



Operating instructions

Directly coupled
screw compressors
Series CL 4 – CL 7,5

Before installing or starting the compressor for the first time, this manual should be studied carefully to obtain a clear knowledge of the unit and of the duties to be performed while operating and maintaining the unit.

RETAIN THIS MANUAL WITH UNIT.
This technical manual contains **IMPORTANT SAFETY DATA** and should be kept with the air compressor at all times.



separate manual:
compressor control

Operating instructions for directly coupled screw compressors

- CL 4 (4,0 Hp)
- CL 5 (5,0 Hp)
- CL 7,5 (7,5 Hp)

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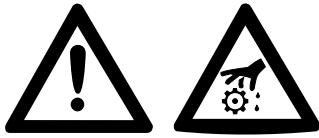
Nominal price: US \$ 5.00

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**WARNING!**

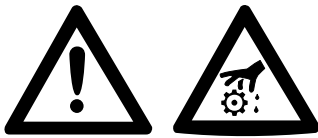
Nonobservance of the following safety instructions may lead to injuries and damage to the compressor.

Also observe the generally applicable safety and accident prevention regulations in addition to the information contained in present operating instructions!

Safety instructions for compressor operation

1. Ensure that no commissioning or maintenance work on the compressor be undertaken until these operating instructions are understood.
2. Only use compressor for its intended use, as described in these operating instructions.
3. The owner must ensure
 - that only appropriately trained and authorized personnel work on this compressor.
 - that the operating, maintenance and repair personnel has been made fully familiar with all safety instructions, and that such instructions be observed.
 - that the compressor is only operated in safe operating conditions.
4. Avoid any operating method which may impair the safety of the compressor.
5. Do not exceed the limit value for the final compression pressure specified on the type plate.
6. Do not operate the compressor without the attendant protection and safety devices.
Do not dismantle any built-in safety devices or put them out of operation. Ensure that all cladding and doors be closed prior to commissioning/ starting up the compressor and not be opened during operation.
7. Place the compressor out of operation as described in these operating instructions, when dismantling the cladding or safety devices for repair or maintenance work. Reattach all cladding and safety devices immediately upon completion of the repair or maintenance work.
8. Only operate the compressor using such additional equipment (options) as may have been recommended or authorized by the manufacturer.
9. Conversions and/or modifications should only be made in agreement with BOGE, taking all relevant safety regulations into consideration. Manufacturer shall not liable for damages resulting from independent modifications on the compressor.
10. Never start compressor when one or several parts (e.g. cable, plug) are damaged, or when not in perfect working order, or when damage is detected or suspected.
11. Observe all safety and danger signs directly attached on the compressor!

Safety instructions for maintenance and repair of the compressor



1. Ensure that maintenance work is only carried out by appropriately trained persons.
2. Ensure that setting work, malfunction rectification and repair are only carried out by specialists or appropriately trained persons.
3. Prior to maintenance or repair work:
 - Switch off main switch.
 - Secure main switch against unintentional switch-on.
 - Make sure that all parts have been isolated.
 - Disconnect compressor from compressed air network (relieve or block pressurized lines).
4. Exercise extreme caution during repair or maintenance work requiring the compressor to be operational.
Ensure that no persons are located in the hazardous area.
5. Ensure that work on the electrical equipment is only undertaken by qualified electricians.
6. Work on voltage carrying parts and devices are not permitted. Exceptions are governed by relevant regulations.

CAUTION

7. Only use original spare parts, compressor oils and operating materials released by BOGE during repair or maintenance.

8. The operator is required to check the compressor daily for externally visible damage and defects, and to immediately report any changes (including operational behavior).
9. When the automatic restart (Auto-Restart) is activated, the compressor restarts automatically following a voltage loss.
Prerequisite: The net pressure is lower than the set switch-on pressure.

Accident prevention regulations

The owner of a compressor plant is required to ensure that it is properly installed, operated and maintained.

For operation of the compressor plant, the accident prevention regulations of the owner country must be observed in addition to the data contained in these operating instructions.

In the event that measures are required above and beyond the legal regulations or the data contained in these operating instructions, then it is of utmost importance that these be carried out prior to commissioning the compressor plant.

**WARNING!**

Failure to adhere to these recommendations can result in mechanical failure, property damage and serious injury or death.

All air and water inlet as well as air and water discharge pipework to and from the inlet and discharge port connections must be designed in such a way as to take into account vibration, pulsations, temperature, maximum pressure applied, corrosion and chemical resistance. In addition, it should be noted that lubricated compressors will discharge some oil into the air stream; therefore, compatibility between discharge piping, system accessories and software must be assured.

For those reasons, the use of plastic piping and soldered copper fittings as discharge piping is not recommended. In addition, flexible joints and/or flex lines can only be considered for such purposes if their specifications fit the operating parameters of the system.

It is the responsibility of the installer and owner to provide the appropriate service pipework to and from the machine.

**WARNING!****Statement concerning inadvertent breathing of compressed air exhaust.**

The purchaser/user must ensure that adequate ventilation and make-up air are provided if a non-BAP designated compressor is likely to discharge air into a confined area harboring air consuming devices such as air motors, air tools, solenoids, air cylinders, air guns, nozzles, etc. The compressed air discharge stream may contain residual coolants/lubricants/carbon monoxide and condensable hydrocarbons or other materials which may be hazardous to health with prolonged inhalation.

The purpose of these operating instructions is to familiarize the user with the function and all application possibilities of the compressor.

These operating instructions contain important information on how to operate the compressor safely, economically and according to its intended use. Observing these operating instructions will help to prevent danger, to reduce repair costs and down-times and to increase the reliability and service life of the compressor. Furthermore, they contain important information concerning the required maintenance and repair measures, give assistance in case of malfunctions, and contain useful data on spare and wear parts.

Make sure that present operating instructions are at all times available to the compressor operating personnel at the place of operation. They must be carefully read and applied by all persons engaged to undertake the following work on the compressor:

- Operation, including fault rectification and daily care
- Maintenance (service, inspection, repair)
- Commissioning
- Transportation

The compressor and its additional equipment shall neither be installed nor commissioned before operating instructions are fully understood.

These operating instructions can be supplemented with instructions on the basis of existing national regulations concerning accident prevention and environmental protection.

In the illustrations, the compressor is shown partially without cladding or safety devices for better visualization. However, operation without these components is prohibited!

Symbols used



DANGER!

Risk of injury! Danger is used to indicate the presence of a hazard which *will cause severe* personal injury, death, or substantial property damage if the warning is ignored.



WARNING!

Warning is used to indicate the presence of a hazard which *can cause severe* personal injury, death, or substantial property damage if the warning is ignored.



CAUTION!

Caution is used to indicate the presence of a hazard which *will or can cause minor* personal injury or property damage if the warning is ignored.




DANGER: Voltage! This symbol indicates information warning of life threatening electrical voltage levels. It serves to indicate work which must exclusively be performed by a skilled electrician.



NOTICE!

Notice is used to notify people of installation, operation, or maintenance information which is important but not hazard-related.



Before working at the compressor:

- disconnect all current-carrying parts!
- check if all parts are actually voltage-free!
- secure compressor against switching on!
- reduce pressure in all areas!

If you neglect these rules, your health will be endangered!

<p>Before putting into service:</p> <ul style="list-style-type: none"> - carefully read instructions - check electric connections - check oil-level (not for oil-free) - if applicable, remove the transportation safety device - check the direction of rotation of compressor - operate only with a belt protective grating or a sound protection bonnet. - do not close cooling air inlets and outlets during operation! 	<p>Regular maintenance:</p> <p>Strictly observe operating instructions!</p> <ul style="list-style-type: none"> - check suction filter weekly, if necessary clean or replace it - check cooler for dirt; clean, if necessary - check oil-level weekly (not for oil-free) - drain condensation water from pressure tank at least once a week - check operativeness of automatic steam trap
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WARNING



Exposed fan blade. Can cause severe injury.

Do not operate with covers removed.
Disconnect power. Lock and tag.

DANGER



Discharge air. Can contain carbon monoxide or other contaminants. Will cause severe injury or death.

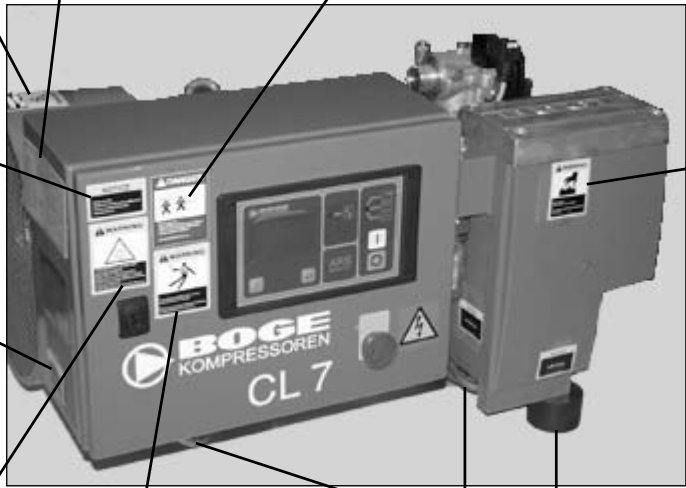
Do not breathe this air.

