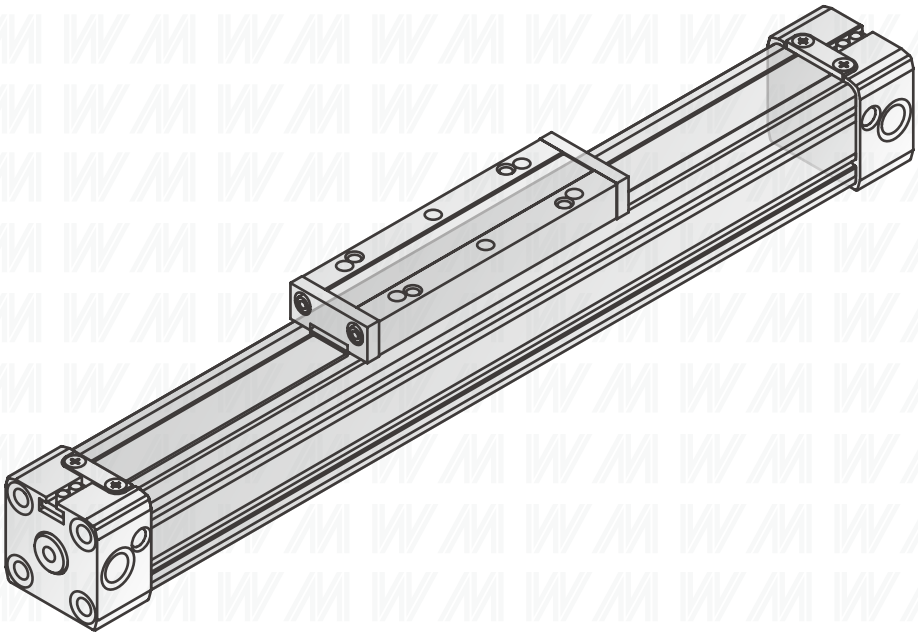
MCRPLF2

Pneumatic Rodless Cylinder

User Manual E1.0



mindman

Contents

1 Operating Parts and Ports 3

2 Function and Applications 4

3 Caution 5

4 Installation 7

5 Specification 9

6 Operating Speed 9

7 Performance 10

8 Maintenance and Repairment 11

Warranty

All products manufactured by Mindman are under warranty regarding defective materials for a period of one year, starting from the date of delivery to the original purchaser.

Warning

Mindman assumes no liability for damages resulting from the use of this product. Mindman reserves the right to change this manual at any time without notice. The information published by Mindman is believed to be accurate and reliable. However, no responsibility is assumed by Mindman for its use, not for any infringements of patents or other rights of third parties resulting from its use.

Copyright

Copyright © 2025 by Mindman Co., Ltd. All rights are reserved.

Trademark

The names used for identification only may be registered trademarks of their respective companies.

Contact us

If there has any question, please contact Mindman right away. Thank you.

1. Operating Parts and Ports

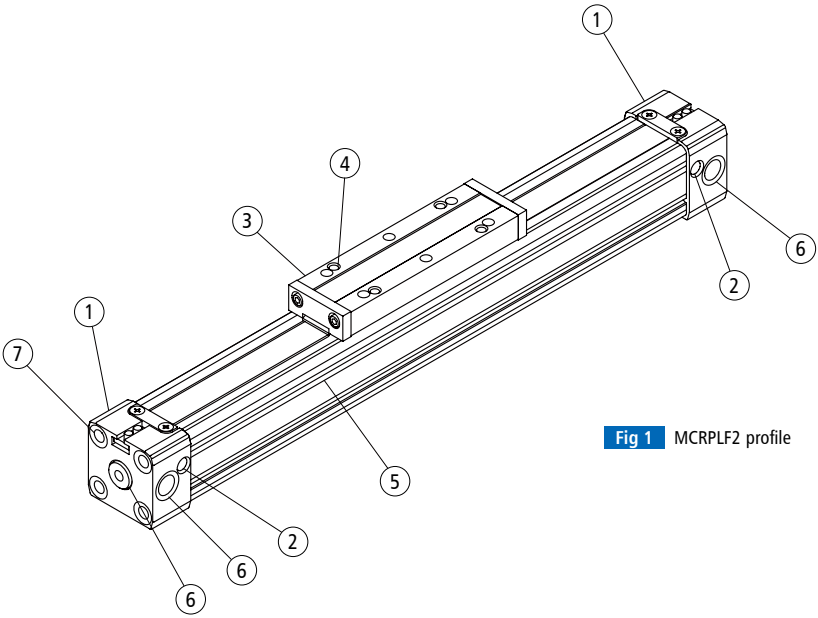


Fig 1 MCRPLF2 profile

No.	Description
1	End Caps
2	Cushioning Adjuster
3	Slider
4	Mounting Holes
5	Sensor Slots
6	Ports
7	Mounting Holes *

* Built-in threads in the mounting bolts for model 16/25/32. Normal threads for model 40/50/63.

