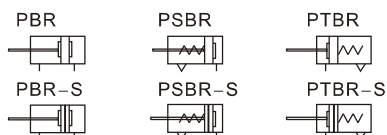


Pen size cylinder

PBR Series



Symbol



Product feature

1. JIS standard is implemented.
2. It belongs to mini cylinder that has compact structure, small volume and light weight.
3. The guide precision of piston rod is high and no additional lubricant is needed.
4. Screw holes are designed for mounting directly at the front cover without any accessories.
5. Piston rod stainless steel barrel make the cylinder adapt general corrosive working environment.
6. It has small cylinder diameter and quick reaction, suitable for the working environment with higher frequency.

Specification

Bore size(mm)		6	8	10	12	16
Acting type		Double acting、Single acting				
Fluid		Air(to be filtered by 40 μ m filter element)				
Operating pressure	Double acting	0.15~0.7MPa(22~100psi)(1.5~7.0bar)				
	Single acting	0.2~0.7MPa(28~100psi)(2.0~7.0bar)				
Proof pressure		1.2MPa(175psi)(12bar)				
Temperature °C		-20~70				
Speed range mm/s		50~800				
Stroke tolerance		0~150 ^{+1.0} ₀ >150 ^{+1.5} ₀				
Cushion type		Bumper				
Port size		M5×0.8				

Add) Refer to P451 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)																Max.std stroke	Max. stroke
PBR	6	10	15	20	25	30	40	50	60								60	60
	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
	12	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	300
	16	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	300
PSBR PTBR	6	5	10	15	20	25	30	40	50	60							-	-
	8	5	10	15	20	25	30	40	50	60							-	-
	10	5	10	15	20	25	30	40	50	60							-	-
	12	5	10	15	20	25	30	40	50	60	75						-	-
	16	5	10	15	20	25	30	40	50	60	75	100					-	-

[Note] Consult us for non-standard stroke.

Ordering code

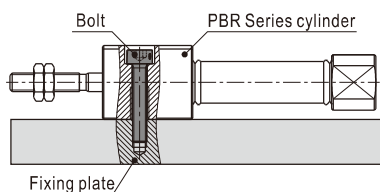
PBR 16×30 S U

1 2 3 4 5

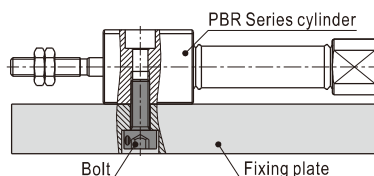
① Model	② Bore size	③ Stroke	④ Magnet	⑤ Back cover		
PBR: Pen size cylinder(Double acting) PSBR: Pen size cylinder (Single acting_push) PTBR: Pen size cylinder(Single acting_pull)	6	Refer to stroke table for details	Blank: Without magnet S: With magnet	Model	Back cover	Bore size
	8			PBR	U: Perpendicular 90°	Φ8~Φ16
	10			PSBR	R: Axial air-in	Φ6~Φ16
	12			PTBR	R: Axial air-in	Φ6~Φ16
	16					

Mounting type

Top bolt mounting



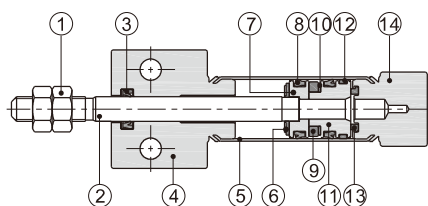
Bottom bolt mounting



Note: Use an applicable bolt to mount upward from the bottom.