NOTICE

Refer to the Instruction/Operators Manual before performing any maintenance.

NOTICE

Electrical power inlet.



WARNING



Hot surface. Can cause severe injury.

Do not touch. Allow to cool before servicing.



Warning:
The unit is operated by remote control, and might start without warning.

WARNING




Hazardous voltage. Can cause severe injury or death.

Disconnect power before servicing.
Lockout/Tagout machine.

NOTICE

Lift here.

⚠ WARNING



High pressure air.
Can cause severe injury or death.
Relieve pressure before removing filter plugs/caps, fittings or covers.

⚠ WARNING

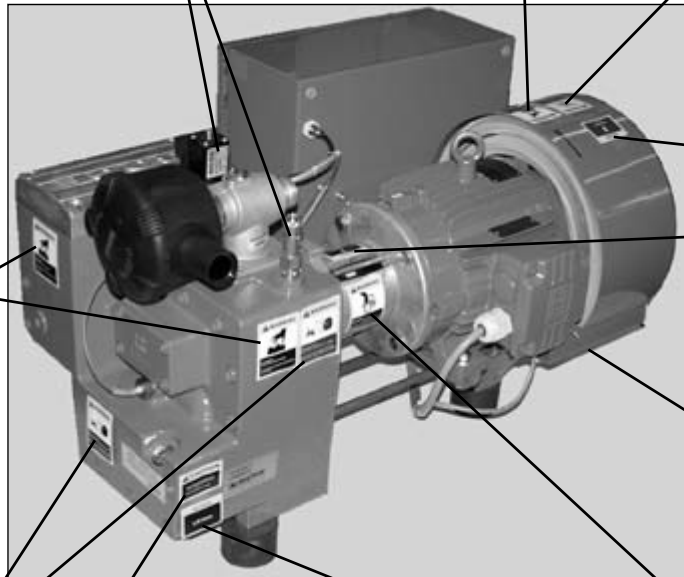


Hot surface.
Can cause severe injury.
Do not touch. Allow to cool before servicing.

⚠ WARNING



Exposed fan blade. Can cause severe injury.
Do not operate with covers removed.
Disconnect power. Lock and tag.




⚠ WARNING



Hot surface.
Can cause severe injury.
Do not touch. Allow to cool before servicing.

NOTICE



Rotation.

NOTICE

Lift here.

⚠ WARNING



High pressure air.
Can cause severe injury or death.
Relieve pressure before removing filter plugs/caps, fittings or covers.

⚠ CAUTION

Use of incorrect coolant can cause system contamination.
Use only BOGE Syprem S.

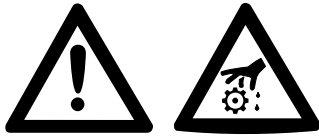
NOTICE

Lift here.

⚠ WARNING



Moving parts.
Can cause severe injury.
Do not operate with covers removed.
Service only with machine locked to prevent turn over.

Intended use

BOGE S series screw compressor, including its additional equipment, is exclusively intended for the compression of air.

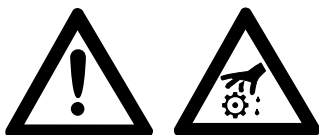
The air taken in must not contain any explosive or chemically instable gases or vapours.

Do not exceed the specified final compression temperature.

BOGE screw compressors are designed for stationary operation.

Ensure that they are only installed and operated in dry and clean rooms.

Operation, control and maintenance are designed to be executed by trained and authorized operators.

Inadmissible use

Never direct the produced compressed air towards persons. Danger to life!

WARNING!

Statement concerning the use of this equipment for breathing air and/or aqua lung service. If the model number on this air compressor contains the letters "BAP", the compressor is suitable for use in breathing air services. In the absence of such a designation, the compressor is NOT considered as capable of producing air of breathing quality. For a compressor to be capable of use in breathing air services it must be fitted with additional specialized equipment to properly filter and/or purify the air to meet all applicable federal, state and local laws, rules, regulations and codes, such as, but not limited to, OSHA 29 CFR 1910.134, Compressed Gas Association Commodity Specification G-7, 1-1966, Grade D Breathing Air and/or Canadian Standards Association. Should the Purchaser and/or User fail to add such specialized equipment and proceeds to use the compressor for breathing air service, the Purchaser/User assumes all liability resulting therefrom without any responsibility or liability being assumed by BOGE COMPRESSORS.

The Purchaser is urged to include the above provision in any agreement for any resale of this compressor.

This BOGE screw compressor is not explosion protected. Do not operate in explosive areas!

Do not operate the compressor in rooms in which extreme dust, toxic or flammable vapours and gases may occur.

The following is not permitted:

- Exceeding the final compression pressure indicated on the type plate.
- Altering the safety devices and cladding or placing them out of operation.
- Removing or painting over signs and symbols on the compressor.
- Operation of the compressor by unauthorized or untrained persons.
- Operation of the compressor with removed cladding or safety devices.

Transport damage

BOGE does not accept any liability for breakage or transport damage. Please inspect the compressor immediately after delivery and direct damage claims to the last haulier – even when the packing is not damaged! To safeguard claims against the haulier we recommend leaving the machine, devices and packing material in the same condition as they were in when the damage was detected.

In the event of any other complaints, please inform us within six days after arrival of the delivery.

Data on the type plate

Enter the data of your compressor from the type plate or enclosed data sheet in the illustration below. This will ensure that in the event of inquiries, you will always have the most important data at hand.


			
Type	_____		
Year of construction	_____		
Serial number	_____		
F.a.d.	max.	_____	cfm
Full load pressure		_____	psig
Motor speed		_____	rpm
Motor power		_____	hp
<small>Otto-Boge-Straße 1–7 · D-33739 Bielefeld · Telefon (05206) 601-0 Postfach 100713 · D-33507 Bielefeld · Fax (05206) 601-200 www.boge.com · info@boge.com</small>			

Fig. 1.1: Data on the type plate

Service

Please do not hesitate to contact BOGE service if you have any questions. Please call:

☎ 770-448-5995

In the event of inquiries, always specify the following data of your compressor to prevent any delays:

- Type
- Year of manufacture
- Machine number



NOTICE!

Only BOGE service technicians or persons authorized by BOGE in writing may repair or alter the compressor during the warranty period. Otherwise all warranty claims will expire!

Technical data for CL 4 – CL 7,5 Compressor assembly, part 1

Type	CL 4	CL 5	CL 7,5
Dimensions			
– Width [inch]	31.9	31.9	31.9
– Depth [inch]	24.0	24.0	24.0
– Height [inch]	22.9	22.9	22.9
Weight			
– silenced [lbs.]	243	276	287
Max. sound pressure level accord. to DIN 45635, part 13	[± 3 dB(A)]		
– silenced / super silenced [dB(A)]	63	68	72
Measuring surface dimensions			
– silenced / super silenced [dB(A)]	13	13	13
Sound capacity level			
– silenced / super silenced [dB(A)]	76	81	85
Compressor			
max. final compression temperature [°F]	230	230	230
Volume flow according to ISO 1217 Part C:			
– p _{max} = 150 psig [cfm]	11	14	24
Drive motor			
Rated power [Hp]	4,0	5,0	7,5
Nominal speed			
– 60 Hz [min ⁻¹]	1800	1800	3600
Protection type	TEFC	TEFC	TEFC
ISO class	F	F	F
Electrical connection			
Mains voltage ¹⁾ [V]	200	200	200
Frequency ¹⁾ [Hz]	60	60	60
Recommended fuse protection (CL, RKS) [A]	25	25	30
Mains voltage ¹⁾ [V]	208 – 230	208 – 230	208 – 230
Frequency ¹⁾ [Hz]	60	60	60
Recommended fuse protection (CL, RKS) [A]	20	25	30
Mains voltage ¹⁾ [V]	460	460	460
Frequency ¹⁾ [Hz]	60	60	60
Recommended fuse protection (CL, RKS) [A]	10	15	25
Mains voltage ¹⁾ [V]	575	575	575
Frequency ¹⁾ [Hz]	60	60	60
Recommended fuse protection (CL, RKS) [A]	8	10	12

¹⁾ Standard equipment. Mains voltages and frequencies are specified on a plate in the switch cabinet.

