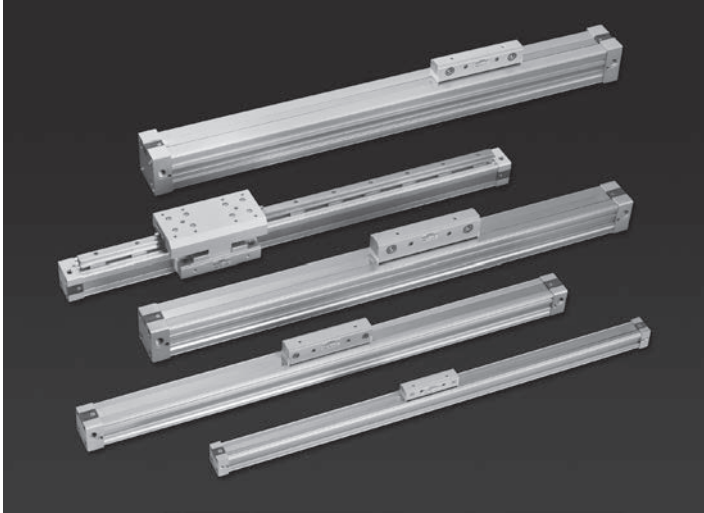


PRU / PRF / PRUT series

Rodless cylinder

CHELIC PNEUMATIC



PRU · PRF · PRUT series
Provide CAD external dimension.

New :
PRU(F)-20 series

Full range of modifications of tube,
in order to make cylinder stronger and
increase efficiency.

PRU
Rodless
Cylinder

PRF
Rodless
Cylinder

PRUT
Rodless
Cylinder

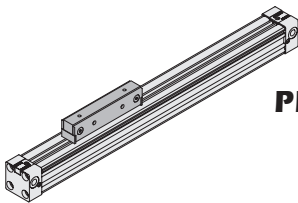
MRD
Magnetic
Rodless
Cylinder

MRB
Magnetic
Rodless
Cylinder

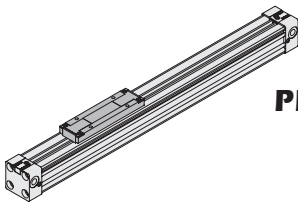
MRX
Magnetic
Rodless
Cylinder

MRU
Magnetic
Rodless
Cylinder

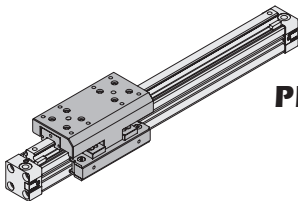
MRH
Magnetic
Rodless
Cylinder



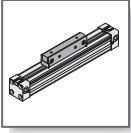
PRU series ----- Rodless cylinder ----- $\varnothing 16\text{-}\varnothing 40$ ----- P.3-6.1
(Standard type)



PRF series ----- Rodless cylinder ----- $\varnothing 16\text{-}\varnothing 40$ ----- P.3-6.1
(Moderate type)



PRUT series ----- Rodless cylinder ----- $\varnothing 16\text{-}\varnothing 40$ ----- P.3-6.9
(Linear guides)



Safety notice / Rodless cylinder caution for application

CHELIC PNEUMATIC

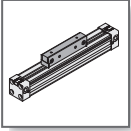


Please read this safety notice carefully, pay attention to safety item while using this product, in order to prevent injury to human body and damage of property.