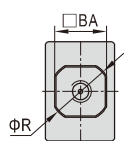
PBR Series

Double acting with magnet

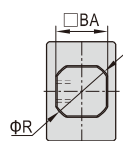


No.	Item	Material	No.	Item	Material
1	Rod nut	Carbon steel	8	Piston seal	NBR
2	Piston rod	SUS304	9	Magnet	Sintered metal(Neodymium-iron-boron)
3	Front cover O-ring	NBR	10	Magnet washer	
4	Front cover	Aluminum alloy	11	Magnet holder	Aluminum alloy
5	Barrel	SUS316L	12	Wear ring	Wear resistant material
6	Bumper	TPU	13	Bumper	TPU
7	Piston	SUS303\Aluminum alloy	14	Back cover	Aluminum alloy

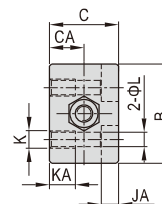
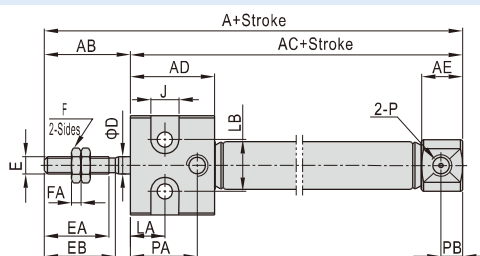
PBR



R Type
(Axial air-in)



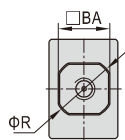
U Type
(Perpendicular 90°)



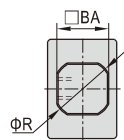
Bore size\Item	A	AB	AC	AD	AE	B	BA	C	CA	D	E	EA	EB	F	FA	J	JA	K	KA	L	LA	LB	P	PA	PB	R
6	70	20	50	19	7	17.2	10	14	7	3	M3×0.5	15	16	5.5	2.4	6.5	4	M4×0.7	7	3.3	8	10	M5×0.8	14	-	11
8	74	20	54	19.5	9.5	19.2	12	16	8	4	M4×0.7	15	16.5	7	2.2	6.5	4	M4×0.7	7	3.3	8	12	M5×0.8	15	5	14
10	74	20	54	19.5	9.5	19.2	12	16	8	4	M4×0.7	15	16.5	7	2.2	6.5	4	M4×0.7	7	3.3	8	12	M5×0.8	15.5	5	14
12	74	20	54	19.5	9.5	24.2	15	20	10	5	M5×0.8	15	16.5	8	4	8	5	M5×0.8	8	4.3	8	16	M5×0.8	15.5	5	17
16	76	20	56	20	9.5	24.2	18	20	10	6	M5×0.8	15	16.5	8	4	8	5	M5×0.8	8	4.3	8	16	M5×0.8	15.5	5	20

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder. Only axial air intake type of back cover is available for $\Phi 6\text{mm}$ bore size.

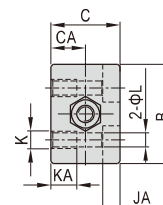
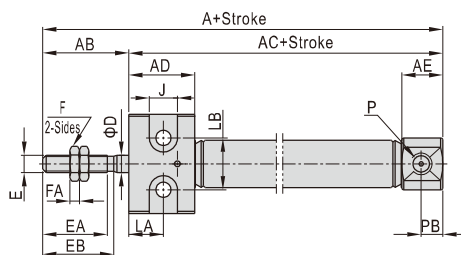
PSBR



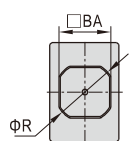
R Type
(Axial air-in)



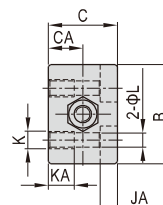
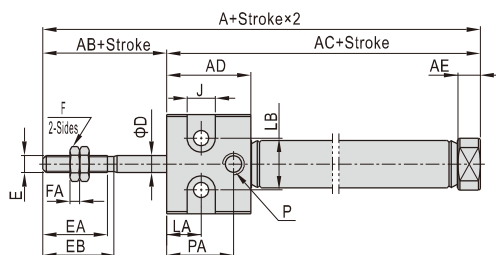
U Type
(Perpendicular 90°)



PTBR



R Type
(Axial air-in)



