



Mini cylinder(Stainless steel)—MI Series

— In accordance with ISO6432 standard

■ 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、The cylinder shall avoid the influence of side load in operation to maintain the normal work of cylinder and extend the service life;
- 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
8	4	Single acting—Push type	50.2	—	3.6	8.6	13.6	18.6	23.6	28.7
		Single acting—Pull type	37.7	—	1.0	4.8	8.6	12.3	16.1	19.9
		Double acting Push side	50.2	5.0	10.1	15.1	20.1	25.1	30.1	35.2
		Double acting Pull side	37.7	3.8	7.5	11.3	15.1	18.8	22.6	26.4
10	4	Single acting—Push type	78.5	—	5.9	13.8	21.6	29.5	37.3	45.2
		Single acting—Pull type	65.9	—	3.4	10.0	16.6	23.2	29.8	36.4
		Double acting Push side	78.5	7.9	15.7	23.6	31.4	39.3	47.1	55.0
		Double acting Pull side	65.9	6.6	13.2	19.8	26.4	33.0	39.6	46.2
12	6	Single acting—Push type	113.0	—	10.1	21.4	32.7	44.0	55.3	66.6
		Single acting—Pull type	84.8	—	4.5	12.9	21.4	29.9	38.4	46.9
		Double acting Push side	113.0	11.3	22.6	33.9	45.2	56.5	67.8	79.1
		Double acting Pull side	84.8	8.5	17.0	25.4	33.9	42.4	50.9	59.4
16	6	Single acting—Push type	201.0	—	14.6	34.7	54.8	74.9	95.0	115.1
		Single acting—Pull type	172.7	—	8.9	26.2	43.5	60.8	78.0	95.3
		Double acting Push side	201.0	20.1	40.2	60.3	80.4	100.5	120.6	140.7
		Double acting Pull side	172.7	17.3	34.5	51.8	69.1	86.4	103.6	120.9
20	8	Single acting—Push type	314.0	—	25.3	56.7	88.1	119.5	150.9	182.3
		Single acting—Pull type	263.8	—	15.3	41.6	68.0	94.4	120.8	147.1
		Double acting Push side	314.0	31.4	62.8	94.2	125.6	157.0	188.4	219.8
		Double acting Pull side	263.8	26.4	52.8	79.1	105.5	131.9	158.3	184.6
25	10	Single acting—Push type	490.6	—	43.1	92.2	141.3	190.3	239.3	288.4
		Single acting—Pull type	412.1	—	27.4	68.6	109.8	151.1	192.3	233.5
		Double acting Push side	490.6	49.1	98.1	147.2	196.3	245.3	294.4	343.4
		Double acting Pull side	412.1	41.2	82.4	123.6	164.9	206.1	247.3	288.5
32	12	Single acting—Push type	804.3	30.2	110.9	191.3	277.1	352.1	432.6	513.0
		Single acting—Pull type	691.2	19.1	88.2	157.4	226.5	295.6	364.7	388.8
		Double acting Push side	804.3	80.2	160.9	241.3	327.1	402.1	482.6	563.0
		Double acting Pull side	691.2	69.1	138.2	207.4	276.5	345.6	414.7	438.8
40	16	Single acting—Push type	1256.6	64.7	190.3	316.0	441.7	567.3	693.0	818.7
		Single acting—Pull type	1055.6	44.6	150.1	255.7	361.2	466.8	572.4	677.9
		Double acting Push side	1256.6	125.7	251.3	377.0	502.7	628.3	754.0	879.7
		Double acting Pull side	1055.6	105.6	211.1	316.7	422.2	527.8	633.4	738.9