Caution for service and Selection

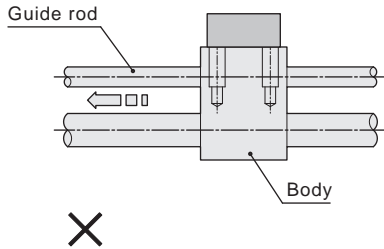
Warning

- Make thorough understanding to the characteristic of the compressed air and the application of this product while designing circuit.
- Please use only the fluid stated on the catalog, don't use the fluid other than limited, in order to prevent damage of product and affect the operation safety.
- The air used is compressed air, please note that expandable and unstable pressure will fly out, burst out, or leak.
- The magnetic force of the magnet is very strong, pay attention to the distance of the slide block moving between front and rear base, avoid activated and crashed and injured.
- Please used as per the specification stated on the catalog, exceeding the pressure beyond the specification, temperature and condition will cause poor action and affect the operation safety. Selection of cylinder, load should not exceed allowable value (give allowance).
- For fixing method, do not secure at middle of slide base but both ends.
- For single rod type rod-less cylinder, the fixing o guide rod should be done on both sides; setting of the turn angle of the slide block should be maintained within 1 degree.
- Due to the mechanical design of movement by rod-less cylinder with variation of wobbling, please pay attention to flying objects and possible crash hazard of your limbs, which may result in body injury and mechanical damage and so on; please take precaution upon designing.
- The movable range of rodless cylinder may contact our body and cause injury, should be protected by safety guard to prevent direct contact of body hazard.
- Maintain minimum activating pressure, keep smooth stroke.
- If the fixing face of cylinder is poor, the parallelism of the affect by pressure, the shaft receive uneven force, cause friction resistance increase and affect the stable stroke, so maintain fixed stable and even force receiving.
- Keep the surface of the cylinder tube clean and scratch free on circumference face; if there is damage in cylinder tube will cause poor action, and cause damage of cylinder if there is recession.
- Take the driving mechanism and circuit control system combination into account upon design, avoid residue pressure in circuit, fail to completely positioning and lateral pressurized and other factor, causing high speed fly out of the object. These situations are very possible to cause body injury, limbs crashed, and damage of mechanism. Countermeasure of protective circuit is necessary.
- Avoid direct load on cylinder slide block; poor fixing method cause deflection of cylinder tube and poor action; therefore, it is preferable to rest the load on guide rod, cylinder moving the slide block and move the load, just do the transmission work, it is best design method.

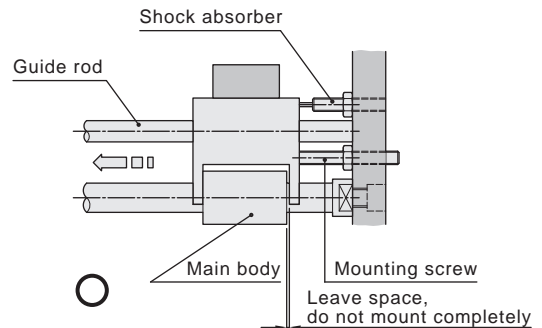


Safety notice / Rodless cylinder caution for application

CHELIC PNEUMATIC



- Direct load receiving may cause deflection of cylinder tube



- Indirect load receiving method, better design

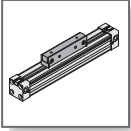
⚠ Caution

- The magnet on the cylinder slide base should keep distance from iron plate and magnetic object to prevent the cause of error induction, and should avoid too close to other magnetic related sensor and the range of slide base stroke and induce error induction.
- Avoid fast impact for the buffer device which cause damage due to collision of magnet, the preferable method is to mount hydraulic buffer device at both ends; start from slow motion in testing the installation and rise the speed slowly.
- The emergency stop device for mechanism is essential, in case of malfunction, in addition the protection device, there should have malfunction stop device to prevent damage of equipment or hurt of human body.
- The restart after the emergency stop should confirm the safe position and collision, affect damage of equipment or hurt of human body; there shall have safety precaution countermeasure for restart after the emergency stop upon designing.
- Please don't apply external process to rod-less cylinder to change the profile and structure, causing insufficient strength and structure damage, part damage.
- Please don't enlarge the vent hole of inlet, enlarged Bore size increase rocking speed and inert torque instant impact, lead to structure damage of product and human injury.

Caution for service and maintenance

⚠ Warning

- Shut off the power switch and air source properly before service and maintenance, confirm that there is no residue pressure in the pipeline and start work after confirming the status is safe.
- Please don't disassemble the rod-less cylinder in discretion, there is strong magnet inside, error disassembling will lead to hazard and cause problem on operation of the product.
- Please don't disassemble the rod-less cylinder in discretion because the margin of cylinder is sharp, error disassembling will lead to hazard and cause problem on operation of the product.

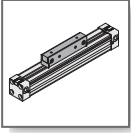


Safety notice / Rodless cylinder caution for application

CHELIC PNEUMATIC

Caution

- The rod-less cylinder is coated with small amount of lubricator at initial using state, it will decrease after a period of usage, and should be added up with appropriate amount of oil according to actual application condition. Lubricant is essential in high speed moving, limit to use ISO-VG32 lubricant, feed by oil applicator, may cause poor action if stop oiled when it is required.
- When disassembling the connecting object of the cylinder, it shall be tighten at even force, and push by hand to confirm there is no interference and then start to supply air.
- Service and maintenance should be perform regularly as schedule, and confirm the normal operation of following :
 - ① Is the compressed air supplied stably?
 - ② Is the front filter and strainer normal?
 - ③ Is the connection portion or piping loosen accompany moving of object? Is the pipe connection portion normal?
 - ④ Is the action condition of the cylinder normal? Is there any delay phenomena and exhaust normal? Any strange noise?
 - ⑤ Whether the piping system connected to solenoid valve (governor) normal? Terminal start and stop movement normal? Is the load system normal?
 - ⑥ Is the lubricant feeding system normal? Is the oil amount adjusted properly?

