PRU(F)2 series Mechanically Jointed Rodless Cylinder

Product feature

CHELIC

Feature

- Space saving by 50% comparing from traditional type
- Precision adjustable pneumatic cushion to absorb the impact of inertia
- Stroke length is able to customized

PRU2

PRF2

Specification

Item \ Bore size (mm)	Ø10	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50
Action	Double acting						
Fluid	Air						
Pressure range kgf/cm² (kPa)	2~7 (200~700)		1.5 ~ 7 (150 ~ 700)				
Max. operating pressure kgf/cm² (kPa)	8 (800)						
Ambient and fluid temperature °C	0 ~ 60						
Piston speed mm/s	50 ~ 500						
Lubrication	Lubrication free type						
Cushion	Air cushion						
Port size	M5		PT1/8		PT1/4		
Sensing device	With magnet						

Standard stroke

Bore size (mm)	Standard stroke (mm)
Ø10	50 ~ 1000
Ø16	50 ~ 1000
Ø20	50 ~ 1000
Ø25	50 ~ 1500
Ø32	50 ~ 1500
Ø40	50 ~ 1500
Ø50	50 ~ 1500

Theoretical output

Unit: kgf

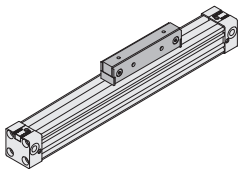
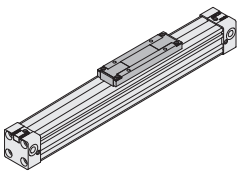
Bore size (mm)	Operating	Piston area (cm²)	Air pressure (kgf / cm²)						
			1	2	3	4	5	6	7
Ø10	Push	0.79	—	1.57	2.36	3.14	3.39	4.71	5.5
Ø16	Push	2.0	—	4	6	8	10	12	14
Ø20	Push	3.14	—	6.2	9.4	12.5	15.7	18.8	21.9
Ø25	Push	4.9	—	9	14	19	24	29	34
Ø32	Push	8.0	—	16	24	32	40	48	56
Ø40	Push	12.5	—	25	37.5	50	62.5	75	87.5
Ø50	Push	19.6	—	39.2	58.8	78.4	98	117.2	137.2

Note: All of above are theoretical data. Before actual adoption, the frictional resistance and mechanical efficiency shall be taken into consideration (about 70% ~ 80%)

Code of order **PRU2 16 x 200 – L – M – AM2 – 95 2**

1 2 3 4 5 6 7 8

1

Model

PRU2: Standard

PRF2: Flat type

2

Mark	Bore size (mm)
10	Ø10
16	Ø16
20	Ø20
25	Ø25
32	Ø32
40	Ø40
50	Ø50

- PRU2 without bore size of 10 mm & 50 mm

PRU/ PRF Specification

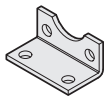
Model	Bore size (mm)
PRU	Ø16, Ø20, Ø25, Ø32, Ø40
PRF	Ø10, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50

3

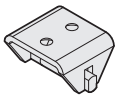
Bore size	Stroke (mm)
Ø10	50 ~ 1000
Ø16	
Ø20	
Ø25	50 ~ 1500
Ø32	
Ø40	
Ø50	

- Any strock available within above length with 1 mm as minimum.

4

Mark	Bracket
L	

5

Mark	Floating bracket
M	

6

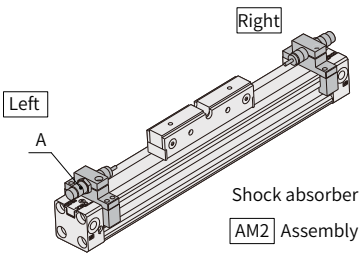
Mark	Cushion option	Cushion
None	Without cushion	A: Shock absorber
AM1	Left side with shock absorber	
AM2	Both sides with shock absorber	M: Shock abosorber base
AM3	Right side with shock absorber	

