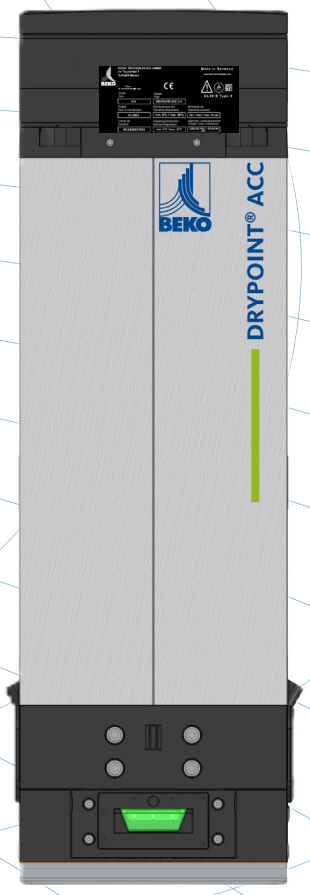
OPERATION MANUAL
Installation, operation and service information

DRYPOINT® ACC
005 - 100



EN

06-078

Introduction

As the user / operator, you should make yourself familiar with this operation manual in terms of the safety, construction, function, maintenance and servicing of the heatless regenerating adsorption dryer.

A basic prerequisite for safe working with and error-free operation of the equipment is a knowledge of the basic special safety features.

This operation manual includes the required safety information in order to operate this equipment safely.

This operation manual and especially the safety information, are to be followed by all persons working on this equipment. It is imperative that this operation manual is made freely available at all times to machine operators and is to be kept at the place where the equipment is installed.

Explanation of the pictograms used
- Safety instructions
- Explanation of symbols

Safety instructions in this manual are identified by symbols. The safety instructions are introduced by signal words that express the extent of the hazard. To avoid accidents, personal injury and damage to property, act with caution and strictly adhere to the safety instructions.

Touch display
Marks the required pressure on certain areas of the touch display.

DANGER!

This combination of symbol and signal word indicates an **imminent danger** to the life and health of persons. Failure to observe these instructions **will result in serious health hazards, including life-threatening injuries.**

WARNING!

This combination of symbol and signal word indicates a **possible danger** to the life and health of persons. Failure to observe these instructions **can result in serious health hazards and even life-threatening injuries.**

CAUTION!

This combination of symbol and signal word indicates a **potentially dangerous situation**. Failure to observe these instructions may result in **injury** or **damage to property.**

DANGER OF ELECTRIC SHOCK!

This combination of symbol and signal word warns of dangerous electrical voltage.Failure to observe these instructions **may result** in personal injury due to **electric shock or high voltage**.

WARNING! Danger from pressurized parts!

Compressed air can escape if pipes or components are defective. Compressed air can injure body parts. Depressurize the system before starting work.

Blow off noise during pressure release
This symbol indicates that you should wear ear protection for your personal protection!

Wear suitable gloves
This symbol indicates that you should wear protective gloves for your personal protection!

Important
Indicates in particular instructions for avoiding damage.

Environmental protection
This symbol gives you tips for environmentally friendly work.

Waste must be disposed of in accordance with local regulations

Starting up / pressurizing the equipment

Shutting down / depressurizing the equipment

Table of contents

1 The manufacturer

BEKO TECHNOLOGIES GmbH
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D-41468 Neuss
Phone: +49 2131 988 1000

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www.beko-technologies.com

2 Recommendations for work protection

The manufacturer explicitly excludes all responsibility or liability for damage and / or injury caused by failure to follow these special points requiring attention, or others, or by failing to pay the necessary attention when operating and handling these adsorption dryers, even if this is not explicitly stated in individual cases.

In order to ensure proper operation of the equipment, please pay attention to all safety advice and general information given in this operation manual.

All safety information is always intended to ensure your personal safety!

All relevant regulations for industrial safety, general safety rules and information included in the operation manual, apply to the operation of the adsorption dryer. The adsorption dryer was designed and constructed according to the generally recognized safety regulations.

Design / development, production, installation and after-sales service of the equipment are subject to a certified quality assurance system as per DIN EN ISO 9001.

2.1. Intented use

The system may only be operated in accordance with its intended purpose. The adsorption dryer is designed exclusively for drying compressed air or nitrogen. Any other use of the system or use beyond this is considered improper use. To the extent permitted by law, the manufacturer is not liable for any resulting damage. All work on pressure vessels and pipelines, such as welding work, structural modifications, assembly work, etc., may only be carried out after prior consultation with the manufacturer and, if applicable, the notified body. Improper modifications can cause malfunctions, dangerous operating conditions, system downtime or the destruction of components. Any unauthorized modification may invalidate the declaration of conformity.

2.2. General safety instructions

WARNING! Danger due to nitrogen!

Risk of suffocation if nitrogen escapes due to oxygen displacement!

- When drying nitrogen, do not operate the system in closed rooms, ensure adequate ventilation, discharge / extract the regeneration air if necessary and observe additional country-specific regulations for handling gaseous nitrogen.

The medium to be dried must not contain any corrosive components which could cause corrosion in the material of the pressure equipment in an unacceptable way.

Pressure and temperature of the medium must correspond to the specifications on the type plate and the operation manual!

The pressure unit is not designed for traffic, wind and earthquakes loads. In the case of the occurrence of these loads, the pressure unit must be protected by suitable measures against these loads.

Leave the operating manual at the usage site!

Ensure that the operating manual is always with the equipment and is accessible to the operating personnel.

Use correct tools!

When maintaining as well as servicing the equipment you may only use faultless tools approved for the usage purpose. If special tools are required for some work this is to be clarified with the manufacturer beforehand.

DANGER! Do not make any structural changes to the equipment!

Unauthorized modifications to pressure vessels or pipelines, e.g. welding work or conversions, lead to an increased risk of accidents for personnel. The safety of employees and the integrity of the system are jeopardized.

- Work on pressurized parts may only be carried out by the manufacturer or with the manufacturer's written consent.

DANGER! Do not deactivate any protective devices on the equipment!

If safety-relevant protective devices are disabled to prevent the permissible operating parameters for pressure and temperature from being exceeded, the system may enter a dangerous operating state. This endangers the life and limb of employees.

- Protective devices must never be bypassed, deactivated or tampered with. They must be kept operational at all times.

WARNING! Risk of injury from excessive pressure / temperature!

- It must be ensured that the pressure in the system components cannot exceed the permissible operating pressures under any circumstances.
- By default, the operator is responsible for protecting the system against excess pressure. It must be ensured that the pressure-generating compressor and, if applicable, the compressed air network connected downstream of the adsorption dryer are appropriately protected.
- Procedural it is ensured that the temperature at operating pressure cannot rise above the max. permissible operating temperatures of the individual components. The operator must take suitable measures to ensure that the temperatures of the feed materials cannot exceed the permissible values of the system.
- Damage to components, loss of functionality, system failure and danger to personnel due to sudden pressure release or material failure.

If the pressure equipment is under operating pressure, it must be guaranteed by suitable measures, that the permissible operating temperatures are not exceeded by the environmental conditions at the place of installation.

Pressure vessels - recurring approvals / demands of alternating stress

Because of the cycle times of the pressure equipment, the alteration of loads per year is dependent on the type. The design takes a lifetime of 10 years into consideration.

Sizes 035 - 100:
An examination of the pressure-bearing walls (internal check) must take place after 5 years, at the latest in Germany, a strength test (pressure test) after 10 years, at the latest. Otherwise the operator must observe the national regulations at the respective installation site and determine the test limits in consultation with the responsible body named.

FIRE HAZARD!

Uncontrolled pressure increase in the event of fire can lead to explosion, component failure and danger to life.

- If there are potential sources of fire at the installation site, the operator must ensure that suitable protective measures are taken to prevent the permissible operating parameters from being exceeded.

2.3. Safety information for transport and installation

WARNING! Risk of injury and damage to property during transportation!

Packages may have an eccentric center of gravity. If the sling is incorrect, the package may tip and fall. Falling or tipping packages can cause serious injuries!

- The system must be slung and lifted at the designated points using suitable lifting gear. The system must not be transported by the piping, as this may damage it. This can lead to leaks in the piping system and even serious malfunctions of the system.
- Have all work carried out by qualified personnel only.

CAUTION! Damage due to improper use!

Avoid danger from external forces and torques!

- Ensure that no additional forces and torques are transferred to the adsorption dryer via the connected on-site pipes that could exceed the permissible loads of the system. If necessary, this must be ensured by the operator by means of suitable verifications and/or on-site measures.
- Ensure that no impermissible oscillations, vibrations and pulsations from other units can be transmitted to the adsorption dryer. If necessary, this must be prevented by suitable on-site measures.

2.4. Safety measures during operation

Safe working conditions and proper operation of the equipment can be achieved with knowledge of and adherence to the national working, operating and safety regulations. Furthermore, any internal plant regulations must be followed.

Check the equipment for visible external damage at regular intervals. Malfunctions or faults, which can compromise safety, must be resolved immediately. Follow the advice given (chapter 12) in the event of malfunctions. If the measures listed there do not lead to a correction of the malfunction contact the manufacturer.

Only allow properly trained personnel to operate the controller or the equipment.