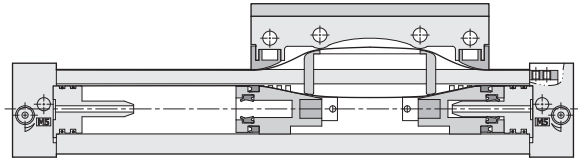


PRU / PRF series - Rodless cylinder

Operating specification and Ordering expression

CHELIC PNEUMATIC

Internal structure



PRU
Rodless
Cylinder

PRF
Rodless
Cylinder

PRUT
Rodless
Cylinder

Theoretical force

Unit : kgf

Bore size mm	Action	Piston area cm ²	Air pressure (kgf/cm ²)						
			1	2	3	4	5	6	7
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

Note : Above are theoretical Data : please take into consideration the frictional resistance and the mechanical efficiency of value should be added calculation before using. (About 70%~80%)

MRD
Magnetic
Rodless
Cylinder

MRB
Magnetic
Rodless
Cylinder

MRX
Magnetic
Rodless
Cylinder

Specification

Standard weight (PRU series)

Item	Bore size (mm)	Ø16	Ø20	Ø25	Ø32	Ø40
Operation		Double acting				
Fluid		Air				
Pressure range	kgf/cm ² (kpa)	1.5 ~ 7 (150 ~ 700)				
Max. service pressure	kgf/cm ² (kpa)	8 (800)				
Operating ambient temperature range	°C	0 ~ 60				
Range of service speed	mm/sec	50 ~ 500				
Lubrication		Free				
Cushion device		Pressure cushion				
Port size		M5	G 1/8"	G 1/4"		
Magnet device		With magnet				

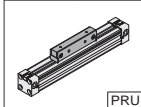
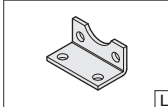
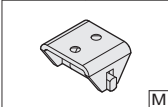
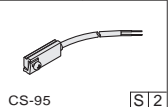
Bore size	Stroke	The weight for each additional stroke
Ø16	0.25	0.1
Ø20	0.47	0.15
Ø25	0.74	0.197
Ø32	1.62	0.354
Ø40	2.10	0.415

Unit : kg

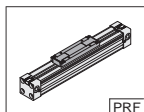
MRU
Magnetic
Rodless
Cylinder

MRH
Magnetic
Rodless
Cylinder

How to order

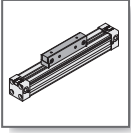
PRU	16	×	50	-	L	-	M	-	S	2
Model	Bore size		Stroke		Mounting bracket		Mounting bracket		Sensor switch	
	16 - Ø16 20 - Ø20 25 - Ø25 32 - Ø32 40 - Ø40		Ø16 - 50-1000 Ø20 - 50-1000 Ø25 - 50-1500 Ø32 - 50-1500 Ø40 - 50-1500							CS-95 [S] 2

PRU :
Standard type



PRF :
Moderate type

None :
Without Sensor switch
[S] : Sensor switch code
(CS-95)
[2] : Number of Sensor switch