- Remark: Above for PRU only

How to select Shock absorber

Bore size (mm)	Shock absorber model	Maximum absroption (N · m)
16	SAT-1007C	6
20	SAT-1007C	6
25	SAT-1210C	10
32	SAT-1412C	20
40	SAT-2015C	59

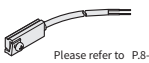
Assembly example and direction



7

Mark	Sensor switch
None	Without sensor switch
95	CS-95

- Image



CS-95

8

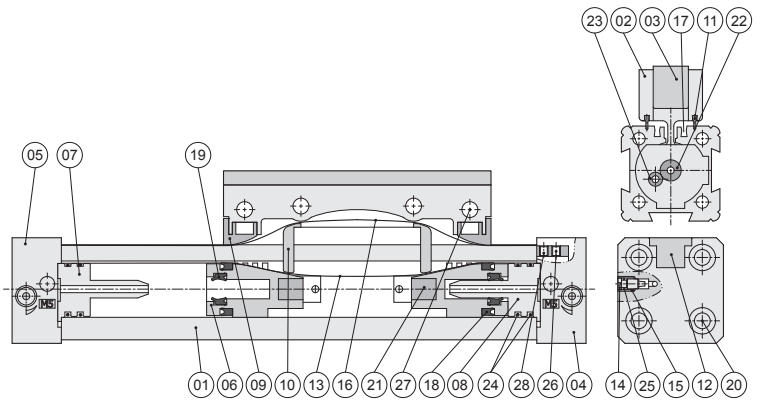
Mark	Sensor switch
1	1 pc
2	2 pcs

PRU(F)2 series Mechanically Jointed Rodless Cylinder

Product feature

CHELIC

Internal structure



Product weight

Unit: kg

Bore size (mm)	Stroke = 0mm	Additional weight
Ø10	0.2	0.08
Ø16	0.25	0.1
Ø20	0.47	0.15
Ø25	0.74	0.197
Ø32	1.62	0.354
Ø40	2.10	0.415
Ø50	4.28	0.660

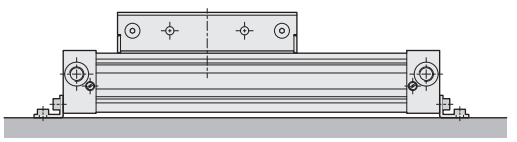
Note: Additional weight per each 100 mm in ± 5% difference

Components and material list

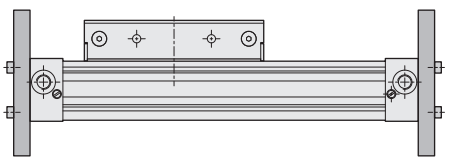
NO.	Item	Material	NO.	Item	Material
01	Body	Aluminum alloy	15	Bush	Stainless steel
02	Slider	Aluminum alloy	16	Outer belt	Stainless steel
03	Slider cap	Aluminum alloy	17	Magnet belt	Rare earth metal
04	Left end cap	Aluminum alloy	18	Piston packing	NBR
05	Right end cap	Aluminum alloy	19	Air cushion packing	NBR
06	Piston	POM	20	End cap screw	Carbon steel
07	Air cushion lever (left)	POM	21	Piston magnet	Rare earth metal
08	Air cushion lever (right)	POM	22	End cap O-ring	NBR
09	Outer belt block	POM	23	Air cushion lever O-ring_1	NBR
10	Belt guide block	POM	24	Air cushion lever O-ring_2	NBR
11	Slider plate	NBR	25	Air cushion pin O-ring	NBR
12	Cover	POM	26	Cap screw	Carbon steel
13	Inner belt	Stainless steel	27	Slider plate screw	Carbon steel
14	Air cushion pin	Copper Alloy	28	Inner belt screw	Carbon steel

