Compact Cylinders

Installation & Application

1) Cylinders should be sized according to work load.
2) Cylinders should be protected from dirty environments.
3) Dirty substances in the pipe must be cleared away before cylinder is connected with pipeline to prevent the entrance of sundries into the cylinder.
4) Use only clean filtered air to 40μm (lubricated if necessary).
5) Anti-freezing measure shall be adopted under low temperature environments to prevent moisture freezing.
6) In order for the cylinder to achieve long service life, do not side load cylinder.

Cylinder Thrust

Unit: Newton (N)

Bore (mm)	Rod (mm)	Acting		Pressure Area (mm^2)	Operating Pressure MPa						
					0.1	0.2	0.3	0.4	0.5	0.6	0.7
12	6	Single Acting-Push type		113.1	-	13.6	24.9	36.2	47.5	58.9	70.2
		Single Acting-Pull type		84.8	-	8.0	16.4	24.9	33.4	41.9	50.4
		Double Acting	Push side	113.1	11.3	22.6	33.9	45.2	56.5	67.9	79.2
			Pull side	84.8	8.5	17.0	25.4	33.9	42.4	50.9	59.4
16	8	Single Acting-Push type		201.1	-	27.0	47.1	67.2	87.3	107.4	127.5
		Single Acting-Pull type		150.8	-	17.0	32.0	47.1	62.2	77.3	92.4
		Double Acting	Push side	201.1	20.1	40.2	60.3	80.4	100.5	120.6	140.7
			Pull side	150.8	15.1	30.2	45.2	60.3	75.4	90.5	105.6
20	10	Single Acting-Push type		314.2	-	36.8	68.2	99.7	131.1	162.5	193.9
		Single Acting-Pull type		235.6	-	21.1	44.7	68.2	91.8	115.4	138.9
		Double Acting	Push side	314.2	31.4	62.8	94.2	125.7	157.1	188.5	219.9
			Pull side	235.6	23.6	47.1	70.7	94.2	117.8	141.4	164.9
25	12	Single Acting-Push type		490.9	18.1	67.2	116.3	165.3	214.4	263.5	312.6
		Single Acting-Pull type		377.8	6.8	44.6	82.3	120.1	157.9	195.7	233.4
		Double Acting	Push side	490.9	49.1	98.2	147.3	196.3	245.4	294.5	343.6
			Pull side	377.8	37.8	75.6	113.3	151.1	188.9	226.7	264.4
32	16	Single Acting-Push type		804.2	27.4	107.8	188.3	268.7	349.1	429.5	510.0
		Single Acting-Pull type		603.2	7.3	67.6	128.0	188.3	248.6	308.9	369.2
		Double Acting	Push side	804.2	80.4	160.8	241.3	321.7	402.1	482.5	563.0
			Pull side	603.2	60.3	120.6	181.0	241.3	301.6	361.9	422.2
40	16	Single Acting-Push type		1256.6	44.7	170.3	296.0	421.7	547.3	673.0	798.6
		Single Acting-Pull type		1055.6	24.6	130.1	235.7	341.2	446.8	552.3	657.9
		Double Acting	Push side	1256.6	125.7	251.3	377.0	502.7	628.3	754.0	879.6
			Pull side	1055.6	105.6	211.1	316.7	422.2	527.8	633.3	738.9
50	20	Single Acting-Push type		1963.5	96.3	292.7	489.0	685.4	881.7	1078.1	1274.4
		Single Acting-Pull type		1649.3	64.9	229.9	394.8	559.7	724.7	889.6	1054.5
		Double Acting	Push side	1963.5	196.3	392.7	589.0	785.4	981.7	1178.1	1374.4
			Pull side	1649.3	164.9	329.9	494.8	659.7	824.7	989.6	1154.5
63	20	Single Acting-Push type		3117.2	141.7	453.4	765.2	1076.9	1388.6	1700.3	2012.1
		Single Acting-Pull type		2803.1	110.3	390.6	670.9	951.2	1231.5	1511.9	1792.2
		Double Acting	Push side	3117.2	311.7	623.4	935.2	1246.9	1558.6	1870.3	2182.1
			Pull side	2803.1	280.3	560.6	840.9	1121.2	1401.5	1681.9	1962.2
80	25	Double Acting	Push side	5026.5	502.7	1005.3	1508.0	2010.6	2513.3	3015.9	3518.6
			Pull side	4535.7	453.6	907.1	1360.7	1814.3	2267.8	2721.4	3175.0
100	32	Double Acting	Push side	7854.0	785.4	1570.8	2356.2	3141.6	3927.0	4712.4	5497.8
			Pull side	7049.7	705.0	1409.9	2114.9	2819.9	3524.9	4229.8	4934.8