WARNING! Risk of injury due to blow-off noises!

Pressure relief can cause loud noises and possibly damage the ear!

- Wear hearing protection for your own safety!

2.5. Dangers due to electrical energy

DANGER OF ELECTRIC SHOCK!

Danger to life due to electrical voltage on electrical components and electrostatic discharge!

- Work on the electrical supply must be carried out in accordance with DIN-VDE regulations (or comparable country-specific regulations) and the regulations of the respective power supply company by a trained and authorized specialist.
- The appliance may only be connected to a properly installed electrical network.
- If it is necessary to work on live parts, a second person must be called in to switch off the main switch and secure it against being switched back on. Secure and cordon off the work area and put up a warning sign. Only usevoltage-insulated tools.
- The electrical equipment of the system must be checked regularly. Only use-original fuses with the specified voltage and amperage.
- Never touch electrical components or contacts when the operating switch is switched on!
- Switch off the appliance immediately if the power supply fails.
- Check the earthing conductor and the protective conductor system including all connections regularly!
- Switch off the operating switch for all work on the electrical supply.

2.6. Dangers due to desiccant

The adsorbents used are located in the adsorber cartridge.

The selection of adsorbent depends on the type of processing equipment. Only the manufacturer's adsorption cartridges may be used.

Adsorbents are chemicals and thus, are subject to standard safety measures (safety data sheet). The type of adsorbent used here is not subject to any labeling requirements as per the Hazardous Substances Ordinance.

Categorically only store adsorber cartridges there where access is only possible for trained personnel.

2.7. Safety measures during maintenance, servicing and repair work

All personnel working for the user who are involved with installation, start-up, operation, servicing, repair work of the equipment must read and understand the operation manual beforehand, with special reference to the safety information. Contact the manufacturer in case of any questions.

The manufacturer is not liable for damage caused by inappropriate installation and start-up of the equipment. The user bears all the risk in such a case.

The responsibility for maintenance and servicing work must be clearly established. Operating personnel must be informed before the start of maintenance and service. Preventive maintenance should be performed at the recommended intervals by the manufacturer's after-sales service.

All the maintenance and service must be carried out on the equipment as per the operation manual instructions.

DANGER! Danger to life due to unauthorized restart

Unauthorized restarting of the power supply during maintenance poses a risk of serious injury or even death to persons in the danger zone.

- For some maintenance and repair work, the system must be taken out of operation and de-energized and depressurized. You put yourself and others in danger if you carry out this work on the system while it is running.

- Shut down the equipment properly.
- Depressurize the equipment.
- To switch off the system disconnect it from the mains and secure it against being switched back on
- Post a warning sign to prevent the equipment from being switched on again.

Replace the consumable parts according to the intervals stated in the "Equipment and spare parts list" or the chapter 13.2 "Service sets". This list is part of the operation manual.

Only use original spare parts and accessory parts from the manufacturer. There is no guarantee that non-original parts have been designed and manufactured to meet the safety and operational requirements of the equipment.

DANGER DUE TO DAMAGED COMPONENTS!

Damaged components or pressure equipment can lead to a sudden loss of pressure or uncontrolled gas leakage during continued operation - with the risk of injury. The system can no longer be operated safely.

- Damaged components must be replaced with new ones.
- In the event of recognizable severe damage to pressure equipment, it must be taken out of service immediately!
- For your own safety, we recommend that you have wearing parts or damaged parts replaced by the manufacturer's customer service department.
- A leak test must be carried out after the maintenance work has been completed.

WARNING! Risk of injury and damage to property during transportation!

Packages may have an eccentric center of gravity. If the sling is incorrect, the package may tip and fall. Falling or tipping packages can cause serious injuries!

- Carefully attach and secure larger assemblies to lifting gear when replacing them! Only use suitable and technically sound lifting gear and lifting accessories with sufficient load-bearing capacity!
- When carrying out assembly work above body height, use safety-related climbing aids and work platforms! Never use machine parts as climbing aids; risk of falling! Wear fall protection when carrying out maintenance work at heights above 5 feet!
- Have all work carried out by qualified personnel only.

2.8. Obligations of the operator

The operator should ensure that the equipment is operated by trained personnel familiar with safety stipulations and the handling of the equipment. In detail, these are as follows:

Safety

- Accident prevention regulations
- Safety information (both general and specific to the equipment)
- Safety devices of the equipment
- Emergency procedures

Operation of the equipment

- Measures for equipment start-up
- Behavior in the event of malfunctions
- Equipment shutdown

2.9. Requirements for personnel

All persons who are entrusted with the operation of the equipment are required to,

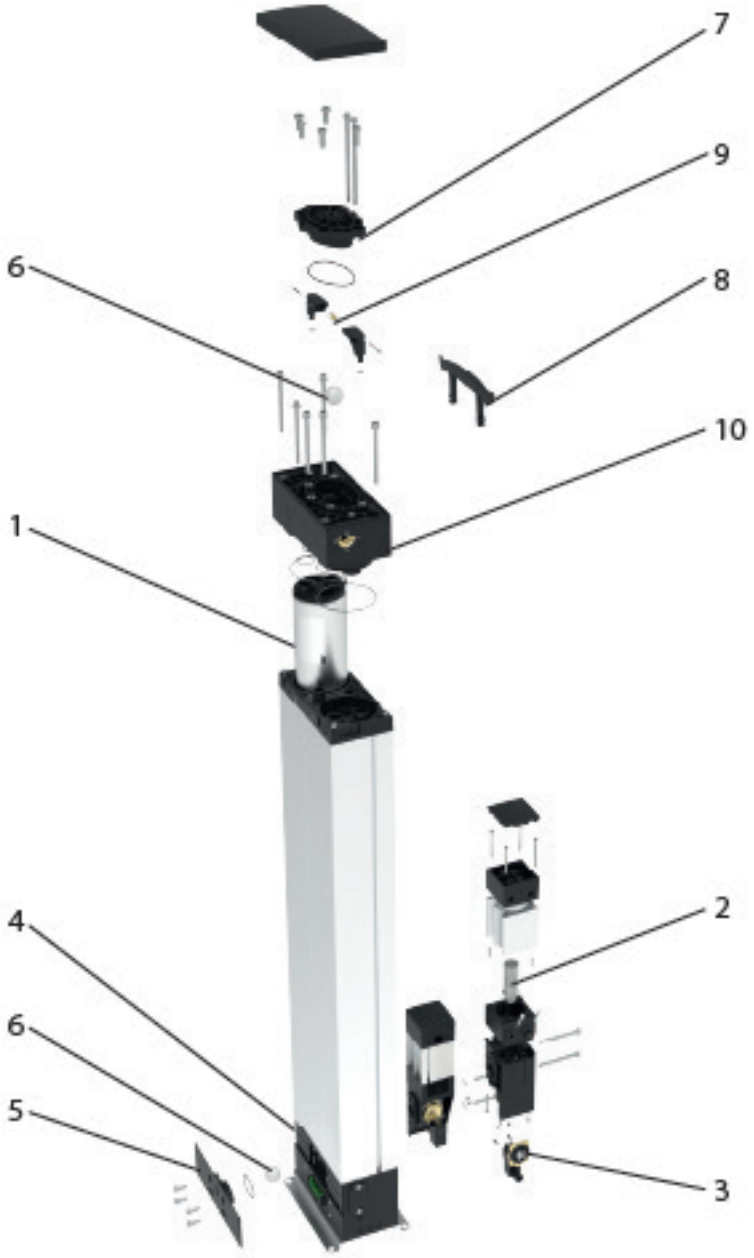
- follow the basic regulations for safety at work and accident prevention,
- have read and understood the operation manual,
- follow the measures provided in this manual.

3 Product description

The DRYPOINT® ACC 005-100 is a heatless-regenerating adsorption dryer for drying and treating compressed air or nitrogen.

