Installation and Operational Instructions for Pneumatic Safety Brakes Size 11

Design according to Drawing number: E006 11 197 000 112 Article number: 8204879

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. These Installation and Operational Instructions (I + O) are part of the brake delivery. Please keep them handy and near to the brake at all times.

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Safety and Guideline Signs

CAUTION



Danger of injury to personnel and damage to machines.



Please Observe! Guidelines on important points.



According to German notation, decimal points in this document are represented with a comma (e.g. 0,5 instead of 0.5).

Safety Regulations

These Installation and Operational Instructions (I + O) are part of the brake delivery. Please keep them handy and near to the brake at all times.



It is forbidden to start use of the product until you have ensured that all applicable EU directives, directives for the machine or system into which the product has been installed have been fulfilled. At the time these Installation and Operational Instructions go to print, the pneumatic brakes accord with the known technical specifications and are operationally safe at the time of delivery. 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.



If the pneumatic brakes are modified.

If the relevant standards for safety and / or installation conditions are ignored.

User-implemented Protective Measures

Cover all moving parts to protect against seizure, dust or foreign body impact.

To prevent injury or damage, only professionals and specialists should work on the devices, following the relevant standards and directives. Please read the Installation and Operational Instructions carefully before installation and initial operation of the device.

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



Installation and Operational Instructions for Pneumatic Safety Brakes Size 11



Fig. 2

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(E006 11 197 000 4 EN)

Parts List (Only use mayr[®] original parts)

Item	Name	Pcs.
1	Hub	1
2	Cylinder assembly	1
2.1	Cylinder	1
2.2	Thrust ring	1
2.3	Armature disk	1
2.4	Distance sleeve	12
2.5	Piston	1
2.6	Quad ring D240,67 x 5,33	1
2.7	Quad ring D120,02 x 5,33	1
2.8	Cap screw M8 x 65	10
2.9	Cap screw M8 x 70	2
2.10	Sealing plug D20 / 16,5 x 7,5	1
2.11	Screw plug with sealing ring G3/8"	2
3	Friction block	12
4	Cap screw M10 x 100	5
5	Cap screw M10 x 105	1
6	Washer A10,5	7
7	Bracket	1
8	Holding plate	1
9	Cap screw M10 x 25	1
10	Type tag	1

Technical Data

Braking torque:	1600 Nm
Max. speed:	600 rpm
Tightening torque (Item 7):	48 Nm
Compressed air connection:	R3/8"
Operating pressure:	5,5 – 8 bar
Min. release pressure:	5,2 bar
Mass:	57,1 kg
Nominal air gap ¹⁾ "a" (Figs. 2 + 3):	0,7 ^{+0,5} mm
Max. permitted air gap "a" (Figs. 2 + 3) after wear:	2,5 mm

¹⁾ The nominal air gap is the air gap to be adjusted in new condition or during re-adjustment



Function

This pneumatic safety brake is a brake, which is actuated via thrust springs.

The brake is released via the application of compressed air. In de-pressurised condition, the thrust springs press the armature disk (2.3) including the piston (2.5) against the friction blocks (3) and the customer-side machine wall, thereby holding the drive element in braked condition.

On application of compressed air (min. 5,2 bar), the armature disk (2.3) including the piston (2.5) is pressed against the thrust springs to the cylinder (2.1); therefore, the brake is torque-free.

Scope of Delivery / State of Delivery

The cylinder assembly (2) incl. attachment parts is preassembled.

All screw connections are tightened to tightening torque. Included loose in delivery are:

Hub (1), 1 set of friction blocks (Item 3 / 12 pieces), cap screws (4), cap screw (5) and 6 washers (6).

Please check the scope of delivery according to the Parts List as well as the state of delivery immediately after receiving the goods.

mayr[®] will grant no guarantee for belated complaints. Please report transport damage immediately to the deliverer. Please report incomplete delivery and obvious defects immediately to the manufacturer.