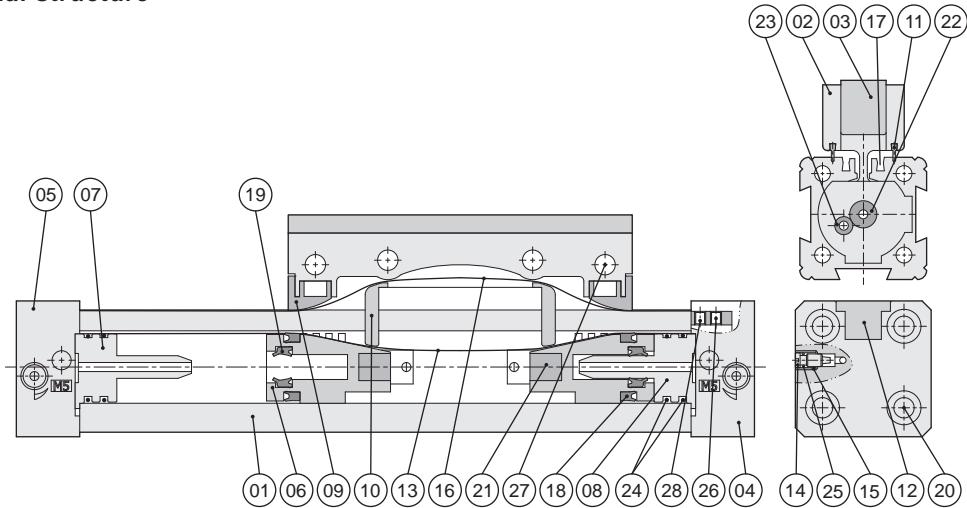


PRU / PRF series - Rodless cylinder

Components and Material list

CHELIC PNEUMATIC

Internal structure

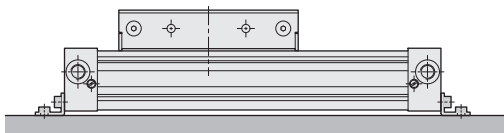


Components and Material list

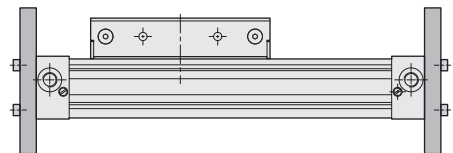
No.	Item	Material	No.	Item	Material
01	Body	Aluminum alloy	15	Bush	Stainless steel
02	Sliding block	Aluminum alloy	16	Belt	Stainless steel
03	Sliding plate	Aluminum alloy	17	Magnet belt	Rubber
04	Cover (right)	Aluminum alloy	18	Piston packing	NBR
05	Cover (left)	Copper	19	Cushion packing	NBR
06	Piston	POM	20	Screw	Medium carbon steel
07	Cushion rod (left)	POM	21	Piston magnet	SCM
08	Cushion rod (right)	POM	22	O-Ring	NBR
09	Block	POM	23	O-Ring	NBR
10	Block	POM	24	O-Ring	NBR
11	Band	NBR	25	O-Ring	NBR
12	Plate	POM	26	Screw	Medium carbon steel
13	Belt	Stainless steel	27	Screw	Medium carbon steel
14	Cushion needle	Copper	28	Screw	Medium carbon steel

Mounting type

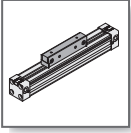
● Mounting bracket type



● Mounting cover type



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



PRU / PRF series - Rodless cylinder

Design and Installation reference

CHELIC PNEUMATIC

Load and Moment allowable

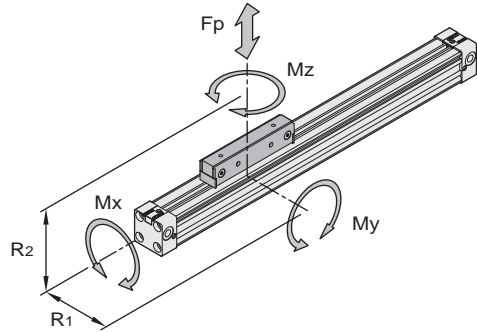
The maximum allowable moment is to calculate the piston of center of gravity.

In general situation, the moment of load can not exceed the range of allowable. If the moment of load is not single direction, its value can not bigger than 1.

$$M_x = F_p \times R_1$$

$$M_y = F_p \times R_2$$

$$M_z = F_p \times R_1$$



PRU
Rodless
Cylinder

PRF
Rodless
Cylinder

PRUT
Rodless
Cylinder

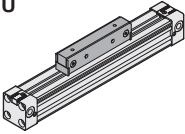
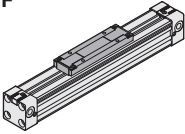
MRD
Magnetic
Rodless
Cylinder

MRB
Magnetic
Rodless
Cylinder

MRX
Magnetic
Rodless
Cylinder

MRU
Magnetic
Rodless
Cylinder

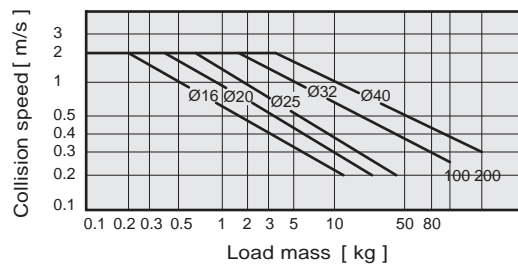
MRH
Magnetic
Rodless
Cylinder

Model	Bore size (mm)	Stroke (mm)	Theoretical force in 6 bar (N)	Max. load (N)		Max. moment (Nm)	
				Fp	Mz	Mx	My
 PRU	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
 PRF	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