3.1. System parts

Drawing number	Component	Quantity
01	Desiccant cartridge	2-12
02	Silencer	2
03	Valve membrane	2
04	Electronic control	1
05	Lower cover shuttle valve	1
06	Shuttle valve ball	2
07	Upper cover shuttle valve	1
08	Cartridge lifter	1
09	Regeneration air nozzle	1
10	Adsorber cover	1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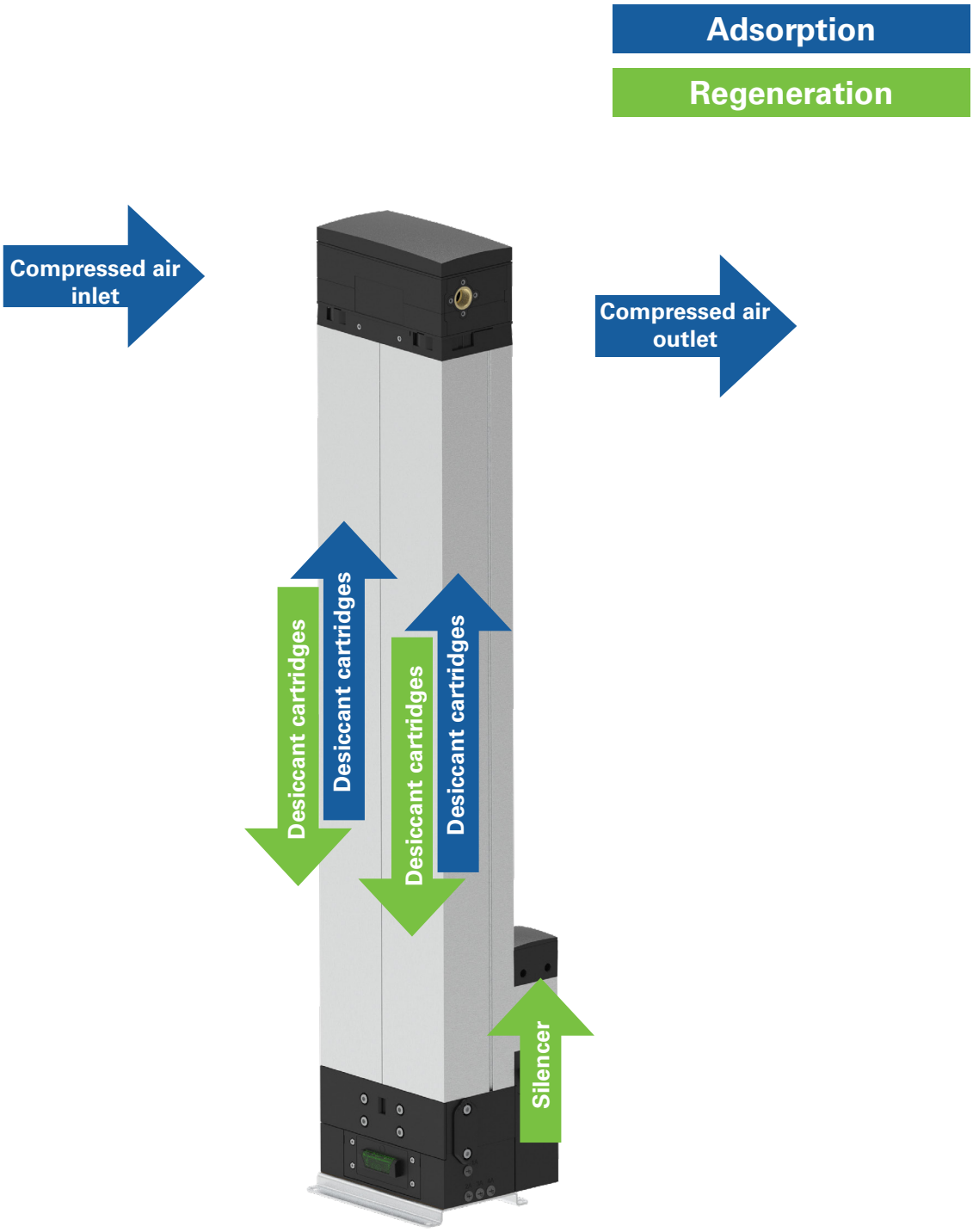
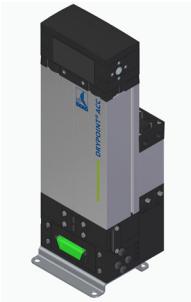
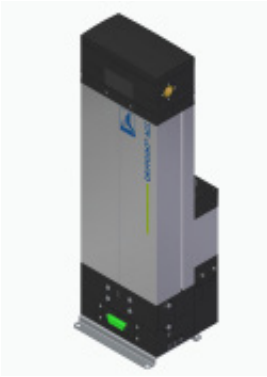
3.2. Schematic representation



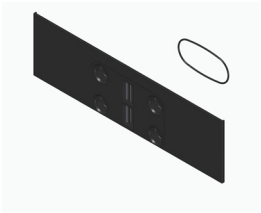
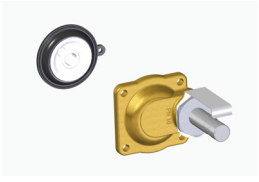
3.3. Scope of delivery

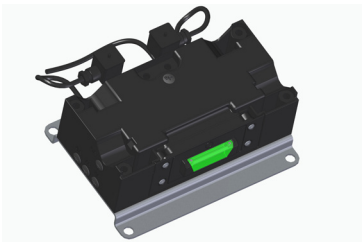
Protective devices against exceeding pressure and temperature are not supplied as standard with the system. If they are available as an option, they must never be rendered ineffective or bypassed.

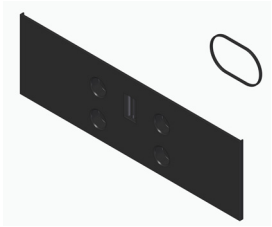
005-025 DRYPOINT® ACC			
	Illustration	Designation	Quantity
1		DRYPOINT® ACC	1
2		Cartridge lifter 005-025	1
3		Operating instructions on USB	1
4		Throttle 005-025 4-6 bar(g)- provided	1
		Throttle 005-025 7-8 bar(g)- already fitted	1
5		Eyebolt M5 005-025	2

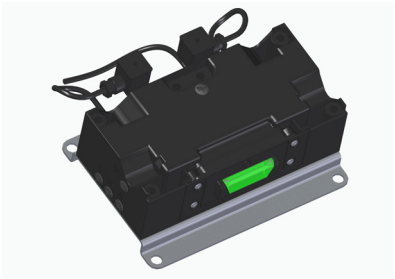
035-100 DRYPOINT® ACC			
	Illustration	Designation	Quantity
1		DRYPOINT® ACC	1
2		Cartridge lifter 035-100	1
3		Operating instructions on USB	1
4		Throttle 035-100 4-6 bar(g) - provided	1
		Throttle 035-100 7-8 bar(g)- already fitted	1
5		Eyebolt M8 035-100	2

3.4. Accessories

005 -025 DRYPOINT® ACC			
	Illustration	Designation	Quantity
1		Membran housing 005-025 right incl. 2x O-rings	1
2		Membran housing 005-025 left incl. 2x O-rings	1
3		Upper cover shuttle valve 005-025 incl. 1x O-ring	1
4		Lower cover shuttle valve 005-025 incl. 1x O-ring	1
5		Solenoid valve cover and membrane 005-025 incl. 1x membran	1
6		Adsorber cover 005-025 incl. 3x O-rings	1

7		Cartridge lifter 005-025	1
8		Electronic control 005-025 230 V 50-60 Hz	1
9		Electronic control 005-025 110 V 50-60 Hz	1
10		Electronic control 005-025 24 V	1

035 -100 DRYPOINT® ACC			
	Illustration	Designation	Quantity
1		Membran housing 035-100 right incl. 2x O-rings	1
2		Membran housing 035-100 left incl. 2x O-rings	1
3		Upper cover shuttle valve 035-100 incl. 1x O-ring	1
4		Lower cover shuttle valve 035-100 incl. 1x O-ring	1
5		Solenoid valve cover and membrane 035-100 incl. 1x membran	1
6		Adsorber cover 035-100 incl. 3x O-rings	1

7		Cartridge lifter 035-100	1
8		Electronic control 035-100 230 V 50-60 Hz	1
9		Electronic control 035-100 110 V 50-60 Hz	1
10		Electronic control 035-100 24 V	1

3.5. Function

The compressed air travels via a prefilter with condensate drain to the shuttle valve. Depending on its position the air is directed to one of the two adsorbers, passes its moisture to the desiccant within the adsorption time defined, and reaches the outlet dry and clean via the second shuttle valve and the afterfilter. The water vapor content of the compressed air is reduced down to the specified pressure dew point of –40 °C. Part of the dried compressed air flow over the throttle elements in the other adsorber, which is in regeneration mode, extracts the moisture for its desiccant and carries it over the regeneration valve assigned which is in open state and the silencer (**2**) out of the dryer. After expiry of the regeneration time saved in the control system the open regeneration valve closes. The pressurization takes place in the regenerated container time-controlled. After expiry of the pressurization the regeneration valve opens the previously adsorbed container. The shuttle valves are switched by the available pressure in the second position.

3.6. Adsorption

The adsorption dryer works with alternating adsorption and regeneration phases. In both adsorbers alternately in each of the adsorbers the medium is dried, while the other adsorber is regenerated. This process guarantees a continuous operation. The medium to be dried arrives at the wet gas inlet of the prefilter. Here condensate and dirt particles are separated in the microfilter. The medium flows through the lower shuttle valve from top to bottom through one of both adsorbers.

On the top section of the adsorber the dried medium goes through the upper shuttle valve to the afterfilter. Here fine dust and possibly occurring desiccant wear are separated on the dust filter and the dried and cleaned medium from the dry gas outlet reaches the pipeline network.