Technical data for CL 4 – CL 7,5 Compressor assembly / Compressed air system, part 2

Type		CL 4	CL 5	CL 7,5
Oil filling quantity				
Total oil filling quantity	[gallon]	1,1	1,1	1,1
Oil topping up quantity between min. + max.	[gallon]	0,3	0,3	0,3
Intake air temperature				
– min.	[°F]	+ 41	+ 41	+ 41
– max.	[°F]	+ 104	+ 104	+ 104
Cooling air requirement				
– free-standing installation	[cfm]	941	1294	1764
Operating pressure values ¹⁾ (factory settings)				
– p _{max} = 150 psig: Switch-off press. p _{max}	[psig]	150	150	150
Switch-off press. p _{min}	[psig]	135	135	135
Safety valve				
Activation pressure at:				
– p _{max} = 150 psig	[psig]	203	203	203

¹⁾ Compressors for other operating pressures $P_{min} = P_{max} - 15$ psig.

Function principle of the air end

The air end operates according to the displacement principle. In the housing, the main and secondary screws are driven by means of an electric motor and V-belt.

Both screws have screw-shaped profiles, intermeshing without contact. Together with the housing wall, these screws form chambers which gradually reduce in size, seen in air flow direction.

Rotation of the rotors causes the air taken in to be compressed to the final pressure in the chambers.

During compression oil is continuously injected into the air end. This having a cooling, sealing and lubricating function.

Air circuit

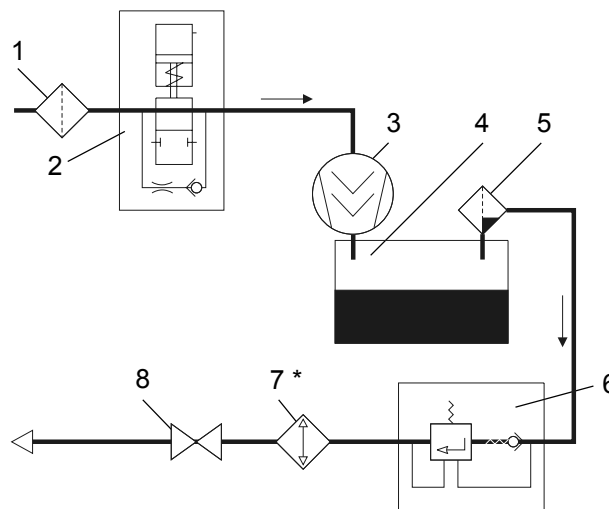


Fig. 2.1:
Components
of the air circuit

* Option

1 = Intake filter

The intake filter cleans the air suctioned by the air end.

2 = Intake regulator

The intake regulator opens (load operation) or closes (idling operation or standstill) the suction line depending on the operating condition of the compressor.

3 = Air end

The air end compresses the suctioned air.

4 = Compressed air/oil receiver

The compressed air separates from the oil under the force of gravity in the compressed air/oil receiver.

5 = Oil separator

The oil separator separates the residual oil contained in the compressed air.

6 = Minimum pressure check valve

The minimum pressure check valve does not open until the system pressure has increased to 3.5 bar. This causes a rapid build-up of the system pressure and ensures lubrication in the starting phase. Once the compressor has been switched off, the check valve prevents the compressed air from flowing back out of the mains line.

7* = Compressed air after-cooler (air and water cooled)

The compressed air is cooled in the compressed air after-cooler, causing the water contained in the air to condensate.

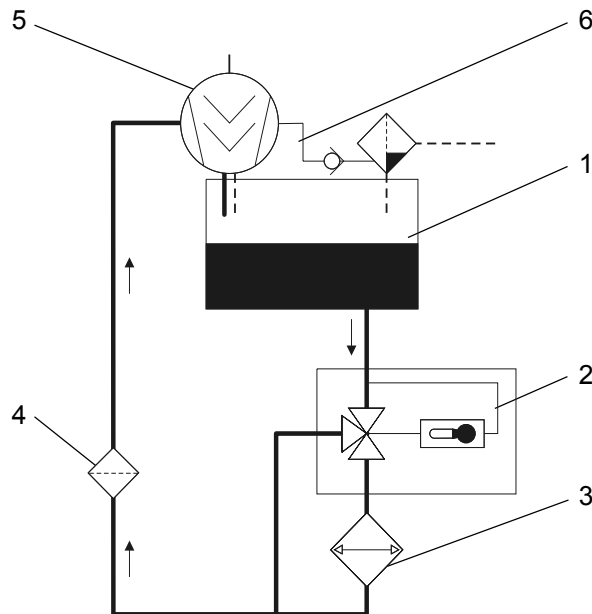
8 = Stop valve

The screw compressor may be isolated from the mains by means of the stop valve.

Oil circuit

The oil injected into the air end has the following function:

- It dissipates the compression heat (cooling)
- It seals the gaps between the screws and between the screws and housing
- It lubricates the bearings.



*Fig. 2.2:
Components
of the oil circuit*

1 = Compressed air/oil receiver

The oil separated from the compressed air through the force of gravity collects in the compressed air/oil receiver.

The system pressure forces it out of the receiver into the air end.

2 = Thermostatic oil control valve

Depending on the oil temperature, the thermostatic oil control valve either allows the oil to pass through the oil cooler or through a bypass (e.g. in the starting phase).

Thus the oil constantly maintains its optimum operating temperature.

3 = Oil cooler (air or water cooled)

The oil cooler cools down the hot oil to operating temperature.

4 = Oil filter

The oil filter traps impurities in the oil.

5 = Air end

The injected oil returns to the compressed air/oil receiver together with the compressed air. There, it is separated through the force of gravity.

6 = Drainage line

The air end suctions the residual oil which collects in the oil separator back into the oil circuit via a drainage line.

Network pressure

For the compressor, the pressure downstream of the check valve is termed the network pressure. The control system switches the compressor on and off during operation depending on the network pressure.

Operating states

All screw compressor controls are based on three basic operating states:

1. Load operation

- The compressor delivers its maximum amount of compressed air.
- It consumes its maximum energy.

2. Idling operation

- The compressor runs but does not deliver any compressed air.
- It consumes approx. 75% less energy than in load operation.
- When compressed air is required, it switches to load operation without delay.
- Idling operation reduces switching frequencies which can damage the drive motor, and reduces wear of the system.

3. Standstill ready for operation

- The compressor is standing still but ready for operation.
- When compressed air is required, it switches automatically to load operation.

Operating modes

The two most important operating modes are achieved by combining the three operating states:

1. Intermittent operation

In intermittent operation the energy balance is perfect.

- The compressor operates in load operation.
- Upon reaching the switch-off pressure p_{\max} the compressor switches to standstill. It does not consume any energy.
- Once the pressure has dropped to the switch-on pressure p_{\min} the compressor switches back to load operation.

2. Continuous operation

Continuous operation limits the drive motor switching cycles and reduces wear to the system.

- The compressor operates in load operation.
- Upon reaching the switch-off pressure p_{\max} the compressor switches to idling operation.
- Once the pressure has dropped to the switch-on pressure p_{\min} the compressor switches from idling operation back to load operation.

Short operating times



ATTENTION!

During short operating times, the compressor does not reach its operating temperature. It operates below the dew point. The generated condensate mixes with the oil. The lubricating ability of the oil is reduced. This leads to damage to the air end.

It is of utmost importance to consult BOGE, if you operate your system with short operating times.

Please refer to the operating instructions for the refrigeration compressed air dryer.

Operating pressure sensor

The operating pressure sensor allows controlled operation of the compressors within the set switching limits.

Switch-on pressure p_{\min}

If the network pressure drops to the set switch-on pressure p_{\min} , the compressor switches on.

Switch-off pressure p_{\max}

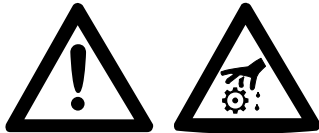
If the network pressure increases to the switch-off pressure p_{\max} , the compressor either switches off (intermittent operation) or switches to idling operation (continuous operation).

General

The safety devices guarantee a high degree of operational safety, in connection with the BOGE monitoring system.

When one of the safety devices responds, the control system reacts as follows:

- The compressor is immediately switched off.
- A flashing fault number in the left field of the display indicates the cause of the fault.



ATTENTION!

Do not operate the compressor without built-in safety devices.

Do not dismantle the safety devices or put them out of operation.

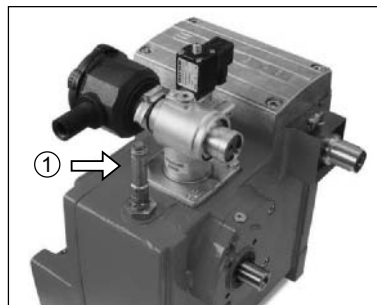
The following monitoring devices are standard for BOGE control systems:

Safety temperature limiting device

Safety temperature limiting device switches off the compressor once the maximum admissible final compression temperature has been reached. The compressor does not switch on when dropping below the minimum temperature.

- While you see the flashing number, press button ↵ (Enter). Fault is acknowledged.
- Rectify the fault.
- Switch on the compressor (ON button).

