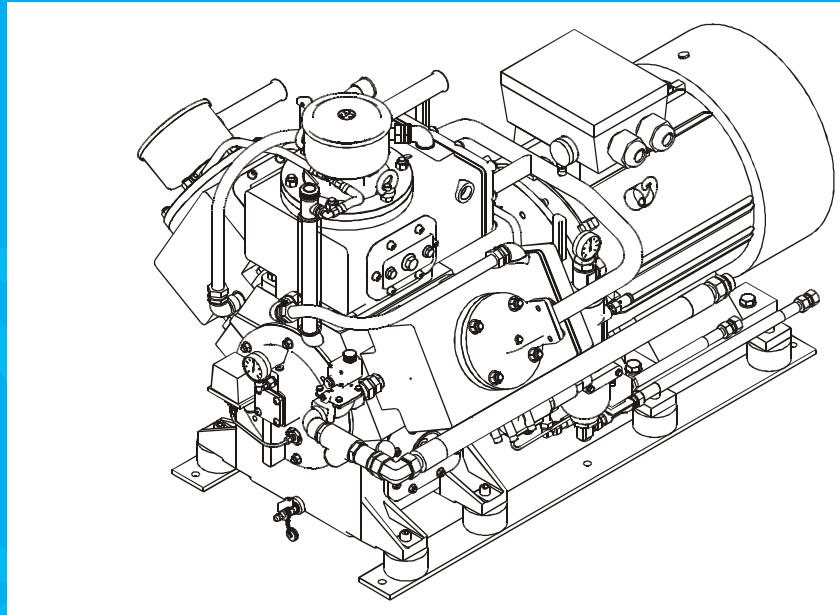




J.P. SAUER & SOHN
MASCHINENBAU GMBH



S a u e r

C o m p r e s s o r

Type: WP 400

Operating instructions

- High pressure compressor
- 2-stage
- Water-cooled



Ein Mitglied der
SAUER-Gruppe



1 General

1.1 Foreword

These Operating Instructions contain instructions concerning the installation, safe operation, maintenance and repair of the Sauer-Compressor as well as an illustrated parts list.

The following unique specification for the Sauer-Compressor can be found on the nameplate affixed to the compressor:

- Compressor type
- Serial number
- Year of construction

We recommend that you record this information in chapter 11 and always provide this data when ordering parts and for any repair instructions.

1.2 Precautions

Specific precautions

It is essential that only authorised and trained personnel operate and service the Sauer-Compressor. These responsible personnel should be thoroughly familiar with, and frequently review, the Operating Instructions.

These operating instructions must always be readily available at the compressor installation.

Copyright

The copyright for these instructions remains with J.P. SAUER & SOHN. These operating instructions, or parts thereof, shall not be copied, distributed or made available to third parties. Contravention will result in prosecution.

1.3 Warranty and liability

Sauer will no longer cover warranty or be liable for any claims if a failure is attributed to any of the following:

- Use of the machine in a manner or for a purpose other than that specified;
- Replacement with parts not manufactured or approved by Sauer;
- Use of spare parts that are not genuine Sauer Spare Parts
- Operation of the machine with faulty or improperly installed safety and/or protective devices;
- Failure to observe the Operating Instructions;
- Unauthorised modifications to the machine or its control system;
- Inadequate monitoring of machine parts subject to wear;
- Failure to maintain/repair in accordance with Sauer instructions;
- Force majeure.



1.4 Type approval and genuine Sauer Spare Parts

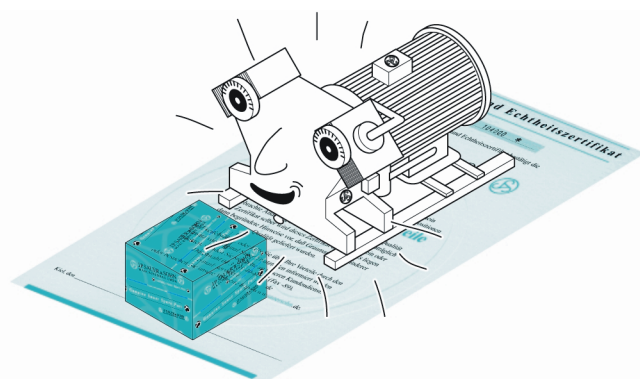
- Type approval for the Sauer-Compressor is valid on condition that only parts and components specified and quality-tested by J.P. SAUER & SOHN are used. Type approval is provided by the classification body and the EC Declaration of Conformity or EC Manufacturer's Declaration. Failure to observe these requirements may void type approval.
- Only the use of genuine Sauer Spare Parts will ensure compliance with these specifications and, therefore, reliable and safe operation of the Sauer-Compressor.
- If parts other than genuine Sauer Spare Parts are used, we reserve the right to refuse liability for personal injury and material damage.
- Genuine Sauer Spare Parts are supplied with a Certificate of Conformity and a Certificate of Authenticity. An example of this document is shown before the Table of Contents in these Operating Instructions. If spare parts are received without this certificate, there is a risk that these are not genuine Sauer Spare Parts. In such an instance, please contact Sauer-Service.