■ Product series

Series name	Mounting type					Acting type	Bore size	Collocation of sensor switch				Memo
	Basic	FA	SDB	LB	TC			CS1-M	CS1-MX	CS1-MN	CS1-MP	
Double acting type: MI Double acting with cushion: MIC	●	●	●	●	●	Double acting Double acting (with cushion)	8	●	●	●	●	The bore size of double acting with cushion type is 16-40
Single acting type: MSI、MTI	●	●	●	●	●	Single acting	10	●	●	●	●	
Double rod type: MID、MICD	●	●	●	●	●	Double acting	12	●	●	●	●	The bore size of double acting with cushion type is 16-40
Adjustable stroke type: MIJ、MICJ	●	●	●	●	●	Double acting (with cushion)	16	●	●	●	●	
	●	●	●	●	●		20	●	●	●	●	
	●	●	●	●	●		25	●	●	●	●	
	●	●	●	●	●		32	●	●	●	●	
	●	●	●	●	●		40	●	●	●	●	
Page	IV-02							VI-39				



Mini cylinder(Stainless steel,ISO6432)

AIRTAC

MI Series

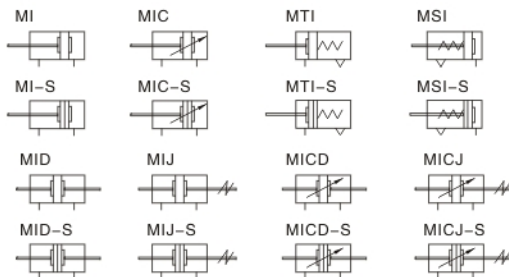


■ Specification

Bore size		mm	8	10	12	16	20	25	32	40
Acting type			Double acting type、Single acting-Push type、Single acting-Pull type							
			-			Double acting with cushion type				
Fluid			Air(to be filtered by 40um filter element)							
Operating	Double acting		0.1~1.0MPa(14~145Psi)							
Pressure	Single acting		0.2~1.0MPa(28~145Psi)							
Proof pressure			1.5MPa(215Psi)							
Temperature			℃ -20~70							
Speed range			mm/s		Double acting type: 30~800				Single acting type: 50~800	
Stroke tolerance			0~150 ^{+1.0} ₀				>150 ^{+1.4} ₀			
Cushion type			MIC Series: Variable cushion; Other series: Bumper							
Port size			①		M5 x 0.8			1/8"		1/4"

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

■ Symbol



■ Product feature

- 1、In accordance with ISO6432 standard(φ8~φ25)
- 2、Front and back cover owns fixed bumper pad which can reduce the impact of direction-change of the cylinder;
- 3、There are several mode of back cover, which makes the installation of cylinder more convenient;
- 4、Front and back cover and stainless steel block adopt riveted rolling packed structure to form a reliable connection;
- 5、Piston rod and cylinder body with the material of stainless steel make the cylinder adapt general working environment with corrosivity;
- 6、There are cylinders and accessories with several specifications for installation for your choice.

■ Stroke

Bore size (mm)		Standard stroke (mm)																Max. stroke	Available stroke
Double acting	8	10	15	20	25	30	40	50	60	75	80	100	125	150				150	200
	10	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	200	200
	12	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	500
	16	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300
Double acting with cushion	20																	500	700
	25	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300
	32	350	400	450	500	600												600	700
	40																	600	700
Single acting	8																	-	-
	10	10	15	20	25	30	40	50										-	-
	12																	-	-
	16	10	15	20	25	30	40	50	60	75	80	100						-	-
	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 MI、MIC、MSI、MTI

MI — 10 × 40 — S — CA — □ — G									
Bore size		Stroke		Mounting type		Thread type			
Model				Blank: No accessories		G: G			
MI: Mini cylinder(Double acting type)				FA: FA type					
MIC: Mini cylinder(Double acting with cushion type)				SDB: SDB type					
MSI: Mini cylinder(Single acting-Push type)				LB: LB type					
MTI: Mini cylinder(Single acting-Pull type)				TC: TC type					
Magnet				Back cover					
S: With magnet				Back cover type		Adaptable bore size			
Blank: Without magnet				CA: Pivot type		8、10、12、16、20、25			
				U: Perpendicular 90°		8、10、12、16、20、25、32、40			
				R: Axial air-in		16、20、25、32、40			
				CM: Round-end type		16、20、25、32、40			

① MIC series don't have R type back cover; ② Please refer to PIV-06 for accessory parts.
③ When it is M5 thread, the code is blank.

