

Compressed air booster

Pressure booster Type 3880



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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 Operational Instructions are part of the brake delivery.
Please keep them handy and near to the brake at all times.

1 Safety

1.1 Safety and Guideline Signs

Symbol	Signal word	Meaning
	DANGER	Designates a directly pending danger. If not avoided, death or severe injuries will be the consequence.
	WARNING	Designates a possibly hazardous situation. If not avoided, death or severe injuries will be the consequence.
	CAUTION	Designates a hazardous situation. If not avoided, slight or minor injuries can be the consequence.
	ATTENTION	Possible property damage can be the consequence.
	Please Observe	Designates tips for application and other particularly useful information. Not a signal word for dangerous or damaging situations.

1.2 General Guidelines

Severe injury to people and damage to objects may result if:

- ☐ The pressure booster is used incorrectly.
- ☐ The pressure booster is modified.
- ☐ the relevant standards for safety and / or installation conditions are ignored.

General Guideline:

During the risk assessment required when designing the machine or system, the dangers involved must be evaluated and removed by taking appropriate protective measures in accordance with the Machinery Directive 2006/42/EC.

1.2.1 Personnel Requirements

To prevent injury or damage, only professionals and specialists are allowed to work on the components.

They must be familiar with the dimensioning, transport, installation, initial operation, maintenance and disposal according to the relevant standards and regulations.



Before product installation and initial operation, please read the Installation and Operational Instructions carefully and observe the Safety Regulations. Incorrect operation can cause injury or damage. At the time these Installation and

Operational Instructions go to print, the pressure booster accords with the known technical specifications and is operationally safe at the time of delivery.

- ☐ Technical data and specifications (Type tags and documentation) must be followed.

1.3 Intended Use

mayr®-Pressure booster are for use in machines and systems and must only be used in the situations for which they are ordered and confirmed. Using them for any other purpose is not allowed.

- ☐ Not suitable for operation in areas where there is a danger of explosion

1.4 Handling

Prior to mounting, check for proper condition (visual inspection). The following are not considered as being representative of a proper condition:

- ☐ Outer damage
- ☐ Outer contamination

The function must be inspected both **once attachment has taken place** as well as **after longer system downtimes**.

1.5 User-implemented Protective Measures

- ☐ Install additional protective measures **against corrosion** if the pressure booster is subject to extreme ambient conditions or is installed in open air conditions, unprotected from the weather.

2 Legal Provisions

2.1 Standards, Directives and Regulations Used

(also to be observed during installation and operation)

EN ISO 4414	General rules and safety requirements for pneumatic systems and their components
EN ISO 12100	Safety of machinery - General principles for design - Risk assessment and risk reduction
2014/68/EU	Pressure Equipment Directive
2014/29/EU	Pressure Vessel Directive

2.2 Liability

The information, guidelines and technical data in these documents were up to date at the time of printing. Demands on previously delivered pressure boosters are not valid. Liability for damage and operational malfunctions will not be taken if:

- ☐ the Installation and Operational Instructions are ignored or neglected,
- ☐ the application of the brakes is improper,
- ☐ the brakes are modified
- ☐ the pressure boosters are worked on unprofessionally,
- ☐ the brakes are handled or operated incorrectly.

2.3 Guarantee

- ☐ The guarantee conditions correspond with the Chr. Mayr GmbH + Co. KG sales and delivery conditions (www.mayr.com → Service → General Terms and Conditions)
- ☐ Mistakes or deficiencies are to be reported to *mayr*® power transmission at once!

2.4 Guidelines



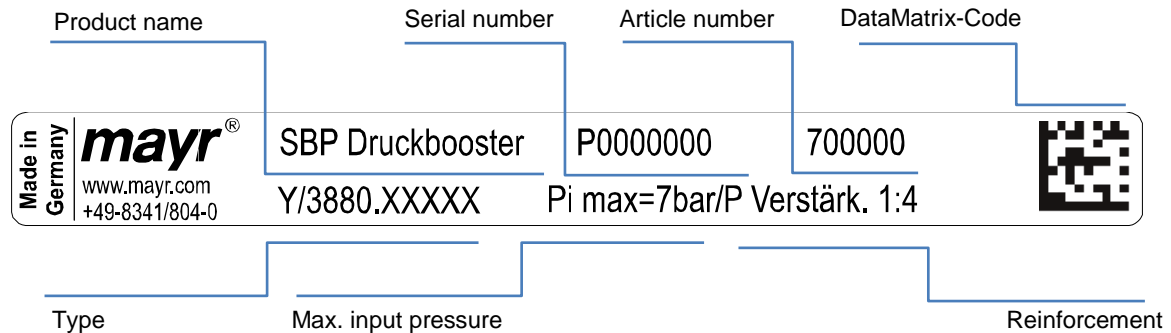
Guidelines on the ATEX Directive

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

For application of this product in areas where there is a high danger of explosion, it must be classified and marked according to directive 2014/34/EU.

