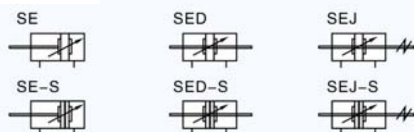


The MSE - Series Cylinders conform to ISO15552 and use pressure assisted Polyurethane seals for service long life. All cylinders have magnetic pistons and end of stroke cushions as standard. The range may be used with a variety of position sensors.



Symbols



Product Features

1. Conforming to ISO15552 and VDMA24562 standards.
2. Pressure assisted Piston and Rod Polyurethane seals.
3. Square profile clean-line Barrel.
4. Smooth action cushions at each end.
5. Magnetic pistons for position sensors.
6. Substantial range of cylinder mounting accessories.

Product Series

Series name	Mounting type	Acting type	Bore size	Collocation of sensor switch
Double acting type: SE	Basic LB FA FB CA CB CR TC FTC	Double acting	32, 40, 50, 63, 80, 100, 125	CS1-E CS1-EX CS1-EN CS1-EP
Double rod type: SED				
Adjustable stroke type: SEJ				

Theoretical Load values

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	0.8	0.9
32	12	Push side	804	80.4	160.8	241.2	321.6	402.0	482.4	562.8	643.2	723.6
		Pull side	690	69.0	138.0	207.0	276.0	345.0	414.0	483.0	552.0	621.0
40	16	Push side	1256	125.6	251.2	376.8	502.4	628.0	753.6	879.2	1004.8	1130.4
		Pull side	1055	105.5	211.0	316.5	422.0	527.5	633.0	738.5	844.0	949.5
50	20	Push side	1963	196.3	392.6	588.9	785.2	981.5	1177.8	1374.1	1570.4	1766.7
		Pull side	1649	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1319.2	1484.1
63	20	Push side	3117	311.7	623.4	935.1	1246.8	1558.5	1870.2	2181.9	2493.6	2805.3
		Pull side	2803	280.3	560.6	840.9	1121.2	1401.5	1681.8	1962.1	2242.4	2522.7
80	25	Push side	5026	502.6	1005.2	1507.8	2010.4	2513.0	3015.6	3518.2	4020.8	4523.4
		Pull side	4536	453.6	907.2	1360.8	1814.4	2268.0	2721.6	3175.2	3628.8	4082.4
100	25	Push side	7853	785.3	1570.6	2355.9	3141.2	3926.5	4711.8	5497.1	6282.4	7067.7
		Pull side	7362	736.2	1472.4	2208.6	2944.8	3681.0	4417.2	5153.4	5889.6	6625.8
125	32	Push side	12272	1227.2	2454.4	3681.6	4908.8	6136.0	7363.2	8590.4	9817.6	11044.8
		Pull side	11468	1146.8	2293.6	3440.4	4587.2	5734.0	6880.8	8027.6	9174.4	10321.2

Specification

Bore size		mm	32	40	50	63	80	100	125			
Acting type			Double acting									
Fluid			Air (to be filtered by 40um filter element)									
Mounting type	SE		Basic	FA	FB	CA	CB	CR	LB	FTC	TF	TM
	SED		Basic	FA	LB	FTC	TF	TM				
	SEJ											
Operating pressure			0.1~1.0MPa(14~145Psi)									
Proof pressure			1.5MPa(215Psi)									
Temperature ℃			-20~80									
Speed range		mm/s	30~800					30~500				
Stroke Tolerance			0~250 ^{+1.0} ₀		251~1000 ^{+1.4} ₀		1001~1500 ^{+1.8} ₀					
Cushion type			Variable cushion									
Adjustable cushion stroke		mm	27			30		36		40		
Port size ①			1/8"		1/4"		3/8"		1/2"			

① G thread and PT thread are available;
Add: Refer to PVI-35-VI-44 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke	Max. Stroke	Available stroke
32	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500	1000	1800
40	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800	1200	1800
50		1200	1800
63		1500	1800
80	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800
100		1500	1800
125		1500	1800

Remark: Consult us for non-standard stroke.