Note!

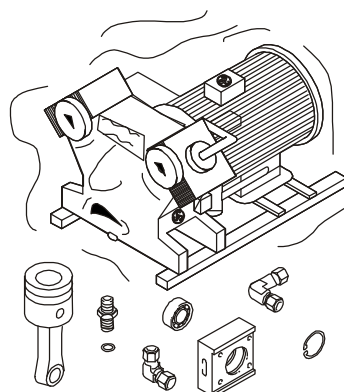
Be aware this is a high-pressure compressor, for your own safety and for reliable compressor operation, only use genuine Sauer Spare Parts.

Correct



Use only genuine Sauer Spare Parts that are certified!

Incorrect



Do not use parts obtained on the "grey market".

1.5 J.P. SAUER & SOHN Service

Should you have any technical questions relating to maintenance or repair, please contact the Sauer-Service department:

J.P. SAUER & SOHN Maschinenbau GmbH
Sauer-Service
Postfach 92 13
D-24157 Kiel

Telephone (international):

Technical information

+49 431 39 40 87

Spare parts orders

+49 431 39 40 86/886

Fax (international):

+49 431 39 40 - 89

**Emergency service
(international):**

+49 172 4 14 63 94

E-mail:

service@sauercompressors.de

Web:

www.sauercompressors.com



Note!

If you have questions regarding your Sauer-Compressor, please specify the compressor model and serial number (see chapter 11 or nameplate on the compressor).



1.6 Text conventions used in these Operating Instructions

Lists

General lists are marked using a dash.

Example:

Compressor cooling system consists of

- Cooler assembly
- Cooling water lines

Instructions

Individual instructions or multiple instructions requiring action but where the sequence is of no importance are normally denoted by a bullet point.

Example:

- Check the oil level.

Instructions to be carried out in a certain sequence are numbered.

Example:

1. Turn the main switch ON.
2. Choose the operating mode.
3. Turn the control ON.

Results of actions carried out are denoted by a tick mark.

Example:

- ✓ The control light is on.

Safety instructions

Safety and warning instructions are presented pictorially with clear instructions. The safety instructions are described in detail in chapter 2.



2 Safety

2.1 Proper use

This Sauer-Compressor must only be used to compress the specified gas/medium (see factory test). The Sauer-Compressor must not be used at ambient temperatures below +5 °C or over +55 °C. Any other unauthorised use requires the express written approval of J.P. SAUER & SOHN.

In addition, proper conditions of use also include compliance with these Operating Instructions and the installation requirements and maintenance intervals described in these.

Most accidents that occur during operation and maintenance of machinery result from failure to observe basic safety rules or precautions.

When handling, operating or carrying out maintenance, personnel must observe safe engineering working practices and local regulations.

2.2 Unauthorised modifications

Unauthorised modifications to the Sauer-Compressor are not permitted. Modifications may lead to life-threatening injuries, endanger personnel and damage the equipment.

When planning any modifications, contact J.P. SAUER & SOHN to obtain written approval.

2.3 Safety information – Warning and caution

The safety information in these Operating Instructions is presented as 'high' risk and 'lower' risk, as follows:



Warning – Danger!

High risk.

Ignoring these safety instructions can cause personal injury, or death, and significant equipment damage.



Caution – Note!

Lower risk.

Failure to observe these safety instructions may cause damage to the equipment.



2.4 Safety markings on the machine



Danger!