Installation Conditions

- □ The eccentricity of the mounting pitch circle and the centering Ø 360 in relation to the shaft end must not exceed 0,2 mm.
- □ The positional tolerance of the threads for the hexagon head screws (4/5) must not exceed 0,4 mm.
- □ The axial run-out deviation of the screw-on surface to the shaft must not exceed the permitted axial run-out tolerance of **0,063 mm** acc. DIN 42955 R. The centering diameter is the related diameter.
- □ The brake surfaces and friction blocks (3) must be oil and grease-free.

Brake Release Capacity

During the course of installation, the release behaviour of the brake must be checked

Check the air gap "a" = $0,7^{+0.5}$ using a feeler gauge between the cylinder (2.1) and the armature disk (2.3), see Figs. 2 and 3, in de-pressurised condition.

- 1. Pressurize the brake with compressed air 5,2 bar. The hub (1) with the friction blocks (3) must be disengaged.
- 2. When measured at 5,2 bar operating pressure, air gap "a" may total max. 0,6 mm.





Brake Installation (Figs. 1 and 2)

- 1. Mount the hub (1) onto the drive shaft, bring it into the correct position and secure it axially (e.g. with a clamping set).
- 2. Equip the hub (1) with 12 friction blocks (3).
- 3. Secure the rest of the brake using cap screws (Items 4 and 5 / secure the screws using Loctite 243) with washers placed under them (6) output-side to a **tightening torque of 48 Nm**.

Pneumatic Connection

The threaded hole R3/8" for the pneumatic connection onto the piston (2.5) is sealed with a sealing plug (2.10) to protect against dirt and other external influences.

In order to connect the brake, the sealing plug (2.10) must be removed.

The operating pressure (pressure for brake release) is 5,5-8 bar.

The min. release pressure is 5,2 bar.

The compressed air quality must comply with DIN ISO 8573-1.

In case of oiled compressed air, use oil acc. ISO 3448 VG32.



Installation and Operational Instructions for **Pneumatic Safety Brakes**

Size 11





When carrying out maintenance work or repair work, please make sure that the brake is not pressurized.

Replacement of Worn Parts

Parts subject to wear are:

- Friction blocks (Item 3 / 1 set = 12 pieces) - Cylinder assembly (2)

As the friction blocks (3) wear down, the air gap "a" increases. The air gap "a" can be checked on an installed brake. To do this, measure the distance dimension from the cylinder facing side (2.1) to the friction blocks (3), as shown in Fig. 4, when compressed air is applied to the brake.

This dimension accords with the air gap "a" in de-pressurised condition.

At the latest with a max. air gap "a" of 2,5 mm, the friction blocks (3) must be replaced.

When replacing the friction blocks (3), the state of the friction surfaces must be assessed.

If they are run in substantially, the respective assemblies need to be replaced.

Replacement of the quad rings (2.6/2.7) must only be carried out by the manufacturer.



De-installation of the cylinder assembly (2) must only be carried out by the manufacturer. The unit is subject to spring pre-tension.



Fig. 4

Disposal

Our pneumatic brake components must be disposed of separately as they consist of different materials. Please also observe the relevant authority regulations. Code numbers may vary according to the disassembling process (metal, plastic and cables).

Electronic components (proximity switch):

Products which have not been disassembled can be disposed of under Code No. 160214 (mixed materials) or components under Code No. 160216, or can be disposed of by a certified disposal firm.

Steel components:

	Steel scrap	(Code No. 160117)			
Friction blocks:					
	Brake linings	(Code No. 160112)			
Seals, O-rings, V-seals, elastomers:					
	Plastic	(Code No. 160119)			

Malfunctions / Breakdowns

Malfunction	Possible Causes	Solutions	
Brake does not release	 Operating pressure too low Leaking piston seals 	 Increase operating pressure (min. 5,5 bar, max. 8 bar) Replace the quad rings at the place of manufacture 	
Brake does not brake	Air gap too largeOil or grease on the friction surfaces	Replace friction blocksDe-grease the brake surfaces	

mayr[®] will take no responsibility or guarantee for replacement parts and accessories which have not been delivered by mayr[®], or for damage resulting from the use of these products.

