

Please read these Operational Instructions carefully and follow them accordingly!

Ignoring these Instructions may lead to malfunctions or to brake failure, resulting in damage to other parts.

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Declaration of Conformity

A conformity evaluation for the applicable EU directives has been carried out for this product.

The conformity evaluation is set out in writing in a separate document and can be requested if required.

It is forbidden to start use of the product until the machine or system into which it should be built is operating in accordance with all applicable EU directives.

Without a conformity evaluation, this product is not suitable for use in areas where there is a high danger of explosion.

This statement is based on the ATEX directive.

Safety Regulations



Danger!

This warning applies if:

- the ROBA[®]-linearstop brakes are modified.
- the relevant standards for safety and / or installation conditions are ignored.

User-implemented protective measures

- Cover all moving parts to protect against seizure.

To prevent injury or damage, only professionals and specialists should work on the devices.

These Safety Regulations are user hints only, and may not be complete!

Safety Sign



Danger!

Danger of injury to personnel and damage to machines.

Installation and Operational Instructions for ROBA®-linearstop Brakes Type 381.00_0

(B.381.GB)

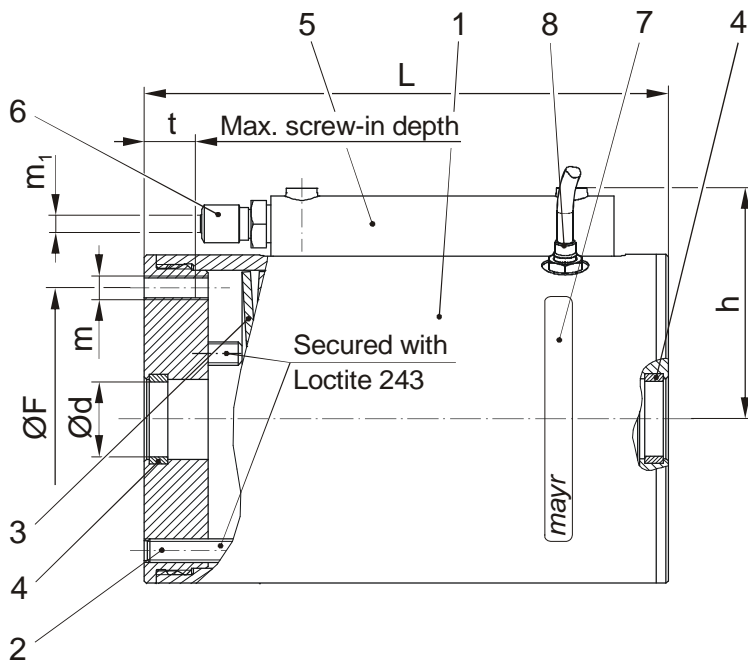


Fig. 1

Position of the compressed air connection
± 30° to a fixing screw

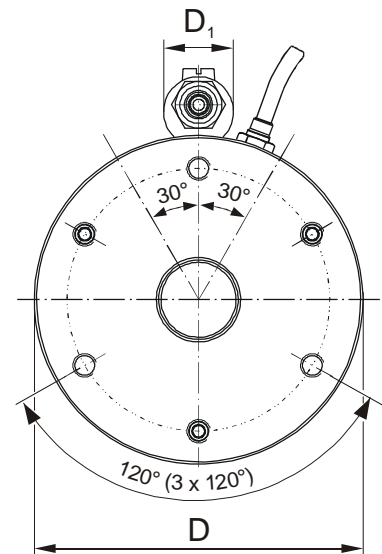


Fig. 2

Parts List (Only use mayr® original parts)

- | | | | |
|---|---------------------------|-----|---|
| 1 | Housing | 6 | Plug connection for connection thread M5 |
| 2 | Set screw | 7 | Type tag |
| 3 | Spring | 8 | Release monitoring (option dependent on Type) |
| 4 | Guide ring | 8.1 | Proximity sensor (Fig. 4 / page 4) |
| 5 | Compressed air connection | 8.2 | Hexagon nut (Fig. 4 / page 4) |

Table 1: Technical Data

Size	Holding force F* [N]	Weight [kg]	Operating pressure** [bar]	Max. permitted inspection pressure [bar]	Compressed air connection outer Ø hose m1 [mm]	Pressure medium	Ambient temperature [°C]
2	500	0,6	6 – 8	10	6	Compressed air VG-32 ISO 3448 filtered, oiled or not oiled	-10 up to +60
4	2500	1,4	6 – 8	10	6		
6	6000	4,2	6 – 8	10	6		

* Minimum holding force when the brake is not pressurised, and with a brake rod that is dry or has been moistened with mineral oil.