Safety valve



Safety valve ① on the compressed air/oil receiver prevents the maximum admissible pressure from being exceeded. When the maximum pressure is exceeded (e.g. incorrect setting of the operating pressure switch), the entire delivery volume of the compressor is ejected.

Monitoring the drive motor

The drive motor is monitored by PTC resistors.

General

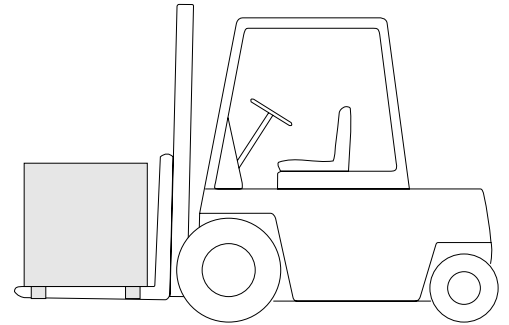
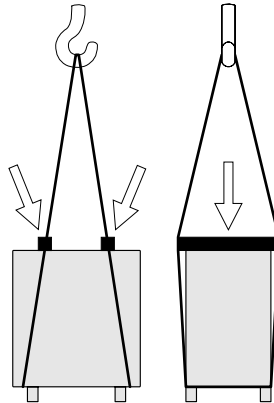
Please observe the generally accepted safety and accident prevention regulations when transporting the compressor. BOGE accepts no liability for damage caused by improper transport!!

**ATTENTION!**

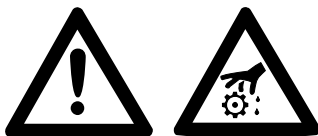
The compressor is delivered filled with oil.
Do not tilt during transport!

Transportation**Fork lift or fork stacking truck**

Ensure that forks reach underneath base frame of compressor.
See below if there is no base frame: (crane transport)

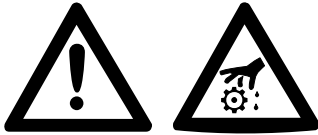
**Crane conveyance**

**Only use suitable conveyer slings having a minimum length of approx. 315 in.
Position slings at the ends underneath the base frame of the compressor.**

**ATTENTION!**

Do not subject the safety cladding to force during transportation.
Protect compressor by using wooden spacers (see arrows).
Remove supporting timber beams.

Installation, maintenance conditions and application for compressed air receivers arranged below or separately

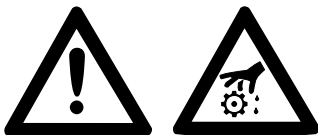


- Protect compressed air receivers against damage through mechanical effects (e.g. falling objects).
- Operate the compressed air receiver and its equipment from a safe location.
- Adhere to safety areas and safety clearances.
- Ensure that the compressed air receiver stands securely. It must not shift or tilt due to external forces. This also includes the additional weight during a pressure test!
- The compressed air receiver **must not** be bolted to the base.
- Ensure that the compressed air receiver is easily accessible from all sides (for recurring tests).
- Ensure that the factory label is clearly visible.
- Ensure that compressed air receivers are adequately protected against corrosion.
- Only use the compressed air receiver for compressors operating with cut-in and cut-out mode if the pressure fluctuation range amounts to $\Delta p \leq 20\%$ of the maximum operating pressure.

Installation surface

A level industrial floor without foundation is adequate for the installation of the compressor. No special fastening elements are required.

Fire protection



The following applies to rooms in which compressors with oil injection cooling are to be installed:

- For compressors with motor ratings **exceeding 55 Hp**, ensure that the compressor room is equipped with special fire protection.
- Install compressors with motor ratings **exceeding 136 Hp** in a separate fire protected room.

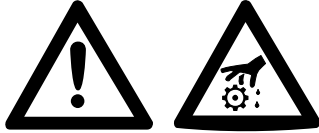
Requirements of fire protected compressor rooms:

- Walls, ceilings, floor and doors must be designed in **fire protection class F30** or higher.
- Flammable liquids must never be stored in the compressor room.
- The floor around the compressor must be made of non-flammable material.
- Leaking oil must not spread out over the floor.
- No inflammable materials must be located within a radius of at least 10 foot around the compressor.
- No inflammable machine parts, such as cable ducts, may run overhead of the compressor.

Sound protection

Only install compressors in workrooms if the sound pressure level of their measuring surfaces does not exceed 85 dB(A).

Admissible environmental influences



The compressor room must be clean, dry, cool and free of dust.

Admissible ambient temperatures

Maximum ambient temperature (for air cooling): **+ 104°F**

Minimum ambient temperature: **+ 41°F**

ATTENTION!

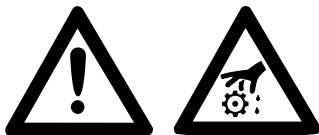
Nonobservance of the admissible ambient temperature may lead to the following problems:

- Compressor will switch off when the admissible final compression temperature is exceeded or gone below.
- Pipe lines and valves will freeze up at low temperatures.
- Damage due to reduced lubricating ability of the compressor oil.

Measures to be taken to ensure that admissible ambient temperatures are observed:

- Avoid any pipe lines or units radiating heat in the vicinity of the compressor or insulate them well.
- Never install compressor in the cooling air flow of other machines.
- Provide the supply air openings with adjustable louvres to ensure that the minimum temperature is not gone below in winter.
- BOGE anti-frost facility (series).

Ventilation



If the following instructions are not observed, the admissible final compression temperature may be exceeded.

In this case, the compressor will switch off automatically.

Attention!

Arrange the compressor intake openings or ducts such, that dangerous admixtures (e.g. explosive or chemically unstable materials) cannot be drawn in.

Ventilation openings (free-standing installation)

- Arrange supply air openings close to the floor.
- Arrange exhaust air openings in the ceiling or at the top of the wall.
- The required cross sections for the supply openings (as well as for the flaps and weather protection grids) are indicated in the table.

Ventilators

Ensure that the heated exhaust air is not taken in again.

If necessary, the heated air must be extracted by ventilators.

To ensure perfect cooling even at higher temperatures in the summer, the ventilators must be designed as follows:

- The ventilator capacity must be rated approx. 10 – 15% higher than the sum of the cooling air quantity required for all machines operated in the room (VDMA Code of Practice sheet 4363 "Ventilation of compressor rooms").
- For free-standing installation, the cooling air requirement specified in the table corresponds to the required ventilator capacity.

Cooling air requirements

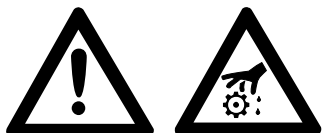
Please refer to the following table for the cooling air requirements and size of the supply air openings for your compressor. Ensure that flaps and weather protection grids have the necessary free cross section. We generally recommend contacting a specialist company for performing the duct construction work and planning.

Type	Drive rating [Hp]	* Cooling air requirements for free standing unit [cfm]	Necessary inlet opening for free standing unit [sq. ft.]
CL 4	4,0	705	2,15
CL 5	5,0	940	2,15
CL 7,5	7,5	1176	2,69

Table 1: cooling air requirements, necessary aperture dimensions.

* For the cooling air requirements the basis is a 4° C temperature difference between room and outside temperature.

Condensate disposal



The air taken in contains water in form of vapor, which turns into condensation during compression.

ATTENTION!

The condensate contains oil. Never feed it into the public sewage system without prior treatment.

Strictly observe applicable disposal laws of your local authorities.

Oil-water separator

The **BOGE-oil-water-separator** separates the oil from the condensate.

The cleaned water may be fed directly into the public sewage system.

The oil is collected in a separate container. Dispose of the oil according to environmental regulations.

If, due to special operating conditions, the oil should emulsify, use an emulsion cracking plant.

General



BOGE screw compressor units are supplied ready for connection. Only the work described in the following paragraphs needs to be carried out during installation.

ATTENTION!

Only have the installation work carried out by appropriately trained persons or specialists.

Prior to delivery, each compressor is subjected to a trial run at the factory. It is carefully tested and set. However, possible transportation damage cannot be excluded.

- Please inspect the compressor immediately after delivery and direct damage claims to the last carrier – even if the packing is not damaged! To safeguard any claims against the carrier we recommend leaving the machine, devices and packing material in the same condition as they were in when the damage was detected.
- Prior to commissioning, check compressor for external damage.
- Observe compressor very closely during commissioning and subsequent trial run.
- If malfunctions occur, switch off compressor immediately and inform the BOGE Service accordingly.

Checking the delivery scope

The delivery scope depends on your order.

Prior to commissioning, please check whether all required parts have been provided. Please check the order confirmation for any possible accessory equipment.

The delivery scope includes the following component parts:

- Operating instructions
- Electric circuit diagram (in the compartment of the switch cabinet)
- List of electrical equipment (in the compartment of the switch cabinet)
- Oil drainage hose
- Head nut (in compartment in switch cabinet)
- Spare parts list.