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Enhanced Quality Performance
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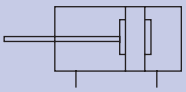
Compact Cylinders

Specification

Bore mm		12	16	20	25	32	40	50	63	80	100
Style		Double Acting									
Fluid		Air (to be filtered by 40μm filter element)									
Operating Pressure	Double Acting	0.1 - 1.0MPa (14 - 145psi)									
	Single Acting	0.2 - 1.0MPa (28 - 145psi)									
Proof Pressure		1.5MPa(215psi)									
Temperature		-20 to +80°C									
Speed range mm/s		30 - 500									
Stroke Tolerance		$0 - 150 + {}^{1.0}_{0}$				>150 $+ {}^{1.4}_{0}$					
Cushioning		Bumper									
Port size		M5 x 0.8				1/8"		1/4"		3/8"	

Symbol



Double Acting

Stroke

Bore (mm)		Standard Stroke (mm)	Max. stroke	Available Acting Stroke	
				Without Magnet	With Magnet
12	Double Acting	5 10 15 20 25 30 35 40 45 50	50	80	70
	Single Acting	5 10 15 20	20	-	-
16	Double Acting	5 10 15 20 25 30 35 40 45 50 55 60	60	80	70
	Single Acting	5 10 15 20	20	-	-
20	Double Acting	5 10 15 20 25 30 35 40 45 50 55 60 70 75 80 90 100	100	130	130
25	Single Acting	5 10 15 20 25 30	30	-	-
32 40 50	Double Acting	5 10 15 20 25 30 35 40 45 50 55 60 70 75 80 90 100	100	150	150
63 80 100	Single Acting	5 10 15 20 25 30	30	-	-

Ordering Code

KK S — 20 × 30

KL S — 20 × 30

KM S — 20 × 30

Bore Stroke

Model
- KK : (Double Acting)
- KL : (Single Acting-Push)
- KM : (Single Acting-Pull)

Magnet
- S : With Magnet
- Blank : Without Magnet

Thread type
- P : PT
- T : NPT
- BLANK : BSPP(Female)

Product Features

JIS standard is implemented.

Riveted structure is adopted to connect the cylinder body and cover, and piston and piston rod to make it compact and reliable.

The internal diameter of the cylinder is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.

The seal of piston adopts heterogeneous two way seal structure, it has compact dimension and the function of oil reservation.

Compact structure can effectively save installation space.

There are magnetic switch slots along the length of the cylinder body, which makes it convenient to install reed switches.

Installing accessories with various specifications are optional.

