



Mini cylinder(Stainless steel)——MI Series

In accordance with ISO6432 standard

Product series

Series name	Mounting type					Acting type	Bore size	Collocation of sensor switch						Meno
	Basic	LB	FA	SDB	TC			CS1-M	DS1-M	CS1-F	DS1-F	CS1-U	DS1-U	
Double acting type: MI Double acting with adj. cushion: MIC	●	●	●	●	●	Double acting Double acting(with adj. cushion)	8	●	●	●	●	●	●	The bore size of double acting with cushion type is $\Phi 16-\Phi 40$
Double rod type: MID, MICD	●	●	●	●	●		10	●	●	●	●	●	●	
Adjustable stroke type: MIJ, MICJ	●	●	●	●	●		12	●	●	●	●	●	●	
Single acting type: MSI, MTI	●	●	●	●	●		16	●	●	●	●	●	●	
						Single acting	20	●	●	●	●	●	●	
							25	●	●	●	●	●	●	
							32	●	●	●	●	●	●	
							40	●	●	●	●	●	●	
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Installation and application

- When load changes in the work, the cylinder with abundant output capacity shall be selected.
- Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion.
- Necessary protection measure shall be taken in the environment with higher humidity, much dust or water drops, oil dust and welding dregs.
- Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of particles into the cylinder.
- The medium used by cylinder shall be filtered to $40\ \mu\text{m}$ or below.
- Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
- 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.
- The cylinder shall avoid the influence of side load in operation to maintain the normal work of cylinder and extend the service life.
- If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust caps shall be added in air inlet and outlet ports. 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 side	50.2	-	3.6	8.6	13.6	18.6	23.6
			Pull side	37.7	-	1.0	4.8	8.6	12.3	16.1
		Double acting	Push side	50.2	5.0	10.1	15.1	20.1	25.1	30.1
			Pull side	37.7	3.7	7.5	11.3	15.1	18.8	22.6
10	4	Single acting	Push side	78.5	-	5.9	13.8	21.6	29.5	37.3
			Pull side	65.9	-	3.4	10.0	16.6	23.2	29.8
		Double acting	Push side	78.5	7.9	15.7	23.6	31.4	39.3	47.1
			Pull side	65.9	6.6	13.2	19.8	26.4	33.0	39.5
12	6	Single acting	Push side	113.0	-	10.1	21.4	32.7	44.0	55.3
			Pull side	84.8	-	4.5	12.9	21.4	29.9	38.4
		Double acting	Push side	113.0	11.3	22.6	33.9	45.2	56.5	67.8
			Pull side	84.8	8.5	17.0	25.4	33.9	42.4	50.9
16	6	Single acting	Push side	201.0	-	14.6	34.7	54.8	74.9	95.0
			Pull side	172.7	-	8.9	26.2	43.5	60.8	78.0
		Double acting	Push side	201.0	20.1	40.2	60.3	80.4	100.5	120.6
			Pull side	172.7	17.3	34.5	51.8	69.1	86.4	103.6
20	8	Single acting	Push side	314.0	-	25.3	56.7	88.1	119.5	150.9
			Pull side	263.8	-	15.3	41.6	68.0	94.4	120.8
		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 side	490.6	-	43.1	92.2	141.3	190.3	239.3
			Pull side	412.1	-	27.4	68.6	109.8	151.1	192.3
		Double acting	Push side	490.6	49.1	98.1	147.2	196.2	245.3	294.4
			Pull side	412.1	41.2	82.4	123.6	164.8	206.1	247.3
32	12	Single acting	Push side	804.3	30.2	110.9	191.3	277.1	352.1	432.6
			Pull side	691.2	19.1	88.2	157.4	226.5	295.6	364.7
		Double acting	Push side	804.3	80.4	160.9	241.3	321.7	402.2	482.6
			Pull side	691.2	69.1	138.2	207.4	276.5	345.6	414.7
40	16	Single acting	Push side	1256.6	64.7	190.3	316.0	441.7	567.3	693.0
			Pull side	1055.6	44.6	150.1	255.7	361.2	466.8	572.4
		Double acting	Push side	1256.6	125.7	251.3	377.0	502.6	628.3	754.0
			Pull side	1055.6	105.6	211.1	316.7	422.2	527.8	633.4



Mini cylinder(Stainless steel, ISO6432)