** Other operating pressures available on request

Table 2: Dimensions List

Size	D	D ₁	d	F	h	L	m	t
2	42	15	12	27	35,1	108	3 x M5	13,5
4	70	15	16	56	49,3	112	3 x M6	12,5
6	110	15	20	90	69,4	127	3 x M8	13,5

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(B.381.GB)

State of Delivery

The ROBA[®]-linearstop is manufacturer-assembled and adjusted to the holding force requested on order. If no holding force adjustment is requested customer-side, the brake will be adjusted to the holding force according to Table 1.

Function

The spring loaded-closed, pneumatically-opened ROBA[®]-linearstop clamps a customer-side brake rod continuously and backlash-free.



Danger!

The maximum clamping force can only be achieved when there is no pressure on the brake.

By using the spring loaded system, the fail-safe principle is guaranteed. The ROBA[®]-linearstop acts as a safety brake. The standard air pressure required (operating pressure) is 6 bar. For a lower operating pressure, the holding force is set lower accordingly. The max. permitted sliding speed is 2 m/s.

Brake Rod

- ❑ The piston rod is hard chromium-plated $Ra = 0,2 \mu\text{m}$; yield point min. 400N/mm^2 (e.g. C45); tolerance field f7 or h7; induction hardened min. 1 mm deep, HRC > 50.
- ❑ For brake installation, we recommend an insertion chamfer on the brake rod of min. $3 \times 20^\circ$.

Installation (Figs. 1 and 2)

The brake is delivered manufacturer-assembled. **The pre-tension force of the springs (3) is used to adjust the holding force manufacturer-side. The set screws (2) for spring pre-tension are secured against turning with Loctite 243. Customer-side turning of the set screws (2) can lead to malfunctions.**

- 1) Connect the pneumatic hose with $\varnothing m_1$ (Fig. 1) to the compressed air connection and pressurize the brake with operating pressure, see Table 1 (release brake).
- 2) Push the brake onto the brake rod and bring it up to contact to the mounting flange.
- 3) Screw in the fixing screws (without torque).
- 4) Switch the brake in depressurised state, thereby placing it under tension.
- 5) Tighten the fixing screws using the torque, see below.
- 6) As the brake is attached to the customer-side flange, please make sure that no constraining forces are produced between the brake rod and the brake. (The brake must run freely on the brake rod).

The brake is attached using 3x M5 (for size 2) or 3x M6 (for size 4) or 3x M8 (for size 6) screws, strength 8.8 (not included in delivery) (Fig. 1) ($\varnothing F$ or thread m).

It is essential that the following points are observed:

- a) Tightening torque for M5 screws: 6 Nm
Tightening torque for M6 screws: 10 Nm
Tightening torque for M8 screws: 24 Nm
- b) Maximum screw-in depth $t = 13,5 \text{ mm}$ (for sizes 2 and 6) or $12,5 \text{ mm}$ (for size 4) (see Table 2 and Fig. 1)
- c) Secure the screws with Loctite 243

Control

The Mayr company recommends a pneumatic control as shown in Fig. 3.

The piston space is filled with compressed air, thus suspending the spring force. Cross-sections and line lengths have a considerable effect on the reaction times. For quicker brake engagement, we recommend a quick-action ventilating valve.

