

Operating Manual



for Pneumatic Driven Container Pumping
Unit for High Viscous Lubricants

Art. Nr. 46010.00 / 46020.00

Introduction

This instruction manual is made to introduce the pneumatic container-pumping unit for high viscous lubricants (named 'system') to be able to use the system according to the intended purpose.

This manual underlines high important details about how to operate the system in a safe, appropriate and economical way. Thus, the study will help to avoid danger, to reduce the cost of repair as well as the outage time and also to increase the life-time of the system.

The manual has to be completed based on the national accident prevention regulations and on the national conservation of the environment.

The complete technical documentation should always be kept near the system concerned.

This manual is meant to be read, understood and adhered to in all points by the personnel responsible for the system, p. e.:

- Operation including change of container, clearance in course of work, removal of manufacturing waste products, service, waste management of operations- and accessory substances
- Maintenance (service, inspection, assembly) and/or
- Transport and storage

In addition to this manual, the rules and regulations effective for national accident prevention regulations at the place of application as well as special national safety regulations must be observed.

Confirmation

We herewith confirm as operator and customer, that we have read and understood this instruction manual and that we have instructed and tested all personnel who will operate the below detailed system:

Company stamp:

Place and date:

Signature:

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1 Safety

1.1 Principal Safety Advises

The principal precondition for the safe handling and the satisfactory operating of the system is the knowledge of the principal:

- Basic safety instructions and the safety regulations.
- This operating manual.
- All persons working on the system must observe the manual, particularly the safety instructions.
- In addition, the rules and regulations effective for accident prevention at the place of application must be observed and the inspection and maintenance work performed.

The following pages describe the basic safety instructions and the safety regulations.



NOTE:

Please read these instructions, as well as the directions given in subsequent sections before putting the system into service. The system operator must be familiar with these instructions.

In addition, the safety instructions of the operator and the special regulations in the operator's company must be strictly observed.

The operating manual must always be reachable at the main station of the system.

1.2 Importance of the operating instructions

These operating instructions only refer to the system as described in the cover sheet.

The manufacturer only takes responsibility for the safety, reliability and capacity of the system if the customer has read and understood the operating instructions.

Please remember that the operating instructions have been made out mainly for your own protection and safety.

It is very important for the customer to read and understand these operating instructions to:

- avoid expensive service.
- avoid the wrong handling and usage of the system.

1.3 Responsibility of the operator

The operator undertakes only to allow persons to work on the system who:

- are familiar with the basic regulations concerning working safety and accident prevention and have been familiarised with the operating of the system.
- have read and understood the safety instructions and DANGER notes in this operating manual. **This has to be confirmed with their signature.**

The safety-conscious working of the system is checked by the operator at regular intervals.

All operators, instructed to work on the system must:

- observe the basic instructions concerning working safety and accident prevention.
- read the safety instructions and warning notes in this operating manual and confirm with their signature that they have understood these instructions.

1.4 Training of personnel

- Only trained and instructed personnel may work on the system.
- The responsibilities of personnel are clearly defined for installation, commissioning, operating, fitting, transport, storage, maintenance and repair.
- Personnel to be trained must only work on the system under the supervision of an experienced person.

1.5 Danger when operating the system or subassembly

The machine or subassembly is constructed according to the latest state-of-the-art and the recognised safety regulations. Danger to the operator or other persons, or damage to the system or other material damage through improper handling or use can however arise during its operation. The system must only be operated:

- For the intended purpose;
- In a satisfactory and safe condition.

Faults which can affect safety must be eliminated immediately.

1.6 Workplaces for operating personnel

- The workplace is situated in front of the system.
- The cleanliness and tidiness of the workplace on and around the machine must be ensured and checked regularly.

1.7 Safety and protection devices

- All protective devices must be properly fitted and be in working order each time before starting the system.
- Protective devices may only be removed after shutdown and securing against re-start of the system.
- The operating panel as well as the coupling AX 100 must be freely accessible.

1.8 Personal protection and organisational measures

- The operator is responsible for personal protection devices.
- All safety devices must be checked regularly.

1.9 Appropriate use

The system and components may only be used under the appropriate operating conditions.

The system is to be used exclusive for the pumping of lubricants according to the detailed specifications in the manual under section 2.1.

A different or fairly further use is considered inappropriate. Consequently, the manufacturer does not take any responsibility for damaged caused thereby

Appropriate use means, amongst other things:

- To follow all recommendations mentioned in the operating instructions.
- To adhere to the inspection and maintenance works.

1.10 Inappropriate use

We do not take any liability for damages caused by inappropriate application. Inappropriate application means:

- Pumping of any kind of media which are not mentioned in this operating manual or which are not released by the manufacturer in written form;
- The use of corrosive and / or solidify able material;
- The work of food with the system and the storage of food within the area of the system.

1.11 Danger- and Information Symbols

WARNING symbols are used in the manual to signify the safety:



DANGER

Warning signs contain information about danger, which - through improper use, handling or application - could lead to injuries or mechanical damage to the system.



DANGER

This symbol informs specially about the danger of hand injuries.

Recommendation symbols are used in the manual to signify notes for handling:



NOTE

These recommendation symbols furnishes important notes for an appropriate handling of the system. In the event these recommendations are not followed, interference of the system or in its ambience may be caused.

1.12 Danger through the lubricant



NOTE

Please pay special attention to the safety rules of the supplier of the lubricant and follow strictly the instructions.

The manufacturer of this system does not accept any liability for incidents, which are caused through inappropriate use of regulations, instructions and recommendations of the supplier of the lubricant.

1.13 Dangers by hydraulic and pneumatic energy

- Works on hydraulic and pneumatic equipment may only be carried out by specially trained personnel with a good knowledge of and experiences in hydraulics and pneumatics.
- The system works with a hydraulic pressure up to 335 bar and a pneumatic pressure up to 10 bar. Parts of the system as pressure hoses, valves or user, have to be depressurised before start of the repair works. It is not allowed to have any pressure left.
- Hydraulic and pneumatic flexible tubes should be replaced regularly, even without obvious defects which might influence the safety.