MI Series

Inner structure and material of major parts

NO.	Item	Material
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	Φ8~Φ12: SUS304 Others: Aluminum alloy
10	Piston seal	NBR
11	Wear ring	Wear resistant material
12	Nut	Carbon steel
13	Back cover	Aluminum alloy

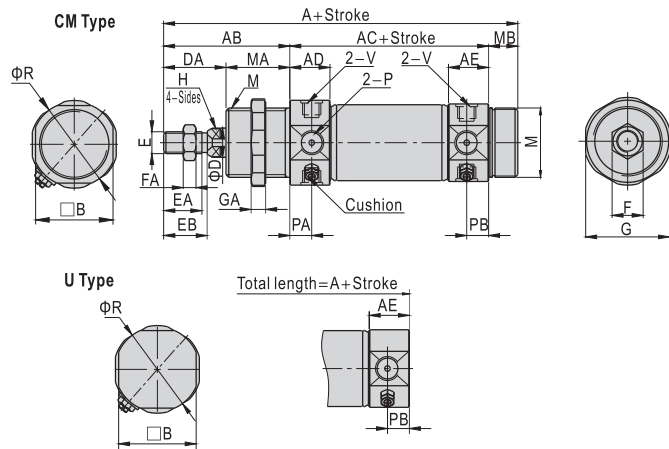
Dimensions

CA Type																															
U Type		R Type		CM Type																											
Total length=A+Stroke		Total length=A+Stroke		Total length=A+Stroke		Φ32: M8X1 Φ40: M10X1 Others no this screw hole																									
Bore size\Item		A														AE		AF		P		PA		PB		MA		MB			
Back cover		CA	U	R	CM	AB	AC	AD	CA	U/R/CM	AF	P	PA	CA	U/CM	R	CA	U/CM	R	CA	U/CM	R	CA	U/CM	R						
8		86	74	-	-	28	46	11.5	9.5	9.5	64	M5×0.8	7	5	5	17	86	74	-	-	28	46	11.5	9.5	9.5	64	M5×0.8	7	5	5	17
10		86	74	-	-	28	46	11.5	9.5	9.5	64	M5×0.8	7	5	5	17	105	88	-	-	38	50	12.5	10.5	10.5	75	M5×0.8	8	6	6	20
12		105	88	-	-	38	50	12.5	10.5	10.5	75	M5×0.8	8	6	6	20	111	94	94	111	38	56	12.5	10.5	10.5	82	M5×0.8	8	6	6	22
16		111	94	94	111	38	56	12.5	10.5	10.5	82	M5×0.8	8	6	6	22	126	106	106	126	44	62	14.5	14.5	14.5	95	1/8"	7.5	7.5	7.5	29
20		126	106	106	126	44	62	14.5	14.5	14.5	95	1/8"	7.5	7.5	7.5	29	137	114.5	115	137	50	65	16	16	16	104	1/8"	8	8	8	33.5
25		137	114.5	115	137	50	65	16	16	16	104	1/8"	8	8	8	33.5	-	125	126	140	58	-	16.5	-	16.5	-	1/8"	9	-	9	37.5
32		-	125	126	140	58	-	16.5	-	16.5	-	1/8"	9	-	9	37.5	-	158	158	174	69	-	22	-	22	-	1/4"	12	-	12	46.5
40		-	158	158	174	69	-	22	-	22	-	1/4"	12	-	12	46.5															
Bore size\Item		B	C	D	DA	E	EA	EB	F	FA	G	GA	H	K	KA	M	MA	MB													
8		15	8	4	16	M4×0.7	10.5	12	7	2.2	17	6	-	4	10	M12×1.25	12	12													
10		15	8	4	16	M4×0.7	10.5	12	7	2.2	17	6	-	4	10	M12×1.25	12	12													
12		18	12	6	21	M6×1.0	14	16	10	5	22	6	5(2-sides)	6	14	M16×1.5	17	17													
16		20	12	6	21	M6×1.0	14.5	16	10	5	22	6	5(2-sides)	6	13	M16×1.5	17	17													
20		25	16	8	24	M8×1.25	18	20	12	6	29	7	6(2-sides)	8	11	M22×1.5	20	20													
25		30	16	10	28	M10×1.25	20.5	22	17	6	29	7	8(4-sides)	8	11	M22×1.5	22	22													
32		34.5	-	12	28	M10×1.25	17.5	20	17	6	36	7	10(4-sides)	-	-	M30×1.5	30	14													
40		42.5	-	16	34	M12×1.25	21	24	17	7	46	8	14(4-sides)	-	-	M38×1.5	35	16													
Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.																															
MIC		Φ16~Φ25																													
CA Type																U Type		R Type		CM Type											
Total length=A+Stroke		Total length=A+Stroke		Total length=A+Stroke		Φ32: M8X1 Φ40: M10X1 Others no this screw hole																									
Bore size\Item		A														AE		AF		P		PA		PB		MA		MB			
Back cover		CA/CM	U	AB	AC	AD	CA/CM	U	AF	B	C	D	DA	E	EA	EB	CA	U/CM	R	CA	U/CM	R	CA	U/CM	R						
16		111	94	38	56	12.5	12	82	20	12	6	21	M6×1.0	14.5	16	105	88	-	-	38	50	12.5	10.5	10.5	75	M5×0.8	8	6	6	20	
20		126	106	44	62	14.5	14.5	95	25	16	8	24	M8×1.25	18	20	111	94	94	111	38	56	12.5	10.5	10.5	82	M5×0.8	8	6	6	22	
25		137	113.5	50	65	16	16	104	30	16	10	28	M10×1.25	20.5	22	126	106	106	126	44	62	14.5	14.5	14.5	95	1/8"	7.5	7.5	7.5	29	
Bore size\Item		F	FA	G	GA	H	K	KA	M	MA	MB	P	PA	PB	R																
16		10	5	22	6	5(2-sides)	6	13	M16×1.5	17	17	M5×0.8	7.5	7	22																
20		12	6	29	7	6(2-sides)	8	11	M22×1.5	20	20	1/8"	7.5	7.5	29																
25		17	6	29	7	8(4-sides)	8	11	M22×1.5	22	22	1/8"	8	8	33.5																
Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.																															