Installing the compressor

- Remove packing material on and in the compressor.
- Install compressor and align horizontally.
The compressor must stand firmly on the ground on all feet.
- For compressor assemblies series CL3 to CL7 the operating height of the control must be 400 mm according to EN 60204.
For this reason the compressor assembly has to be installed onto a console or base (on site).
- The compressors have to be installed in such a way that they can be operated easily and conveniently from the operating side.
Always observe the local prescriptions and/or the EN 60204 regulations!

Connecting the compressor to the compressed air network

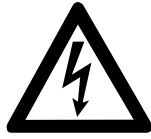
- Connect compressor to the compressed air network or a compressed air receiver.
For this, use a BOGE high pressure hose.
Pneumatic connection see scale drawing



**Do not install a check valve in the pressure line.
The compressor is already equipped with a check valve.**

Checking the oil level

BOGE compressors are supplied with a complete oil filling.
Prior to commissioning/start up, check the oil level as described in chapter 5.3 and on page 5.9.

Electrical connection**WARNING: Voltage!**

Ensure that work on the electrical equipment of the compressor is only carried out by authorized electricians.



When connecting to the power supply, observe valid VDE, DIN and EVU regulations or applicable local safety regulations.

Also observe applicable regulations of your local power supply company regarding the load rating of your power supply.

**Main switch**

According to accident prevention regulation VBG 5, § 12, the customer is required to provide the following safety measures:

Compressor plants having a drive motor larger than 3 kW and current intensities larger than 16 amperes have to be equipped with a power disconnecting device according to EN 60204-1.

Please refer to the technical data (chapter 2.1) for the design and fuse rating.

Rated voltage

The data of your mains (operating voltage, control voltage, type of current, frequency, ...) must coincide with the data on the type plate on the switch cabinet.

In the event of deviations, please contact the BOGE service or your supplier.

Connecting the leads

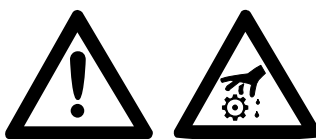
- Check to ensure that all terminals in the switch cabinet are firmly tightened. If necessary, retighten the screw connections.
- Guide the lead cable through the PG screw connection.
- Connect the leads L1, L2, L3, N, Pe (PEN) firmly to the terminal strip. A clockwise rotational field must be created.
- Tighten the electrical connections after the first operating hours.

**CAUTION: Risk of injury!**

Prior to any work on the compressor:

- Switch off the main switch and secure against unintentional switch-on.
- Check that all electrical components are not under power.
- Depressurize all areas under pressure.

Never omit a single safety step! Otherwise, you will risk injuries due to re-starting, electric shock or self-releasing parts.

**WARNING!**

With an activated automatic restart (Auto-Restart) the compressor may restart automatically after a voltage failure.

Precondition: the network pressure is lower than the set cut-in pressure of the operating switch and it was already switched on before the mains failure – green indicator lamp = ON.

Checking the rotational direction**ATTENTION!**

Always check the rotational direction of the drive motor prior to commissioning/initial start up.

Even brief operation in the wrong direction of rotation (more than approx. 5 seconds) may cause total destruction of the air end!



Ensure that the rotational direction coincides with the rotational direction arrow on the air end.

- Switch on the main switch.
- Switch the compressor on and immediately off again to check the rotational direction.

Changing the rotational direction:**CAUTION: Risk of injury!**

Switch off the main switch and secure against unintentional switching-on.

- Interchange two phases (L1, L2 or L3) in the power cable.

Opening the stop valves

Open ball valve 1 on the compressor delivery.

Checking for leaks

Undertake the following to prevent leaks:

- Check screw connection of the lines and retighten, if necessary.

Conduct trail run

Switch on the main switch.

- Switch on the compressor using the ON key. The compressor starts.
- The compressor switches off automatically once the switch-off pressure, factory set on the operating pressure switch, has been reached.
- Check network pressure on control display.
If necessary, reset operating pressure switch (see page 2.2).
- The compressor is ready for operation.

Commissioning following extended stoppages

If an extended stoppage is scheduled, you should contact BOGE-Service beforehand.

Following an extended stoppage of more than 2 months, fill a small amount of oil in the suction controller prior to starting the compressor.



ATTENTION!

Only fill the suction controller with the grade of oil used to operate the compressor.

Never mix different oil grades and brands.



CAUTION: Risk of injury!

Switch off main switch and secure against unintentional switching-on.

- Unscrew the plug on the suction controller ①.
- Fill approx. 0.06 gallon of compressor oil into the suction controller.
- Reclose the controller using the plug.
- Turn compressor stage at the shaft by hand 5- to 10 times to spread the oil evenly.

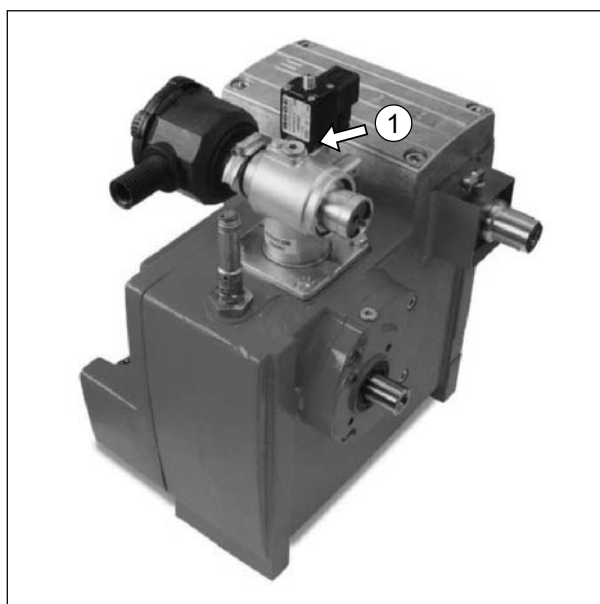
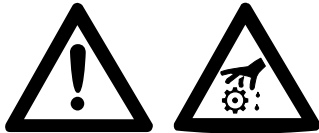


Fig. 3.1: Suction controller

General

The tables on the following pages give information on the possible causes of operating faults and measures for their rectification.








ATTENTION!

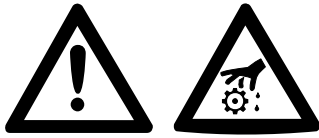
Ensure that any work required to rectify faults is only carried out by trained personnel or specialists.
Ensure that components which have a safety function are only set, repaired or exchanged by BOGE Service!

Please contact BOGE Service at the following telephone number, if you have any questions.

☎ 770-448-5995

Fault	Possible cause	Rectification
No quantity delivered, no pressure build-up, max. pressure 0.5 bar	System components in the compressor are leaking	Check oil and compressed air lines inside the compressor; tighten and/or reseal screw connections, if necessary
	Minimum pressure valve is defective	Close ball valve and check whether pressure builds up; if so, open ball valve again immediately; replace minimum pressure valve
	Electromagnetic venting valve does not close	Check solenoid valve and replace, if necessary
	Suction controller does not open	Suction controller or solenoid valve are defective; check and replace, if necessary
	V-belts are torn	Fit new V-belts
Compressor does not start up 	No electric power to compressor	Check electrical connection
	Fuses are defective	Check the mains and control fuses, replace if necessary
	Machine has not vented perfectly	Check venting valve and replace, if necessary
	Voltage fluctuations in the electrical mains power	Ensure constant voltage in accordance with IEC 38
	Compressor oil is very viscous due to low ambient temperature	Heat up the compressor (additional heater available as an option)
Oil in suction filter 	Minimum pressure non-return valve is leaking	Check the minimum pressure check valve and replace, if necessary
	Suction controller is leaking	Check the suction controller and replace, if necessary
	Cut-out performed by emergency-off switch	Cut-out normally via O key

Fault	Possible cause	Rectification
Excessive oil consumption 	Drain line is blocked	Dismantle and clean drain line
	Defective oil separator element	Check oil separator and replace, if necessary
	Excessive oil filling	Drain off oil
Safety valve blows 	Operating pressure switch has been misadjusted	Set operating pressure to the maximum permissible pressure of the screw compressor
	Defective safety valve	Replace safety valve
System pressure does not decrease when switching off 	Venting valve does not open	Check venting valve and replace, if necessary
	Check valve is leaking	Check the check valve and replace, if necessary

**ATTENTION!**

Ensure that maintenance work is only carried out by specialists or appropriately trained person.

- Prior to starting any maintenance work, always stop the compressor as described in these operating instructions prior to removing any cladding or safety devices. Refit the cladding or safety devices immediately upon completion of the maintenance work.
- Only use original spare parts, compressor oils and operating materials released by BOGE for the maintenance work.
- With an activated automatic restart (Auto-Restart) the compressor may restart automatically after a voltage failure.
Prerequisite: The net pressure is lower than the set switch-on pressure.