Bore size\Item	A												AC											
Model	PSBR								PTBR				PSBR								PTBR			
Stroke	5~15	16~30	31~45	46~60	61~75	76~100	5~15	16~30	31~45	46~60	61~75	76~100	5~15	16~30	31~45	46~60	61~75	76~100	5~15	16~30	31~45	46~60	61~75	76~100
6	70	79	83	97	-	-	74.5	83.5	87.5	101.5	-	-	50	59	63	77	-	-	54.5	63.5	67.5	81.5	-	-
8	76.5	82.5	93.5	101.5	-	-	78.5	84.5	95.5	103.5	-	-	56.5	62.5	73.5	81.5	-	-	58.5	64.5	75.5	83.5	-	-
10	73.5	81	93	105	-	-	76.5	84	96	108	-	-	53.5	61	73	85	-	-	56.5	64	76	88	-	-
12	73.5	81	93	105	111.5	-	76.5	84	96	108	114.5	-	53.5	61	73	85	91.5	-	56.5	64	76	88	94.5	-
16	74.5	83	95	107	113	119	77.5	86	98	110	116	122	54.5	63	75	87	93	99	57.5	66	78	90	96	102

Bore size/Item Model	AD		AB	AE		B	BA	C	CA	D	E	EA	EB	F	FA	J	JA	K	KA	L	LA	LB	P	PA	PB	R
	PSBR	PTBR		PSBR	PTBR																					
6	13	19	20	7	5	17.2	10	14	7	3	M3×0.5	15	16	5.5	2.4	6.5	4	M4×0.7	7	3.3	8	10	M5×0.8	14	-	11
8	13	19.5	20	9.5	5	19.2	12	16	8	4	M4×0.7	15	16.5	7	2.2	6.5	4	M4×0.7	7	3.3	8	12	M5×0.8	15	5	14
10	13	19.5	20	9.5	5	19.2	12	16	8	4	M4×0.7	15	16.5	7	2.2	6.5	4	M4×0.7	7	3.3	8	12	M5×0.8	15.5	5	14
12	13	19.5	20	9.5	5	24.2	15	20	10	5	M5×0.8	15	16.5	8	4	8	5	M5×0.7	8	4.3	8	16	M5×0.8	15.5	5	17
16	13	20	20	9.5	5	24.2	18	20	10	6	M5×0.8	15	16.5	8	4	8	5	M5×0.8	8	4.3	8	16	M5×0.8	15.5	5	20

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder. Only axial air intake type of back cover is available for $\Phi 6\text{mm}$ bore size.

Pen size cylinder

PB Series—Accessories

List for ordering code of accessories

Accessories Bore size	Mounting accessories			Knuckle				Sensor switch	
	LB	FA	CJ	I	Y	F	U	CMSG	DMSG(S)
4	-	-	-	-	-	-	-	-	-
6	F-PB6LB	F-PB6FA	-	F-PB6I	F-PB6Y	F-M3X040F	-	CMSG	DMSG(S)
10	F-PB10LB	F-PB10FA	F-PB10CJ	F-PB10I	F-PB10Y	F-M4X070F	F-M4X070U		
12	F-PB12LB	F-PB12FA	F-PB12CJ	F-PB12I	F-PB12Y	F-M5X080F	F-M5X080U		
16			F-PB16CJ						

Accessory selection

Accessories Cylinder model		Mounting accessories			Knuckle				Sensor switch	
		LB	FA	CJ	I	Y	U [1]	F	CMSG	DMSG(S)
PB	Standard	●	●	●	●	●	●	●	×	×
	With magnet	●	●	●	●	●	●	●	●	●
PSB	Standard	●	●	●	●	●	●	●	×	×
PTB	With magnet	●	●	●	●	●	●	●	●	●
PBD	Standard	●	●	×	●	●	●	●	×	×
PBJ	With magnet	●	●	×	●	●	●	●	●	●

Material of accessories

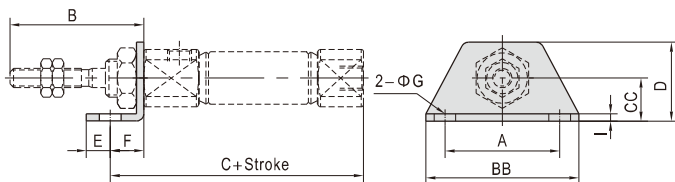
Accessories Bore size	Mounting accessories			Knuckle			
	LB	FA	CJ	I	Y	F	U
4~16	△	△	△	□	□	□	□

△—SPCC; □—Carbon steel;

[Note 1] Please refer to P447~450 for knuckle detail.