2. Function and Applications

Input compressed air through ports ⑥ to move the piston inside the cylinder. The slider ③ is connected to the piston, and they move simultaneously.

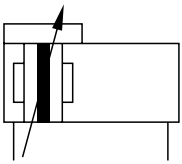


Fig 2 Switch symbol

The **MCRPLF2** series is designed for load transmission and space-saving purposes.

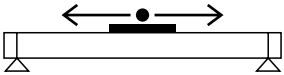


Fig 3 Slider operation mode

⚠ Caution

The slider can be moved slowly when there is no input source for debugging purposes.
High-speed movement may damage the inner pneumatic sealing, resulting in air leakage.

3. Caution

3.1 Input Air Quality

Foreign debris or water may damage the pneumatic sealing, please use filtered air.

3.2 Piping

A. Don't overtighten the ports.

B. Use filtered air and a lubricator for better service life.

C. As shown in **Fig 4** , ensure that the lubricator is placed as close to the cylinder as possible for higher efficiency and lower air consumption

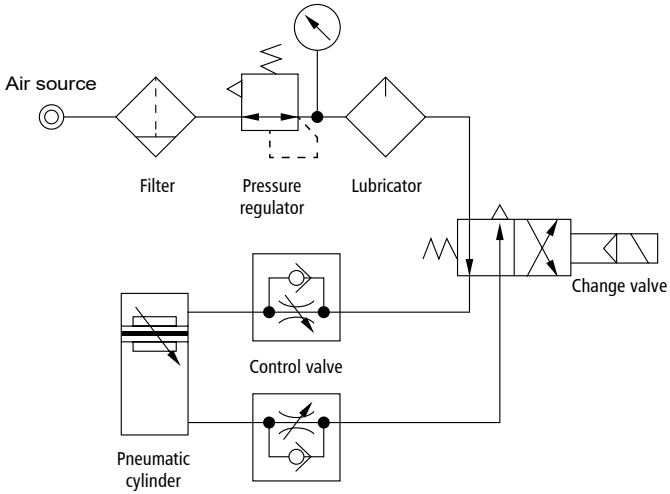


Fig 4 Air pressure circuit

3.3 Lubricating

The product can be used without additional lubricant (already included). However, once additional lubricant is used, do not stop feeding. Use lubricant (ISO VG32 grade) for the cylinder.

3.4 Load Capacity

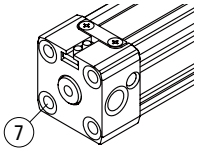
Please check our catalog for suitable installation methods and accessory usage.

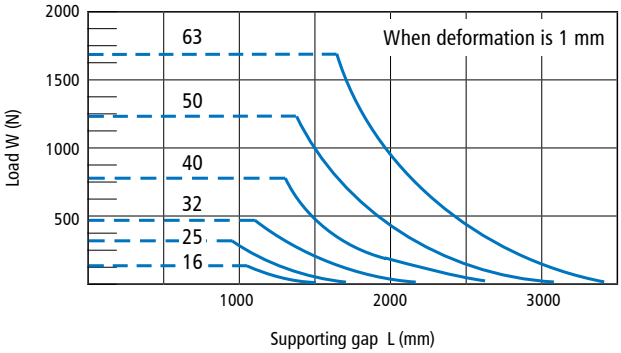
3.5 Avoid Collisions

Avoid collisions with sliding parts to protect the inner pneumatic sealing. After installation, if any part is exposed and may be struck by hand, it is necessary to use a protective cover to prevent impact damage and protect the components.

4. Installation

1. Do not bend or twist the cylinder during installation.
   Before installation, check the flatness of the installation area.
2. Please use the threads ⑦ on the end caps for installations.
   When the stroke of the product is long, please use additional support parts from our catalog, as shown in **Fig 5** .
3. Please use accessories from our catalogue.
4. Deformation is allowed to be less than 1 mm. If the deformation exceeds 1 mm, reduce the supporting gap or increase the quantity of supports, as shown in **Fig 6** .