1.14 Maintenance, repair and fault elimination

- The prescribed setting, maintenance and inspection work should be performed at the specified intervals.
- Operating personnel must be informed before starting maintenance and repair work.
- Remove the pressure air connection from the system and safe it against unintentional operation (fix a warn sign against re-operation).
- Check all released screw- and fitting connections for firm seating.
- Check safety devices for proper functioning after completing maintenance work.

1.15 Guarantee and Liability

In principle, guarantee and liability is based on our already signed written agreement.

We do not accept guarantee or any liability for damages caused to either persons or machinery which can be attributed to one or several of the following causes:

- Inappropriate use of the system.
- Inappropriate works on the system, done by non-instructed personnel.
- Inappropriate transport, storage, assembly, commissioning, operation and maintenance of the system.

- Operating of the system in spite of broken safety equipment or insufficiently mounted or not functional safety and protective equipment.
- No attention to recommendations stated in the operating instructions concerning safety, transport, storage, assembly, commissioning, maintenance and fitting of the system.
- Constructive change of the system without permission.
- Change of pressure ration at the pneumatic inlet without permission.
- Lack of control of the system parts which may be subject to wear.
- Inappropriate use and repair of components.
- Catastrophic cases due to foreign bodies or cases beyond our control.

1.16 Copyright

The copyright remains with the manufacturer. These operating instructions are destined to the customer and the operating personnel. The requirements and recommendations contained must not, neither in complete, nor in extras, be

- copied
- distributed or
- handed over to other persons.

2 Overview of the System

2.1 Use

The system is to be used exclusively to pump the following media:

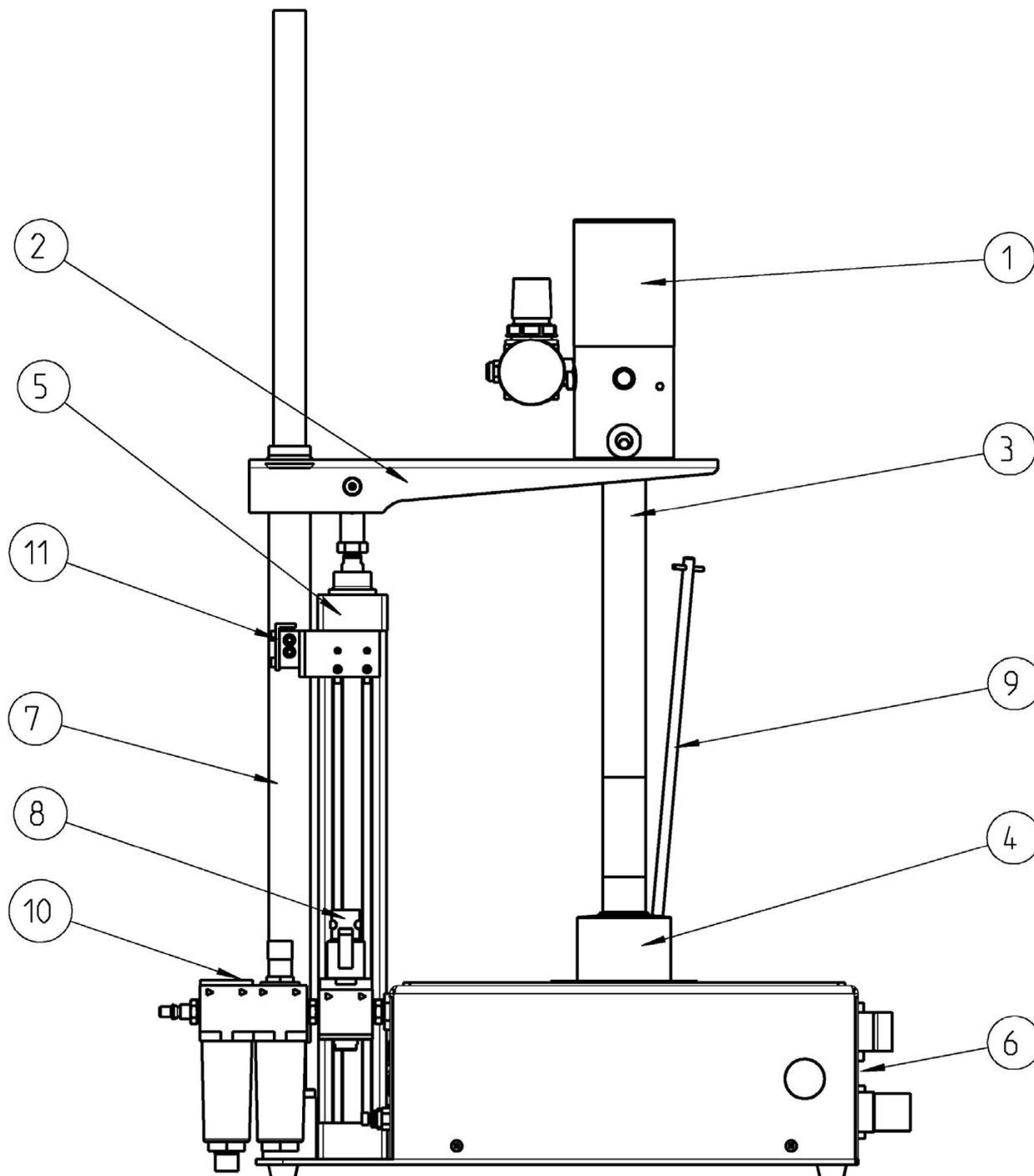
- Lubricants
- Viscosity NLGI 4 / 1'000'000 mPa s or smaller
- Size of container as listed on separate data sheet



WARNING

The use of different media can lead to mechanical defects, to serious damage and also to destruction of the system.