Load mass and Collision speed

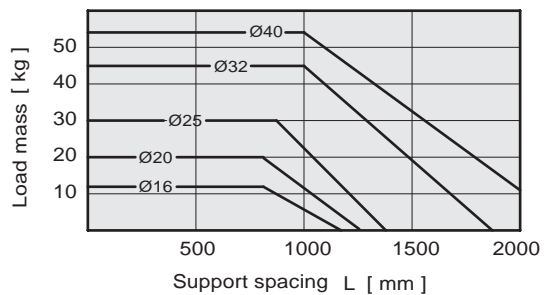
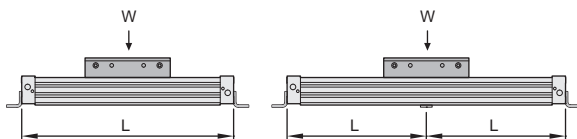
The cushion of the end of cylinder can be adjusted to make sure it do not cause the structure damage because of the stronger hit.

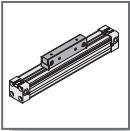
When operating with a load or speed exceeding the limit line, it should be add cushion to keep normal operating.



Load mass and Support spacing

For long stroke operation, the cylinder tube may be deflected depending on its own weight and load weight. In such a case, use a side support in the middle section.



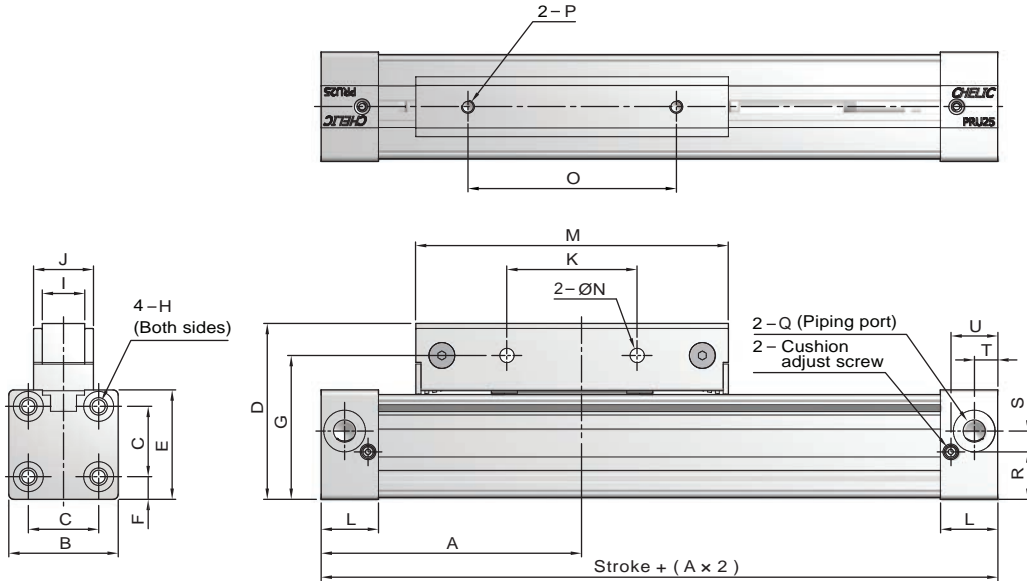


PRU series - Rodless cylinder

External dimension

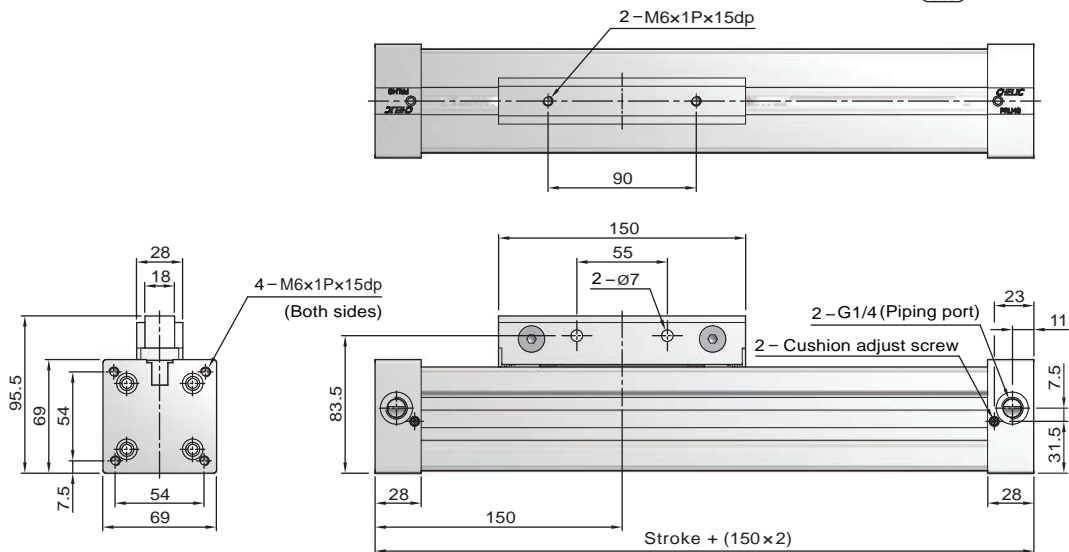
CHELIC PNEUMATIC

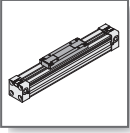
PRU Ø16 ~ Ø32



Model 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	M3x0.5P×9dp	10	18	32	14	76	4.5	48	M4x0.7P×8dp	M5x0.8P	13.4	3.5	4	10
Ø20	80	37	24	55	37	6	48	M4x0.7P×12dp	12	20	40	22	96	4.5	65	M4x0.7P×8dp	G 1/8	17	5	9	18
Ø25	100	42	27	67.5	42	8.7	55.2	M5x0.8P×15dp	16.3	23	50	22	120	5.5	80	M5x0.8P×10dp	G 1/8	18.2	8	9	18
Ø32	125	54	36	88.3	55	9.5	74.6	M6x1P×15dp	18	27	60	25.5	160	7	90	M6x1P×15dp	G 1/4	24	9	11	21