2.5 Identification/ Type Tag

mayr® components are clearly marked and described on the Type tag:




Serial number

Year	Code	Year	Code
2000	A	2011	N
2001	B	2012	P
2002	C	2013	R
2003	D	2014	S
2004	E	2015	T
2005	F	2016	U
2006	H	2017	V
2007	J	2018	W
2008	K	2019	X
2009	L	2020	Y
2010	M	2021	Z

3 Product Description

3.1 Scope of Delivery / State of Delivery

- ☐ The pressure booster is ready for installation.
- ☐ Please observe the Type tag.
- ☐ Please check the scope of delivery as well as the state of delivery immediately after receiving the goods. *mayr*® power transmission will take no responsibility for belated complaints. Please report transport damage immediately to the supplier. Please report incomplete delivery and obvious defects immediately to the manufacturer.

Caution 	Please observe the own weight The pressure booster may drop during lifting / transport. The consequences may be crush injuries and impact injuries.
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3.2 Function

The pressure booster pneumatically increases the pressure available in the system to the required output pressure in a purely mechanical way and without external use of power.

The pressure booster is equipped with a compressed air reservoir.

3.3 Views

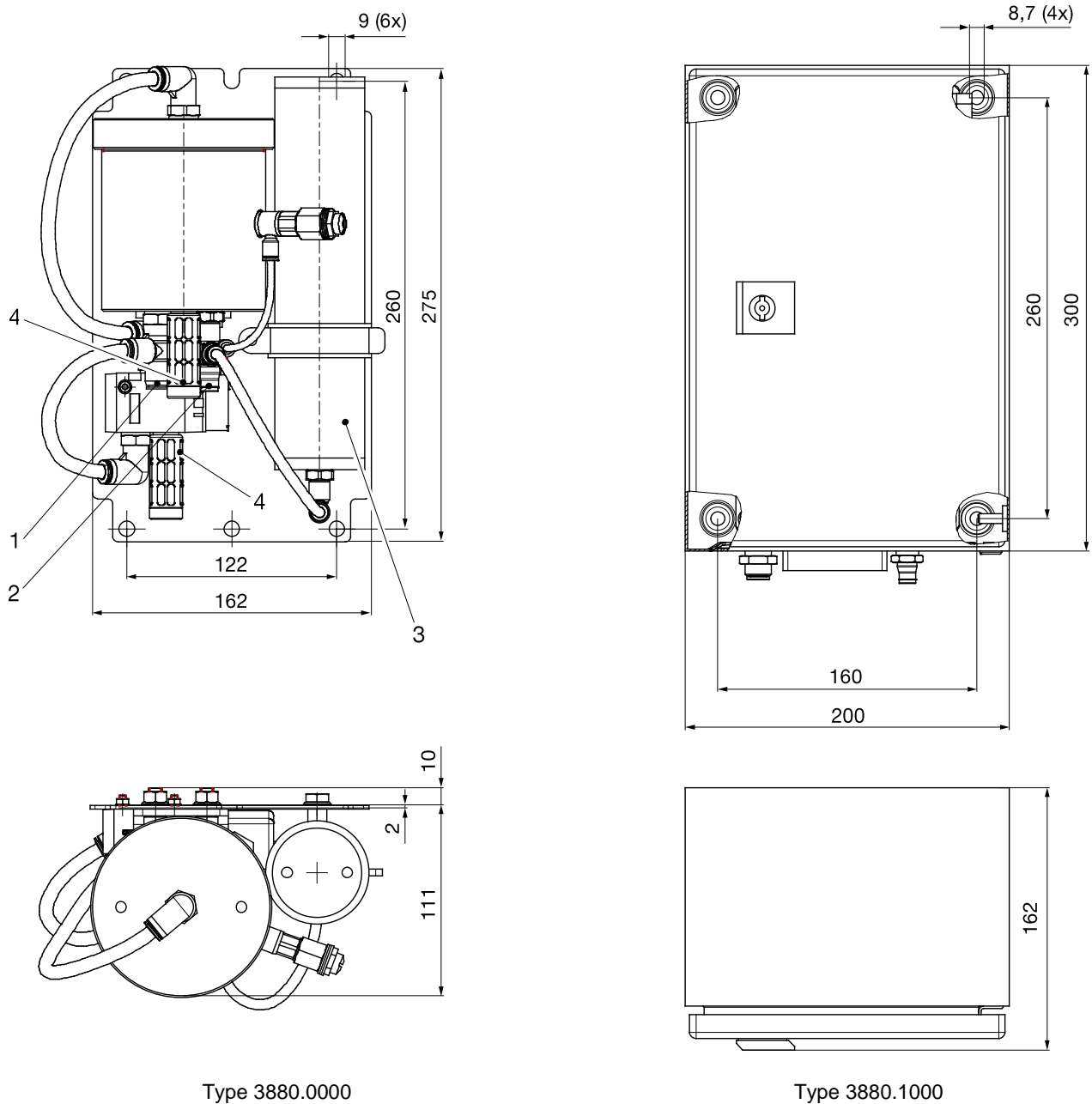


Fig. 1

3.4 Parts List

(Only use *mayr*® original parts)

Item	Name
1	Connection input pressure
2	Connection output pressure
3	Compressed air reservoir
4	Silencer

4 Technical Data

4.1 Guidelines

4.1.1 Application Conditions



The stated values are guideline values which have been determined in test facilities. It may be necessary to carry out your own tests for the intended application.

- ☐ Mounting dimensions and connection dimensions must be adjusted according to the size of the pressure booster at the place of installation.
- ☐ Use of the pressure booster in extreme environmental conditions or outdoors, directly exposed to the weather, is not permitted.
- ☐ The provision of the required operating pressure must be guaranteed.
- ☐ The stated maximum input pressure (see Chapter **4.2**) may not be exceeded. The required measures are to be taken by the operator.

4.1.2 Ambient Temperature

-10 °C up to +50 °C

The Technical Data refers to the stated temperature range.

4.1.3 Protection

(mechanical) IP40: In installed condition, protected against solid foreign bodies >1 mm in diameter.