3.7. Regeneration (dryer stage)

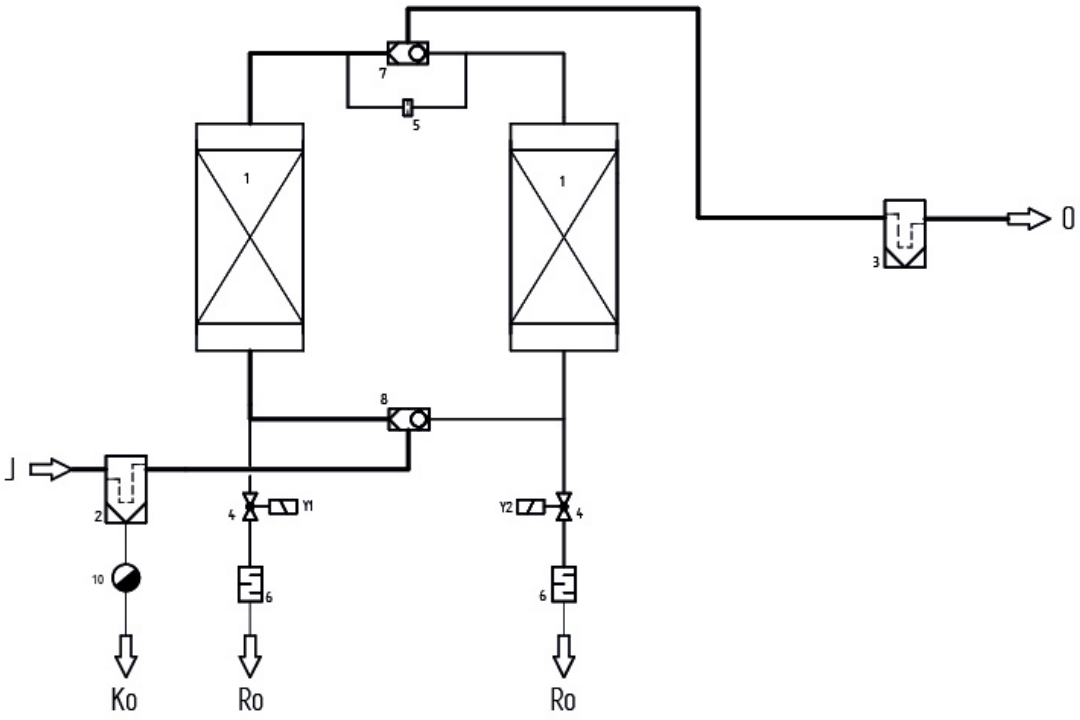
Regeneration of the moisture-laden desiccant is achieved with a partial flow of the dried medium. At the start of regeneration the solenoid valve on the regeneration gas outlet is opened. In this way the adsorber is brought down to atmospheric pressure. The compressed air travels out of the system via the silencer. A partial flow of the dried medium flows from the adsorbing adsorber, over the bypass line in the top pipeline, from top to bottom through the regenerating adsorber and through the silencer (**2**) to the atmosphere. The required regeneration gas quantity is limited by the throttle (**9**).

3.8. Pressurization (drying stage)

At the end of the regeneration phase, the solenoid valve at the regeneration gas outlet is closed. The pressure builds up in the regenerating adsorber via the bypass line in the upper pipe. The regenerated adsorber is in „stand-by“ under operating pressure until the switchover process is initiated.

3.9. Switchover process (dryer stage)

The switchover process is time-controller (see chapter 3.10).



R&I - Flow chart

3.10. Function of the electronic control system

3.10.1. Timing (time control)

The electronic control system has an LED display that shows the "Operation", "Intermittent operation", "Service" and "Alarm" statuses. The control system has a potential-free collective alarm. Furthermore, as described in chapter 7.5 "Intermittent operation", the control system offers the option of being coupled with the compressor. The dryer only operates when the compressor is also running. The adsorption cycle for an adsorber is set to 2 minutes. The adsorption time results from the regeneration time of 100s and the pressure build-up time of 20s for the respective regenerating adsorber.

3.10.2. Intermittent operation

If the high-performance dryer is operated in intermittent operation installation must take place in accordance with the fig. in chapter 7.5. During discontinued (intermittent) operation of the compressor there is the option of coupling the control system of the dryer with the control system of the compressor. This ensures that the regeneration of the dryer is not interrupted. After completion of pressurization the dryer remains in stand-by, if no compressed air is used. The coupling of the dryer control system with the compressor control system is done by connecting the isolated normally open contact on the compressor to the terminal strip (digital input) of the control board. The contact must be closed when the compressor is not running. The "intermittent operation" status is indicated by a green flashing status indicator. This operating mode can only be used if the dryer is installed directly downstream of the compressor and a storage tank is connected downstream of the dryer, which must be dimensioned so that the regeneration of the adsorption dryer can be completed without the compressor restarting. If a potential-free contact of the compressor is connected (opens when the compressor is running), intermittent operation is active.

From the start of the pressurization phase now the compressor runtime is cumulative. At the end of the adsorption phase is then evaluated whether the runtime is greater or less than the factor set of 1 min, for example. If this time is not reached, the control unit closes the regeneration valves and switches to intermittent operation. If the compressor starts the pressurization again (air is extracted again) then the program sequence runs again and the control system continues its operation.

3.10.3. Control system behaviour in case of power failure

The control system has an intelligent data backup system. If the mains voltage collapses or even fails completely, then the control system carries out a data backup. All required data is saved. After switching the mains voltage back on the control system carries out a pressurization and continues working at the point where the interruption took place.

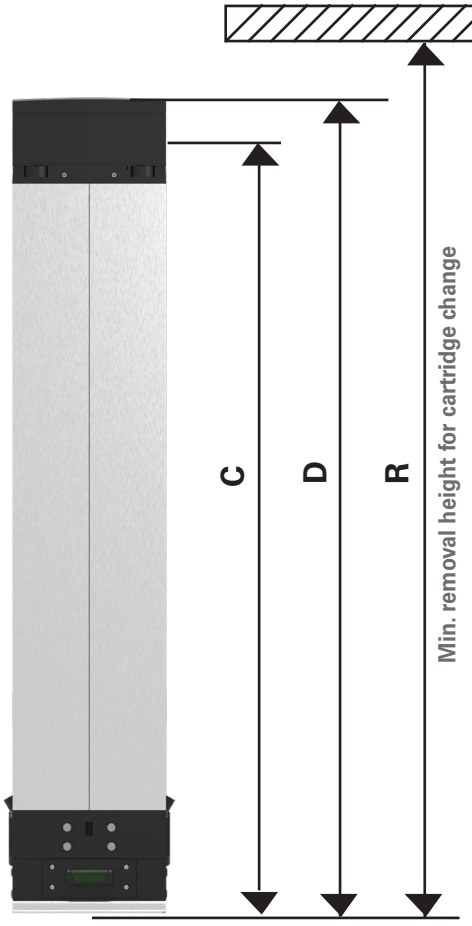
4 Technical data

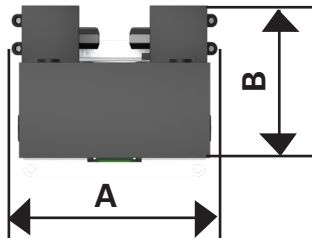
DRYPOINT® ACC 005 - 100	
Functional principle	fully automatic, heatless regenerating for continuous operation
Power supply	
Supply depending on design	220-230 V AC / 50-60 Hz, 110-115 V AC / 50-60 Hz, 24 V DC, +/-10%
Mains cable	AC: 3 x 1.0 mm^2 / DC: 2 x 1.0 mm^2
Power consumption and internal fuse	24 V DC = 12 W, AC = 15 VA / 12 W
Internal fuse	2 A time-lag, 250 V, ceramic tube fuse
Nominal contact voltage relay solenoid valves	230 V AC / 115 V AC / 24 V DC
Nominal current contact relay solenoid valves	5 A (ohmic load)
Nominal contact voltage relay alarm	40 V
Rated contact current relay alarm	1 A (ohmic load)
Protection class	IP65 UL 50 E Type 5
Overvoltage category	II
Design data	
Medium	Compressed air / nitrogen
Operating overpressure	min. 4 bar(g) / max. 16 bar(g) (type 005 to 025) 12 bar(g) (type 035 to 100)
Medium temperature	min. 5 °C / max. 55 °C
Pressure dew point	min.-40 °C (further pressure dew point options on request)
Ambient temperature	min. +4 °C / max. +50 °C
Ambient humidity	max. 100% at 50 °C
Place of location	0-2000 m above sea level (indoor area)
Pollution level	2
Pressure vessel	
Design overpressure	min. 4 bar(g) / max. 16 bar(g) (type 005 to 025) 12 bar(g) (type 035 to 100)
Tested overpressure	24 bar(g)
Design temperature	0 °C to +55 °C
Purity of the compressed air at the dryer inlet	
Water vapor content dependent on temperature and degree of saturation	5 :-: 4 according to ISO 8573-1:2010
Purity of the air at the dryer outlet	
DRYPOINT® ACC 005 -100:	1-2 :2*-: 2 according to ISO 8573-1:2010

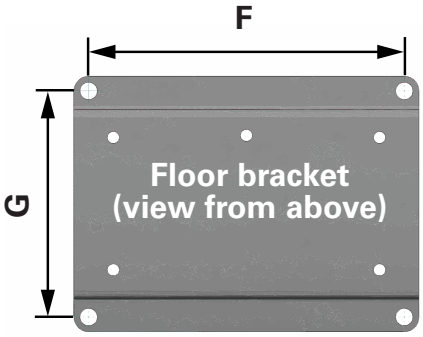
* Class 1 with corresponding sizing

Reference conditions: According to ISO7183 Compressed air inlet temperature +35 °C / 7 bar(g) Operating pressure		
Type	Nominal flow rate m^3/h	Connection
005	5	3/8″
010	10	3/8″
015	15	3/8″
025	25	3/8″
035	35	3/4″
050	50	3/4″
065	65	3/4″
080	80	3/4″
100	100	3/4″

5 Dimensions







Size	F mm	G mm
005-025	138	117
035-100	236	169

Size	Connections	A mm	B* mm	C mm	D mm	R mm	Weight kg
005	3/8“	183	169	450	489	897	10
010	3/8“	183	169	717	756	1164	15
015	3/8“	183	169	984	1023	1431	21
025	3/8“	183	169	1518	1557	1965	31
035	3/4“	290	241	788	850	1266	34
050	3/4“	290	241	1025	1114	1530	45
065	3/4“	290	241	1316	1378	1894	57
080	3/4“	290	241	1580	1642	2058	68
100	3/4“	290	241	1844	1906	2322	79

***Total depth incl. floor bracket**

6 Before installation

6.1. Transportation and assembly

Here you will find information on:

- how to correctly and safely transport and set up the equipment.