Mounting type

● Mounting bracket type



● End bracket type

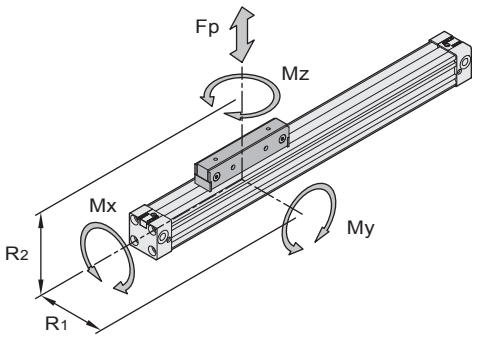


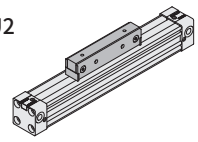
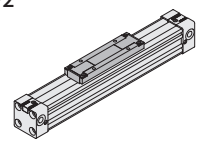
Note: It has thread hole in the mounting screw of cover to use, do not take out this screw.

Load and moment allowable

The maximum allowable moment is to calculate the piston of center of gravity. In general situation, the moment of load can not exceed the allowable range. If the moment of load is not single direction, its value can not bigger than 1.

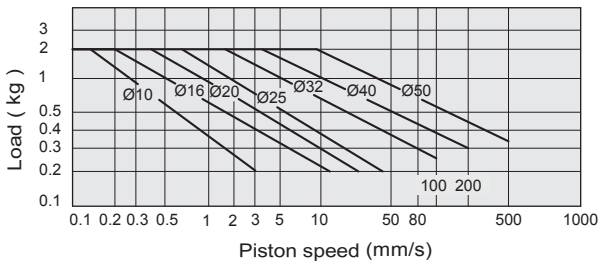
Mx = Fp x R1
My = Fp x R2
Mz = Fp x R1



Model	Bore size (mm)	Stroke (mm)	Theoretical output at 6 bar (N)	Max. load (N)	Max. Moment allowable(Nm)		
				Fp	Mz	Mx	My
PRU2 	16	50~1000	121	120	0.5	0.3	4
	20	50~1000	189	200	1.2	0.8	8
	25	50~1500	294	300	3	1	15
	32	50~1500	482	450	5	2	30
	40	50~1500	754	750	8	4	60
PRF2 	10	50~1000	47	20	0.3	0.2	1
	16	50~1000	121	120	0.5	0.45	4
	20	50~1000	189	200	1.2	1.2	8
	25	50~1500	294	300	3	1.5	15
	32	50~1500	482	450	5	3	30
	40	50~1500	754	750	8	6	60
	50	50~1500	1178	1200	15	7	115

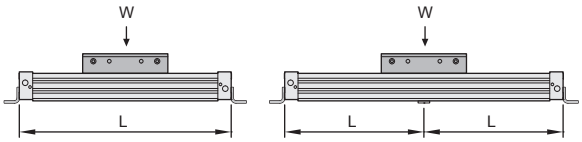
Load weight and piston speed

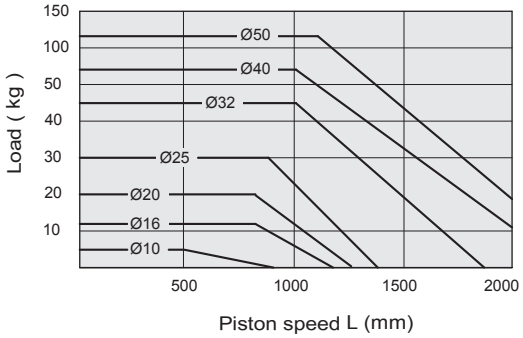
The shock absorbing device at end of cylinder is adjustable for preventing damage from huge impact. The shock absorber shall be applied before the cylinder produce high movements.