4.1.4 Noise Emissions

See Technical Data section **4.2**

4.1.5 Installation Position

The pressure booster can be operated in any installation position.

4.1.6 Prerequisites for Product Application

Compare the limit values stated in these operational instructions with the actual application, e.g.

- ☐ Pressure
- ☐ Temperatures etc.
- ☐ Pressure medium

4.1.7 Number of Brakes per Pressure Booster

Number of attachable brakes by size and type for a max. opening time of 1 second.

Size	Number of brakes ¹⁾	
	3850/3582	3851/3583
25	2	4
35	2	4
45	1	2
55	1	1
65	-	-

1) Installing several brakes as stated in the Table is possible. As a result, the max. opening time increases.

4.2 Technical Data

4.2.1 Type 3880

Technical Data			Size
			1
Weight	Type 3880.00000	[kg]	9.3
	Type 3880.10000	[kg]	14.5
Input pressure	max.	[bar]	7
Output pressure	max.	[bar]	28
Transmission ratio			1 : 4
Connection input pressure	Connection Outer diameter Ø hose		8 mm
Connection output pressure			6 mm
Pressure medium			Compressed air quality acc. ISO 8573-1 Class 4
Storage volume		[L]	0.3
Ambient temperature		[°C]	-10 to +50
Flow rate		[L/min]	1.2
Maximum noise level	Type 3880.00000	dB(A)	75
	Type 3880.10000	dB(A)	65

5 Intended Use

See also section 1.3

5.1 Guidelines for Application

- ☐ Application in a clean environment (penetration of greases, coarse dust and water can adversely affect the Pressure booster function)
- ☐ Application in enclosed buildings (in tropical regions, in high humidity and temperatures below 0 °C with long downtimes, and sea climates only after taking special measures).
- ☐ Use only with compressed air.

► Please contact **mayr®** power transmission.

5.2 Limits

- ☐ The pressure booster is not suitable for use in severely contaminated environments
- ☐ The pressure booster is not suitable for application in high ambient temperatures >50 °C
- ☐ The pressure booster is not suitable for use in liquid media
- ☐ The pressure booster is not suitable for use in a vacuum
- ☐ The pressure booster is not suitable for contact with abrasive media (e.g. abrasive and grinding dust)
- ☐ The pressure booster is not suitable for contact with aggressive, corrosive media (e.g. solvents, acids, lyes, salts etc.)
- ☐ The pressure booster is not suitable for contact with foodstuffs

5.3 Reasonably Foreseeable Misuse

The following uses are prohibited and may generate hazards.