2.2 Overview illustration / Components



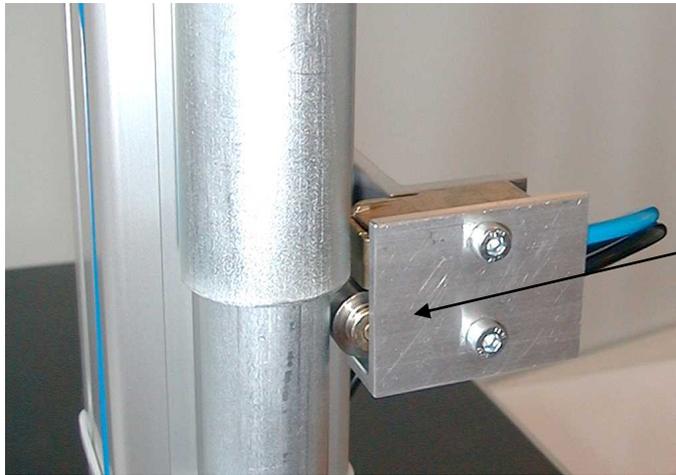
- 1) Air motor
The air motor drives the pump for high viscous lubricants
- 2) Pump jack
The pump jack lifts and lowers the pump with the follower plate

- 3) Pump
The pump pumps the high viscous lubricant
- 4) Follower plate
The follower plate produces by means of one pneumatic cylinder a pressure on the contents of the container. The contents are therefore pressed into the pump.
- 5) Pneumatic cylinder
They lift and lower the pump jack and produce the pressure power for the follower plate
- 6) Operating panel
The valves and operating elements are placed upon the operating panel
- 7) Rod guide
- 8) Lockable block valve with pressure release
- 9) Ventilation screw
to exhaust the air from the keg at the run-in of the follower plate
- 10) Pressure regulating valve with pressure gauge and integrated water separator
- 11) End switch for pump operation
Setting: the end switch is only permitted to be switched on when the follower plate has completely been entered in the container

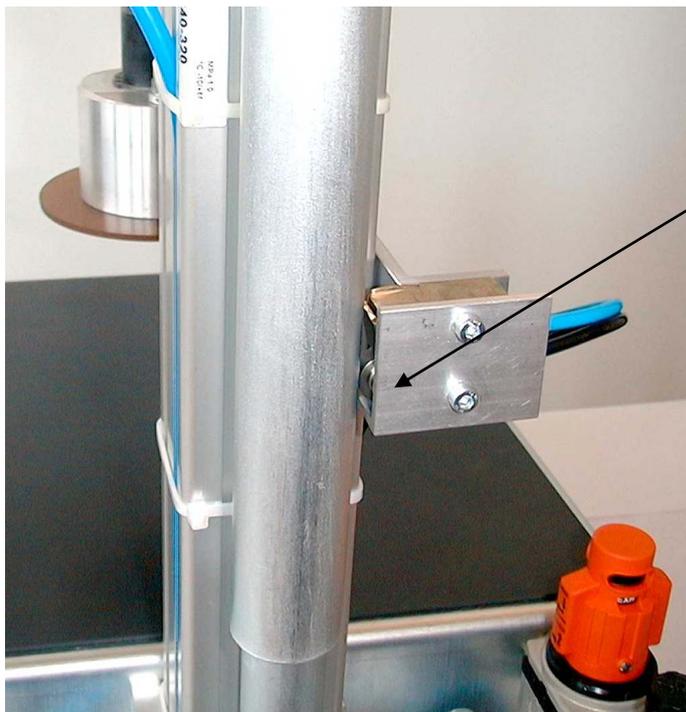


WARNING

This end switch is only to be adjusted by specialist staff.



End switch is not operated.
The system works only with a
two-hand-controlling



End switch operating.
The system works in
production and with two-hand-
controlling.
See also safety note.

2.3 Technical data

Pressure ration:	according enclosure 16.1
Air inlet pressure air connection:	4 – 10 bar
Outlet pressure at 6 bar air pressure	according enclosure 16.1
Max. output at pump outlet:	according enclosure 16.1
Min. inlet pressure system:	4 bar
Min. inlet pressure pump:	2 bar
Max. inlet pressure pneumatic:	10 bar
Max. controlling pressure pneumatic:	6 bar
Min. controlling pressure pneumatic:	3.5 bar
Max. follower plate pressure pneumatic	6 bar
Min. follower plate pressure pneumatic:	0.5 bar
Pressure connection pump:	according enclosure 16.1
Size system net (without container):	according enclosure 16.1
Size system gross (without container):	according enclosure 16.1
Measurement floor plate:	according enclosure 16.1
Min. height (retraced):	according enclosure 16.1
Max. height (extended):	according enclosure 16.1
Size packaging L x B x H:	according enclosure 16.1
Min. size working space L x B x H:	according enclosure 16.1
Size of container:	according enclosure 16.1
Max. height of container:	according enclosure 16.1
Max. inside-Ø:	according enclosure 16.1
Air connection nipple-Ø:	6 mm
Air connection inside thread BSP:	G ¼ "
Amount of air:	according enclosure 16.1
Temperature of surroundings	+15 ... 40 C°
Viscosity	NLG14 / 1'000'000 mPa s

3 Packaging and transport

3.1 Packaging

The system will be prepared and packed by ABNOX Ltd. for transport to the respective "first destination". The unit will be delivered on a Euro-pallet. The packaging unit should not be exposed to any more weight. The packaging as well as its content should be protected for any influences of humidity. The transport as well as the storage temperature must be -20°C to $+40^{\circ}$.