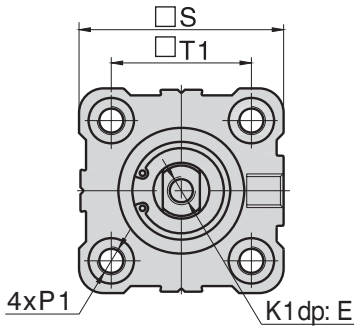
Compact Cylinders

KK & KKS

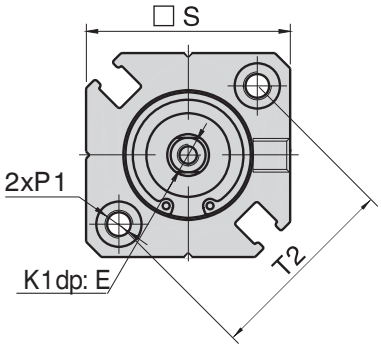
Dimensions

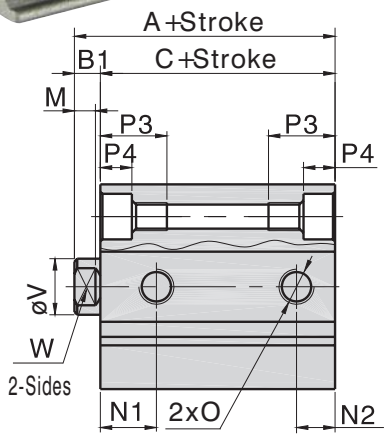
ø12 & ø16

Without Magnet



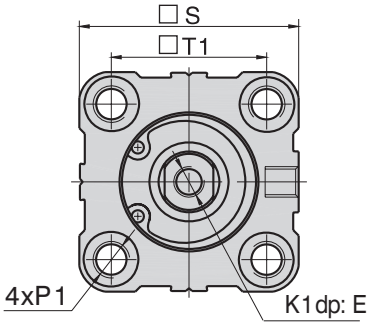
With Magnet



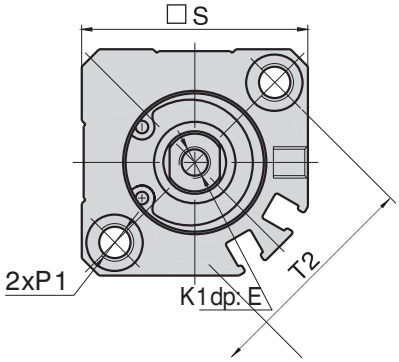


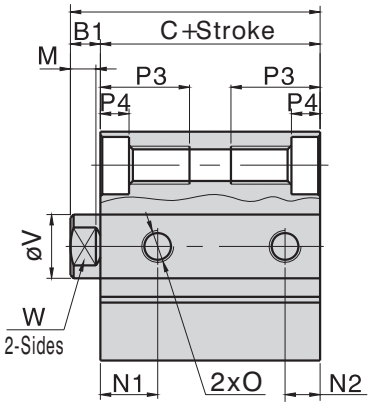
ø20 & ø25

Without Magnet



With Magnet





Model	Without Magnet				With Magnet		B1	D	E	K1	M	N1		N2	
Item/ Bore	A		C		A	C						Without Magnet	With Magnet	Without Magnet	With Magnet
	St≤50	St≥60	St≤50	St≥60											
12	20.5	-	17	-	31.5	28	3.5	-	6	M3 x 0.5	3.5	7.5	9	5	7
16	22	-	18.5	-	34	30.5	3.5	-	8	M4 x 0.7	3	8	9.5	5.5	
20	24	34	19.5	29.5	36	31.5	4.5	-	7	M5 x 0.8	4	9	9.5	5.5	
25	27.5	37.5	22.5	32.5	37.5	32.5	5	-	12	M6 x 1.0	4.5	11		5.5	

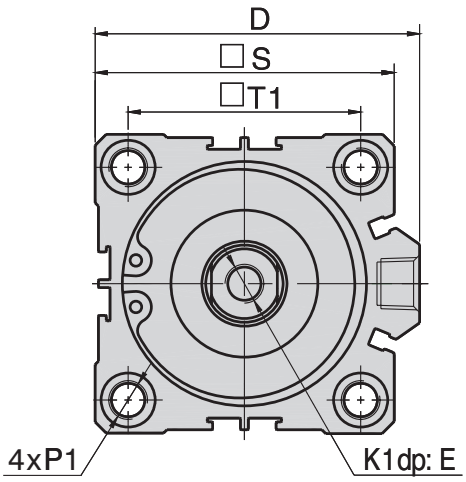
Item/ Bore	O	P1	P3	P4	S	T1	T2	V	W
12	M5 x 0.8	2-Sides: ø6.5 Thread:M4×0.7 Thru.hole:ø3.4	11	3.5	25	15.5	22	6	5
16	M5 x 0.8	2-Sides: ø6.5 Thread:M4×0.7 Thru.hole:ø3.4	11	3.5	29	20	28	8	6
20	M5 x 0.8	2-Sides: ø9 Thread:M6×1.0 Thru.hole:ø5.2	17	7	36	25.5	36	10	8
25	M5 x 0.8	2-Sides: ø9 Thread:M6×1.0 Thru.hole:ø5.2	17	7	40	28	40	12	10