■ Ordering code of MID、MICD、MIJ、MICJ

MID — 10 × 40 — S — □ — G									
Bore size		Stroke		Adjustable stroke		Mounting type			
Model				10: 10mm		Blank: No accessories			
MID: Mini cylinder(Double rod type)				20: 20mm		FA: FA type			
MICD: Mini cylinder(Double rod with cushion type)				30: 30mm		LB: LB type			
MIJ: Mini cylinder(Adjustable stroke type)				40: 40mm		TC: TC type			
MICJ: Mini cylinder(Adjustable stroke with cushion type)				50: 50mm		Magnet			
				75: 75mm		S: With magnet			
				100: 100mm		Blank: Without magnet			

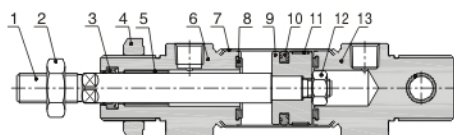
① Please refer to PIV-06 for accessory parts.
② When it is M5 thread, the code is blank.



Mini cylinder(Stainless steel,ISO6432)

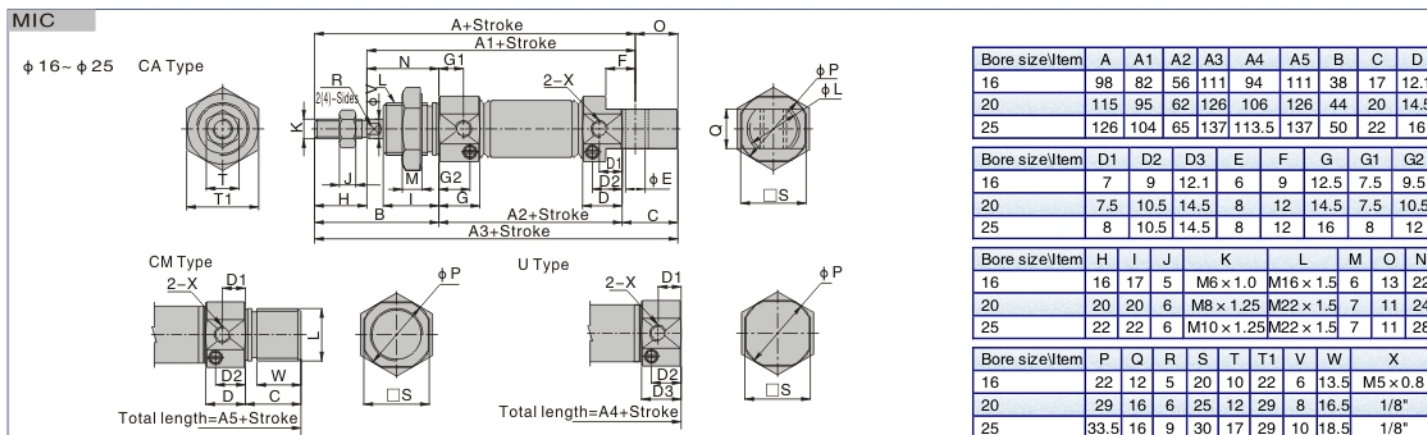
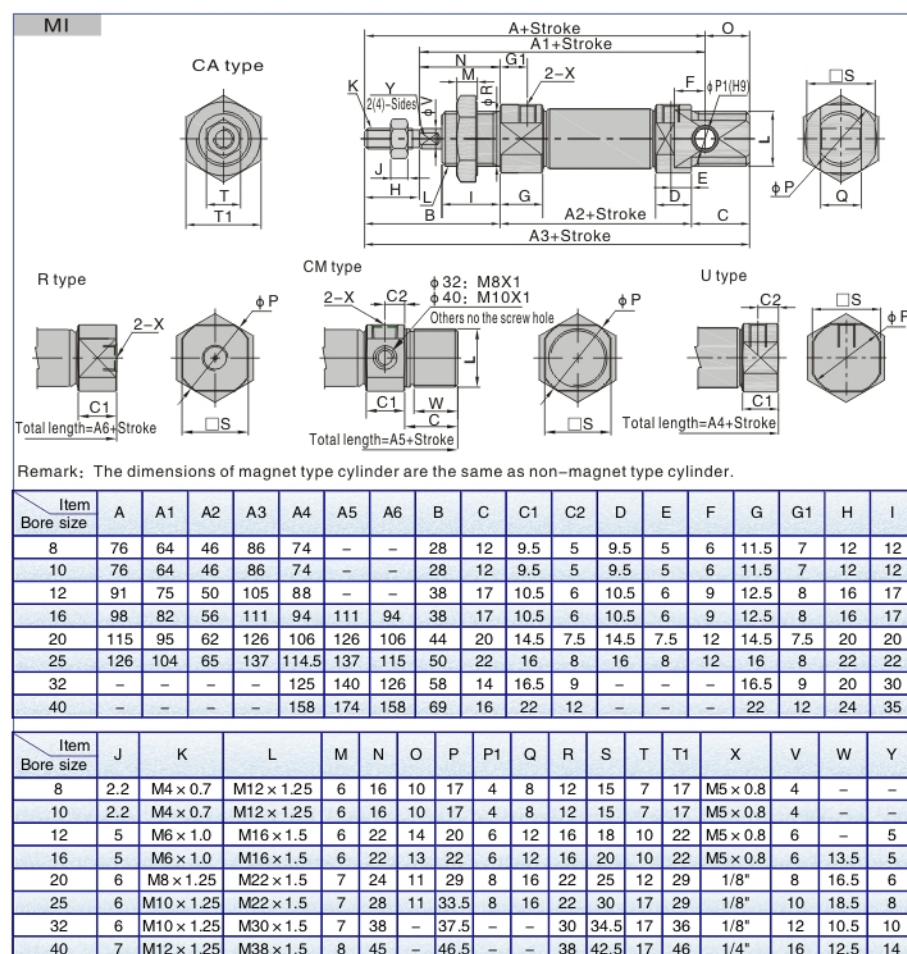
MI Series