3.2 Transport damage

When transport damage is found when inspecting the system, the following procedure should be adopted:

- Notify delivery service (forwarder, railway etc.)
- Prepare damage report
- Inform manufacturer

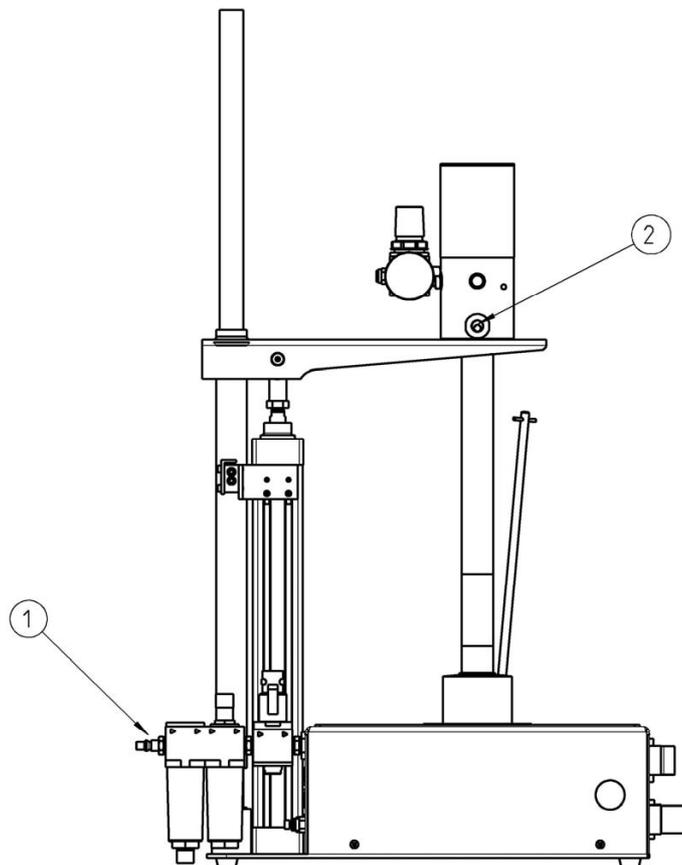
3.3 Storage

The storage of the system in an aggressive and excessively moist surroundings or out of doors can lead to corrosion damage or other damages, for which we can accept no liability. The transport- as well as the storage temperature of -20°C to $+40^{\circ}\text{C}$ must be kept.

4 System Installation

- All rules and regulations valid for the system stand itself must be observed and respected.
- The floor- and place dimensions must be observed before the system is installed to be able to secure the operation for the personnel as well as for the system itself.
- All exposed parts and hoses have to be assembled in such a way, that no injury risk is given.
- Only special instructed and trained personnel is allowed to assemble, to commission and to storage the system.
- The system must be placed and operated onto an horizontal floor/basis.
- The system has been designed to be used in rooms which are not exposed to the effects of the weather.
- The storage of the system in an aggressive and excessively moist surroundings or out of doors can lead to corrosion damage or other damages, for which we can accept no liability.

5 Definition of interface



1) Inlet

The pneumatic container-pump unit is powered by air pressure. The connection is placed on the back side of the operating case. The safety air coupling type AX 100 Art. No. 50500.00 is included in the delivery range.

Connection air coupling:	Nipple ARO 210 standard
Air coupling:	Safety air coupling with connection internal thread G ¼"
Hose nipple:	Internal-diameter 6 mm
Inlet pressure min.:	2 bar
Inlet pressure max.:	10 bar

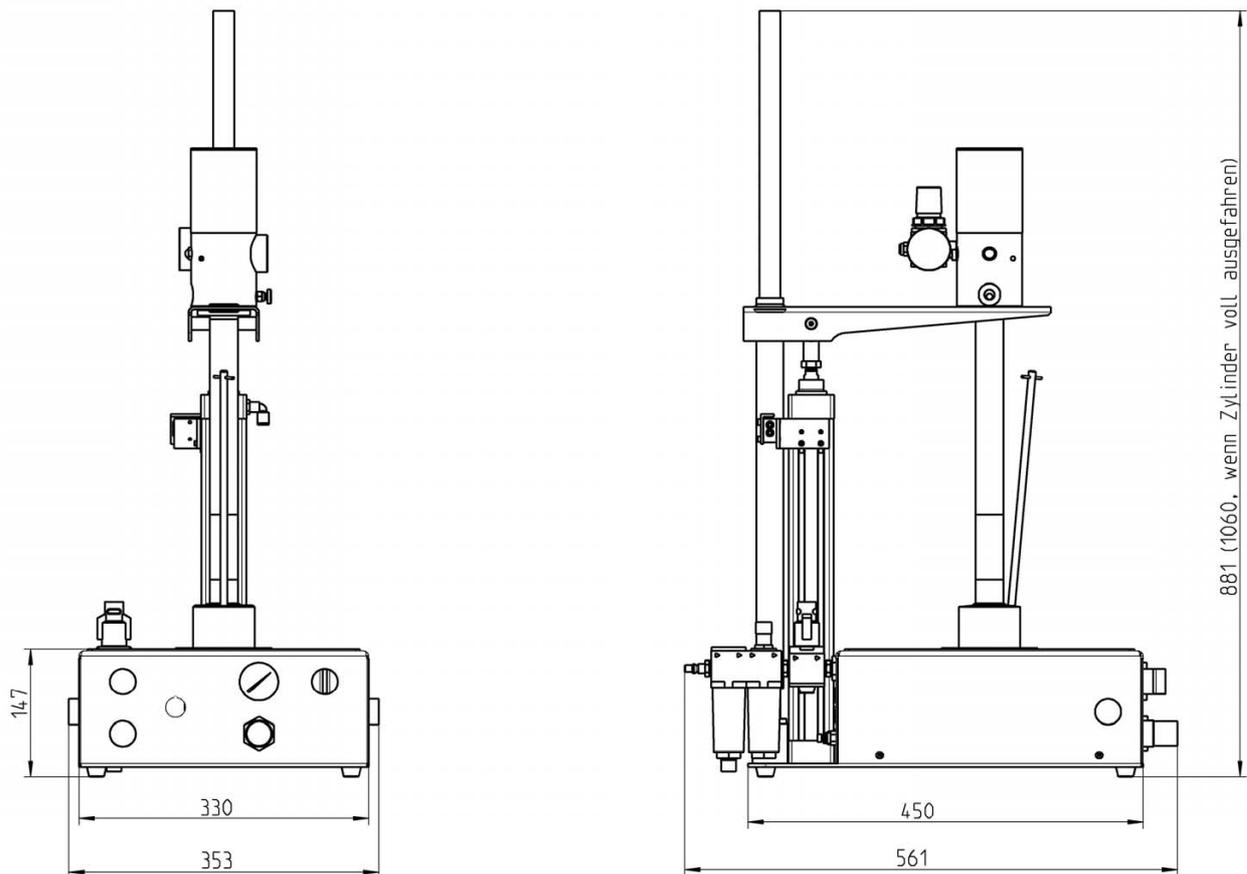
2) Outlet

The outlet for the lubricant is placed on top of the pump

Outlet pressure:	According to the pump used
Connection:	According to the pump used

6 Assembly

- The system has to be put on the determined position (considering the conditions listed under section 4).
- The system must be placed in a way that the access to operating elements, display and place container can easily be reached.