The adsorption dryer DRYPOINT® ACC 005-010 is packed in a cardboard box. In sizes 015-100, the dryer is also supplied lying on a profiled wooden frame. Pay attention to the symbols on the packaging.

6.1.1. Safety instructions for transportation

CAUTION! Damage due to improper transportation!

Incorrect load distribution during transportation can cause considerable personal injury and/or material damage.

- Special care and attention must be taken when transporting, loading and unloading the system! Never use force! Only use lifting gear that is suitable for the weight and type of load.

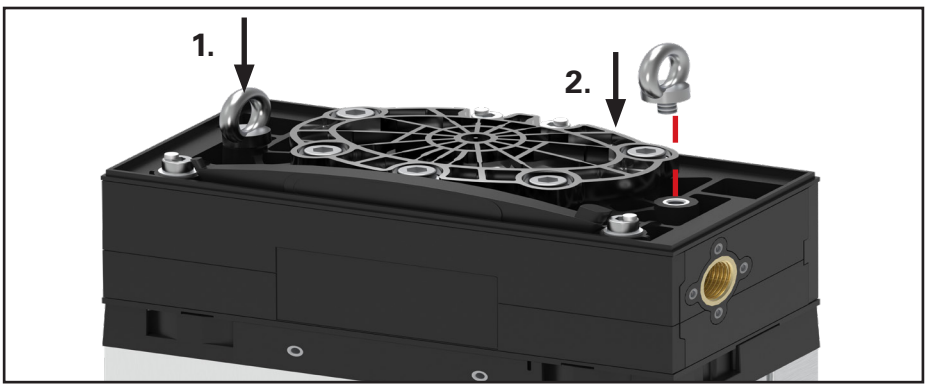
Ensure that the maximum permissible load of the lifting gear in the user's plant is not exceeded. When transporting with a pallet truck, ensure that the system is only picked up under the support frame of the system or under the profiled timber frame.

Ensure that the angle between the horizontal and the ropes is never less than 45°. Failure to observe this can lead to leaks in the piping system of the system and even serious malfunctions of the dryer.

The system must not be transported by the piping under any circumstances, as this could damage it. This can lead to leaks in the piping system of the system and even serious malfunctions of the dryer. Use **eyebolts** instead.

Corresponding eyebolts are included in the scope of delivery.

Assembly of the eyebolts:



7 Installation

The operator of the equipment is responsible for the correct installation and layout of the piping leading to and from the equipment.

The manufacturer is not responsible for the installation of protection devices to protect against power surges, short-circuits, and overloads.

7.1. General hints

- If the equipment is to be integrated into an existing pipeline, take into consideration that the existing piping sections may still be contaminated after the installation prior to initial start-up and commissioning. If necessary, these piping sections and components must be cleaned or replaced.

- Never remove individual filters or desiccant cartridges from the system, without first replacing them before recommissioning. Otherwise, this could lead to limited functionality of the equipment.

- The high performance dryer can, taking the labeled flow direction into account, basically be setup vertically.

- Ensure that the dryer is not set up so the direction of airflow is reversed (exception: intermittent operation).

- The dryer may not be started up under large volumes of atmospheric pressure or a vacuum (see also chapter 4). This can be prevented by using an automatic starting device (optional).

- In the same way, avoid parallel switching of multiple dryers without separate volume flow limiters.

- If the compressor is not operated continuously, it is possible to couple the compressor controller and the dryer controller (operating mode: intermittent operation, chapter 7.5). In all cases, ensure that the current regeneration cycle is completed after switching off the compressor.

- The straight inner thread according to DIN EN ISO 228-1 may only be used with a straight outer thread, whereby the seal is achieved on the sealing surface around the connection thread. To prevent overtightening, the following maximum tolerances may be applied:
  Type 005-025: 30 Nm
  Type 035-100: 50 Nm

- The conical NPT inner thread according to ANSI B 1.20.1 must be sealed with suitable thread sealants (e.g. DIN EN 751) and a maximum of the following tolerances may be applied when screwing in a conical outer thread:
  Type 005-025: 30 Nm
  Type 035-100: 50 Nm

7.2. Installation variants

DANGER OF TIPPING OVER!

The dryer may tip over if it is set up incorrectly or unsecured. There is a risk of injury!

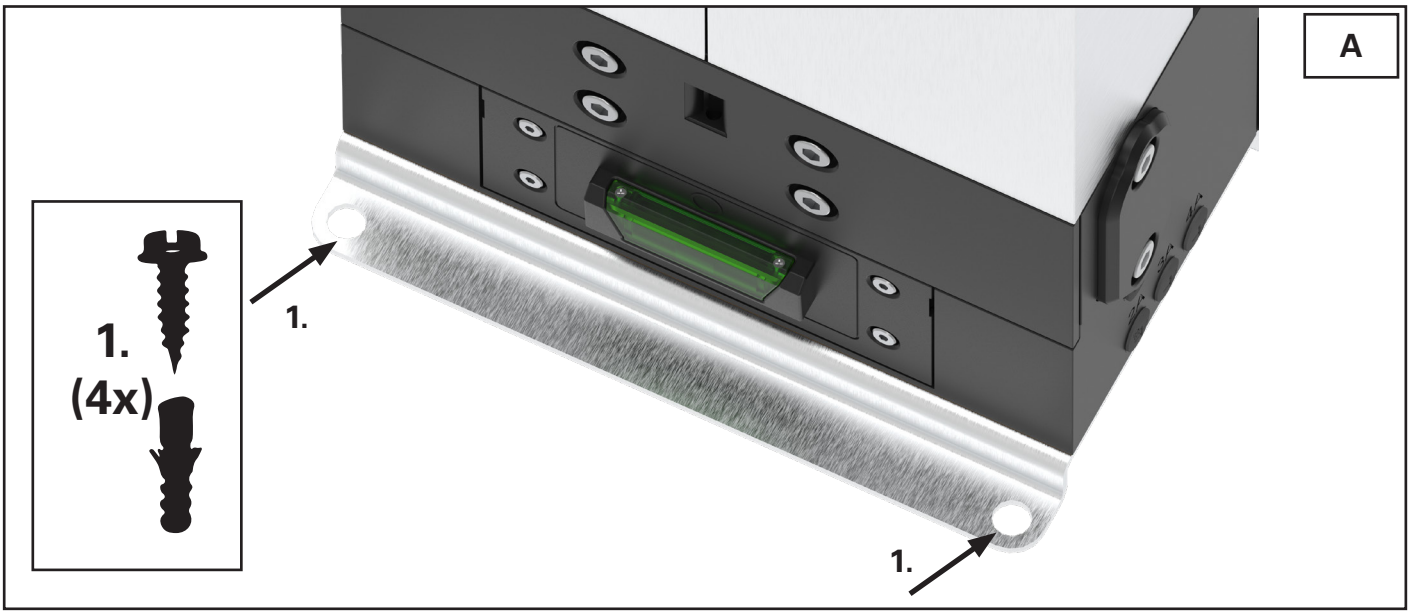
- Only place the appliance on a level, stable surface and secure the dryer against tipping over.

7.2.1. General information

The floor bracket is already fitted to the dryer on delivery.

The floor for mounting the adsorption dryer must be level and sufficiently stable. The same applies to the wall mounting of the adsorption dryer. Sufficiently dimensioned screws and dowels must be used to fasten the floor/wall brackets. The adsorption dryer must be protected against being knocked over when mounted on the floor and secured against tipping over when mounted on racks. If necessary, install a support device.

7.2.2. Floor mounting



7.3. Installation tips

- During installation ensure that the system is well accessible for service and repair work.
- The equipment can be supplied with compressed air from all conventional compressors available on the market. Also ensure that the inlet conditions for the compressed air are guaranteed at the system inlet as per the design. The inlet of the compressor may not be located at a point where there are excessive contaminants and pollutants (in direct proximity of machine exhaust gases or other sources of contamination).