Inner structure and material of major parts



NO.	Item	Material
		8-12(Bore size) 16-40(Bore size)
1	Rod	SUS304
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	SUS303 Aluminum alloy
10	Piston O-ring	NBR
11	Wear ring	Wear resistant material
12	Nut	Carbon steel
13	Back cover	Aluminum alloy

■ Dimensions

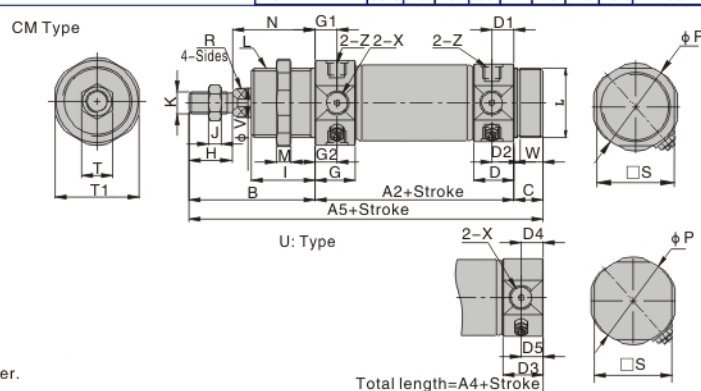


φ 32, φ 40

Bore size/Item	A2	A4	A5	B	C	D	D1	D2	D3	D4
32	68	124	140	58	14	16.5	9	11.5	14.5	7.5
40	89	157.5	174	69	16	22	12	12	21.5	11.5

Bore size/Item	D5	G	G1	G2	H	I	J	K
32	11	16.5	9	11.8	20	30	6	M10 × 1.25
40	14	22	12	12	24	35	7	M12 × 1.25

Bore size/Item	L	M	N	P	S	T	T1	V	W	X
32	M30 × 1.5	7	38	37.5	34.5	17	36	12	10.5	1/8"
40	M38 × 1.5	8	45	46.5	42.5	17	46	16	12.5	1/4"