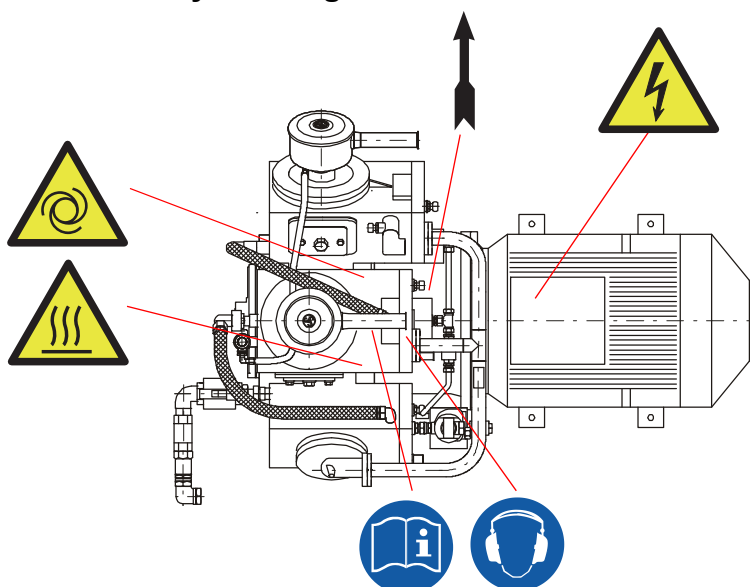
Safety markings affixed to the machine must not be altered or removed. Replace damaged or lost safety markings immediately with an approved replacement.

The Sauer-Compressor with an EC Manufacturer's Declaration or EC Declaration of Conformity is provided with the following safety markings:

Safety marking	Meaning
	High voltage! Danger to life!
	Compressor starts automatically without warning.
	Hot surface!

Safety marking	Meaning
	Read Operating Instructions!
	Wear hearing protection.
	Direction of rotation of crankshaft

Location of safety markings



2.5 Safety and protection equipment



Danger!

Safety equipment must not be adjusted, disabled or removed. Safety equipment must be tested and checked periodically. Safety valves must only be installed with a lock-seal and replaced, adjusted and re-sealed by authorised personnel.

Safety valves

Each compression stage of the Sauer-Compressor is equipped with a safety valve, which will fully discharge air when the blow-off pressure is reached.

The safety valves are installed at the following locations:

- 1st compression stage: in the rear cooler cover of stage 1.2;
- 2nd compression stage: in the final separator after the 2nd stage.

There is a safety valve on the cylinder housing of the 2nd stage in the cooling water circuit of the compressor, which opens if the blow-off pressure is exceeded.

Temperature monitoring

The Sauer-Compressor is equipped with a temperature switch. If the temperature rises above a predefined limit value, the temperature switch sends a signal to the control, which then switches the compressor off.

A temperature sensor can also be used as an optional alternative.

Oil pressure monitoring

The Sauer-Compressor is equipped with an oil pressure controller that trips if the pressure drops below $p < 1$ bar. An oil pressure controller can also be used as an optional alternative.

Final pressure monitoring

A final pressure switch is included with the Sauer-Compressor, which is installed by the operator depending on the operation task. The final pressure switch transmits a signal to the compressor control if the lower or upper limit value is reached so that the compressor is stopped or started automatically. A final pressure sensor can also be used as an optional alternative.



2.6 Noise protection

Sound pressure level details are included in the technical specifications (see chapter 4).

The Sauer-Compressor can be equipped with a sound-proof canopy to reduce noise, available as an accessory from J.P. SAUER & SOHN.



Danger!

If the equipment is operated without a sound-proof canopy, hearing protection must be worn.



Note!

A mandatory instruction to this effect is attached to the compressor (see chapter 4.2).



Note!

The operator must also affix a corresponding mandatory instruction in clear view in the vicinity of the machine or on the entry door to the compressor room.

2.7 Waste disposal



Note!

While recyclable materials are used as far as possible, local environmental regulations, or laws, dictate that the following are disposed of to avoid polluting the environment:

- Condensate (containing oil and water) arising from after-cooling in the compression process;
- Used oils and greases, and cloths soiled by these lubricants;
- Cleaning agents and cloths soiled by these agents.

2.8 Safety requirements for personnel

Only personnel authorised by J.P. SAUER & SOHN are permitted to service the Sauer-Compressor! Before commencing work they must have read and understood the instructions in the Operating Instructions and must be familiar with all safety devices and safety regulations.

In addition to the instructions in these Operating Instructions and supplier documentation, recognised engineering standards must be observed as well as all local laws, standards and regulations such as:

- the Equipment and Product Safety Act,
- the German Ordinance on Industrial Safety and Health,
- the rules for the prevention of compressor-related accidents,
- the provisions of the Verband Deutscher Elektrotechniker (VDE/German electrical engineering industry association),
- the regulations on environmental protection.

In addition, all applicable classification society and operational regulations must be observed.

Only personnel trained and thoroughly familiar with the compressor operation should be authorised to operate the compressor.