Load weight and stroke length

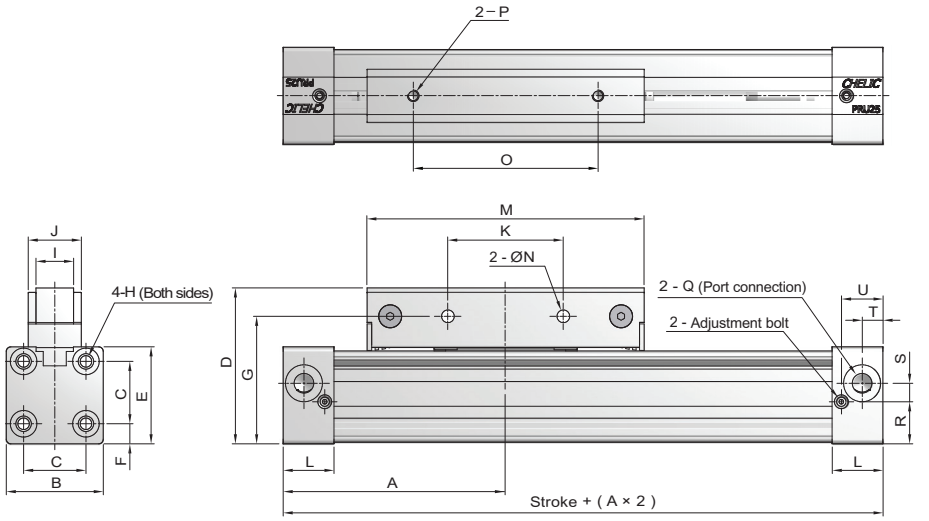
The long stroke cylinder may curve when load weight increased. The support bracket shall be considered to apply at the middle of stroke for preventing deforming.





PRU2 Ø16 ~ Ø32

PRU □ × □ ST

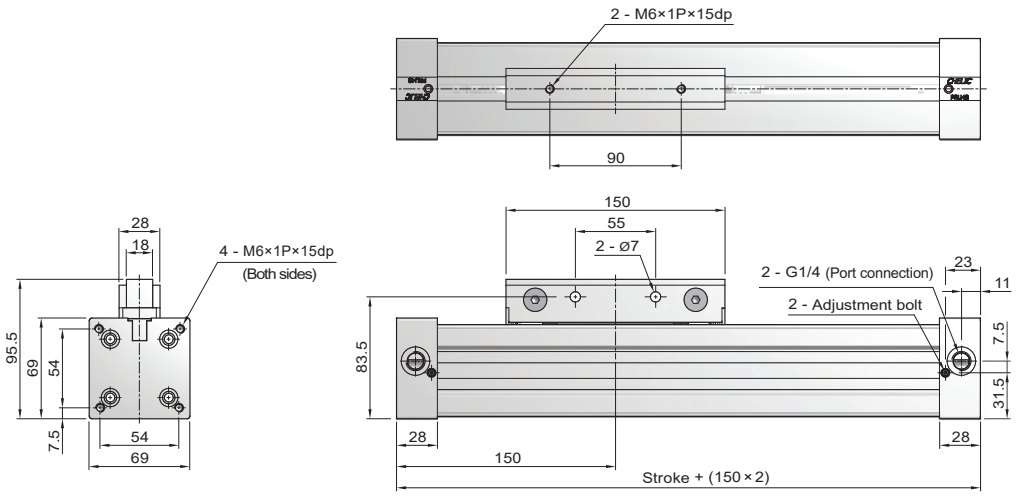


Unit: mm

Mark / Bore size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Ø16	65	30	18	45	30	6.4	39	M3×0.5P×9dp	10	18	32	14	76	4.5	48	M4×0.7P×8dp	M5×0.8P	13.4	3.5	4	10
Ø20	80	37	24	55	37	6	48	M4×0.7P×12dp	12	20	40	22	96	4.5	65	M4×0.7P×8dp	G1/8	17	5	9	18
Ø25	100	42	27	67.5	42	8.7	55.2	M5×0.8P×15dp	16.3	23	50	22	120	5.5	80	M5×0.8P×10dp	G1/8	18.2	8	9	18
Ø32	125	54	36	88.3	55	9.5	74.6	M6×1P×15dp	18	27	60	25.5	160	7	90	M6×1P×15dp	G1/4	24	9	11	21