PRU Ø40



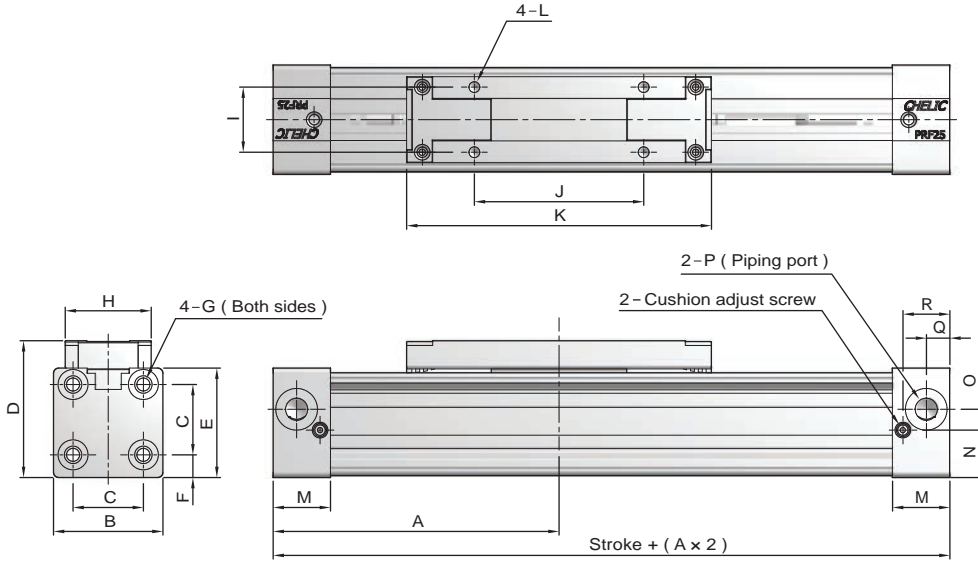


PRF series - Rodless cylinder

External dimension

CHELIC PNEUMATIC

○ PRF Ø16 ~ Ø32



PRU
Rodless
Cylinder

PRF
Rodless
Cylinder

PRUT
Rodless
Cylinder

MRD
Magnetic
Rodless
Cylinder

MRB
Magnetic
Rodless
Cylinder

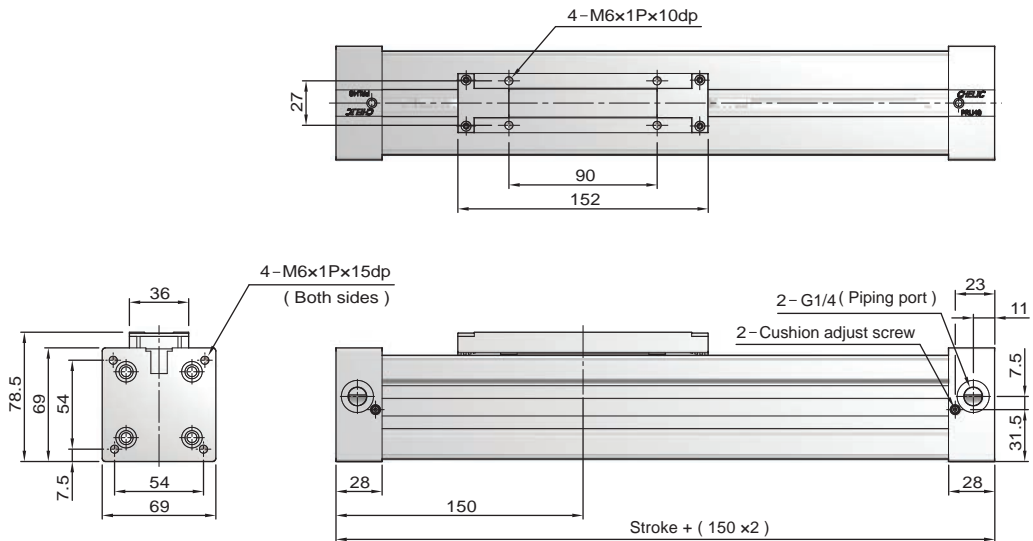
MRX
Magnetic
Rodless
Cylinder

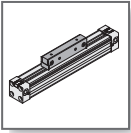
MRU
Magnetic
Rodless
Cylinder

MRH
Magnetic
Rodless
Cylinder

Model Bore size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Ø16	65	30	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	46	37	6	M4x0.7Px12dp	28	20	50	90	M4x0.7Px6dp	22	17	5	G 1/8	9	18
Ø25	100	42	27	52.5	42	8.7	M5x0.8Px15dp	33	25	65	117	M5x0.8Px8dp	22	18.2	8	G 1/8	9	18