Personnel authorised to service the compressor must be trained technical specialists employed by the operator and the manufacturer.



2.9 Personal protective equipment

The operator must provide personal protective equipment for personnel carrying out any work on the Sauer-Compressor. This includes:

- hearing protection,
- safety boots,
- safety goggles,
- Protective gloves.



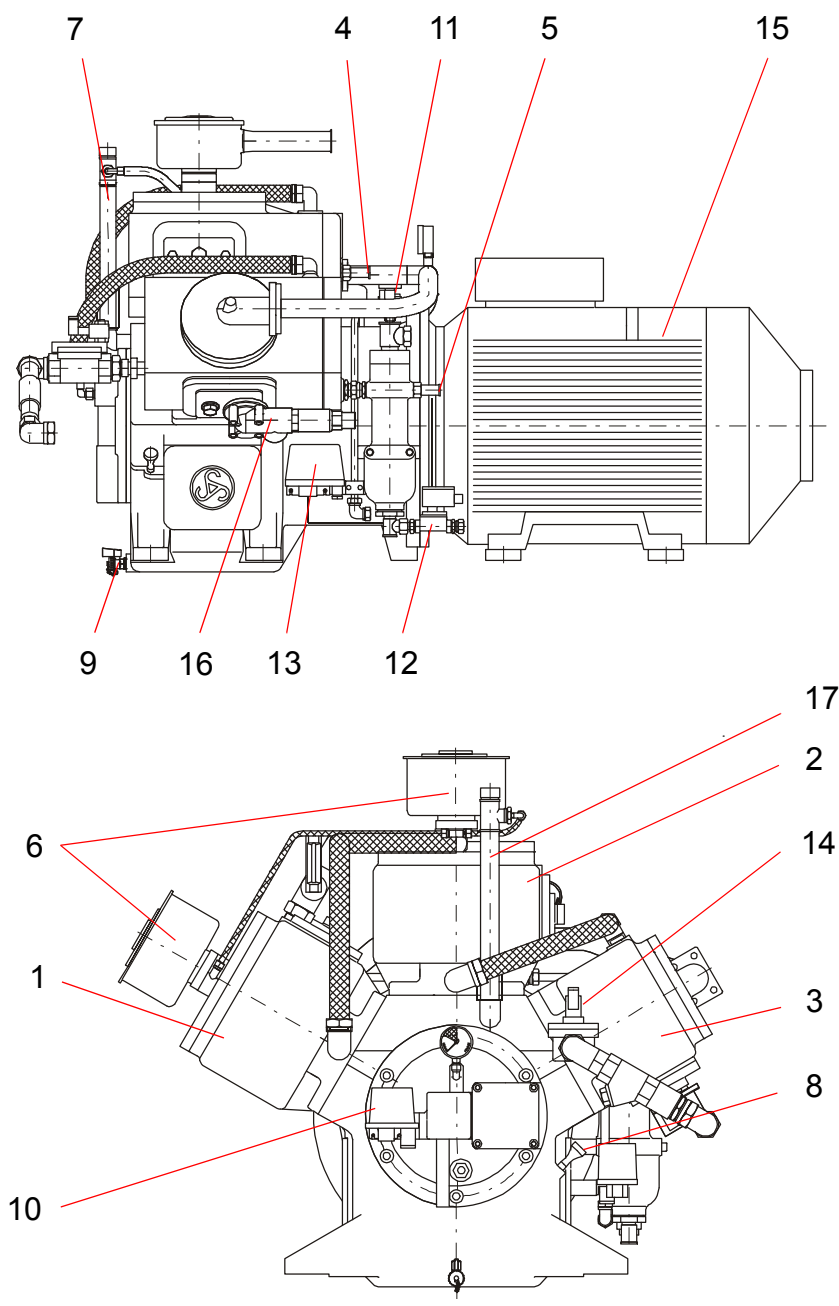
3 Design and function

3.1 Overview



Note!

Details of parts and spare parts can be found in the Spare Parts Catalogue.



Item	Designation
1	Cylinder stage 1.1
2	Cylinder stage 1.2
3	Cylinder 2nd stage
4	Safety valve 1st stage
5	Safety valve 2nd stage
6	Air filter
7	Oil filler
8	Oil dipstick
9	Oil drain valve
10	Oil pressure controller
11	Drain valve 1st stage
12	Drain valve 2nd stage
13	Compressed air temperature monitor
14	Cooling water stop valve
15	Electric motor
16	Cooling water safety valve
17	Crankcase vent