**CAUTION: Risk of injury!**

Always adhere to the prescribed operating method as described below for all maintenance work. Never omit a single safety step! Otherwise you will risk injury from restarting, electric shock or parts which may fly off.

Prior to all maintenance work:

1. Switch off compressor by using the OFF button.
2. Switch off main switch and secure against unintentional switching on.
3. Check to ensure that all machine elements are definitely isolated.
4. Separate compressor from compressed air network by closing the ball valve at the compressed air outlet.
5. Vent the compressor.
To this effect open the safety valve on the combined compressed air-oil receiver as follows:
 - Turn the knurled nut counterclockwise until you can feel a resilient resistance.
 - Turn the knurled nut a little further.
Any possibly existing air will escape.
 - Once the residual air has completely escaped from the system, firmly retighten the knurled nut.

Once the maintenance work has been concluded:

6. Open ball valve at compressed air outlet.
7. Prior to switching on again, check whether anyone else is working on the compressor!

Maintenance through BOGE service

Have BOGE service check your compressor every 3000 operating hours or annually.



Maintenance agreement

Enter into a maintenance agreement with BOGE.

BOGE service will carry out the proper maintenance on your compressor at regular intervals. This guarantees maximum safety and reliability of your compressed air supply.

Review of regular maintenance work

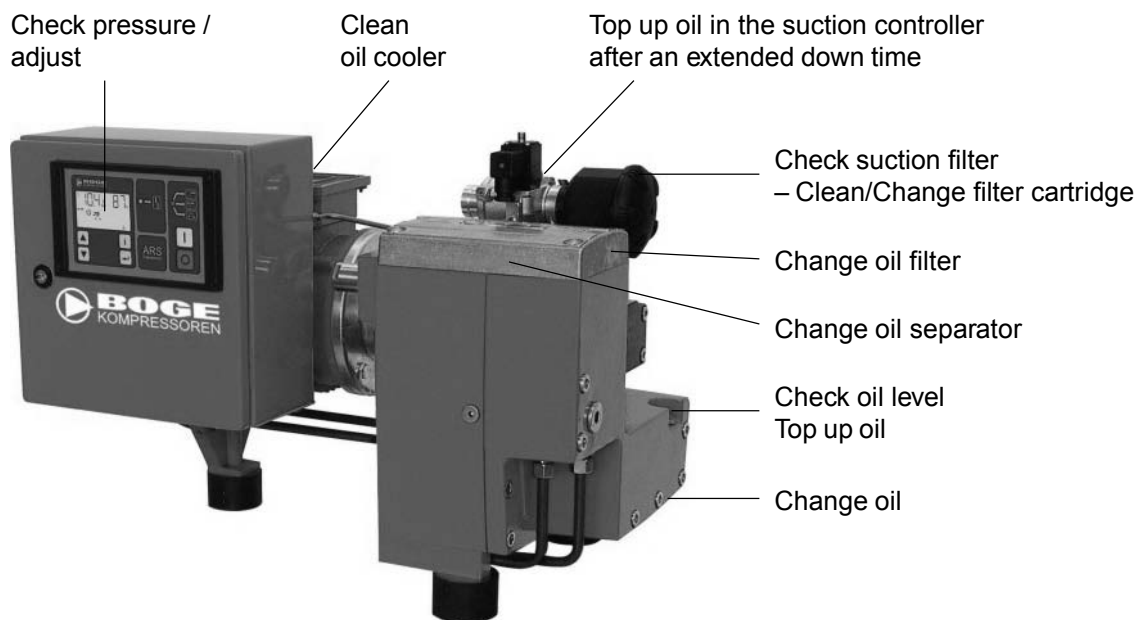


Fig. 5.1: Review of regular maintenance work

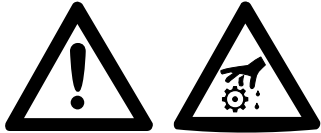
Maintenance intervals

The maintenance intervals specified in the table are based on average operating and ambient conditions.

Extreme conditions may require shorter maintenance intervals.



Note down any maintenance work in the table on the last page. This will facilitate trouble shooting for BOGE service.



Oil change

When using a mineral oil or any oil suitable for the foodstuff industry change oil, oil filter and nozzle with dirt catcher after the initial 500 operating hours.

Maintenance work	Maintenance intervals in operating hours ¹⁾					Page
	weekly/ monthly	1000 annually	1500 annually	3000 annually	9000 every 2 years	
General maintenance work						
Check final compression temperature (set point value: 70 – 100 °C)	w					FOCUS
Check compressor for leaks				X		–
Check system relief on system pressure gauge (22) (set point value 0 – 1.5 bar)	w					–
Check function of EMERGENCY STOP button	m					–
Clean oil cooler			X			5.11
Drain condensate at receiver	w					–
Check automatic condensate drainage	w					–
Check if electr. connections are firmly tightened			X			–
Air circuit						
Check and if necessary clean suction filter	m					5.5
Change suction filter cartridge			X			5.5
Check safety valve				X		5.12
Minimum pressure valve (wearing parts set change)				X		–
Replace suction regulator					X	–
Oil circuit						
Check oil level and top up as required ²⁾		X				5.6
Change oil separator ²⁾				X		5.8
Change oil filter ²⁾				X		5.7
Change oil ²⁾					X	5.9
Oil regulator (wearing parts set change)				X		–
Clean nozzle and dirt catcher					X	–
Drive						
Lubricate drive motor bearings	Drive motors with permanent lubrication					5.6
Replace grease in motor bearings	Depending on mains frequency: 60 Hz 8,000 operat. hrs.					

¹⁾ If the compressor is not often used, carry out maintenance according to specified intervals (weekly/monthly/annually) depending on the number of operating hours.

²⁾ The specified intervals only apply when BOGE **Syprem S** compressor oil is used! The service life may differ depending on the ambient temperature. In this case have the oil analyzed by your BOGE service!

General information concerning the lubricants used



CAUTION: Risk of injury!

Oil presents a potential danger to health and environment due to its additives.

- Avoid contact with skin and eyes.
Wear protective gloves made of resistant synthetic material.
Wash yourself thoroughly after contact with oils.
- Do not inhale the fumes or mist.
- Protect your environment. Ensure that no oil is spilled.
- Fire, naked flames and smoking are strictly prohibited when handling oil.

We recommend using only oil according to following specification:

- Viscosity range of 55 mm²/s at 40°C
- Minimum viscosity at 100°C of 8 mm²/s
- Maximum viscosity at 0°C of 1.000 mm²/s
- Failure load stage 10, FZG-Test, DIN 51 354-02/ ISO DIS 14 635-1
- Test Method A/8,3/90 10
- Excellent oxidation stability (rotating bomb oxidation Test, ASTM D 2272) higher than 2.400 minutes
- Antifoam – additives
- Additives to prevent residue formation
- Compatibility with all materials which are resistant to mineral hydrocarbons, e.g. Neoprene, NBR, FPM, PTFE, acrylic and epoxy resin paints, nylon (polyamide) and PVC
- Flash point, DIN ISO 2592 > 230°C
- Excellent demulsifying properties
- Additives for corrosion protection
- Meet VDL requirement DIN 51 506 (including Pneurop test)
- Or you use BOGE compressor oil **Syprem S**. The stated maintenance rates refer to the use of **Syprem S**.
- **Syprem S** can be purchased from BOGE retailers.
- Never mix different oil types and brands.
The additives may be incompatible. It may lead to foam formation, premature aging or loss of lubricating ability.

Disposal of used operating material



ATTENTION!

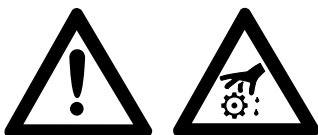
The handling and disposal of mineral oils is subject to legal regulations. It is an offense not to ensure correct and safe disposal of old oil!

Please instruct one of the known service companies to dispose of used operating materials or deliver them to an authorized disposal point.

Observe the following points when disposing of old oil:

- Never mix the oil with other material or liquids.
- Used oil filters and oil separator cartridges require special waste treatment and must be kept separate from normal waste!

Spare and wear parts



ATTENTION!

Only use original spare parts, compressor oils and operating materials released by BOGE for repair and maintenance work.

BOGE is not liable for any damage resulting from the use of other spare parts or operating materials.

Clean or change suction filter

- Cleaning:**
- 1x monthly, however, at least every 500 operating hours
 - Correspondingly earlier if the air taken in is heavily soiled
- Change:**
- In the event of damage
 - After the second cleaning

- Switch off the compressor using the OFF button.



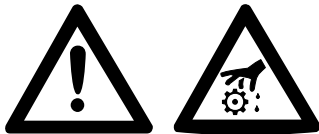
CAUTION: Risk of injury!