Ø32	125	54	36	66.5	55	9.5	M6x1Px15dp	36	27	90	152	M6x1Px10dp	25.5	24	9	G 1/4	11	21

○ PRF Ø40





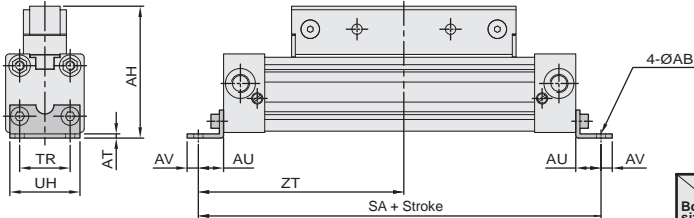
PRU / PRF series - Rodless cylinder

Accessories external dimension

CHELIC PNEUMATIC

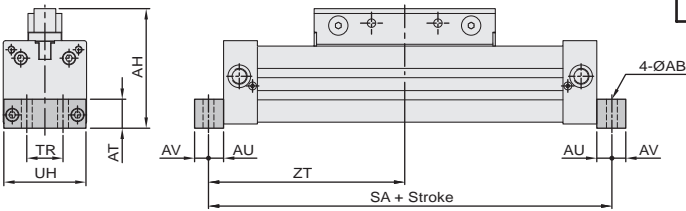
○ L type mounting bracket (PRU)

● PRU Ø 16 ~ Ø 32



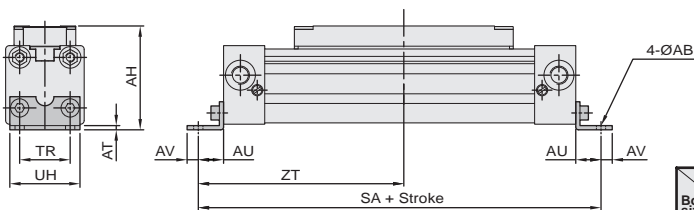
Model Bore size	AB	AH	AT	AU	AV	SA	TR	UH	ZT
Ø16	3.6	45	1.6	10	4	150	18	26	75
Ø20	4.6	56	1.6	11	5	182	24	35	91
Ø25	5.8	68	2.5	16	6	232	27	39	116
Ø32	6.6	89.8	3	18	8	286	36	50	143
Ø40	9	99	24	12.5	11.5	325	30	68	162.5

● PRU Ø 40



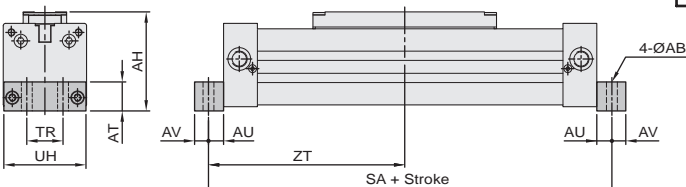
○ L type mounting bracket (PRF)