Removing the packing

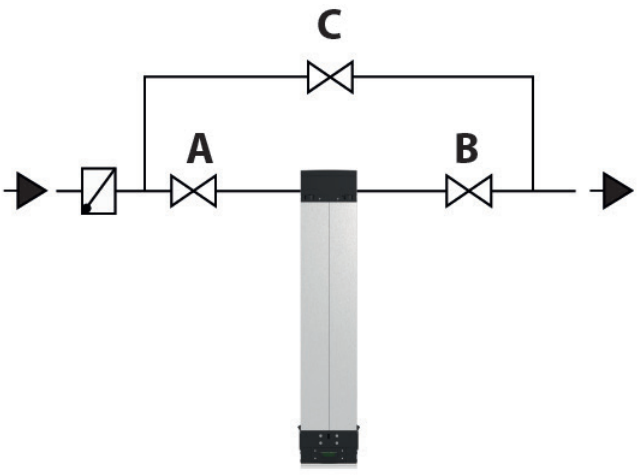
Remove the packing with care! Immediately report any damaged machine parts or missing parts as a result of transport to the manufacturer and the transporting company. Document any possible equipment damage and inform the manufacturer immediately.

Setup location

- Ensure that the installation site is clean and make it accessible from all sides of the equipment. Take special care that there is a sufficient room to swap over the equipment or perform maintenance on it.
- Ensure that the load-bearing capacity of the floor corresponds to the equipment weight, and that the floor is flat and even.
- Ensure that any vibration or pulsation from other equipment or machinery is not transmitted to the dryer.
- The system is to be setup so that the power socket (if using the connection cable supplied) or the mains isolator (for external supply) are well accessible.

Bypass line

A bypass line should be installed around the equipment so the compressed air can still be supplied to the network if maintenance work is being performed on the equipment.



Adjustment to the operating pressure

The adsorption dryer is factory equipped for operating conditions 7 bar(g) / 35 °C. The dryer is additionally supplied with nozzles 4-6 bar(g).

If other operating conditions prevail at the setup site the throttle element must be replaced (see chapter 13.3.2).

Caution!
If the operating pressure is adjusted, the settings must be changed by the manufacturer.

Attention!
At pressures below 7 bar, the nozzle must be changed. Otherwise, there is a risk that the regeneration of the desiccant cannot be guaranteed. At pressures above 8 bar, the nozzle should be changed to prevent too much regeneration air being lost.

Throttle set	Throttle number			
	4-6 bar(g)	7-8 bar(g)	9-12 bar(g)	13-16 bar(g) *
5	6	3	2	1
10	11	7	5	4
15	16	9	8	7
25	24	14	13	10
35	25	17	14	n/a
50	29	21	19	n/a
65	31	25	23	n/a
80	32	27	26	n/a
100	33	30	28	n/a

***only for dryer sizes 005 - 025 of the DRYPOINT® ACC.**

If the manufacturer is aware of deviating conditions at the place of use, the dryers are equipped with the corresponding nozzle ex works. In this case, no additional nozzles are included in the scope of delivery.

7.4. Connection to the compressed air network

Properly connect the equipment to the moist gas inlet and to the dry gas outlet. Check that all screw connections have been installed properly.

The straight inner thread according to DIN EN ISO 228-1 may only be used with a straight outer thread, whereby the seal is achieved on the sealing surface around the connection thread. To prevent overtightening, the following maximum tolerances may be applied:
Type 005 -025: 30 Nm
Type 035 -100: 50 Nm

The conical NPT inner thread according to ANSI B 1.20.1 must be sealed with suitable thread sealants (e.g. DIN EN 751) and a maximum of the following tolerances may be applied when screwing in a conical outer thread:
Type 005 -025: 30 Nm
Type 035 -100: 50 Nm

Compressed air quality

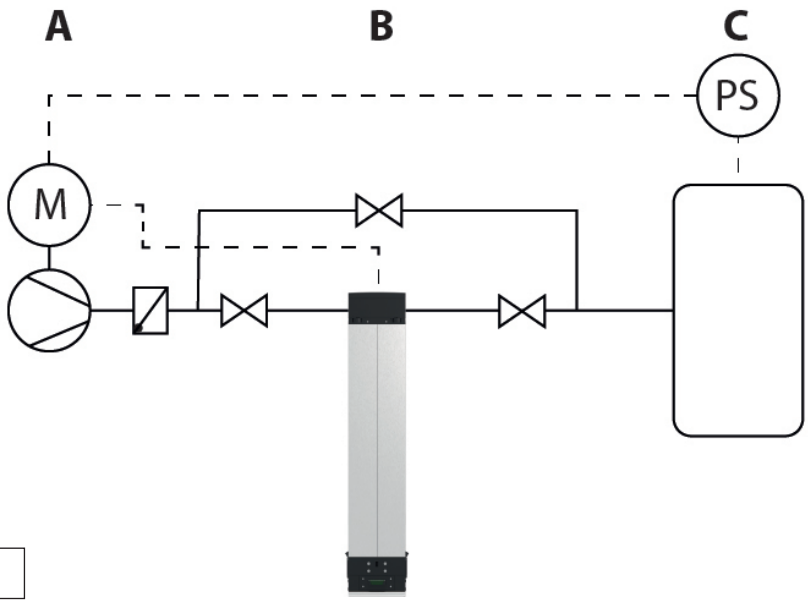
- The maximum permissible residual oil content in the compressed air before entering the dryer is 3 mg/m^3. An additional prefilter should be installed if higher residual oil contents are encountered.

- If sterile compressed air is required, a high-performance sterile filter can be installed after the dryer.

7.5. Intermittent operation

If the high performance dryer is operating in the "intermittent operation" mode, the installation must be performed as per fig. "intermittent operation" in the following sequence: compressor (A) – dryer (B) – reservoir tank (C).

Ensure that the dryer can be back-flushed! See also chapter 3.10.2 "Intermittent operation".



Intermittent operation

7.6. Electrical connection

DANGER OF ELECTRIC SHOCK!

There is a danger to life from electrical voltage when working on the electrical supply!

- Switch off the operating switch before carrying out any work on the electrical supply
- Work on the electrical supply must be carried out in accordance with DIN VDE regulations (or comparable country-specific regulations) and the regulations of the respective power supply company by a trained and authorized specialist.
- Only use voltage-insulated tools!

The system is always supplied with a connected power cable (1.5 m, without plug). Depending on the model, the system must be supplied with a voltage of 220–230 V AC / 50–60 Hz, 110–115 V AC / 50–60 Hz or 24 V DC (see also Chapter 4 'Technical Data').

A new, longer power supply cable must have a cross section of 3 x 1.0 mm^2 (AC voltage) or 2 x 1.0 mm^2 (DC voltage). To connect a new power cable the inspection cover of the dryer must be removed. The mains cable is connected to terminal X1 (see following page).

- Before the electrical connection ensure that the permissible network voltage range of the controller matches that of the local mains voltage.
- For a stationary mains connection of the controller provide an all-pole disconnecting device with corresponding back-up fuse as per IEC/EN 60947. You will find the required connection data on the type plate. The plug connection or disconnecting device must be accessible at all times.
- If the device is disconnected from the mains, the disconnection device must be lockable or the disconnection point is to be monitored at all times.
- A new installation of the connection, changes in the system or an inspection of the protective earth including determination of the correct fusing may only be undertaken by a recognised electrical specialist.

Important!
The cable ends to be connected to the control unit must be fitted with wire end ferrules (using a tool provided for this purpose).

Removing the inspection cover

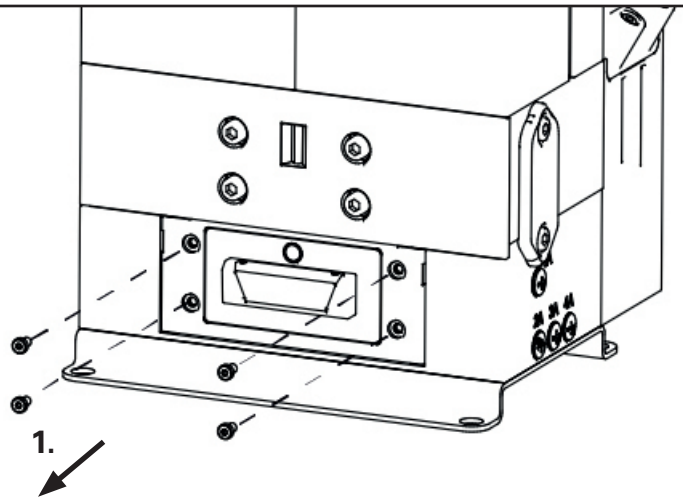
The inspection cover must be released if:
- the mains cable is replaced
- the cover is replaced (including power supply)
- alarm contact is used
- intermittent operation is used
- the fuse is replaced
- the battery is replaced

DANGER OF ELECTRIC SHOCK!

There is a danger to life from electrical voltage when working on the system!