Switch off the main switch and secure against unintentional switching-on.

Removing the filter cartridge

- Remove lid ① of the filter housing (Fig. 5.2).
- Remove filter cartridge ② (Fig. 5.2).

Cleaning the filter cartridge



ATTENTION! Do not clean filter cartridges in liquids.

Do not use any hard objects when cleaning to avoid damaging the filter paper.

Refit a new filter cartridge in the event of damage or once it has been cleaned twice.

- Hit on the filter cartridge using the palm of your hand to knock out coarse dust.
- Blow out fine dust **from the inside to the outside** using dry compressed air (maximum pressure 73 psig).
- Clean the sealing surface of the filter cartridge.

Fitting a filter cartridge

- Insert filter cartridge into the filter housing.
- Attach lid of the filter housing.

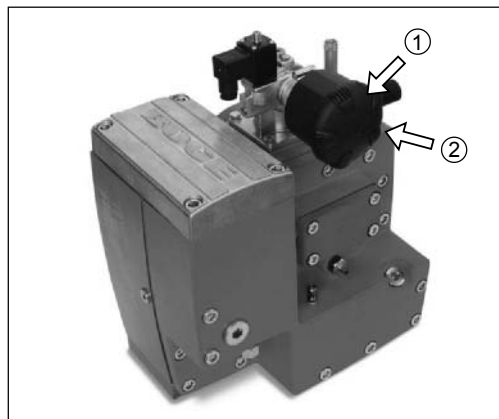


Fig. 5.2: Changing the suction filter

Lubricating the drive motor bearings



As a rule, the bearings of the drive motors are provided with a maintenance free **permanent lubrication**.

The drive motor of some series are equipped with a **post-lubricating unit**. These motors can be easily recognised by the two grease nipples on the upper side of the housing. In addition, plates on the compressor indicate the type of motor lubrication.

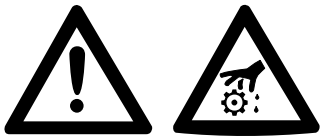
Drive motors with permanent lubrication

Under normal operating conditions (coolant temperature max. 104°F, continuous operation) the bearings are maintenance free for the service life.

Bearing service life:

Mains frequency	Operating hours
60	8,000

The service life decreases or increases as thermal stress increases or decreases (due to increased or reduced coolant temperature).



ATTENTION!

Have BOGE service dismantle and regrease the bearings once the specified service life has expired!

Checking the oil level, topping up oil

Check:

- Prior to commissioning/start-up of the compressor
- Then every 1000 operating hours, however at least once a year

Topping up: – When the oil level has dropped below the "min." mark (see sketch)



ATTENTION!

Always use the same oil type when topping up. Never mix different oil types or brands.

- Switch off the compressor using the OFF button.



CAUTION: Risk of injury!

Switch off main switch and secure against unintentional switch-on.

- Close ball valve at compressed air outlet.
- Vent compressor (as described in the beginning of the chapter).
- Wait approx. 3 minutes to permit the oil to settle.

**CAUTION: Risk of injury!**

Danger of burning due to hot oil!

- Remove plug ② of oil filling socket ①.
- Check oil level.
The oil level must not drop below the "min" mark (see sketch).
- If necessary, top up with oil to the lower edge of the thread ("max." mark) on the oil filling socket.
- Screw plug ② back in.
- Open ball valve at compressed air outlet.

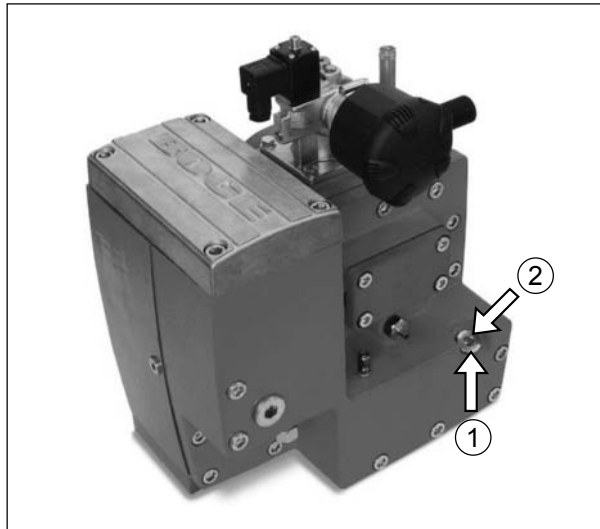
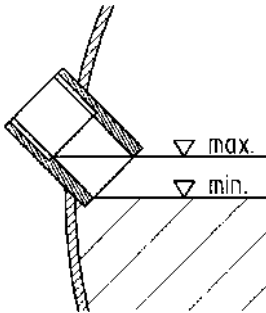


Fig. 5.3: Checking the oil level, topping up with oil

Changing the oil filter (Fig. 5.4)

- Change:**
- After 3000 operating hours, however, no later than after one year.
 - With each oil change!

- Switch off the compressor using the OFF button.

**CAUTION: Risk of injury!**

Switch off the main switch and secure against unintentional switch-on.

- Close ball valve at compressed air outlet.
- Vent compressor (as described in chapter 5.1).
- Wait approx. 3 minutes to permit the oil to settle.



CAUTION: Risk of injury!

Do not touch hot surfaces!

- Slacken screws on service cover ③ and remove cover.
- Take out oil filter cartridge ④ and remove from support body ⑤.
- Slide support body in new oil filter cartridge.



CAUTION!

Over-current/ Non-return valve ⑥ must be fitted facing up.

- Fit oil filter cartridge ④ with support body ⑤.
- Check O-rings on service cover for damage and replace if necessary.
- Fit service cover ③ and tighten screws.
- Open ball tap at compressed air exit.
- Switch on compressor and run till it reaches operating temperature.
- Check tightness of service cover and re-tighten screws.

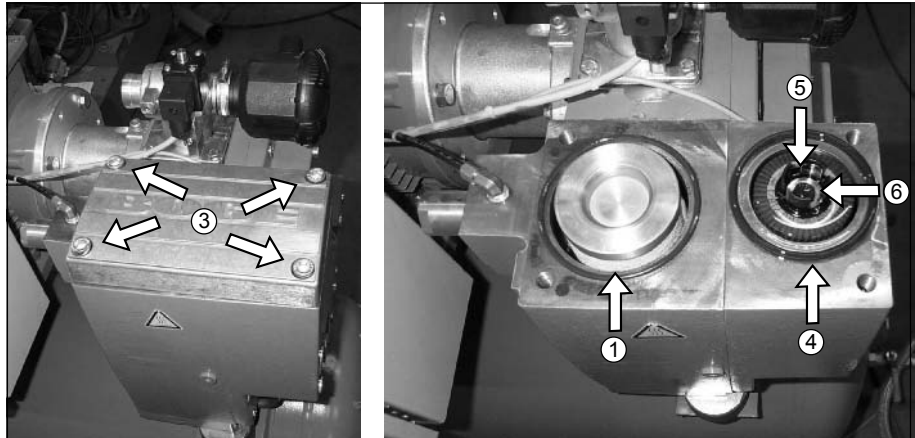


Fig. 5.4: Changing the oil filter / Changing the oil separators

Changing the oil separator

(Fig. 5.4)



- Change:**
- After 3000 operating hours, however, no later than after one year.

If the prescribed maintenance intervals are not observed, the oil separators might become blocked. In this case, the differential pressure will increase until the safety valve blows.

- Switch off compressor using the OFF button.

CAUTION: Risk of injury!

Switch off main switch and secure against unintentional switch-on.



- **Do not touch hot surfaces!**
- Slacken screws on service cover ③ and remove cover.
- Pull oil disperser cartridge ① up out of the O-ring seal.
- Check seat of O-ring.
- Lightly oil bottom of new cartridge in and press into O-ring seal.
- Check O-rings on service cover for damage and replace if necessary.
- Fit service cover ③ and tighten screws.
- Open ball tap at compressed air exit.
- Switch on compressor and run till it reaches operating temperature.
- Check tightness of service cover and re-tighten screws.

Oil change

- Change:**
- After 9000 operating hours, however, at the latest after two years.
 - With other types of oil eg, ÖKOLUB or USDA-H1 the appropriate oil change intervals must be complied with.



The service life of the oil, the oil filter and oil separators is reduced under the following conditions:

- When the compressor is operated at extreme ambient temperatures.
- When the intake air is extremely soiled.

Building up a pressure cushion

The combined compressed air / oil receiver is located at the lowest point of the system. Therefore, a light pressure cushion (approx. 22 psig system pressure) must be applied to drain the oil. This pressure cushion forces the oil through the drain hose into a suitable collecting basin (Fig. 5.6, 5.7).

- Switch the compressor using the OFF button.



CAUTION: Risk of injury!

Switch off main switch and secure against unintentional switch-on.