Ordering code

SE-80	□	×	50	-	S	-	□	-	□	-	G
SED-80	□	×	50	-	S	-	□	-	□	-	G
SEJ-80	□	×	50	-	20	-	S	-	□	-	G

Stroke

Seals Material
Blank: TPU
H: Viton
N: NBR

Thread type
G: G
P: PT

Model
SE: Double acting type
SED: Double rod type
SEJ: Adjustable stroke type

Bore size

Adjustable stroke
10: 10mm
20: 20mm
30: 30mm
40: 40mm
50: 50mm
75: 75mm
100: 100mm

Rod Material
Blank: Medium carbon steel
A: SUS420J2
B: SUS304
C: SUS316

Magnet
S: With magnet
Blank: Without magnet

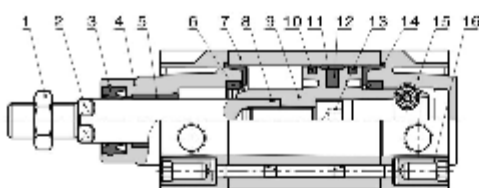
Mounting type

Mounting type	Available series	Memo
Blank	SE SED SEJ	
LB		
FA		
FB		
CA	SE	
CB		
CR		Be used with CB
FTC	SE SED SEJ	Be used with TF, TM
TC		

① Please refer to page III-04-III-06 for accessory parts.

Inner structure and material of major parts

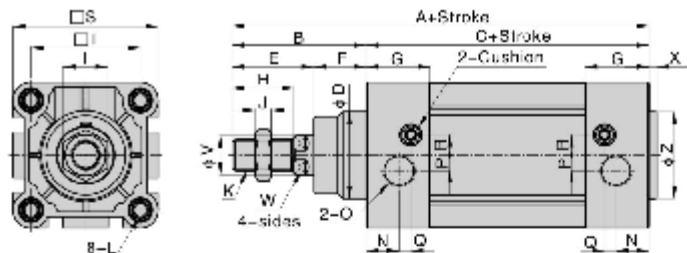
SE-S



NO.	Item	Material
1	End nut	Carbon steel /Stainless steel
2	Piston rod	Carbon steel with 20um chrome plated Stainless steel
3	Front cover packing	TPU
4	Front cover	Aluminum alloy
5	Bushing	Wear resistant material
6	Cushion O-ring	TPU
7	Barrel	Aluminum alloy
8	O-ring	NBR
9	Piston	Aluminum alloy
10	Piston O-ring	TPU
11	Wear ring	Wear resistant material
12	Magnet	Plastic / Rubber (φ 125)
13	Bolt	Carbon steel
14	Buffer gasket	TPU
15	Back cover	Aluminum alloy
16	Screw	Carbon steel /Stainless steel

■ Dimensions

SE

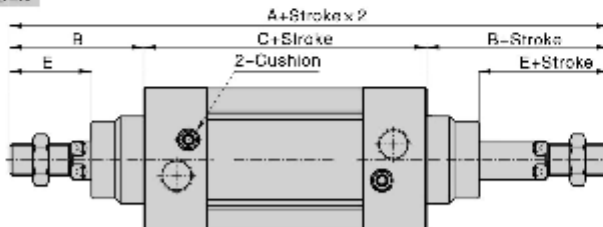


Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

Item Bore size	A	B	C	D	E	F	G	H	I	J	K	L	N
32	142	46	94	30	29	19	27.5	22	17	6	M10×1.25	M6	13.5
40	159	54	105	35	33	21	32	24	17	7	M12×1.25	M6	17.5
50	175	69	106	40	42	27	31	32	23	8	M16×1.5	M8	14
63	150	69	121	45	42	27	33	32	23	8	M16×1.5	M8	17
80	214	85	125	45	53	33	33	40	26	10	M20×1.5	M10	15.5
100	229	91	135	55	55	36	37	40	26	10	M20×1.5	M10	19.5
125	279	119	160	60	74	45	48	54	41	13.5	M27×2	M12	20

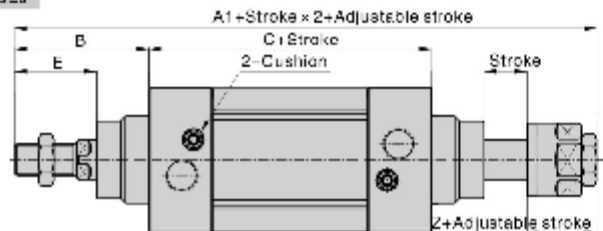
Item Bore size	O	P	Q	R	S	T	V	W	X	Z
32	1/8"	5.8	6	9.3	46.5	32.5	12	10	3	30
40	1/4"	6	5.5	9	54	38	16	13	3.5	35
50	1/4"	8	5	10.5	64	46.5	20	17	3.5	40
63	3/8"	8	5	10.5	75	56.5	20	17	4	45
80	3/8"	8	3.5	12.5	93	72	25	22	4	45
100	1/2"	10	7	12	110	80	25	22	4	55
125	1/2"	11	12	11	134	110	32	27	4	60

S-D



Item Bore size	A	A1	R	C	F	Z
32	190	188	48	94	29	27
40	213	208	54	105	33	28
50	247	233	69	106	42	31
63	259	246	69	121	42	31
80	300	286	86	126	53	39
100	320	304	91	138	55	33
125	368	378	119	160	74	54

S-U



Remark:

1. The dimensions of magnet type cylinder are the same as non-magnet type cylinder.
2. The unmarked dimension is the same as SE standard type.