All dimensions in mm!

7 First installation

Before delivery, the system has been tested completely



NOTE

Check if all hoses and screws are properly fixed (imperviousness)

- Before the first installation can be started the system must be unwrapped completely.
- Fill in the oil at the maintenance unit (chapter 12.2).
- For the operation of the system a main air pressure net is needed. The air pressure connection is placed on the side of the operating panel of the system. The main air pressure net should provide a constant pressure of at least 4 bar and max. 10 bar (chapter 2.4.).
- Place the choice lever onto "lower".
- Connect the system by means of the safety air coupling AX 100 with the main air pressure net.
- Open the block valve.
- Control the pneumatic pressure on the pressure gauges.



NOTE

At the factory a pneumatic inlet pressure of 6 bar was set for the pneumatic container-pump unit which corresponds – depending on which type of pump is used – with a hydraulic pressure of 67-335 bar.

The pneumatic pressure of the control system has been set on 4 bar in the factory. Remove the cover to be able to adjust the pneumatic operating pressure.

Both cylinders work with a pneumatic pressure of 0.5 bar.

Pull the adjustment button of the respective pressure regulating valve to adjust the pneumatic pressure.

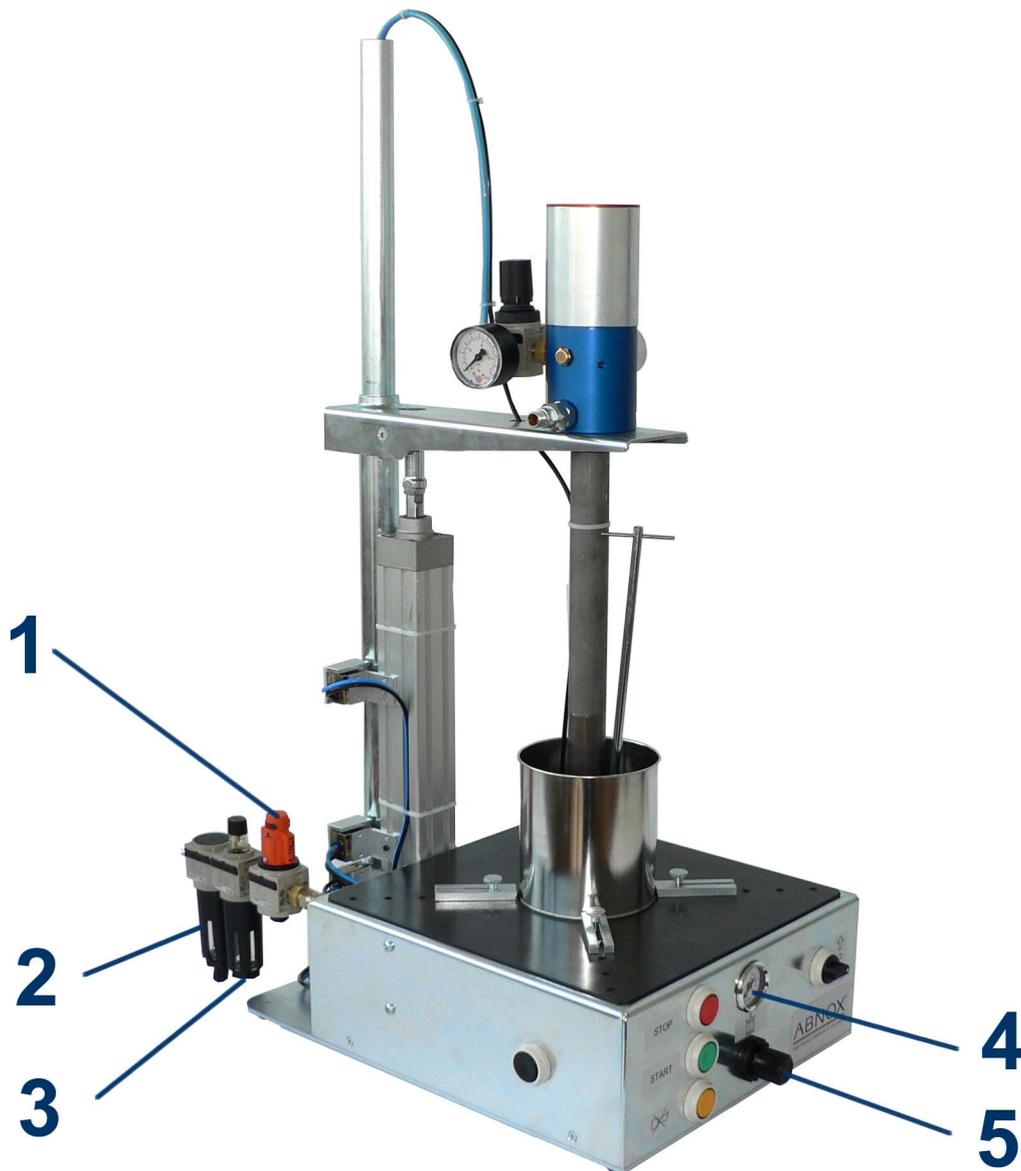
 turn right = increase pressure

 turn left = reduce pressure



WARNING

Don't set the follower plate pressure to high . That helps to avoid sealing problems between plate and keg.