Mini cylinder(Stainless steel, ISO6432)

MI Series

MIC Φ32, Φ40



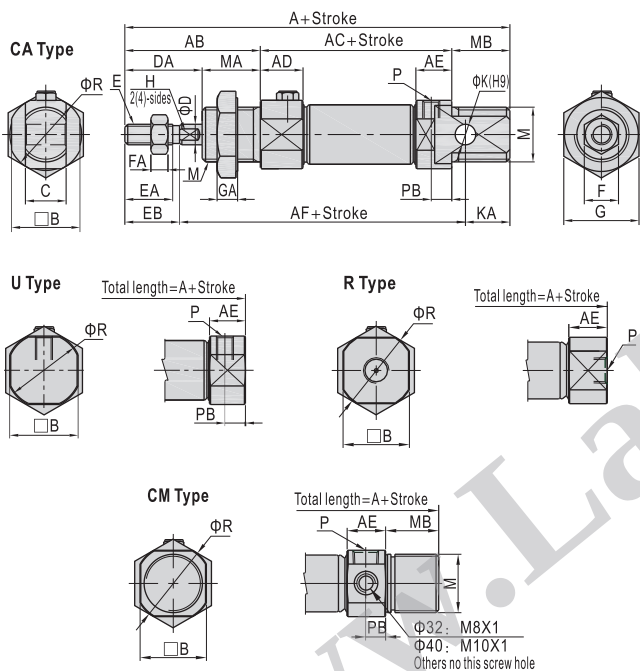
Bore size\Item	A	AB	AC	AD	AE	B	D	DA
Back cover	U	CM			U	CM		
32	124	140	58	68	16.5	14.5	16.5	34.5
40	157.5	174	69	89	22	21.5	22	42.5

Bore size\Item	E	EA	EB	F	FA	G	GA	H
32	M10 × 1.25	17.5	20	17	6	36	7	10(4-sides)
40	M12 × 1.25	21	24	17	7	46	8	24(4-sides)