Ordering code

Accessory	Model	Bore size	Accessory type
F	SE	50	CA
Mounting accessory			
CA CA type			
CB CB type			
TC TC type			

(1) The listed accessories are for SE cylinder. Accessories that are adaptable to other cylinders are not shown. Please refer to accessory list on PIII-06 for selection and ordering information.

(2) CB is attached with relevant PIN.

Accessory selection

Cylinder model Accessories	SE		SED		SEJ	
	Standard	With magnet	Standard	With magnet	Standard	With magnet
Mounting accessory						
LB	●	●	●	●	●	●
FA	●	●	●	●	●	●
FB	●	●	×	×	×	×
CA	●	●	×	×	×	×
CB	●	●	×	×	×	×
CH	●	●	×	×	×	×
TC	●	●	●	●	●	●
FTC	●	●	●	●	●	●
TF	●	●	●	●	●	●
TM	●	●	●	●	●	●
Knuckle switch						
I	●	●	●	●	●	●
Y	●	●	●	●	●	●
U	●	●	●	●	●	●
F	●	●	●	●	●	●
Sensor switch						
CS1-E	×	●	×	●	×	●
CS1-EX	×	●	×	●	×	●
CS1-FN	×	●	×	●	×	●
CS1-FP	×	●	×	●	×	●

I: Please refer to PVI-31 - VI-34 for knuckle detail.

F: Please refer to PVI-35 - VI-41 for detail of sensor switch.

Material of accessories

Accessories		Mounting accessories								Joint accessories		
Bore size	LB	FA	FB	TM	CR	CA	CB	FTC	TF	I, Y	F, U	
32- 100	Low carbon steel	Aluminum alloy			Nodular cast iron			Cast steel		Carbon steel		
125	Cast steel											

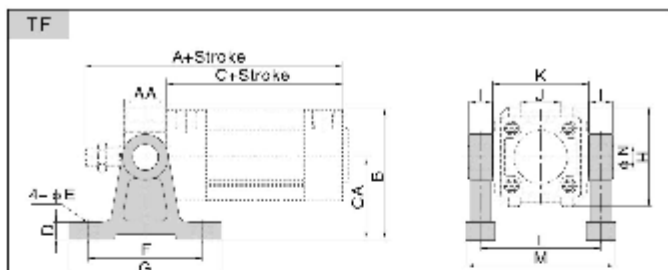
CA		Dimensions									
Item	Bore size	32	40	50	63	80	100	125			
A	142	158	175	190	214	239	279				
C	94	105	108	121	128	138	160				
S	16.5	54	64	75	83	110	134				
T	32.5	38	46.5	58.5	72	89	110				
DC	22	25	27	32	36	41	50				
DD	10.5	12	12	15	15.5	20	24				
DE	10	12	12	16	16	20	25				
DU	13	16	17	22	22	27	33				
DQ	25.8	27.8	31.7	38.7	48.7	59.7	69.7				

Dimensions

LB		Dimensions									
Bore size	Item	32	40	50	63	80	100	125			
A	142	158	175	190	214	239	279				
C	94	105	108	121	128	138	160				
AA	158	175	190	209	248	265	290				
AC	142	161	170	185	210	226	250				
AD	5	9	10	12	19	19	20				
AF	47	53	65	75	95	115	140				
AG	32	36	45	50	63	75	90				
AH	24	28	32	32	41	45	45				
AU	32	36	45	50	63	71	90				
AP	7	9	9	9	12.5	14.5	16.5				
AT	5	3	3	3	4	4	8				