- 1) Lockable block valve with pressure release
- 2) Pressure regulating valve with pressure gauge and integrated water separator
- 3) Oiler
- 4) Pressure Gauge for follower plate
- 5) Pressure regulating valve with pressure gauge for cylinder pump lever
(set 0.5 bar in factory)

8 Operating

8.1 Elements of operating



- 1) Block valve, main valve for turn on and off inclusive the pressure release of the complete system
- 2) Press buttons to START the pump
- 3) Press buttons to STOP the pump
- 4) Press buttons for the two-hand-controlling
- 5) Mode switch UP, HOLD and DOWN
- 6) Pressure gauge follower plate
- 7) Pressure regulating valve for cylinder pump lever

8.2 Put in the container

- Press the press button “STOP”.
- Turn the mode switch to “UP”.
- Press both two-hand-controlling buttons to lift the Pump to the upper end position (mechanical stop).
- Put the keg direct under the pump



- Turn the mode switch to “DOWN”.



- Press both two-hand-controlling buttons to lower the Pump a little above the keg-border.



- Center the keg exactly under the follower plate .



NOTE

- If a new container is opened, please give special attention to the cleanness! Only absolute clean material must be used!
- Use only original containers which have been drawn off by the manufacturer of the lubricants. If the lubricant is self canned or transferred into another container, air inclusions are possible which can lead to a breakdowns of the system.
- Containers which show bumps or any kind of deformation should not be used. This could lead to leakage and damage to the follower plate.

8.3 Retraction of the pump into the container

- Release the ventilating screw on the follower plate (approx. 2 turns).



- Turn the mode switch to “DOWN”.
- Press again both two-hand-controlling buttons to lower the Pump in the keg. As soon the follower plate is inside the keg, the pump lowers automatically.
- Close the ventilating screw .



DANGER OF HAND INJURIES!

Do not touch or reach inside the container edge at any circumstances during the retraction of the follower plate!

8.4 Pumping of lubricants

- Turn the mode switch to „DOWN“.
- Press “START” to turn on the pump.

8.5 Extension of the follower plate out of the container

- Press “STOP” to turn off the pump (or turn the mode switch to “HOLD”).
- Turn mode switch to “UP”



- Release the ventilating screw on the follower plate (approx. 2 turns).



- Turn the mode switch to “UP”
- Lift the follower plate by means of the two-hand-controlling until the pump lever is completely extended (mechanical stop).

- Remove keg from the follower plate



- Control possible damage of the follower plate and clean its seals.

8.6 Change of container

- Remove the empty container
- Push the full container concentric to the follower plate
- Continue with chapter 8.3 and 8.4



NOTE

- If a new container is opened, please give special attention to the cleanness! Only absolute clean material must be used!
- It is only allowed to exchange the same size of container with the same contents.
- Use only original containers which have been drawn off by the manufacturer of the lubricants. If the lubricant is self canned or transferred into another container, air inclusions are possible which can lead to a breakdowns of the system.
- Containers which show bumps or any kind of deformation should not be used. This could lead to leakage and damage to the follower plate.

9 Shutting the system down

9.1 Short shut down

Following works need to be carried out if a short shut down (overnight, weekend) is necessary:

- Close the block valve (pressure release).
- Clean the system



NOTE

If not used, disconnect the system off the main air supply to release the pneumatic elements from the air pressure.

9.2 Long shut down

The following points should be considered if a long shut down is necessary:

- Close the block valve (pressure release).
- Activate the push sleeve by the safety air coupling AX 100 (the system has to be completely disconnected from the main air supply).
- No pneumatic pressure is allowed in the system (control of both pressure gauges).
- The hydraulic and pneumatic hoses as well as the system itself must be stored in a way that there is no danger of accidents and that no damage can occur (e.g. folding of hoses).

9.3 Putting the system out of operation

If the system is put out of operation, the following points must be observed:

- Remove the container and clean the follower plate.
- Turn the mode switch to “DOWN”.
- Lower the follower plate by means of the two-hand-controlling until the pump resp. the follower plate automatically stops on the bottom of the main frame.
- Close the block valve (pressure release).
- Activate the push sleeve at the safety air coupling AX 100 and disconnect the system completely from the main air supply.
- No pneumatic pressure is allowed in the system (control pressure gauge).
- The hydraulic and pneumatic hoses as well as the system itself must be stored in a way that there is no danger of accidents and that no damage can occur (as example folding of hoses).



WARNING

Danger of accident and ecological damage; no oil or lubricants may be spilt..

- The oil or lubricants must be professionally disposed of (special refuse).

10 Trouble shooting, fault elimination



NOTE

Only **specially instructed and trained personnel** are allowed to eliminate all below described faults.

10.1 Faults – causes - elimination

Faults	Possible causes	Elimination	Comments
Pump does not work	No air pressure	Control of air pressure supply	Pay attention to pressure gauge (air pressure)
	Safety coupling is not engaged	Engage safety air coupling	
	Maintenance unit blocked	Clean resp. exchange filter	Chapter 12.3
	Valve of pump broken	Control function valve	Chapter 8.1
Pump has no or almost no pressure	Pressure regulating valve misadjusted	Adjust the pressure regulating valve to 6 bar (increasing)	Pay attention to pressure gauge (air pressure)
	Pump lever switched off	Switch choice lever on to "lower"	Chapter 8.1
	Maintenance unit blocked	Clean resp. exchange filter	Chapter 12.3
	Leakage	Control of hoses and fittings	
	Oil filter soiled Maintenance unit	Clean oil filter	Chapter 12.3
	Pressure on follower plate is too low	Increase the pressure a little by adjusting the pressure regulating valve	
	Air pressure too low	Inspect the main air supply	Contact production mechanic

11 Operating- and working material

Pneumatic oil: HL 25 according DIN 51 524 – ISO VG 22 (chapter 12.2)

12 Maintenance and service

In this section you will be informed about how to maintenance this system. You will find an overview in which the maintenance and service plan is detailed.



NOTE

It is not mentioned in this section how to reassemble the system after any kind of error. These repairs should only be done by specially instructed and trained personnel or by our sales service.