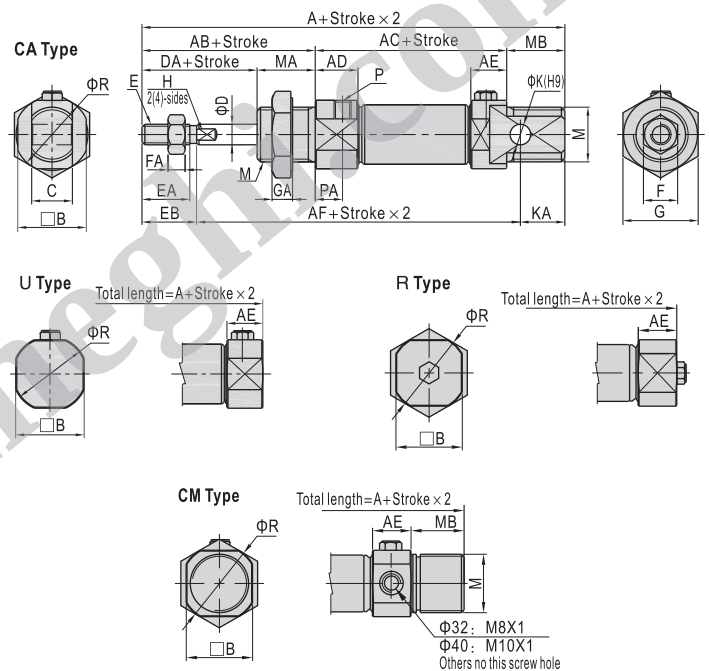
Bore size\Item	M	MA	MB	P	PA	U	PB	R	V
Back cover						U	CM		
32	M30 × 1.5	30	14	1/8"	9	7.5	9	37.5	M8X1
40	M38 × 1.5	35	16	1/4"	12	11.5	12	46.5	M10X1

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

MSI



MTI



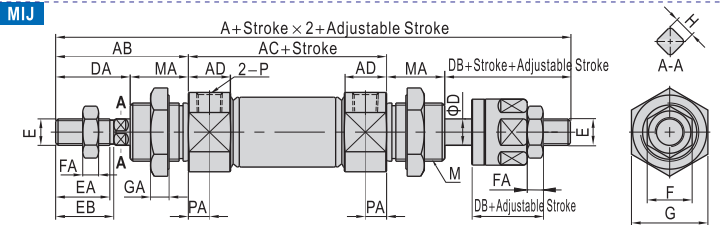
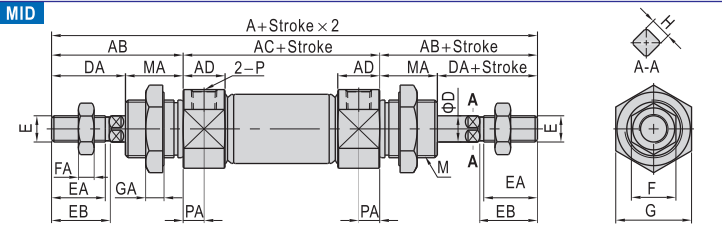
Item	A																	
Back cover	CA																	
Bore size\Stroke	0~50	51~100	101~150	0~50	51~100	101~150	0~50	51~100	101~150	0~50	51~100	101~150	0~50	51~100	101~150	0~50	51~100	101~150
8	111	-	-	99	-	-	-	-	-	-	-	-	28	71	-	-	11.5	89
10	111	-	-	99	-	-	-	-	-	-	-	-	28	71	-	-	11.5	89
12	130	-	-	113	-	-	-	-	-	-	-	-	38	75	-	-	12.5	100
16	136	161	-	119	144	-	119	144	-	136	161	-	38	81	106	-	12.5	107
20	151	176	201	131	156	181	131	156	181	151	176	201	44	87	112	137	14.5	120
25	162	187	212	139.5	164.5	189.5	140	165	190	162	187	212	50	90	115	140	16	129
32	-	-	-	150	175	200	151	176	201	165	190	215	58	-	-	-	16.5	-
40	-	-	-	183	208	233	183	208	233	199	224	249	69	-	-	-	22	-