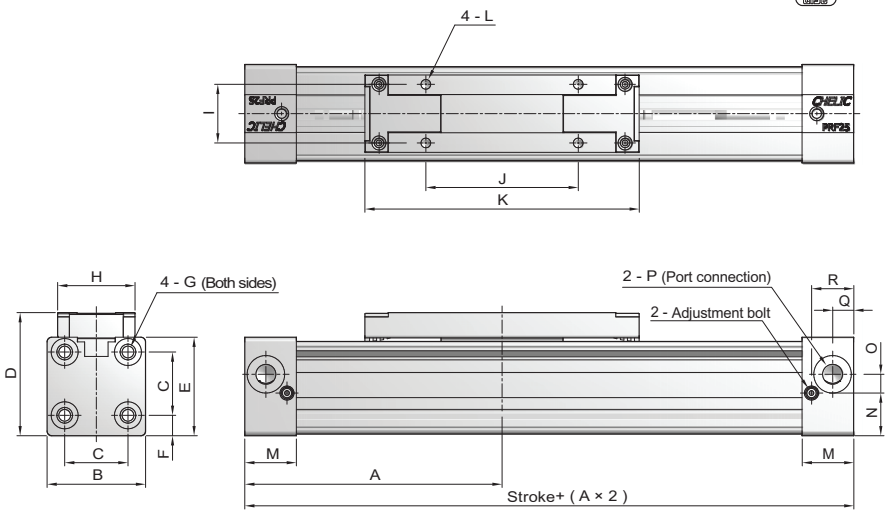
PRU2 Ø40

PRU □ × □ ST



PRF2 Ø10 ~ Ø32

PRF □ × □ ST

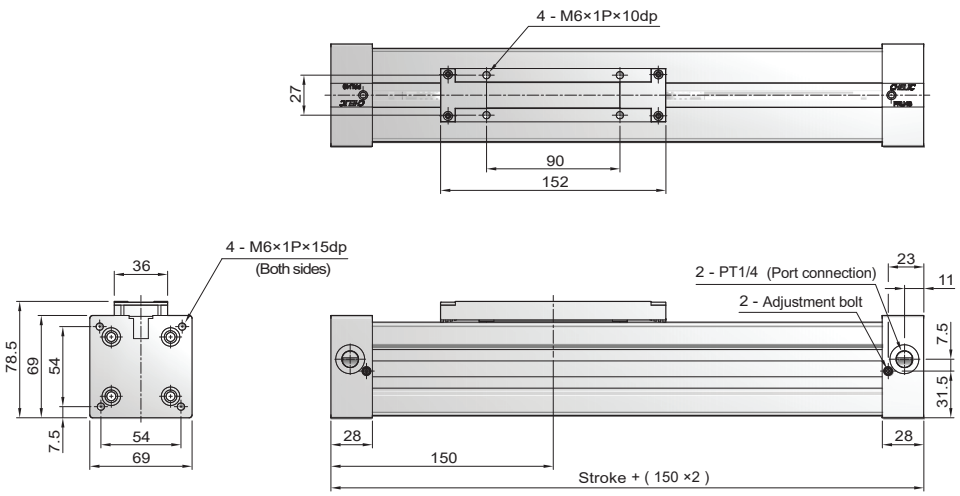


Unit: mm

Mark / Bore size	A	B	C1	C2	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Ø10	54.5	25	18.4	12.5	29.7	21.6	4.2	M2.5x0.45Px9dp	22	16.5	31	60	M4x0.7Px6dp	12	8.4	2	M5x0.8p	3.8	8.8
Ø16	65	30	18	18	38	30	6.4	M3x0.5Px9dp	22	16.5	36	69	M4x0.7Px6dp	14	13.4	3.5	M5x0.8p	4	10
Ø20	80	37	24	24	46	37	6	M4x0.7Px12dp	28	20	50	90	M4x0.7Px6dp	22	17	5	PT1/8	9	18
Ø25	100	42	27	27	52.5	42	8.7	M5x0.8Px15dp	33	25	65	117	M5x0.8Px8dp	22	18.2	8	PT1/8	9	18
Ø32	125	54	36	66.5	66.5	55	9.5	M6x1Px15dp	36	27	90	152	M6x1Px10dp	25.5	24	9	PT1/4	11	21