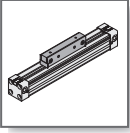
● PRF Ø 16 ~ Ø 32



Model Bore size	AB	AH	AT	AU	AV	SA	TR	UH	ZT
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

● PRF Ø 40





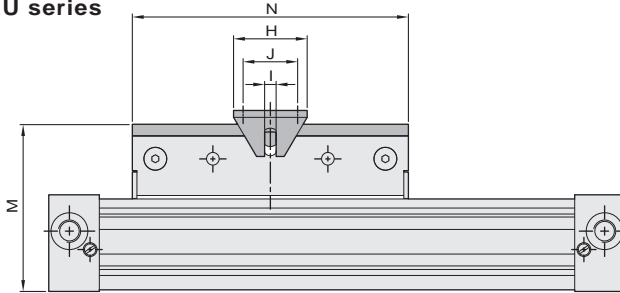
PRU / PRF series - Rodless cylinder

Accessories external dimension

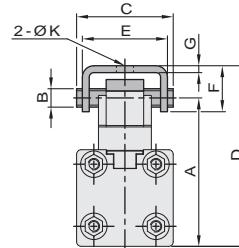
CHELIC PNEUMATIC

Mounting bracket

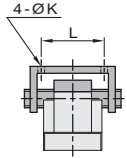
PRU series



PRU Ø16 ~ Ø32



PRU Ø40



Bore size	Model	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	61.5	34	13	2	26	3	15	4.5	-	57.5	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

PRU
Rodless
Cylinder

PRF
Rodless
Cylinder

PRUT
Rodless
Cylinder

MRD
Magnetic
Rodless
Cylinder

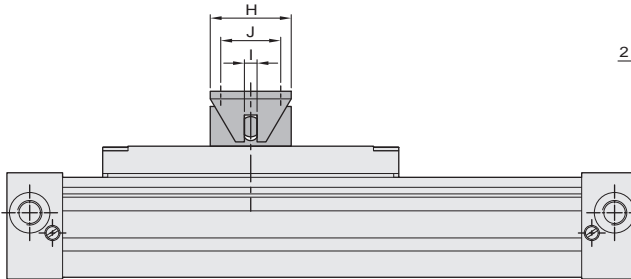
MRB
Magnetic
Rodless
Cylinder

MRX
Magnetic
Rodless
Cylinder

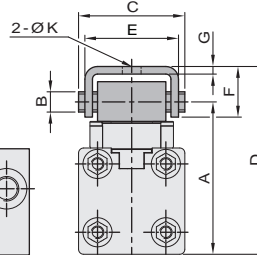
MRU
Magnetic
Rodless
Cylinder

MRH
Magnetic
Rodless
Cylinder

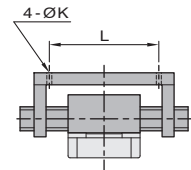
PRF series



PRF Ø16 ~ Ø32



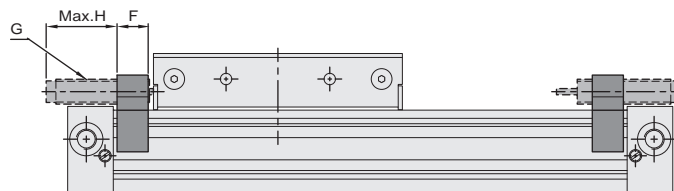
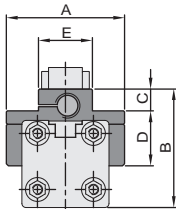
PRF Ø40



Bore size	Model	A	B	C	D	E	F	G	H	I	J	K	L
Ø16		40.5	5	31	49.5	28	13	2	20	3	10	4.5	-
Ø20		48.5	5	37	57.5	34	13	2	26	3	15	4.5	-
Ø25		60.2	8	42	74.2	37	20	3	32	5	16	5.5	-
Ø32		75.7	12	55	95.2	44	30	4	60	8	40	6.6	-
Ø40		85.5	12	84	108.5	70	32	6	90	8	75	7	55

Cushion device

PRU Ø16 ~ Ø40



Bore size	Model	A	B	C	D	E	F	G	H
Ø16		43	41.9	8	20	22	10	M10×1.0P	37
Ø20		52	51.9	10.5	24.8	24	10	M10×1.0P	37
Ø25		57	57.1	10.5	26.5	26	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	53