- ☐ Any opening of the screws on the housing.
- ☐ Exceedance of the stated maximum operating pressure.
- ☐ Changes to Pressure boosters through additional cut-outs, drillholes etc.
- ☐ Use of pressure hoses and components which have not been designed for high pressures.

6 Storage

- ☐ Store in dry rooms, dust and vibration-free.
- ☐ Relative air humidity < 50 %.
- ☐ Temperature without major fluctuations within a range from 0 °C up to +40 °C.
- ☐ Do not store in direct sunlight or UV light.
- ☐ Do not store aggressive, corrosive substances (solvents / acids / lyes / salts etc.) near to the brakes.

For longer storage lasting more than 2 years, special measures are required.

► Please contact **mayr®** power transmission.

7 Installation

7.1 Installation Conditions

Please observe before installation!

7.1.1 General

- ☐ The pressure booster is delivered manufacturer-assembled ready for installation



Please Observe!

Do not dismantle the pressure booster!

- ☐ The blind plugs included in delivery on the input pressure connection (1) and the output pressure connection (2) must not be removed. This prevents foreign bodies (e.g. dust) from getting into the pressure booster during installation. Do not remove until directly prior to connection (see Chapter [7.2.4](#)).

7.1.2 Compressed Air System

For operation of the pressure booster, a compressed air quality acc. Chapter [4.2.1](#) must be ensured.



Please Observe!

If the required compressed air quality cannot be guaranteed, additional components must be installed for **compressed air treatment** on the input side.

The following components are recommended:

- ☐ Compressed air filter
- ☐ Water separator
- ☐ Shut-off valve
- ☐ Pressure controller
- ☐ Pressure gauge
- ☐ Safety valve if applicable

► Please contact **mayr® power transmission**.

- ☐ The lines or hoses used for connection must be designed for the maximum input and output pressures (see Chapter [4.2](#)).
- ☐ The lines must be compatible with the plug-in fittings of the connections (1, 2) on the pressure booster.

7.1.2.1 Compressed air lubricator

When using a compressed air quality acc. Chapter [4.2.1](#), a compressed air oiler is not required.

The seals are lubricated with grease at the factory.

ATTENTION Operation with compressed air lubricator

If a compressed air oiler is used, the pressure booster must no longer be operated without a compressed air oiler.

The oil in the compressed air oilers has an adverse effect on the existing grease lubrication in the pressure booster. Permanent lubrication is no longer guaranteed.

7.1.3 Controls

mayr® power transmission recommends the following pneumatic controls for operation of the ROBA®-guidestop Type 3852/3853.

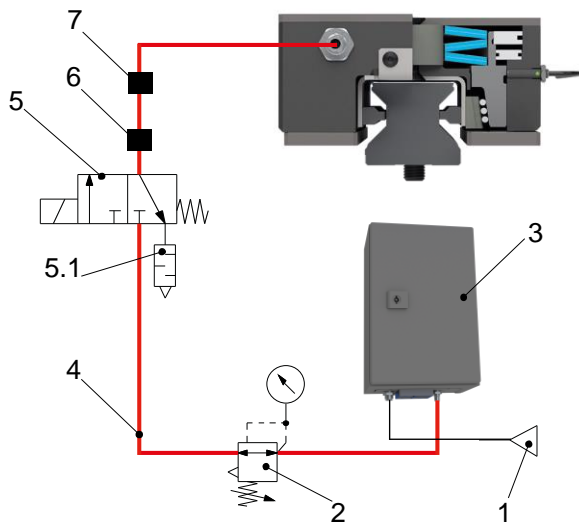


Fig. 3

Item	Name
1	Pressure source
2	Pressure regulator valve with pressure gauge (installation in the feed line also possible)
3	Pressure booster
4	Hose for high pressure
5	3/2-directional control valve high pressure (installation as near to the brake as possible)
5.1	Silencer
6	Pressure switch: Switching point <0.5 bar (brake closed) • Protection against personal hazards / machine damage
7	Pressure switch: Min. operating pressure (brake opened) • Protection against machine damage - in case of pressure fluctuations - In case of pressure drop e.g. leakages



Please Observe!

The pressure booster for the ROBA®-guidestop must have an external connection with the brake ensured via a 3/2-directional control valve.