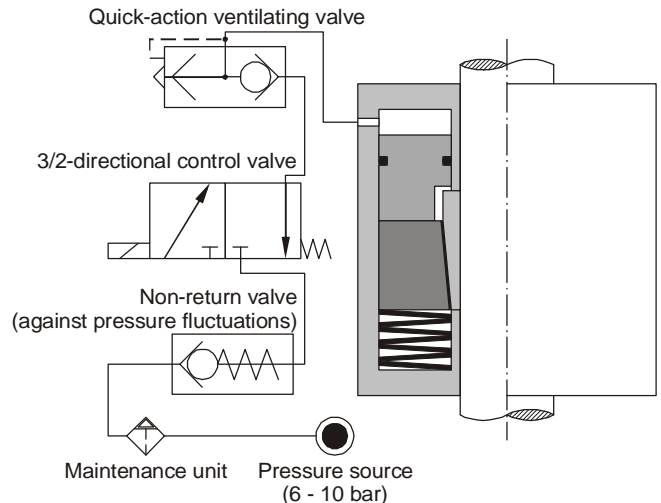


Fig. 3

Maintenance / Switching Frequency

Die ROBA[®]-linearstop is designed for a switching frequency of 200.000 switchings (higher switching frequencies are available on request). The ROBA[®]-linearstop is mainly maintenance-free. The brake rod must be checked regularly (at least every 6 months) for contamination by friction value-decreasing materials, and cleaned if necessary. Special maintenance work is necessary should the device be subject to very dirty, dusty or extreme ambient conditions (please contact the manufacturers). Please ask the manufacturer about permitted friction work during EMERGENCY STOP braking actions.

Operational Safety Precautions

According to the application requirements, regular brake force inspections must be carried out, e.g. 1 x per shift with a load 1,5 times as much as expected. If the brake is installed vertically, we recommend using a release monitoring device (8) in addition to the regular holding force inspections in order to monitor the switching condition of the brake or to prevent possible load crashes.

Installation and Operational Instructions for ROBA®-linearstop Brakes Type 381.00_0

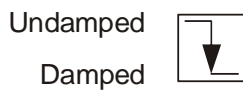
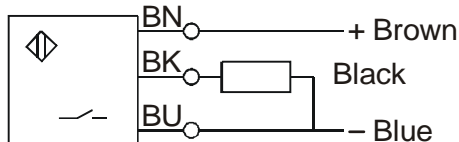
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Release Monitoring (8) Figs. 1 + 4 (Type 381.001.0)

The ROBA®-linearstop brakes Type 381.001.0 are delivered with manufacturer-side adjusted release monitoring. A proximity sensor (Item 8.1 / Fig. 4) emits a signal for every brake condition change:
"Brake opened" or "Brake closed".

The customer is responsible for a signal evaluation of both these conditions.

Wiring Diagram:



Electrical Data:

PNP / NO contact

Rated operating voltage: $U_e = 24$ VDC

Operating voltage: $U_B = 10...30$ VDC

Cable length: 2000 mm

Proximity Sensor Adjustment (Fig. 4):

- 1) Brake is depressurised (closed).
- 2) Screw in the proximity sensor until the **signal "ON"** is emitted.
- 3) Counter the proximity sensor (8.1) with a hexagon nut (8.2).
- 4) Adjust the brake release pressure.
- 5) Switch off the pressure → **Signal "ON"**.
- 6) Switch on the pressure → **Signal "OFF"**.
- 7) Increase the brake release pressure to operating pressure and carry out a functional inspection.

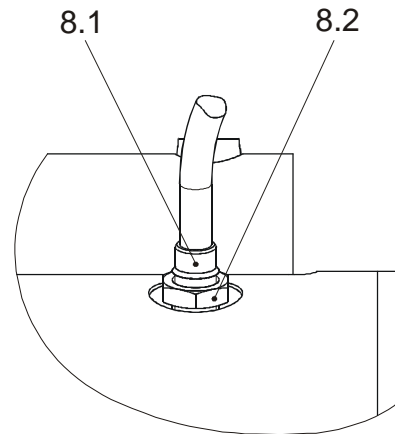


Fig. 4

Disposal

Electronic components (proximity sensor):

Products which have not been dismantled can be disposed of under the Code No. 160214 (Mixed Materials) or Components under Code No. 160216; or the objects can be disposed of by a certified waste disposal firm.

All steel parts:

Steel scrap (Code No. 160117)

Seals, O-rings, V-seals, elastomers:

Plastics (Code No. 160119)

Malfunctions / Breakdowns

Malfunction	Possible Causes	Solution
Brake does not release	Operating pressure too low / changed spring pre-tension	Check the operating pressure and increase if necessary
	Defective valve	Replace defective valve
Brake does not function	Defective valve	Replace defective valve
	Friction value-decreasing materials on the brake rod	Clean the brake rod