	114	139	147	172	197
40	113	138	163	179	204	229

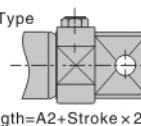
Item	A2			A3		
Bore size	1~50	51~100	101~150	1~50	51~100	101~150
Stroke	1~50	51~100	101~150	1~50	51~100	101~150
20	149	174	199	128	153	178
25	153	178	203	133	158	183
32	161	186	211	135	160	185
40	190	215	240	163.5	188.5	213.5

MTF

CM Type



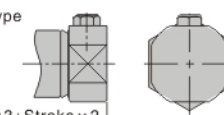
CA Type



Remark:

- The dimensions of magnet type cylinder are the same as non-magnet type cylinder;
- The unmarked dimension is the same as MF standard type.

U Type



Item	A			A1		
Bore size	1~50	51~100	101~150	1~50	51~100	101~150
Stroke	1~50	51~100	101~150	1~50	51~100	101~150
20	87	112	137	141	166	191
25	87	112	137	145	170	195
32	89	114	139	147	172	197
40	113	138	163	179	204	229

Item	A2			A3			C
Bore size	1~50	51~100	101~150	1~50	51~100	101~150	
Stroke	1~50	51~100	101~150	1~50	51~100	101~150	
20	149	174	199	128	153	178	27
25	153	178	203	133	158	183	31
32	161	186	211	135	160	185	31
40	190	215	240	163.5	188.5	213.5	34

Mini cylinder(Stainless steel)

MF Series

MFD MFCD			Remark: 1、The dimensions of magnet type cylinder are the same as non-magnet type cylinder.	
MFJ MFCJ			Remark: 1、The dimensions of magnet type cylinder are the same as non-magnet type cylinder.	

Bore size\Item	A	A1	A2	B	C	C1	E
20	62	144	141	14	27	24	5
25	62	152	148	14	31	27	5.5
32	64	154	150	14	31	27	5.5
40	88	188	182	16	34	28	7

Bore size\Item	F	G1	H	J	J1
20	14.5	7.5	15.5	5	5
25	14.5	7.5	19.5	6	6
32	14.5	7.5	19.5	6	6
40	21.5	11	21	8	7

Bore size\Item	K	K1	L
20	M8 × 1.25	M8X1.25	M20 × 1.5
25	M10 × 1.25	M10X1.25	M26 × 1.5
32	M10 × 1.25	M10X1.25	M26 × 1.5
40	M14 × 1.5	M12X1.25	M32 × 2.0

Bore size\Item	M	P	S	T	T1	X	V
20	8	29	25	13	26	1/8"	8
25	8	33.5	30	17	32	1/8"	10
32	8	37.5	34.5	17	32	1/8"	12
40	10	46.5	42.5	19	41	1/4"	16

Mini cylinder(Stainless steel)

Accessories

Ordering code

Accessory	Cylinder model	Bore size	Accessories type
F	MF	20	LB
			①
			LB
			FA
			SDB
			TC

① Please see accessory list for accessory detail;

② SDB is attached with relevant PIN.

Accessories for choosing list

Accessories		Mounting accessory				Knuckle ①				Sensor switch②
Cylinder model		LB	FA	SDB	TC	I	Y	F	U	CS1-M
MF	Standard	●	●	●	●	●	●	●	●	×
MFC	With magnet	●	●	●	●	●	●	●	●	●
MSF	Standard	●	●	●	●	●	●	●	●	×
MTF	With magnet	●	●	●	●	●	●	●	●	●
MFD	Standard	●	●	×	●	●	●	●	●	×
MFCJ	With magnet	●	●	×	●	●	●	●	●	●
MFJ	Standard	●	●	×	●	●	●	●	●	×
MFCJ	With magnet	●	●	×	●	●	●	●	●	●

①: Please refer to PVI-33~VI-38 for knuckle detail;

②: Please refer to PVI-39~VI-50 for detail of sensor switch.

Material of accessories

Accessories	Mounting accessories				Joint accessories			
	LB	FA	SDB	TC	I	Y	F	U
Material	SPCC			Cast steel	Carbon steel			

List for ordering code of accessories

Accessories	Mounting accessory				
Bore size	LB	FA	TC	SDB	
20	F-MF20LB	F-MF20FA	F-MF20TC	F-MF20SDB	
25	F-MF25LB	F-MF25FA	F-MF25TC		
32				F-MF32SDB	
40	F-MF40LB	F-MF40FA	F-MF40TC		
Accessories	Knuckle				Sensor switch
Bore size	I:I knuckle	Y:Y knuckle	F:F knuckle	U:U knuckle	
20	F-M08125IF	F-M08125YF	F-M08125F	F-M08125U	CS1-M
25	F-M10125IF	F-M10125YF	F-M10125F	F-M10125U	
32					
40	F-M14150IF	F-M14150YF	F-M14150F	F-M14150U	

Dimensions