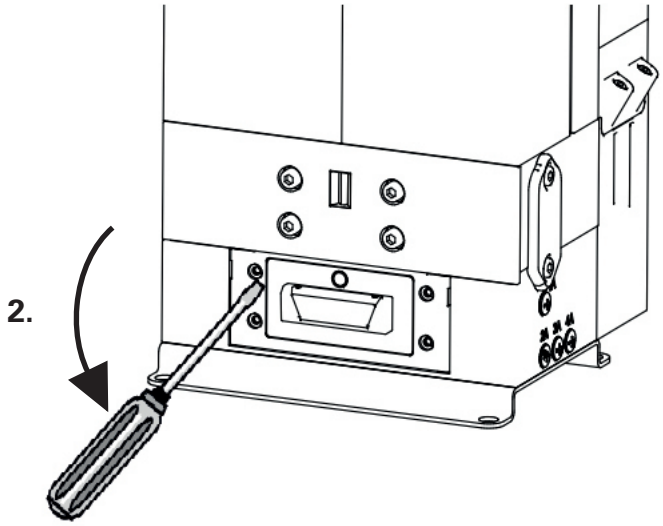
- Disconnect the system from the mains before starting work!
- Damage to the electrical system due to short circuit or overvoltage and risk of injury from electric shock!

A



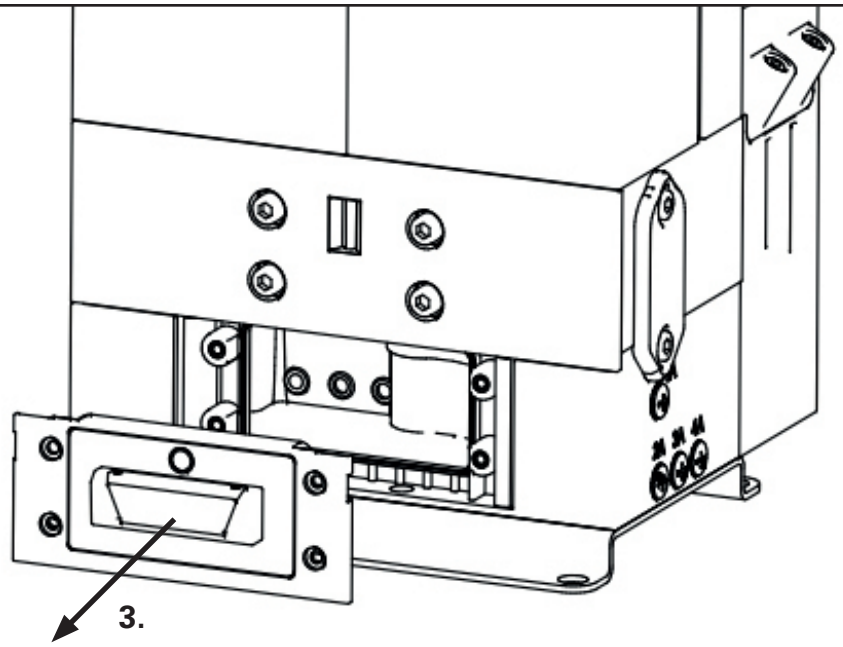
1. Release the 4 screws on the inspection cover by turning counter-clockwise.

B



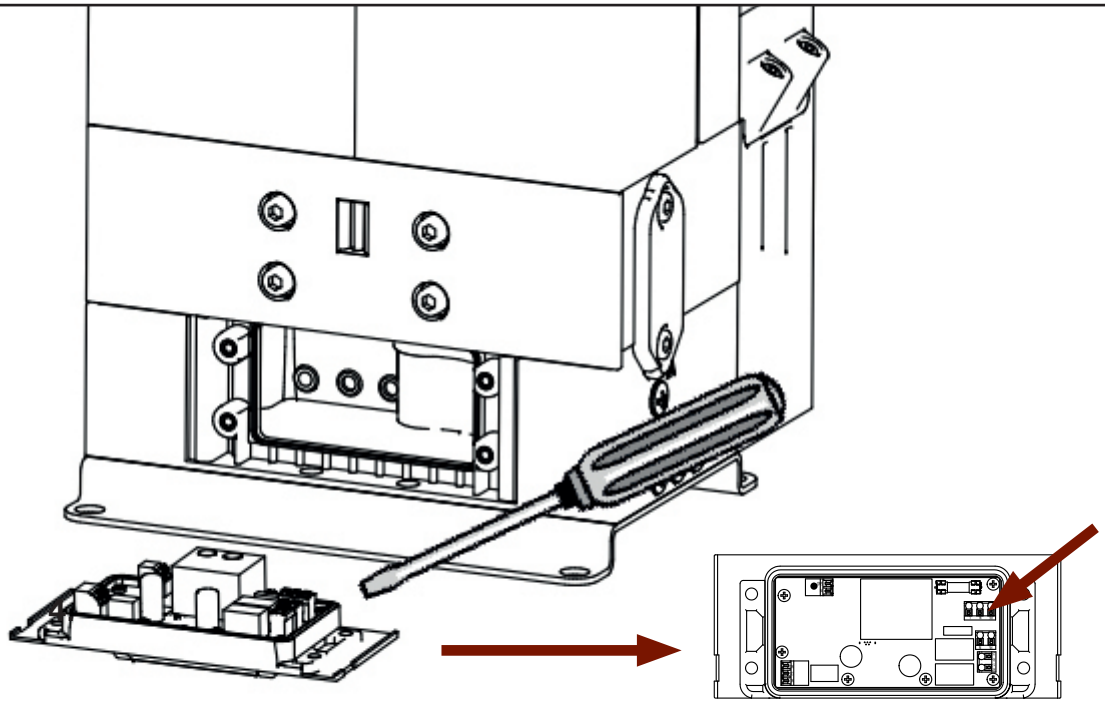
2. With the aid of a flat screwdriver carefully lift the inspection cover at the notches indicated left and right by careful rocking. While doing so ensure that the plastic frame of the inspection cover board is not damaged.

C

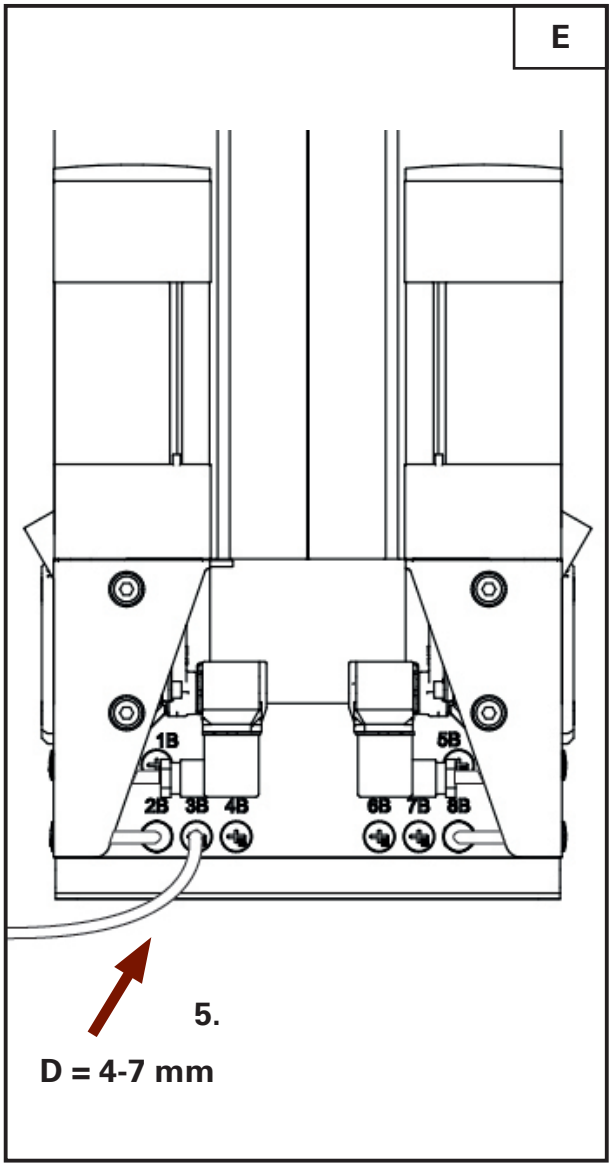


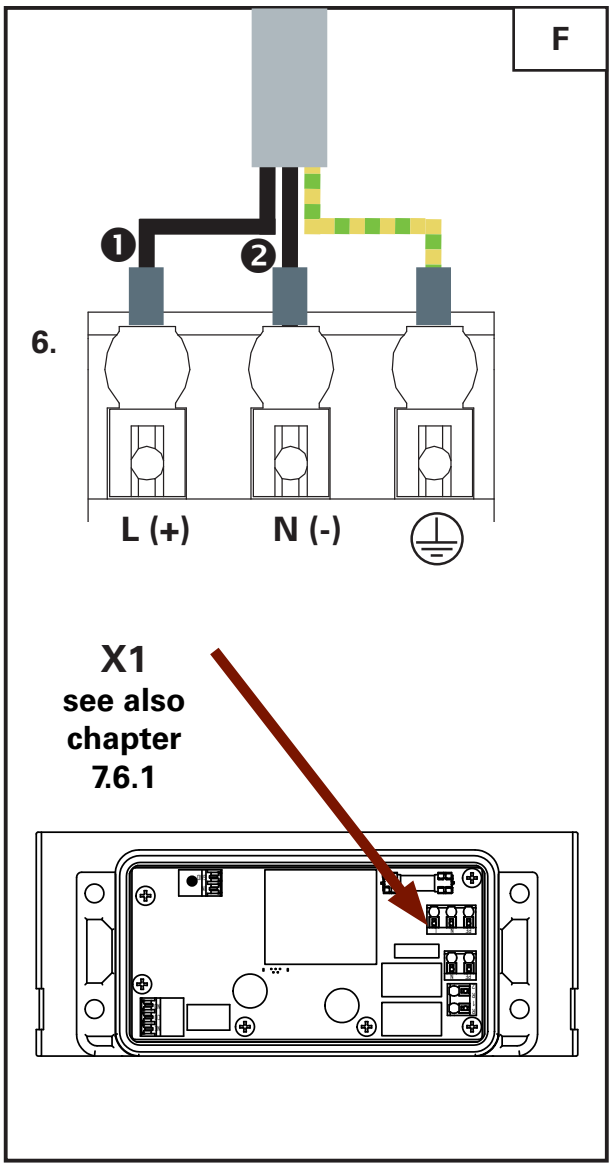
3. Pull the inspection cover forwards..