Bore size\Item	CA	AE	B	C	D	DA	E	EA	EB	F	FA	G	GA	H	K	KA	M	MA	MB	P	PA	PB	R	
Back cover	CA	U/R/CM																			CA	U/CM		
8	9.5	9.5	15	8	4	16	M4 × 0.7	10.5	12	7	2.2	17	6	-	4	10	M12 × 1.25	12	12	M5 × 0.8	7	5	5	17
10	9.5	9.5	15	8	4	16	M4 × 0.7	10.5	12	7	2.2	17	6	-	4	10	M12 × 1.25	12	12	M5 × 0.8	7	5	5	17
12	10.5	10.5	18	12	6	21	M6 × 1.0	14	16	10	5	22	6	5(2-sides)	6	14	M16 × 1.5	17	17	M5 × 0.8	8	6	6	20
16	10.5	10.5	20	12	6	21	M6 × 1.0	14.5	16	10	5	22	6	5(2-sides)	6	13	M16 × 1.5	17	17	M5 × 0.8	8	6	6	22
20	14.5	14.5	25	16	8	24	M8 × 1.25	18	20	12	6	29	7	6(2-sides)	8	11	M22 × 1.5	20	20	1/8"	7.5	7.5	7.5	29
25	16	16	30	16	10	28	M10 × 1.25	20.5	22	17	6	29	7	8(4-sides)	8	11	M22 × 1.5	22	22	1/8"	8	8	8	33.5
32	-	16.5	34.5	-	12	28	M10 × 1.25	17.5	20	17	6	36	7	10(4-sides)	-	-	M30 × 1.5	30	14	1/8"	9	-	9	37.5
40	-	22	42.5	-	16	34	M12 × 1.25	21	24	17	7	46	8	14(4-sides)	-	-	M38 × 1.5	35	16	1/4"	12	-	12	46.5

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

Mini cylinder(Stainless steel, ISO6432)

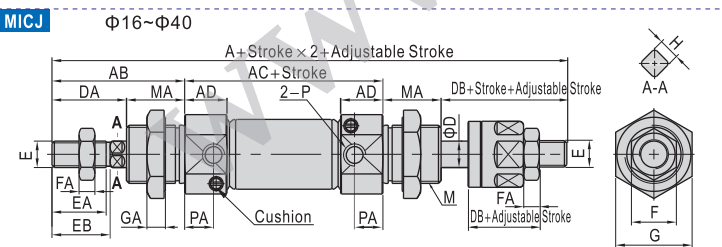
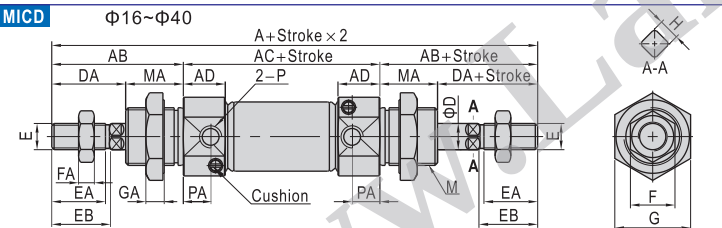
MI Series



Bore size\Item Model	A		AB	AC	AD	D	DA	DB	E	EA	EB
	MID	MIJ									
8	104	103	28	48	11.5	4	16	15	M4×0.7	10.5	12
10	104	103	28	48	11.5	4	16	15	M4×0.7	10.5	12
12	128	128	38	52	12.5	6	21	21	M6×1.0	14	16
16	134	134	38	58	12.5	6	21	21	M6×1.0	14.5	16
20	150	151	44	62	14.5	8	24	25	M8×1.25	18	20
25	165	164	50	65	16	10	28	27	M10×1.25	20	22
32	184	183	58	68	16.5	12	28	27	M10×1.25	17.5	20
40	227	221	69	89	22	16	34	28	M12×1.25	21	24

Bore size\Item	F	FA	G	GA	H	M	MA	P	PA
Model									
8	7	2.2	17	6	-	M12 × 1.25	12	M5 × 0.8	7
10	7	2.2	17	6	-	M12 × 1.25	12	M5 × 0.8	7
12	10	5	22	6	5(2-Sides)	M16 × 1.5	17	M5 × 0.8	8
16	10	5	22	6	5(2-Sides)	M16 × 1.5	17	M5 × 0.8	8
20	12	6	29	7	6(2-Sides)	M22 × 1.5	20	1/8"	7.5
25	17	6	29	7	8(4-Sides)	M22 × 1.5	22	1/8"	8
32	17	6	36	7	10(4-Sides)	M30 × 1.5	30	1/8"	9
40	17	7	46	8	14(4-Sides)	M38 × 1.5	35	1/4"	12