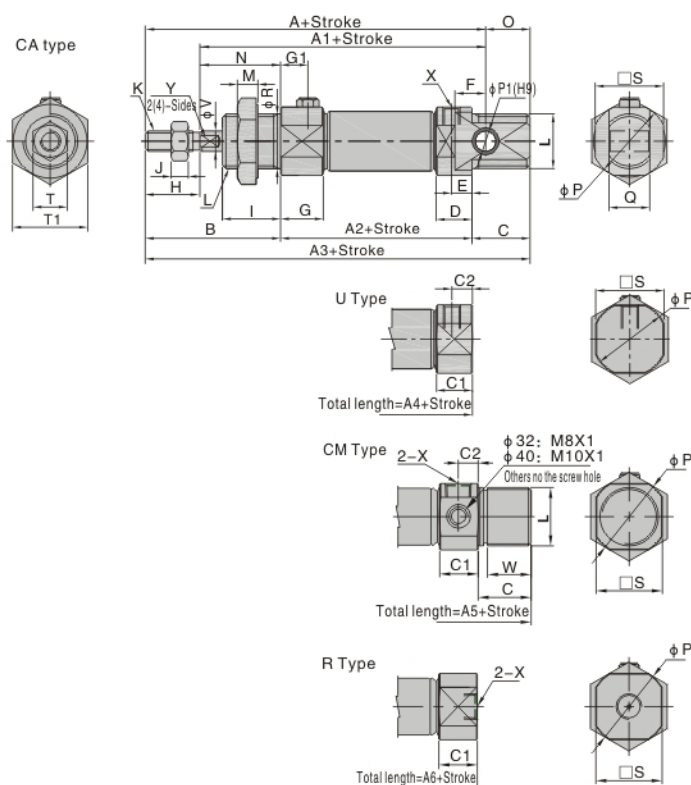
Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

Mini cylinder(Stainless steel,ISO6432)

AIRTAC

MI Series

MSI



Bore size\Item	A			A1		
Stroke	0-50	51-100	101-150	0-50	51-100	101-150
8	101	-	-	89	-	-
10	101	-	-	89	-	-
12	116	-	-	100	-	-
16	123	148	-	107	132	-
20	140	165	190	120	145	170
25	151	176	201	129	154	179
32	-	-	-	-	-	-
40	-	-	-	-	-	-

Bore size\Item	A2			A3		
Stroke	0-50	51-100	101-150	0-50	51-100	101-150
8	71	-	-	111	-	-
10	71	-	-	111	-	-
12	75	-	-	130	-	-
16	81	106	-	136	161	-
20	87	112	137	151	176	201
25	90	115	140	162	187	212
32	-	-	-	-	-	-
40	-	-	-	-	-	-

Bore size\Item	A4			A5		
Stroke	0-50	51-100	101-150	0-50	51-100	101-150
8	99	-	-	-	-	-
10	99	-	-	-	-	-
12	113	-	-	-	-	-
16	119	144	-	136	161	-
20	131	156	181	151	176	201
25	139.5	164.5	189.5	162	187	212
32	150	175	200	165	190	215
40	183	208	233	199	224	249

Bore size\Item	A6			B	C	C1	C2
Stroke	0-50	51-100	101-150				
8	-	-	-	28	12	9.5	5
10	-	-	-	28	12	9.5	5
12	-	-	-	38	17	10.5	6
16	119	144	-	38	17	10.5	6
20	131	156	181	44	20	14.5	7.5
25	140	165	190	50	22	16	8
32	151	176	201	58	14	16.5	9
40	183	208	233	69	16	22	12

Bore size\Item	D	E	F	G	G1	H	I	J	K	L	M
8	9.5	5	6	11.5	7	12	12	2.2	M4×0.7	M12×1.25	6
10	9.5	5	6	11.5	7	12	12	2.2	M4×0.7	M12×1.25	6
12	10.5	6	9	12.5	8	16	17	5	M6×1.0	M16×1.5	6
16	10.5	6	9	12.5	8	16	17	5	M6×1.0	M16×1.5	6
20	14.5	7.5	12	14.5	7.5	20	20	6	M8×1.25	M22×1.5	7
25	16	8	12	16	8	22	22	6	M10×1.25	M22×1.5	7
32	-	-	-	16.5	9	20	30	6	M10×1.25	M30×1.5	7
40	-	-	-	22	12	24	35	7	M12×1.25	M38×1.5	8