Draining old oil

- Switch off compressor. After approx 2 sec screw cap nut ⑤ on the bleed aperture of the magnetic valve. (The nut is located in the storage compartment of the switch cabinet.)



CAUTION: Risk of injury!

Danger of burning due to hot oil!

- Remove blind plug ① at oil drain ③ with the tap closed.
- Fit oil drainage hose ②. (The hose is located on the machine).

- Place the oil drain hose into a suitable container ©.
- Slowly open stop valve.
The pressure cushion forces the oil into the container.
- Once the compressed air/oil receiver has been completely drained, close the stop valve.
- Remove oil drainage hose and replace blind plug with new copper seal.
- **Remove cap nut from solenoid valve.**
- Change oil filter (see page 5.7).
- Change oil separators (see page 5.8).

Filling with new oil:

- Fill up to the edge of the thread of the filling socket (max.) (see page 5.7).

**ATTENTION!**

After each oil change you have to fill a small quantity of oil into the suction controller before starting the compressor.
For oil quantity and procedure see chapter 3.5 "Commissioning following extended stoppages".

**ATTENTION!**

Always fill with the same oil type as previously used.
Never mix different oil types or brands.

The oil circuit must be flushed prior to changing the oil type (see page 5.11).

- Conduct trial run.

**CAUTION: Risk of injury!**

Switch off the main switch and secure against unintentional switch-on.

- Check oil filters and oil separators for leaks and tighten by hand, if necessary.
- Check oil level (see page 5.6). Top up oil losses, if any.

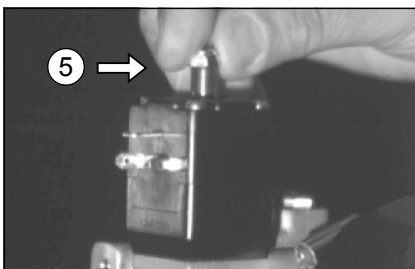


Fig. 5.5:
Solenoid valve on the suction controller with the cap nut screwed on

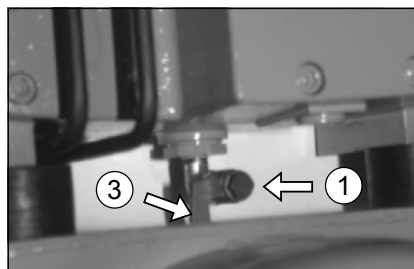


Fig. 5.6:
Oil drain oil compressed air receiver

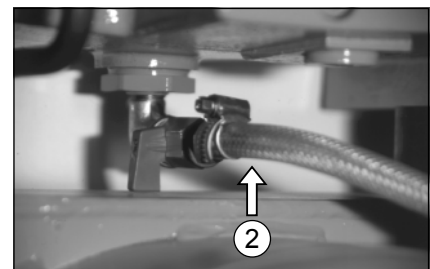


Fig. 5.7:
Oil drain with fitted oil drainage hose

Flushing the oil circuit

Flushing the oil circuit with clean oil becomes necessary:

- When the oil is excessively soiled.
- Prior to changing the oil type.



ATTENTION!

Detailed information as to the flushing with BOGE oils you can obtain from the following service number.

☎ 770-448-5995

Cleaning the compressed air/oil cooling unit



- Cleaning:**
- After 1500 operating hours, however, at the latest after one year.

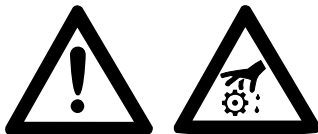
The service life of the compressed air/oil cooling unit depends on the degree of soiling (dust, oil vapor) of the suctioned cooling air. Extreme external soiling of the cooling unit leads to an increased temperature in the oil circuit.

- Switch off compressor using the OFF button.



CAUTION: Risk of injury!

Switch off main switch and secure it against unintentional switch-on.



ATTENTION!

Do not use any sharp objects for cleaning! These could damage the cooling unit!

- Blow down the dirt with compressed air in the opposite direction to the normal cooling air flow. Vacuum out the dirt using an industrial vacuum cleaner (see Fig. 5.8).

If the cooling unit is excessively soiled (cleaning is no longer possible with compressed air), have it disassembled and cleaned by BOGE service.

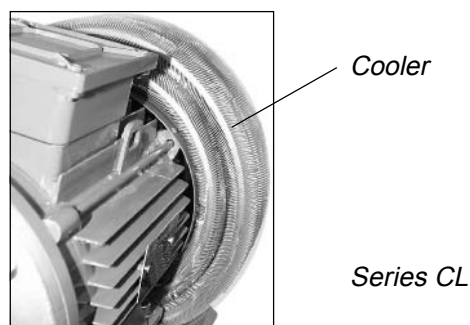


Fig. 5.8: Cleaning the compressed air/oil cooling unit

**Checking
the safety valve**

Check: – After approx. 3000 operating hours,
however, at least once a year.

Check safety valve by opening the screw plug ①.

CAUTION: Risk of injury!

Danger of burning due to hot oil!

Take extreme care when checking the safety valve with the compressor running taking all safety measures into consideration.

A hot air-oil mixture escapes when opening!

- Open threaded plug ① counterclockwise.
Air-oil mixture escapes.
- Tighten threaded plug by turning clockwise.

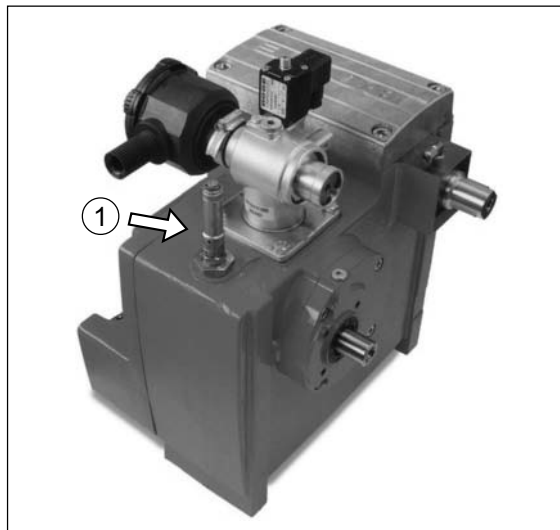


Fig. 5.9: Check safety valve

List of spare and wearing parts (for maintenance)

Designation
Compressor oil Syprem S
Maintenance kit consisting of: oil filter, oil separator, suction filter cartridge, gaskets
Wearing part kits for: oil regulator, minimum pressure valve, solenoid valve
Intake regulator incl. solenoid valve

List of available optional equipment

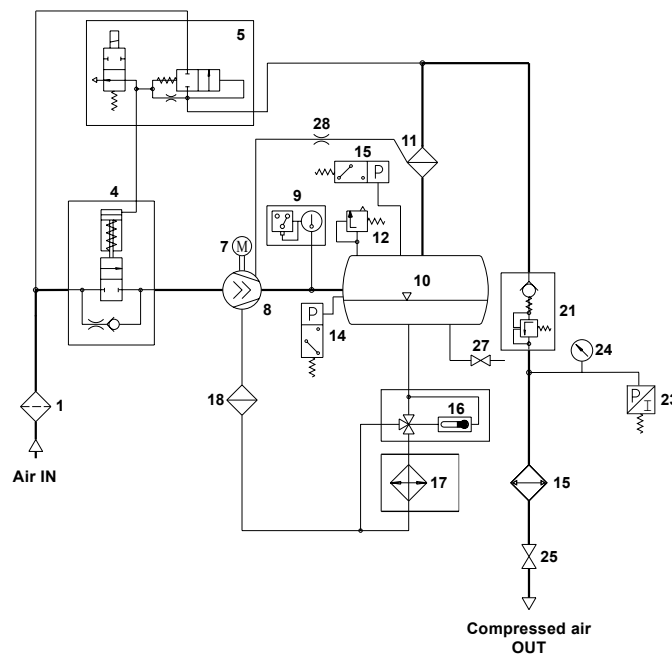
Designation
Optional equipment for compressed air treatment
Oil/water separator
Automatic condensate Bekomat draining unit



When ordering, please specify the data on the type plate:

- Type
- Year of manufacture
- Machine number

Air cooled version, standard



- 1 = Suction filter
- 4 = Suction controller
- 5 = Air relief and regulation control valve
- 7 = Drive motor
- 8 = Air end
- 9 = Final compression temperature display and switch
- 10 = Combined compressed air/oil receiver
- 11 = Oil separator
- 12 = Safety valve
- 15 = Compressed air after-cooler
Optionally for receiver systems without refrigeration compressed air dryer
- 16 = Thermostatic oil control valve
- 17 = Oil cooler
- 18 = Oil filter
- 21 = Minimum pressure check valve
- 23 = Network pressure transmitter
- 24 = Pressure gauge reading in display
- 25 = Stop valve, compressed air outlet
- 27 = Stop valve, oil drainage
- 28 = Throttle with filter