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



Bore size\Item Model	A		AB	AC	AD	D	DA	DB	E	EA	EB
	MICD	MICJ									
16	132.5	132.5	38	56.5	12.5	6	21	21	M6 × 1.0	14.5	16
20	150	151	44	62	14.5	8	24	25	M8 × 1.25	18	20
25	165	164	50	65	16	10	28	27	M10 × 1.25	20.5	22
32	184	183	58	68	16.5	12	28	27	M10 × 1.25	17.5	20
40	227	221	69	89	22	16	34	28	M12 × 1.25	21	24

Bore size\Item	F	FA	G	GA	H	M	MA	P	PA
Model									
16	10	5	22	6	5(2-Sides)	M16 × 1.5	17	M5 × 0.8	7.5
20	12	6	29	7	6(2-Sides)	M22 × 1.5	20	1/8"	7.5
25	17	6	29	7	8(4-Sides)	M22 × 1.5	22	1/8"	8
32	17	6	36	7	10(4-Sides)	M30 × 1.5	30	1/8"	9
40	17	7	46	8	14(4-Sides)	M38 × 1.5	35	1/4"	12

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

Ordering code

F-MI 10 LB			
Accessory	Model	Bore size	Accessory type
			LB: LB type
			FA: FA type
			SDB: SDB type
			TC: TC type

① Please refer to accessory list for selection and ordering information.

② SDB is attached with relevant PIN.

Accessory selection

Cylinder model	MI, MIC		MSI, MTI		MID, MICD, MIJ, MICJ	
Accessories	Standard	With magnet	Standard	With magnet	Standard	With magnet
Mounting accessory	LB	●	●	●	●	●
	FA	●	●	●	●	●
	SDB	●	●	●	×	×
	TC	●	●	●	●	●
Knuckle ①	I	●	●	●	●	●
	Y	●	●	●	●	●
	U	●	●	●	●	●
	F	●	●	●	●	●
Sensor switch ②	CS1-M	×	●	×	●	×
	DS1-M	×	●	×	●	×
	CS1-F	×	●	×	●	×
	DS1-F	×	●	×	●	×
	CS1-U	×	●	×	●	×
	DS1-U	×	●	×	●	×

① Please refer to P393~396 for knuckle detail.

② Please refer to P397~420 for detail of sensor switch.

Material of accessories

Accessories	Mounting accessories				Knuckle			
Bore size	LB	FA	SDB	TC	I	Y	F	U
8-40	△	△	△	▲	□	□	□	□

▲ — SUS304, △ — SPCC, □ — Carbon steel.

List for ordering code of accessories

Accessories	Mounting accessory			
Bore size	LB	FA	SDB	TC
8	F-MI10LB	F-MI8FA	F-MI8SDB	F-MI10TC
10				
12	F-MI12LB	F-MI12FA	F-MI12SDB	F-MI12TC
16				
20	F-MI20LB	F-MI20FA	F-MI20SDB	F-MI20TC
25				
32	F-MI32LB	-	F-MI32SDB	F-MI32TC
40	F-MI40LB	-	F-MI40SDB	F-MI40TC

Accessories	Knuckle			
Bore size	I: I Knuckle	Y: Y Knuckle	F: F Knuckle	U: U Knuckle
8	F-M4X070I	F-M4X070Y	F-M4X070F	F-M4X070U
10				
12	F-M6X100I	F-M6X100Y	F-M6X100F	F-M6X100U
16				
20	F-M8X125I	F-M8X125Y	F-M8X125F	F-M8X125U
25				
32	F-M10X125I	F-M10X125Y	F-M10X125F	F-M10X125U
40	F-M12X125I	F-M12X125Y	F-M12X125F	F-M12X125U

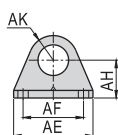
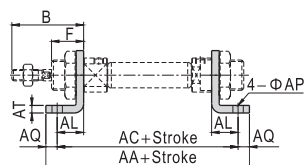
Accessories	Sensor switch					
Bore size	CS1-M□	DS1-M□	CS1-F	DS1-F	CS1-U	DS1-U
8	CS1-M-S08	DS1-M-S08	CS1-F	DS1-F	CS1-U	DS1-U
10	CS1-M-S10	DS1-M-S10				
12	CS1-M-S12	DS1-M-S12				
16	CS1-M-S16	DS1-M-S16				
20	CS1-M-S20	DS1-M-S20				
25	CS1-M-S25	DS1-M-S25				
32	CS1-M-S32	DS1-M-S32				
40	CS1-M-S40	DS1-M-S40				