Bore size\Item	N	O	P	P1	Q	R	S	T	T1	X	V	W	Y
8	16	10	17	4	8	12	15	7	17	M5×0.8	4	-	-
10	16	10	17	4	8	12	15	7	17	M5×0.8	4	-	-
12	22	14	20	6	12	16	18	10	22	M5×0.8	6	-	5
16	22	13	22	6	12	16	20	10	22	M5×0.8	6	13.5	5
20	24	11	29	8	16	22	25	12	29	1/8"	8	16.5	6
25	28	11	33.5	8	16	22	30	17	29	1/8"	10	18.5	8
32	38	-	37.5	-	-	30	34.5	17	36	1/8"	12	10.5	10
40	45	-	46.5	-	-	38	42.5	17	46	1/4"	16	12.5	14

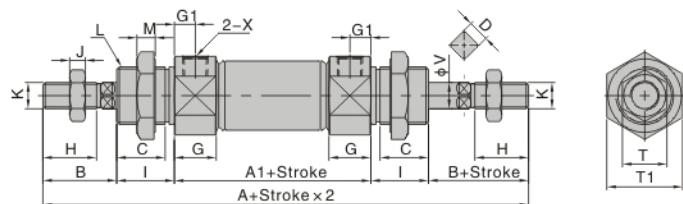
Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.



Mini cylinder(Stainless steel,ISO6432)

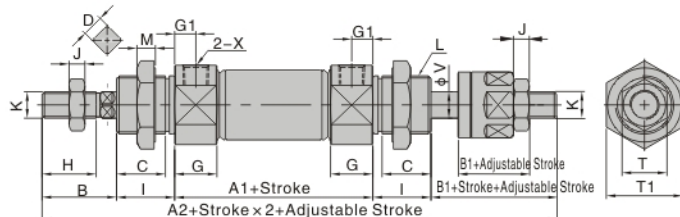
MI Series

MID



Item Bore size	A	A1	A2	B	B1	C	D	G	G1	H	I
8	104	48	102.7	16	14.7	9.5	—	11.5	7	10.5	12
10	104	48	102.7	16	14.7	9.5	—	11.5	7	10.5	12
12	128	52	128	21	21	14.5	5(2-Sides)	12.5	8	14	17
16	134	58	134	21	21	13.5	5(2-Sides)	12.5	8	14.5	17
20	150	62	151	24	25	16.5	6(2-Sides)	14.5	7.5	18	20
25	165	65	164	28	27	18.5	8(4-Sides)	16	8	20.5	22
32	184	68	183	28	27	26.5	10(4-Sides)	16.5	9	17.5	30
40	227	89	221	34	28	31.5	14(4-Sides)	22	12	21	35

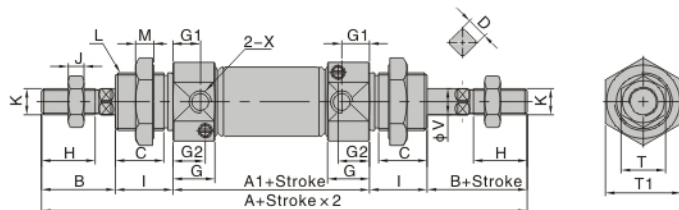
MIJ



Item Bore size	J	K	L	M	T	T1	V	X
8	2.2	M4 x 0.7	M12 x 1.25	6	7	17	4	M5 x 0.8
10	2.2	M4 x 0.7	M12 x 1.25	6	7	17	4	M5 x 0.8
12	5	M6 x 1	M16 x 1.5	6	10	22	6	M5 x 0.8
16	5	M6 x 1	M16 x 1.5	6	10	22	6	M5 x 0.8
20	6	M8 x 1.25	M22 x 1.5	7	12	29	8	1/8"
25	6	M10 x 1.25	M22 x 1.5	7	17	29	10	1/8"
32	6	M10 x 1.25	M30 x 1.5	7	17	36	12	1/8"
40	7	M12 x 1.25	M38 x 1.5	8	17	46	16	1/4"