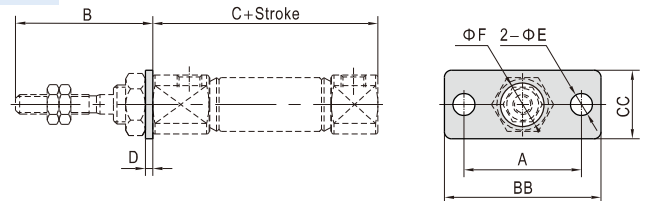
Dimensions

LB



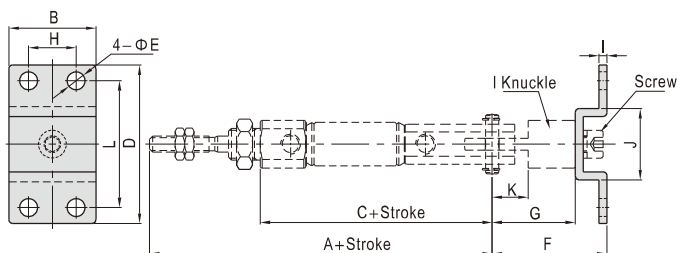
Bore size\Item	A	B	BB	C	CC	D	E	F	G	I
6	24	28	32	56.5	9	16.5	5	7	4.5	1.5
10	24	28	32	53	9	16.5	5	7	4.5	2
12	33	28	42	55	14	25	6	9	5.5	2.5
16	33	28	42	57	14	25	6	9	5.5	2.5

FA



Bore size\Item	A	B	BB	C	CC	D	E	F
6	24	28	32	49.5	14	1.5	4.5	6.3
10	24	28	32	46	14	2	4.5	8.3
12	33	28	42	46	20	3	5.5	10.3
16	33	28	42	48	20	3	5.5	10.3

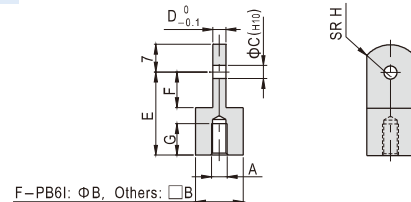
CJ



Bore size\Item	A	B	C	D	E	F	G	H	I	J	K	L
10	82	22	54	40	4.5	29	21	12	2	18	9.1	32
12	84	28	56	48	5.5	35	25	16	2.5	20.4	14.1	38
16	86	28	58	48	5.5	35	25	16	2.5	20.4	14.1	38

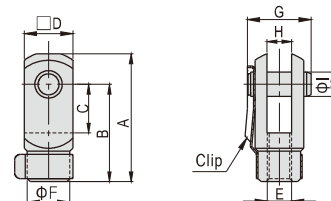
[Note] CJ type accessories includes I knuckle and PIN. It need to be matched with I knuckle and with relevant PIN.

I Knuckle



Bore size\Item	A	B	C	D	E	F	G	H
F-PB6I	M3×0.5	6	3	3	12	5	5	5
F-PB10I	M4×0.7	12	3.3	3	21	9.1	7.5	8
F-PB12I	M5×0.8	12	5	6.3	25	14.1	7.5	12

Y Knuckle



Bore size\Item	A	B	C	D	E	F	G	H	I
F-PB6Y	15.5	12	5	6	M3×0.5	6	9	3	3
F-PB10Y	28	21	10.2	12	M4×0.7	10	15.5	3.2	3.3
F-PB12Y	28	21	10.2	12	M5×0.8	10	15.5	6.5	5