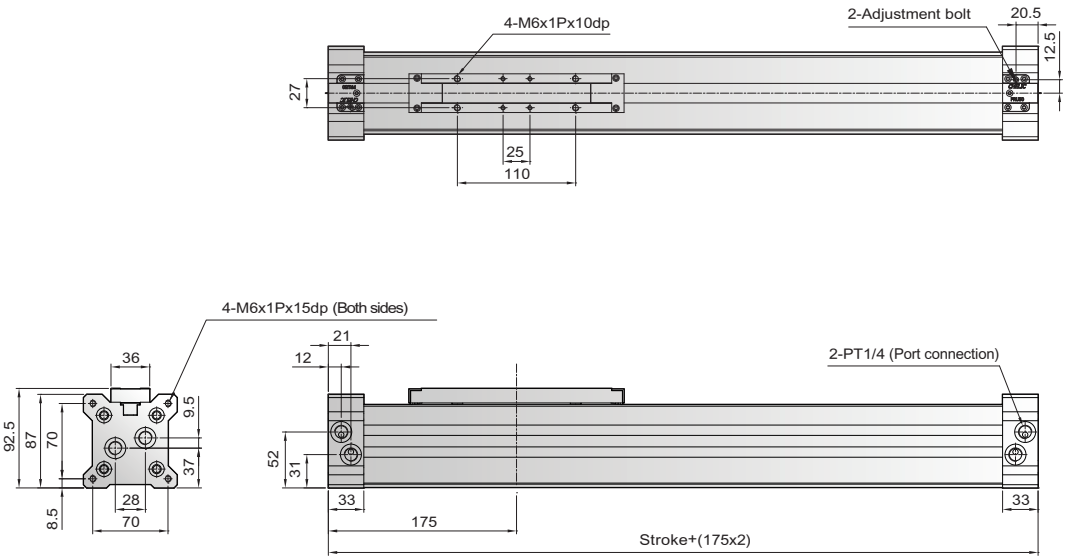
PRF2 Ø40

PRF □ × □ ST



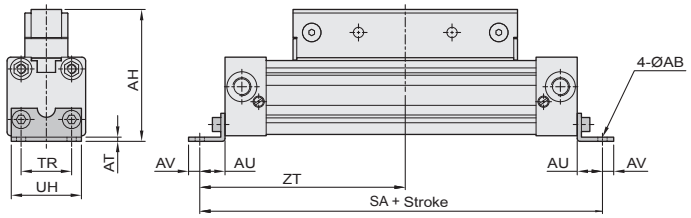
PRF2 Ø50

PRF □ × □ ST



L series Mounting bracket (PRU)