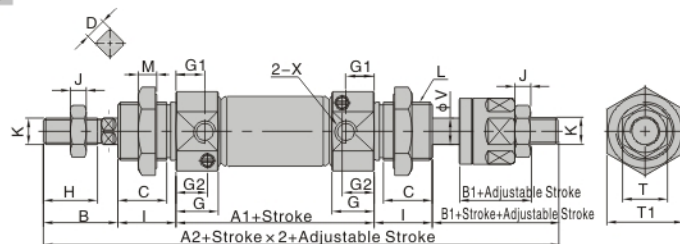
Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

MICD



Item Bore size	A	A1	A2	B	B1	C	D	G	G1	G2	H
16	132.4	56.4	132.4	21	21	13.5	5(2-Sides)	12.5	7.5	9.5	14.5
20	150	62	151	24	25	16.5	6(2-Sides)	14.5	7.5	10.5	18
25	165	65	164	28	27	18.5	8(4-Sides)	16	8	12	20.5
32	184	68	183	28	27	26.5	10(4-Sides)	16.5	9	11.8	17.5
40	227	89	221	34	28	31.5	14(4-Sides)	22	12	12	21

MICJ



Item Bore size	I	J	K	L	M	T	T1	V	X
16	17	5	M6 x 1	M16 x 1.5	6	10	22	6	M5 x 0.8
20	20	6	M8 x 1.25	M22 x 1.5	7	12	29	8	1/8"
25	22	6	M10 x 1.25	M22 x 1.5	7	17	29	10	1/8"
32	30	6	M10 x 1.25	M30 x 1.5	7	17	36	12	1/8"
40	35	7	M12 x 1.25	M38 x 1.5	8	17	46	16	1/4"

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

Mini cylinder(Stainless steel,ISO6432)

Accessories

Ordering code

Accessory	Cylinder model	Bore size	Accessory type
			①
			LB LB Type
			FA FA Type
			SDB ② SDB Type
			TC TC Type

① Please see accessory list for detailed information of accessories.

② SDB is attached with relevant PIN.

Accessory selection

Cylinder model	Accessories	Mounting accessory				Knuckle ①				Sensor switch ②
		LB	FA	SDB	TC	Y	I	F	U	CS1-M
MI	Standard	●	●	●	●	●	●	●	●	×
MIC	With magnet	●	●	●	●	●	●	●	●	●
MSI	Standard	●	●	●	●	●	●	●	●	×
MTI	With magnet	●	●	●	●	●	●	●	●	●
MID	Standard	●	●	×	●	●	●	●	●	×
MICD	With magnet	●	●	×	●	●	●	●	●	●
MIJ	Standard	●	●	×	●	●	●	●	●	×
MICJ	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
Bore size								
8-40		SPCC		SUS304				Carbon steel

List for ordering code of accessories

Bore size	Accessories				Sensor switch
	LB	FA	SDB	TC	
8	F-MI8LB	F-MI8FA	F-MI8SDB	F-MI8TC	CS1-M
10	F-MI10LB	F-MI10FA	F-MI10SDB	F-MI10TC	
12	F-MI12LB	F-MI12FA	F-MI12SDB	F-MI12TC	
16	F-MI16LB	F-MI16FA	F-MI16SDB	F-MI16TC	
20	F-MI20LB	F-MI20FA	F-MI20SDB	F-MI20TC	
25	F-MI25LB	F-MI25FA	F-MI25SDB	F-MI25TC	
32	F-MI32LB	F-MI32FA	F-MI32SDB	F-MI32TC	
40	F-MI40LB	F-MI40FA	F-MI40SDB	F-MI40TC	
Bore size	Knuckle				Sensor switch
	I:I Knuckle	Y:Y Knuckle	F:F Knuckle	U:U Knuckle	
8	F-M040070II	F-M04070YE	F-M04070F	F-M04070U	CS1-M
10	F-M06100II	F-M06100YE	F-M06100F	F-M06100U	
12	F-M06100II	F-M06100YE	F-M06100F	F-M06100U	
16	F-M08125II	F-M08125YE	F-M08125F	F-M08125U	
20	F-M08125II	F-M08125YE	F-M08125F	F-M08125U	
25	F-M10125II	F-M10125YE	F-M10125F	F-M10125U	
32	F-M10125II	F-M10125YE	F-M10125F	F-M10125U	
40	F-M12125II	F-M12125YE	F-M12125F	F-M12125U	