Accessories

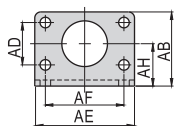
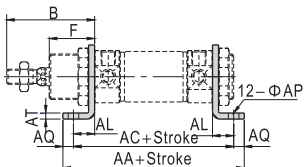
■ Dimensions

LB

Φ8~Φ25



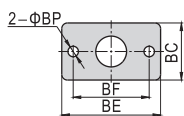
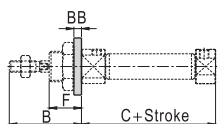
Φ32, Φ40



Bore size\Item	AA	AB	AC	AD	AE	AF	AH	AK	AL	AP	AQ	AT	B	F
8	78	-	68	-	35	25	16	10	11	4.5	5	3	28	12
10	78	-	68	-	35	25	16	10	11	4.5	5	3	28	12
12	90	-	78	-	42	32	20	13	14	5.5	6	4	38	17
16	96	-	84	-	42	32	20	13	14	5.5	6	4	38	17
20	112	-	96	-	54	40	25	20	17	6.6	8	5	44	20
25	115	-	99	-	54	40	25	20	17	6.6	8	5	50	22
32	110	49	96	28	66	52	28	-	14	7	7	4	58	30
40	149	58	129	30	80	60	33	-	20	9	10	5	69	35

FA

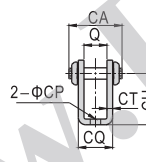
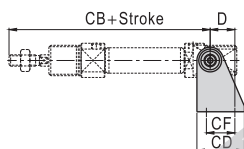
Φ8~Φ25



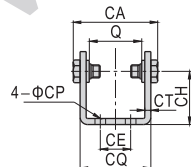
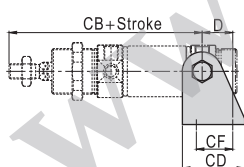
Bore size\Item	B	C	BB	BC	BE	BF	BP	F
8	28	46	3	22	40	30	4.5	12
10	28	46	3	22	40	30	4.5	12
12	38	50	4	30	52	40	5.5	17
16	38	56	4	30	52	40	5.5	17
20	44	62	5	40	66	50	6.6	20
25	50	65	5	40	66	50	6.6	22

SDB

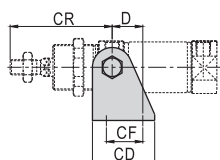
Φ8~Φ25



Φ32, Φ40



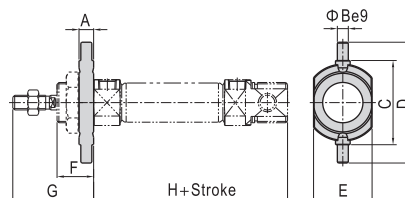
Φ32, Φ40



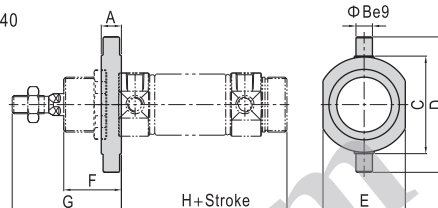
Bore size\Item	D	Q	CA	CB	CD	CE	CF	CH	CP	CQ	CT	CR
8	11	8.1	18.4	76	20	-	12.5	24	4.5	13.1	2.5	-
10	11	8.1	18.4	76	20	-	12.5	24	4.5	13.1	2.5	-
12	13	12.1	28	91	25	-	15	27	5.5	18.1	3	-
16	13	12.1	28	98	25	-	15	27	5.5	18.1	3	-
20	16	16.1	38	115	32	-	20	30	6.6	24.1	4	-
25	16	16.1	38	126	32	-	20	30	6.6	24.1	4	-
32	20	34.6	55.5	117	41	20	24	35	7	46.6	4	67
40	27	42.6	69.6	146	52	28	30	40	9	58.6	5	81

TC

Φ8~Φ25



Φ32, Φ40



Bore size\Item	A	B	C	D	E	F	G	H
8	6	4	26	38	20	12	28	58
10	6	4	26	38	20	12	28	58
12	8	6	38	58	25	17	38	67
16	8	6	38	58	25	17	38	73
20	8	6	46	66	32	20	44	82
25	8	6	46	66	32	22	50	87
32	11	9	54	74	45	30	58	82
40	12	10	64	84	55	35	69	101