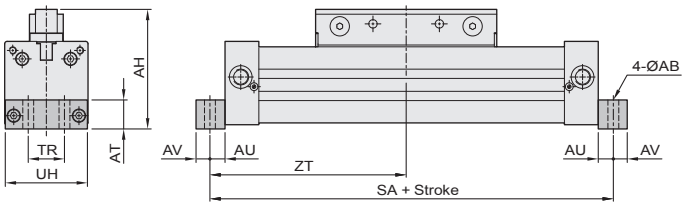
PRU Ø 16 ~ Ø 32



Unit: mm

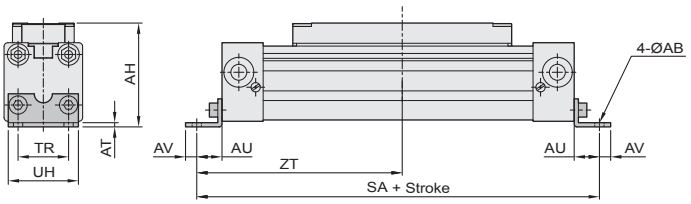
Mark / Bore size	AB	AH	AT	AU	AV	SA	TR	UH	ZT
Ø16	3.6	45	1.6	10	4	150	18	26	75
Ø20	4.6	56	1.6	11	5	182	24	35	91
Ø25	5.8	68	2.5	16	6	232	27	39	116
Ø32	6.6	89.8	3	18	8	286	36	50	143
Ø40	9	99	24	12.5	11.5	325	30	68	162.5

PRU Ø 40



L series Mounting bracket (PRF)

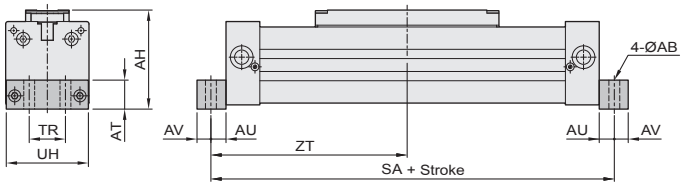
PRF Ø 10 ~ Ø 32



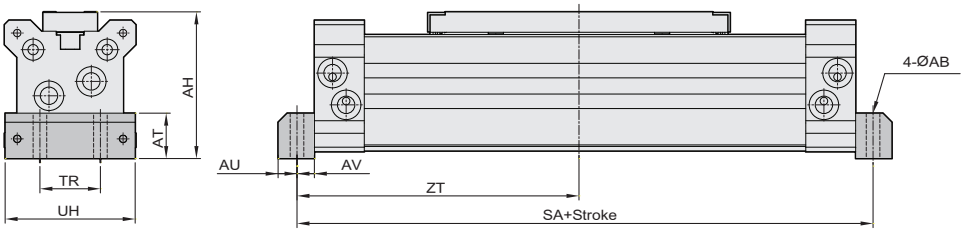
Unit: mm

Mark / Bore size	AB	AH	AT	AU	AV	SA	TR	UH	ZT
Ø10	3.6	29.7	1.6	10	4	129	18	26	64.5
Ø16	3.6	38	1.6	10	4	150	18	26	75
Ø20	4.6	47	1.6	11	5	182	24	35	91
Ø25	5.8	53	2.5	16	6	232	27	39	116
Ø32	6.6	68	3	18	8	286	36	50	143
Ø40	9	82	24	12.5	11.5	325	30	68	162.5
Ø50	9	97	30	12.5	11.5	350	40	86	175