FA	Bore size	Item	8	10	12	16	20	25
	B	28	28	38	38	44	50	
	C	46	46	50	56	62	65	
	BB	3	3	4	4	5	5	
	BC	22	22	30	30	40	40	
	BE	40	40	52	52	66	66	
	BF	30	30	40	40	50	50	
	BP	4.5	4.5	5.5	5.5	6.6	6.6	
	F	12	12	17	17	20	22	

Dimensions

TC

φ8~φ25

φB₂₀

φ32, φ40

φB₂₀

Bore size	8	10	12	16
Item				
A	6	6	8	8
B	4	4	6	6
C	26	26	38	38
D	38	38	58	58
E	20	20	25	25
F	12	12	17	17
G	28	28	38	38
H	58	58	67	73

Bore size	20	25	32	40
Item				
A	8	8	11	12
B	6	6	9	10
C	46	46	54	64
D	66	66	74	84
E	32	32	45	55
F	20	22	30	35
G	44	50	58	69
H	82	87	92	101

SDB

$\phi 8 \sim \phi 25$

$\phi 32, \phi 40$

$\phi 32, \phi 40$

Item/Bore size	8	10	12	16
D	11	11	13	13
Q	8.1	8.1	12.1	12.1
CA	18.4	18.4	28	28
CB	76	76	91	98
CD	20	20	25	25
CE	-	-	-	-
CF	12.5	12.5	15	15
CH	24	24	27	27
CP	4.5	4.5	5.5	5.5
CQ	13.1	13.1	18.1	18.1
CT	2.5	2.5	3	3
CR	-	-	-	-

Item/Bore size	20	25	32	40
D	16	16	20	27
Q	16.1	16.1	34.6	42.6
CA	38	38	55.6	69.6
CB	115	126	117	146
CD	32	32	41	52
CE	-	-	20	28
CF	20	20	24	30
CH	30	30	35	40
CP	6.6	6.6	7	9
CQ	24.1	24.1	46.6	58.6
CT	4	4	4	5
CR	-	-	67	81

LB

Technical drawing of LB component (left view) showing dimensions B, F, AA+Stroke, AC+Stroke, AL, AQ, 4-φ AP, AT, and AO.

Technical drawing of LB component (right view) showing dimensions φ 8-φ 25, AK, AH, AF, and AE.

Technical drawing of LB component (left view) showing dimensions B, F, AA+Stroke, AC+Stroke, AL, AQ, 12-φ AP, AT, and AO.

Technical drawing of LB component (right view) showing dimensions φ 32, φ 40, AD, AH, AB, AF, and AE.

Bore size Item	8	10	12	16
B	28	28	38	38
F	12	12	17	17
AA	78	78	90	96
AC	68	68	78	84
AD	-	-	-	-
AE	35	35	42	42
AF	25	25	32	32
AH	16	16	20	20
AK	10	10	13	13
AL	11	11	14	14
AP	4.5	4.5	5.5	5.5
AQ	5	5	6	6
AT	3	3	4	4

Bore size Item	20	25	32	40
B	44	50	58	69
F	20	22	30	35
AA	112	115	110	149
AB	-	-	49	58
AC	96	99	96	129
AD	-	-	28	30
AE	54	54	66	80
AF	40	40	52	60
AH	25	25	28	33
AK	20	20	-	-
AL	17	17	14	20
AP	6.6	6.6	7	9
AQ	8	8	7	10
AT	5	5	4	5