FA		Dimensions									
Bore size	Item	32	40	50	63	80	100	125			
A	142	158	175	190	214	239	279				
C	94	105	108	121	128	138	160				
BA	30.5	35.5	40.5	45.5	45.5	55.5	60.5				
BB	10	13	12	12	16	16	20				
BC	50	55	65	76	100	120	140				
BD	32	36	45	50	63	75	90				
BE	80	93	108	120	153	178	224				
BF	64	72	80	100	125	150	180				
BP	7	9	9	9	12.5	14.5	16.5				
T	32.5	38	46.5	58.5	72	89	110				

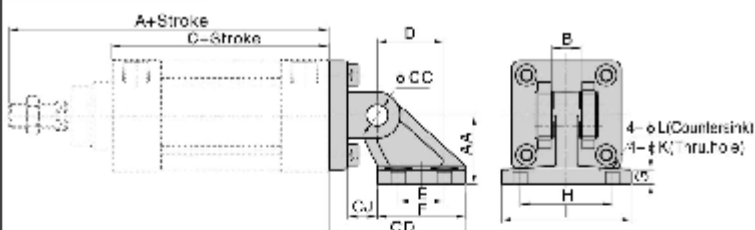




Note: The installation position of the accessories can not be adjusted arbitrarily.

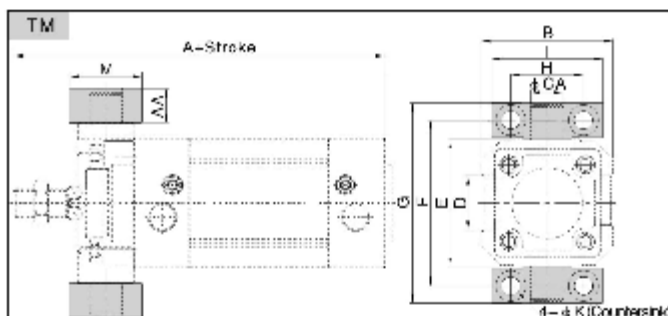
Item/Bore size	32	40	50	63	80	100	125
A	142	159	175	190	214	229	279
AA	22	28	28	30	32	36	40
E	66	86.5	91.5	115	126	157.5	169.3
C	94	105	106	121	128	138	160
CA	40	54	54	70	70	90	90
D	11	11	11	11	11	19	19
F	8	12	12	12	12	18	18
G	60	75	75	85	85	115	115
H	52	65	75	90	112	135	170
I	12	16	16	20	20	25	25
J	20	27	31	42	54	60	90
K	50	63	75	90	110	135	160
L	62	79	91	110	130	157	165
M	77	98	110	138	153	185	213
N	12	16	16	20	20	25	25

CR(Be used with CB)



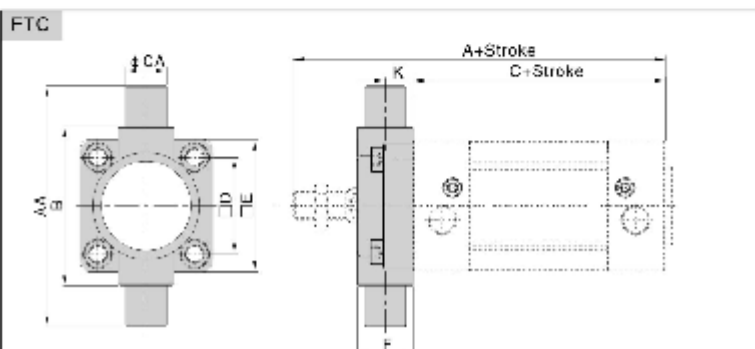
Item/Bore size	32	40	50	63	80	100	125
A	142	159	175	190	214	229	279
AA	32	36	45	50	63	71	90
B	26	28	32	40	50	60	70
C	94	105	106	121	128	138	160
CC	10	12	12	16	16	20	25
CD	50	58	66	77	93	108	135
CJ	10	12	13	17	19	22	26

Item/Bore size	32	40	50	63	80	100	125
D	21	24	33	37	47	55	70
E	18	22	30	35	40	50	60
F	31	35	45	50	60	70	90
G	8	10	12	12	14	15	20
H	38	41	50	52	65	76	94
I	31	54	65	67	86	98	124
K	6.6	6.6	9	9	11	11	14
L	-	-	-	-	15	18	20

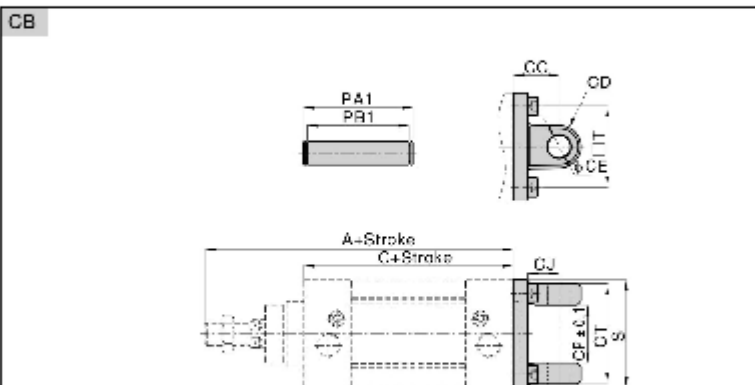


Note: The installation position of the accessories can not be adjusted arbitrarily.