For connection components recommended by mayr® power transmission (3/2-directional control valve, hose), please contact mayr® power transmission.

7.2 Installation (Figs. 1 and 2)

7.2.1 Pre-requisites

- ☐ Unpack the brake
- ☐ Check for completeness
- ☐ Check the data on the Type tag
- ☐ Visual inspection (e.g. after longer storage period)



Caution Please observe the own weight

The pressure booster may drop during lifting / transport.
The consequences may be crush injuries and impact injuries.

7.2.2 Preparation

- ☐ Have the necessary tools ready:
 - Spanners etc.
 - Torque wrenches
- ☐ Provide fixing screws (not included in the standard scope of delivery)
- ☐ The supply air line must not be pressurised

7.2.3 Installation

Mounting the Pressure booster

Installation of the Pressure booster at the planned boreholes (see Chapter **3.3**) using suitable fixing screws.

7.2.4 Compressed Air Connection

1. Remove the blind plug from the input pressure (1) connection
2. Connect the customer-side supply air line to the input pressure connection (1) on the Pressure booster (plug-in connection)
3. Remove the blind plug from the output pressure connection (2)
4. Connect the high pressure hose (4) to the output pressure connection (2) on the Pressure booster
5. Carry out the other connections to the ROBA®-guidestop accc. Chapter **7.1.3**



Caution Injuries possible through lashing out of compressed air lines

Incorrectly connected compressed air lines can loosen during operation and cause injuries if they lash out.

Prior to applying compressed air to the pressure booster, check all connections for tight fit.

8 Initial Operation

8.1 Test (Before Initial Operation)

- ☐ Check for correction mounting of the pressure booster
- ☐ Visual inspection of the pneumatic connections and lines.



Caution Injuries possible through lashing out of compressed air lines

Incorrectly connected compressed air lines can loosen during operation and cause injuries if they lash out.

Prior to applying compressed air to the pressure booster, check all connections for tight fit.

- ☐ Check for leakages (pressure switched on).

8.2 General

On commissioning, the pressure booster fills the system (the compressor first fills the pressure vessel and the high pressure hose).

The initial filling may take some time.

The brake is opened via the pressure accumulator. The pressure accumulator is filled independently of the switching condition of the brake.

9 Maintenance / Inspection / Switching Frequency

9.1 Inspection

Check the condition

Measure	Condition		Interval	Implementation
Visual inspection	Pneumatics	Check that the connections and connection lines are leak-proof.	To be determined by machine operator depending on the installation situation ► Please contact <i>mayr</i> ® power transmission.	Qualified personnel

9.2 Maintenance

The pressure booster is mainly maintenance-free.

Measure	Note/Comment	Interval	Implementation
Functional Inspection	Check the input pressure to output pressure ratio	To be determined by machine operator depending on the installation situation ► Please contact <i>mayr</i> ® power transmission.	Qualified personnel



Should the **Pressure booster** no longer meet the required characteristics or should the necessary safety for work on the machine or system no longer be given, the Pressure booster must be checked at *mayr*® transmission and, if necessary, professionally repaired and approved.

10 De-installation



Caution Please observe the own weight

The pressure booster may drop during lifting / transport.

The consequences may be crush injuries and impact injuries.



Caution Injuries possible through lashing out of compressed air lines

The compressed air lines are pressurised. When compressed air lines are loosened, injuries may be caused if they lash out.

De-pressurize compressed air lines.

10.1 De-pressurizing the Lines

- ☐ Interrupt the supply of compressed air (input pressure)
- ☐ Activate the high pressure 3/2-way valve several times until no more air comes out.



Please Observe!

The operator bears responsibility for the controlled relief of output pressure, input pressure and the inspection for de-pressurized condition.

10.2 De-installation

De-installation takes place by following the "Installation" section **7.2.4** and **7.2.3** backwards.

11 Disposal

For disposal, please observe the specific regulations of the respective country of application.

All steel components:

Steel scrap (Code No. 160117)

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

Plastic (Code No. 160119)

12 Malfunctions / Breakdowns

Malfunction	Possible Causes	Solutions	Implementation
Pressure booster does not work or only works slowly.	Silencer iced up.	Dewater compressed air through water separator.	Qualified personnel
	Formation of a residue in the silencer	Silencer replacement.	
Pressure booster does not switch off	Leakage or Pressure booster defective	Localise the leakage using the leak detection spray	On determination of a pressure booster defect, please send it back to the factory



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