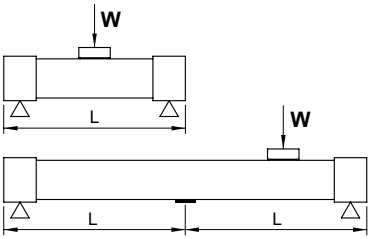


Fig 5

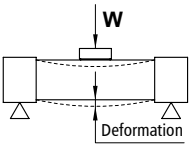


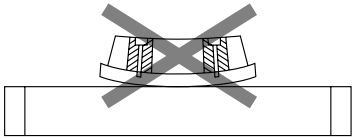
Fig 6

5. The tightening torque is displayed in the table below.

Use mounting holes ⑦ for installation						
Model	16	25	32	40	50	63
Torque [N-m]	0.63	2.9	5.2	5.2	5.2	12.5
Use supports						
Model	16	25	32	40	50	63
Torque [N-m]	2.9	2.9	5.2	5.2	5.2	5.2

⚠ Caution

Deformed load shape can damage the slider ③. Please check the flatness of the installation area.



6. Tightening torque for mounting holes ④ on the slider.

Model	16	25	32	40	50	63
Thread	M4	M5	M6	M6	M6	M8
Torque [N-m]	1.5	2.9	5.2	5.2	5.2	12.5

5. Specification

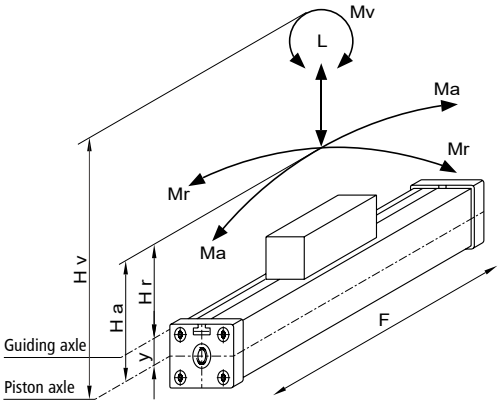
Model	MCRPLF2			
Tube I.D.	16	25	32 、40 、50	63
Port size	M5	G1/8	G1/4	G3/8
Acting type	Double acting			
Medium	Air			
Lubrication	With or without lubrication			
Operating pressure range	0.1 ~ 0.78 MPa			
Ambient temperature	-10~+80°C (No freezing)			
Stroke range (mm)	100 ~ 3000	100 ~ 5600		
Cushion	With adjustable cushion at both ends			
Sensor switch	RDT, RQT			
Sensor switch holder	HPL2		–	

*1. Minimum stroke unit 1mm.
*2. The tube isn't airtight, so the cylinder is allowed little leakage. Before the cylinder is sale, it has passed the standard of leakage test.

6. Operating Speed

Piston seals	Grease lubrication	Available speed range (mm/s)
NBR	Slow motion	50 ~ 100
	Standard	Within 100 ~ 1000
VITON	Slow motion	50 ~ 200
	Standard	200 ~ 1000 above

7. Performance



Formulas

Ma = F × Ha
Mr = F × Hr
Mv = F × Hv

Cylinder		Effect force (N) at 6 bar	Cushion (mm)	Max. allowed load (N)	Max. allowed bending moment (Nm)		Max. allowed torque (Nm)
ø	y	F	S	L	Ma axial	Mr radial	Mv central
16	9	110	15	120	4	0.3	0.5
25	14	250	21	300	15	1	3
32	18	420	26	450	30	2	4.5
40	23	640	32	750	60	4	8
50	28	1000	32	1200	115	7	15
63	36	1550	40	1650	200	8	24

- The figures above are max. values based on light shock free duty and speed of V ≤ .2m/s. Max. pressure 6 bar.
- An exceeding of the values in dynamic operations, even for short moments, has to be avoided.

⚠ Caution

Please ensure that the load is kept under 80% of the maximum value as a safety factor.

8. Maintenance and Repairment

⚠ Caution

Please release the internal pressure before disassembling to prevent parts from falling out.

8.1 Parts Cleaning

1. For metal parts, please clean with turpentine oil, trichloroethylene, or similar solvents.
2. For non-metal parts, please clean with mineral-based light oil and neutral detergent. After cleaning, residual solvent should be thoroughly removed before assembly.

MEMO