Item/Bore size	32	40	50	63	80	100	125
A	142	159	175	190	214	229	279
AA	14	17	17	20.5	20.5	24.5	24.5
B	52	65	75	90	112	135	170
CA	12	16	16	20	20	25	25
D	20	27	31	42	54	68	90
E	50	63	75	90	110	132	160
F	66	82	94	113.5	133.5	159.5	187.5
G	80	99	111	134	154	184	212
H	32	36	36	42	42	50	50
I	46	55	55	65	65	75	75
K	11	15	15	18	18	20	20
L	7	9	9	11	11	14	14
M	30	36	36	40	40	50	50



Item/Bore size	32	40	50	63	80	100	125
A	142	159	175	190	214	229	279
AA	74	95	107	130	150	182	210
B	50	63	75	90	110	132	160
C	94	105	106	121	128	138	160
CA	12	16	16	20	20	25	25
D	32.5	38	46.5	56.5	72	89	110
E	46	52	64	74	94	114	139
F	19	21	26	28	31	35	43
K	10	10	12	12	16	16	20



Bore size	32	40	50	63	80	100	125
Item							
A	142	159	175	190	214	229	279
C	94	105	106	121	128	138	160
CC	22	25	27	32	36	41	50
CD	10.5	12	12	15	15.5	20	24
CE	10	12	12	16	16	20	25
CJ	13	16	17	22	22	27	33

Bore size	32	40	50	63	80	100	125
Item							
CP	26	28	32	40	50	60	70
CT	45	52	60	70	90	110	133
PA1	51	59	67	77	97	119	139
PB1	45.5	52.5	60.5	70.5	90.5	110.5	130.5
S	46.5	54	64	75	93	110	134
T	32.5	38	46.5	56.5	72	89	113



■ List for ordering code of accessories

Cylinder model		32	40	50	63	80	100	125	
Accessories									
Mounting accessory	LB	F-SI32LB	F-SI40LB	F-SI50LB	F-SI63LB	F-SI80LB	F-SI100LB	F-SI125LB	
	FA	F-SI32FA	F-SI40FA	F-SI50FA	F-SI63FA	F-SI80FA	F-SI100FA	F-SI125FA	
	FB								
	CA	F-SE32CA	F-SE40CA	F-SE50CA	F-SE63CA	F-SE80CA	F-SE100CA	F-SE125CA	
	CB	F-SE32CB	F-SE40CB	F-SE50CB	F-SE63CB	F-SE80CB	F-SE100CB	F-SE125CB	
	CR	F-SI32CR	F-SI40CR	F-SI50CR	F-SI63CR	F-SI80CR	F-SI100CR	F-SI125CR	
	TC ①	F-SE32TC	F-SE40TC	F-SE50TC	F-SE63TC	F-SE80TC	F-SE100TC	F-SE125TC	
	FTC	F-SI32FTC	F-SI40FTC	F-SI50FTC	F-SI63FTC	F-SI80FTC	F-SI100FTC	F-SI125FTC	
	TF	F-SI32TF	F-SI40TF			F-SI63TF		F-SI125TF	
	TM	F-SI32TM	F-SI40TM			F-SI63TM		F-SI125TM	
Knuckle	I: I Knuckle	F-M10125II	F-M12125II	F-M16150II			F-M20150II		F-M27200II
	Y:Y Knuckle	F-M10125YI	F-M12125YI	F-M16150YI			F-M20150YI		F-M27200YI
	U:U Knuckle	F-M10125U	F-M12125U	F-M16150U			F-M20150U		F-M27200U
	F:F Knuckle	F-M10125F	F-M12125F	F-M16150F			F-M20150F		—
Sensor switch	CS1-E	CS1-E							
	CS1-EX	CS1-EX							
	CS1-EN	CS1-EN							
	CS1-EP	CS1-EP							

①: TC accessories are under development.