PRF Ø 40

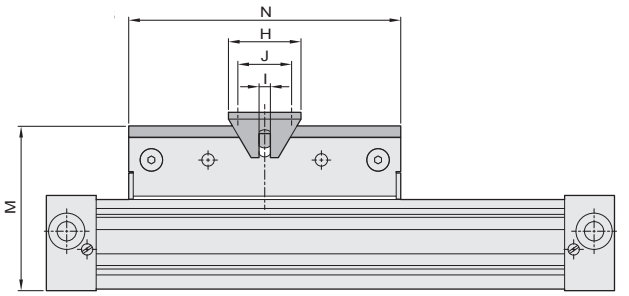


PRF Ø 50

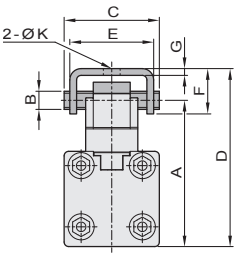


Floating bracket

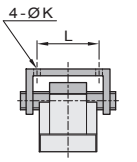
PRU2 series



PRU2 Ø16 ~ Ø32



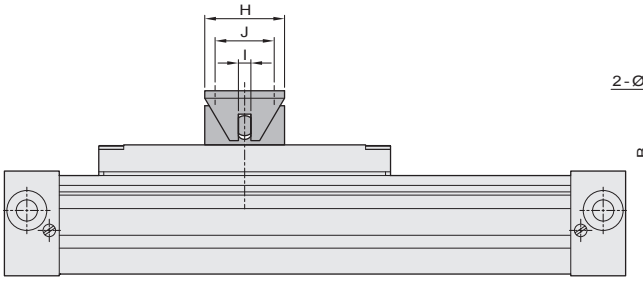
PRU2 Ø40



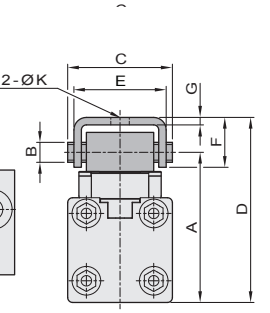
Unit: mm

Mark / Bore size	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Ø16	44	5	28	53	25	13	2	20	3	10	4.5	-	49	76
Ø20	52.5	5	37	63	34	14	2	26	3	15	4.5	-	59	96
Ø25	64.5	8	42	78.5	37	20	3	32	5	16	5.5	-	72.5	120
Ø32	83	12	55	102.5	44	30	4	60	8	40	6.6	-	94	160
Ø40	91.5	12	84	114.5	70	32	6	90	8	75	7	55	103.5	150

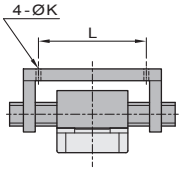
PRF2 series



PRF2 Ø16 ~ Ø32



PRF2 Ø40 ~ Ø50

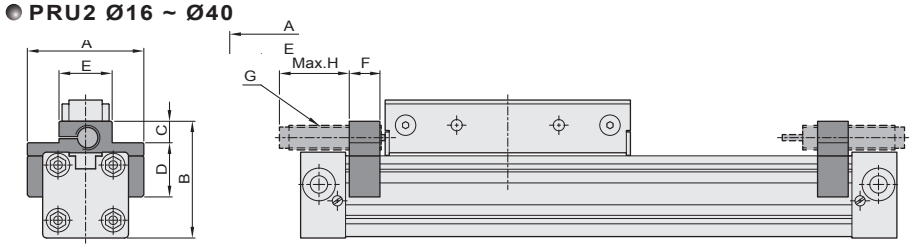


Unit: mm

Mark / Bore size	A	B	C	D	E	F	G	H	I	J	K	L
Ø10	34.2	5	28	43.7	25	13	2	20	3	10	4.5	-
Ø16	42.5	5	28	52	25	13	2	20	3	10	4.5	-
Ø20	48.5	5	37	57.5	34	14	2	26	3	15	4.5	-
Ø25	60.2	8	42	74.2	37	20	3	32	5	16	5.5	-
Ø32	78	12	55	97.5	44	30	4	60	8	40	6.6	-
Ø40	85.5	12	84	108.5	70	32	6	90	8	75	7	55
Ø50	99.5	12	55	122.5	70	32	6	90	8	75	7	55

Cushion

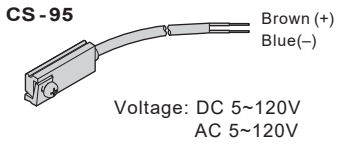
PRU2 Ø16 ~ Ø40



Unit: mm

Mark / Bore size	A	B	C	D	E	F	G	H
Ø16	43	44.4	8	20	22	10	M10×1.0P	37
Ø20	52	51.9	10.5	24.8	24	10	M10×1.0P	37
Ø25	57	64.7	17.5	26.6	30	15	M12×1.0P	37.5
Ø32	69	71.4	11.5	33.9	28	15	M14×1.5P	52
Ø40	80	91.4	18.9	41	34	20	M20×1.5P	52

Sensor switch introduction



Unit: mm

Model	CS - 95	
Bore size	Operating range(F)	Hysteresis(R)
Ø16	10	1
Ø20	9	1.2
Ø25	9	1.2
Ø32	13	1.2
Ø40	10.5	1.5