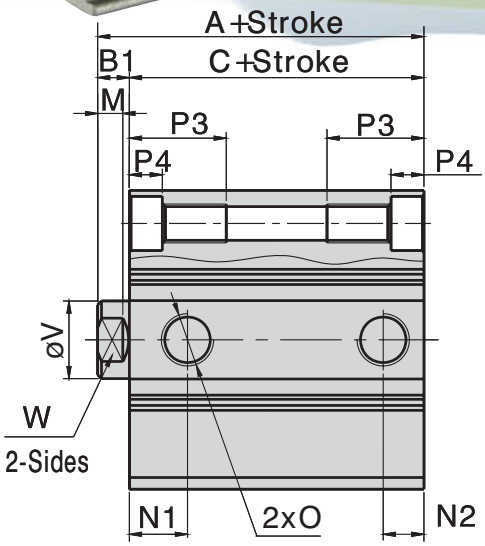
Compact Cylinders

KK & KKS

Dimensions

ø32 to ø100 (Stroke≤100)

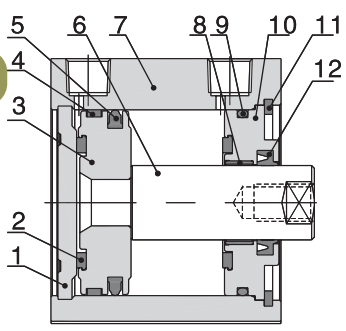




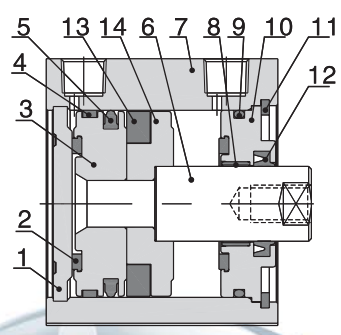
Model		Without Magnet				With Magnet		B1	D	E	K1	M	N1		N2	
Item / Bore size		A		C		A	C						Without Magnet	With Magnet	Without Magnet	With Magnet
		St.≤50	St.≥60	St.≤50	St.≥60											
32	St.=5	30	40	23	33	40	33	7	49.5	13	M8 x 1.25	6	7.5	10.5	6.5	7.5
	St.>5												10.5		7.5	
40		36.5	46.5	29.5	39.5	46.5	39.5	7	57	13	M8 x 1.25	6	11		8	
50	St.=5	38.5	48.5	30.5	40.5	48.5	40.5	8	71	15	M10 x 1.5	6.5	9	10.5	9	10.5
	St.>5												10.5		10.5	
63	St.=5	44	54	36	46	54	46	8	84	15	M10 x 1.5	6.5	14	15	9.5	10.5
	St.>5												15		10.5	
80		53.5	63.5	43.5	53.5	63.5	53.5	10	104	20	M16 x 2.0	8.5	16		14	
100		65	75	53	63	75	63	12	123.5	26	M20 x 2.5	9.5	20		17.5	

Item/ Bore	O	P1	P3	P4	S	T1	T2	V	W
32	1/8"	2-Sides:ø9 Thread M6x 1.0thru.hole:ø5.2	17	7	45	34	-	16	14
40	1/8"	2-Sides:ø9 Thread M6x 1.0 thru.hole ø5.2	17	7	53	40	-	16	14
50	1/4"	2-Sides:ø11 Thread M8 x 1.25 thru.hole:ø6.5	22	8	64	50	-	20	17
63	1/4"	2-Sides:ø14 Thread M10 x 1.5 thru.hole:ø8.7	28.5	10.5	77	60	-	20	17
80	3/8"	2-Sides:ø17.5 Thread M12 x 1.75 thru.hole:ø10.7	35.5	13.5	98	77	-	25	22
100	3/8"	2-Sides:ø17.5 Thread M12 x 1.75 thru.hole:ø10.7	35.5	13.5	117	94	-	32	27

KK



KKS



No.	Bore/ Item	Material				
		12 & 16	20	25	32	40 - 100
1	Back Cover	-	Aluminum Alloy			
2	Bumper	TPU			NBR	
3	Piston	Brass	Aluminum Alloy			
4	Wear Ring	-				Wear Resistant Material
5	Piston O-ring	NBR				
6	Piston Rod	Carbon Steel with 20um Chrome Plated				
7	Body	Aluminum Alloy				
8	Bushing	-				Wear Resistant Material
9	Cover Gasket	NBR				
10	Front Cover	Brass			Aluminum Alloy	
11	C clip	Spring Steel				
12	Front Cover Packing	NBR				
13	Magnet	Sintered Metal (Neodymium-iron-boron)			Plastic	
14	Magnet Holder	Brass	Aluminum Alloy			