12.1 Maintenance plan

The indicated maintenance intervals refer to a single-shift operation. The maintenance intervals are shortened when the system is used at high level, i.e. by several-shift operation. Additional influences such as reduced air pressure quality and soiled work surroundings have to be considered.

WHEN	WHAT	HOW	WHO
Weekly	Pneumatic maintenance unit Oiler	Control oil level, refill if necessary	Special instructed and trained personnel
	Pneumatic maintenance unit filter	Remove collecting tank by hand and empty the water	
	Check the hoses and fittings for leaks	By eye	
Monthly	Pneumatic maintenance unit filter	Clean filter	Special instructed and trained personnel
Yearly	Safety coupling	Check setting and leaks	Special instructed and trained personnel



DANGER

All works on the system should be carried out when the system is shut down. The pneumatic safety coupling must be closed and completely disconnected from the system. No pneumatic or hydraulic pressure is allowed in the system, i.e. both pressure gauges must indicate 0 bar.

12.2 Fill-in of oil during maintenance unit

12.2.1 Filter

- The assembly should take place as near as possible to the air pressure connection hose.
- Pay attention to the throughput of the air which is marked with an arrow on the case.
- Observe the vertical installation.
- If mounted onto the wall, remove the man-made cover and push it in afterwards (cover for dirt).
- The max. operating temperature must not exceed 50° C.
- Do not use more inlet pressure as marked on the name plate.
- Do not disassemble the filter container if under pressure.
- Do not pass the max. display for liquid on the container. Therefore, turn the half-automatic release valve by hand to empty the liquid or to release the machine pressure. After that, the half-automatic emptying starts by itself.
- The inserted filter element can be exchanged by means of the unscrew in the container and the pull out of the old filter. At the same time the container can be cleaned.

12.2.2 Pressure reducer

- The assembly should take place as near as possible to the air pressure connection hose.
- Pay attention to the throughput of the air which is marked with an arrow on the case.
- Observe the vertical installation.
- If mounted onto the wall, remove the man-made cover and push it in afterwards (cover for dirt).
- The max. operating temperature must not exceed 50° C.
- Do not use more inlet pressure as marked on the name plate.
- After adjusting the pressure, bolt by means of push.
- The pressure adjustment is achieved by turning. Turning right means pressure increase, turning left pressure reduce.

12.2.3 Oiler

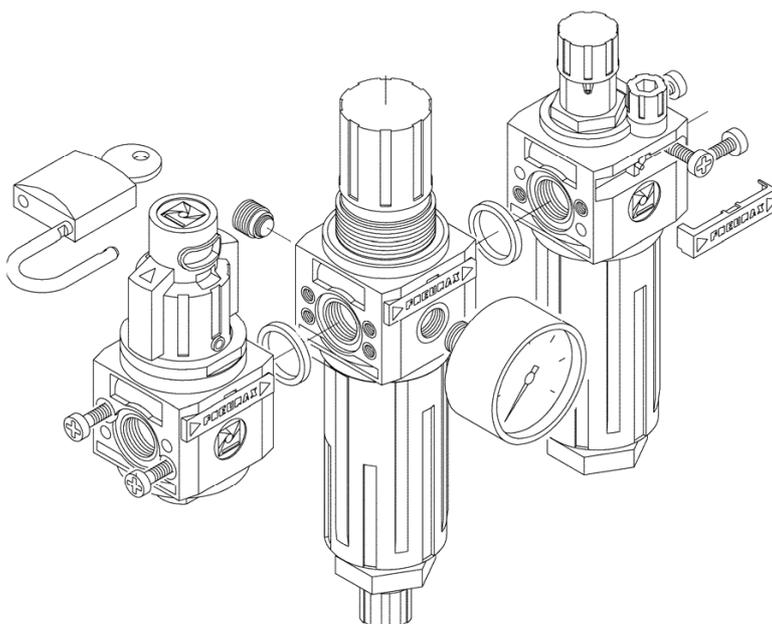
- The assembly should take place as near as possible to the air pressure connection hose as well as after the air pressure filter / pressure reducer.
- Pay attention to the throughput of the air which is marked with an arrow on the case.
- The installation is only carried out vertical.
- If mounted onto the wall, remove the man-made cover and push it in afterwards (cover for dirt).
- The max. operating temperature must not exceed 50° C.

- Do not use more inlet pressure as marked on the name plate.
- Do not exceed the max. oil level display.
- The regulation of the amount of oil is measured by the screw (top) – turning right reduces the oil amount, turning left increases the oil amount.
- Plan the use of oil with the viscosity 3,5 Engler at 50°C.
- Recommended kind of oils are: BLASOL 156, ENERGOL HLP BP 22, SPINESSO 22 ESSO, MOBIL DTE 22 or similar alternatives.
- The optimal setting of quantity per 300 - 600 litre air output is one drop out of the oil amount regulator.

12.2.4 Block valve

- The assembly should take place as near as possible to the air pressure connection hose.
- Pay attention to the throughput of the air which is marked with an arrow on the case.
- If mounted onto the wall, remove the man-made cover and push it in afterwards (cover for dirt).
- The max. operating temperature must not exceed 50° C.
- Do not use more inlet pressure as marked on the name plate.
- To activate the valves, push the manual operation and turn it 90°.
- This function is not available if a padlock for safety is chosen.

12.2.5 Assembly system



13 Re-Sale

This operating manual is part of the system and belongs to the delivery range if re-sold.

14 Recycling management



DANGER

All works on the system should be carried out when the system is shut down. The pneumatic safety coupling must be removed and must be secured so that no unintentional operation is possible. No pressure is allowed in the pneumatic system, i.e. both the pressure gauges must indicate 0 bar.

The different materials/liquids are to be handled professional and are to be separated according to the respective national regulations. After the procedure, they have to be supplied to the disposal.

Product	Material	Disposal
Frame, cylinder, pump, valves	Steel and aluminium, brass, bronze	Separation of metals, recycling
Hoses, seals, lines	Rubber, plastic moulding material	Separation of metals, recycling
Lubrication media	Oils, greases	Recycling or disposal / according to national regulations



WARNING

Do not spoil any oil or grease. Therefore make arrangements in advance to be able to collect any kind of liquid.

15 Instruction

Only special instructed and trained personnel, who read and understood all sections of this instruction manual, who are aware of the different operating status as well as who know and respect the safety aspects are allowed to work on the system.

The responsibilities of personnel are clearly defined for installation, commissioning, operation, fitting, maintenance and repair.

Personnel to be trained must only work on the system under the supervision of an experienced person.

16 Supplement

16.1 Technical data

Inlet pressure air connection	4 -10 bar
Min. inlet pressure pneumatic	2 bar
Max. inlet pressure pneumatic	10 bar
Max. controlling pressure pneumatic	6 bar
Min. controlling pressure pneumatic	3.5 bar
Max. follower plate pressure pneumatic	6 bar
Min. follower plate pressure pneumatic	0.5 bar
Air connection nipple-diameter	6 mm
Air connection internal thread BSP	G $\frac{1}{4}$ "
Surrounding temperature	+10...40 °C
Viscosity	NLGI 4 / 100'000 mPa s

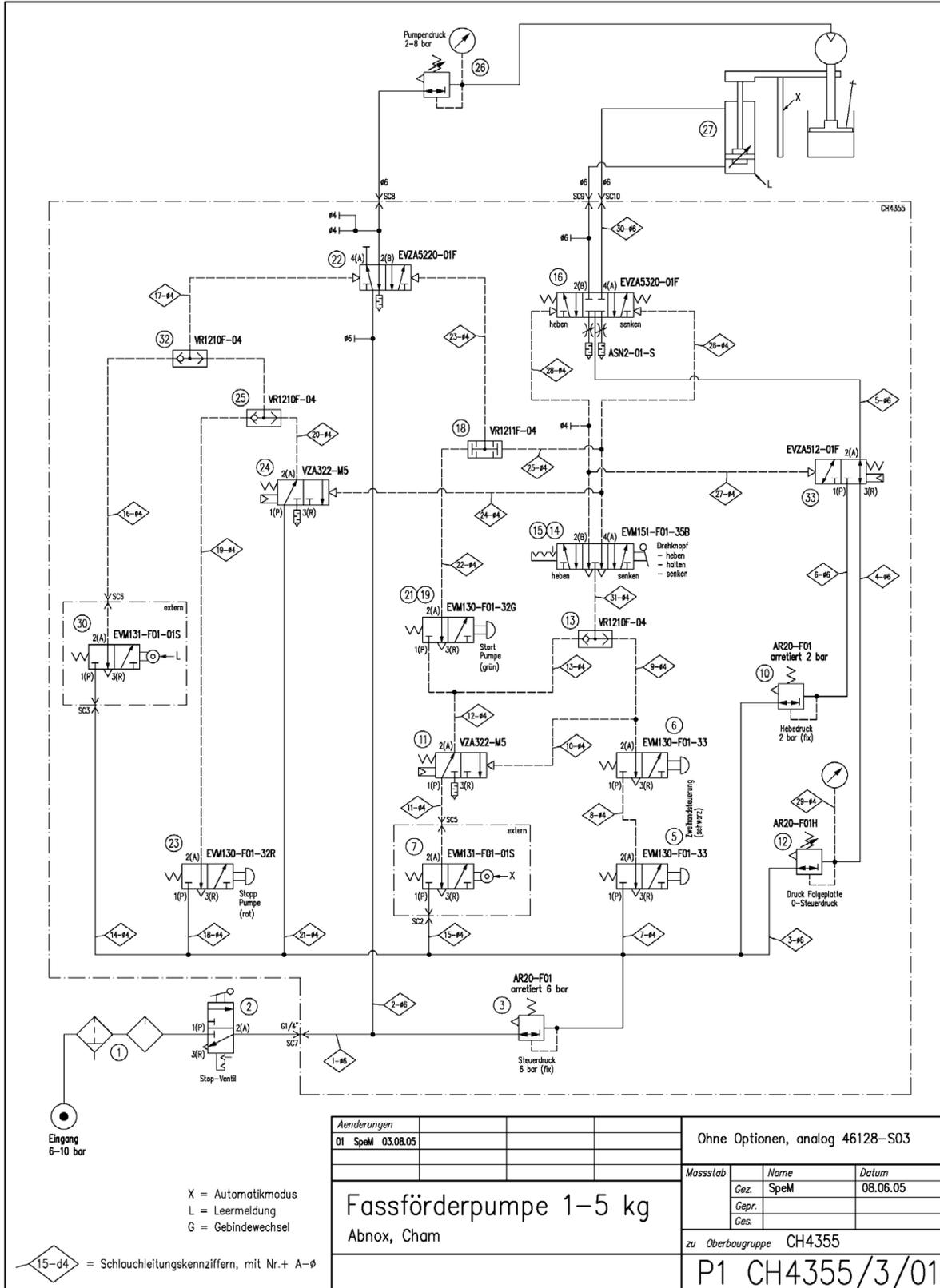
Size of container	1-5 kg
Max. height of container	300 mm
"Min. internal-diameter"	100 mm
"Max. internal-diameter"	300 mm

Size system net without container and packing	ca. 30 kg
Size system gross without container plus packing	ca. x kg

Measurement main frame	450x330 mm
Min. height (retracted)	ca. 880 mm
Max. height (extended)	ca. 1060 mm
Measurement packaging L x B x H	x-x-x
Min. measurement working space L x B	0.8 x 0.8 m

Pressure ration	10:1	20:1	60:1
Pressure connection pump	4-10 bar	4-10 bar	4-10 bar
Outlet pressure at 6 bar air pressure	67 bar	115 bar	335 bar
Max. Output at pump outlet	1'190 cm ³ /Min	890 cm ³ /Min	500 cm ³ /Min
Air amount	217 L/Min	150 L/Min	217 L/Min

16.2 Pneumatic scheme to container pump standard



16.3 Pneumatic scheme with option acoustic warn signal Art.Nr. 46382.00