D



4. Release the available mains cable from terminal X1 of the inspection cover board with the aid of a screwdriver.





5. Pull the existing mains cable from the screw joint (3A) on the right side of the dryer. Run the new mains cable through the screw joint (3A).

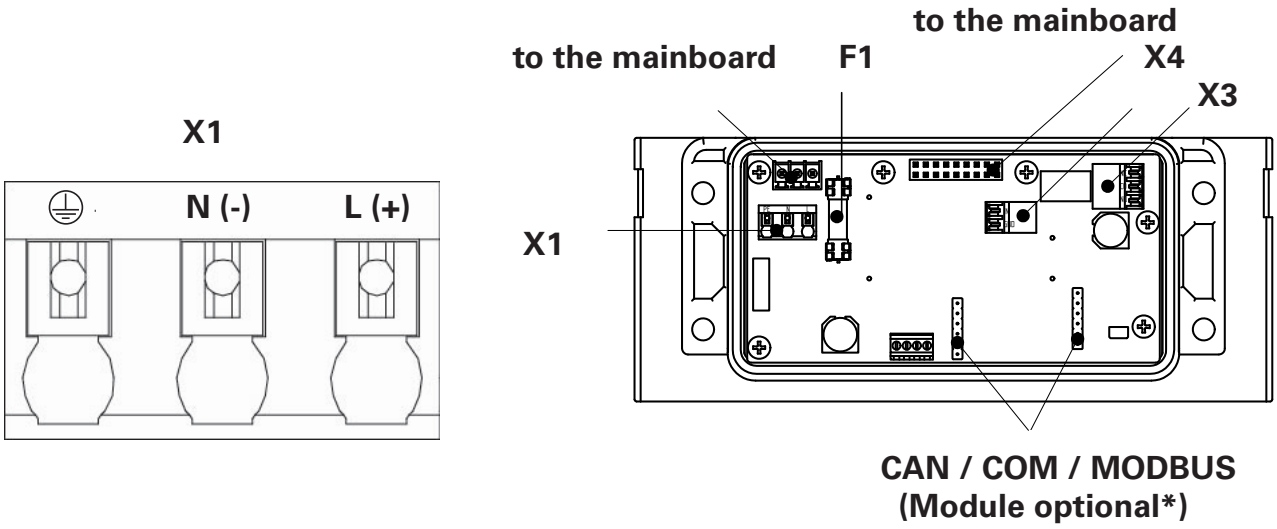
6. Then connect the ends of the new mains cable provided with wire end sleeves to terminal X1 of the inspection cover board.

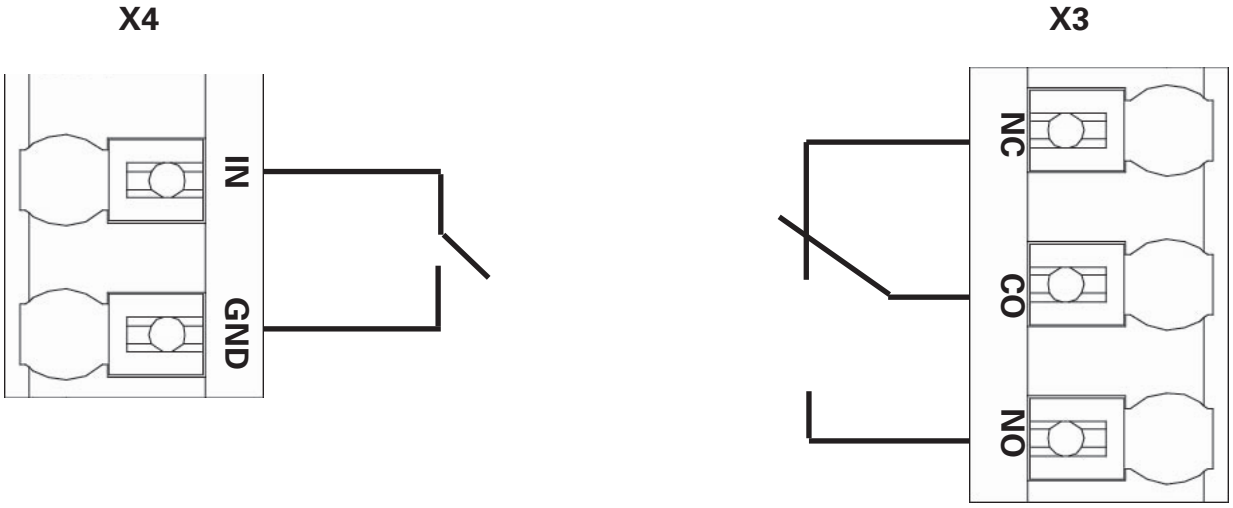
The installation takes place in reverse order.

For the precise position of terminal X1 of the inspection cover board see chapter 7.6.1.

All electrical connections are to be checked before start-up. The electrical connection work is only to be performed by qualified specialist personnel.

7.6.1. Inspection cover board





Intermittent operation

Alarm contact
(CO-NC: closed during alarm / de-energized state)
(CO-NO: closed during normal operation)

Component / terminal strip	Terminal	Terminal assignment	Function
X1	⏚	Ground	Power supply
	N	❷ Neutral (-)	
	L	❶ Phase (+)	
X5	NC	Opener	Alarm contact
	CO	Common	
	NO	Closer	
X6	IN	Neutral	Intermittent operation
	GND	Ground	
F1	--	--	Mains fuse, 2 A time-lag, 250 V AC ceramic

8 Commissioning

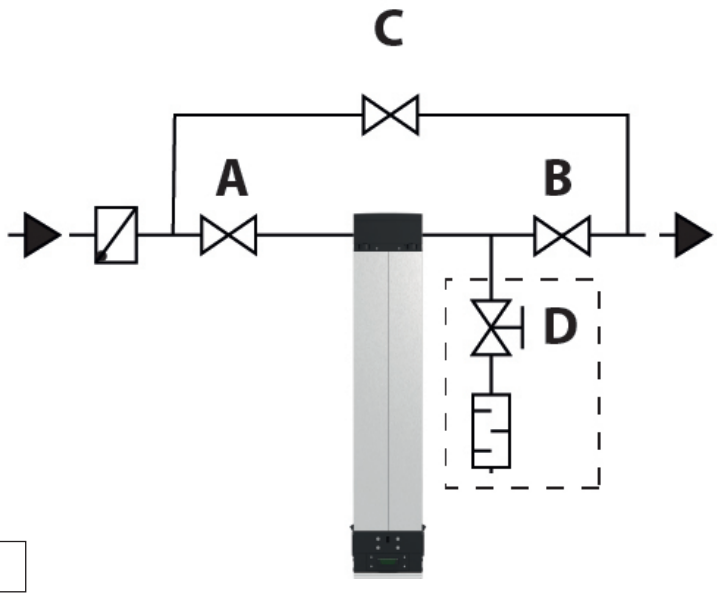
8.1. First commissioning

Before start-up of the system the pressure vessel, if required, must be provided with the required safety devices, such as safety devices against exceeding the pressure, safety valve etc. These items are not part of the scope of supply of the manufacturer.

It is recommended that the initial start-up be performed by the manufacturer's customer service.

Carry out the initial commissioning in the sequence described below, taking into account the instructions given (see chapter 6.1), :

1. Verify that valves A and B in the bypass line (optional) are closed and that the electrical controller is switched off.



Bypass line

2. Slowly build up the pressure in the dryer by gradually opening valve A.

3. Check the pressure. Both adsorbers must be at operating pressure.

4. Now apply power to the electrical controller.

5. The controller starts with the pressure build-up phase in both adsorbers. Then, the regeneration phase begins in one of the adsorbers and the adsorption phase in the other adsorber.

6. Please note that moisture from the environment may have entered the desiccant during transportation or storage of the dryer. Therefore, the desiccant should be regenerated for at least 3 hours before opening the shut-off valve B to the compressed air network. The dryer should only be operated in time-controlled mode.

7. Slowly open valve B to integrate the dryer into the compressed air network.

8. Close valve C if it was open during commissioning.

9. Close valve D if it was open during commissioning.

The dryer is now properly commissioned and operates fully automatically and continuously. Please note that, depending on the operating conditions and the specified pressure dew point, it may take some time until all parts of the dryer and the connected compressed air system are completely dry and the desired pressure dew point is reached.

The following mechanical hazards may arise from the system during operation:

WARNING! Risk of injury due to blow-off noises!

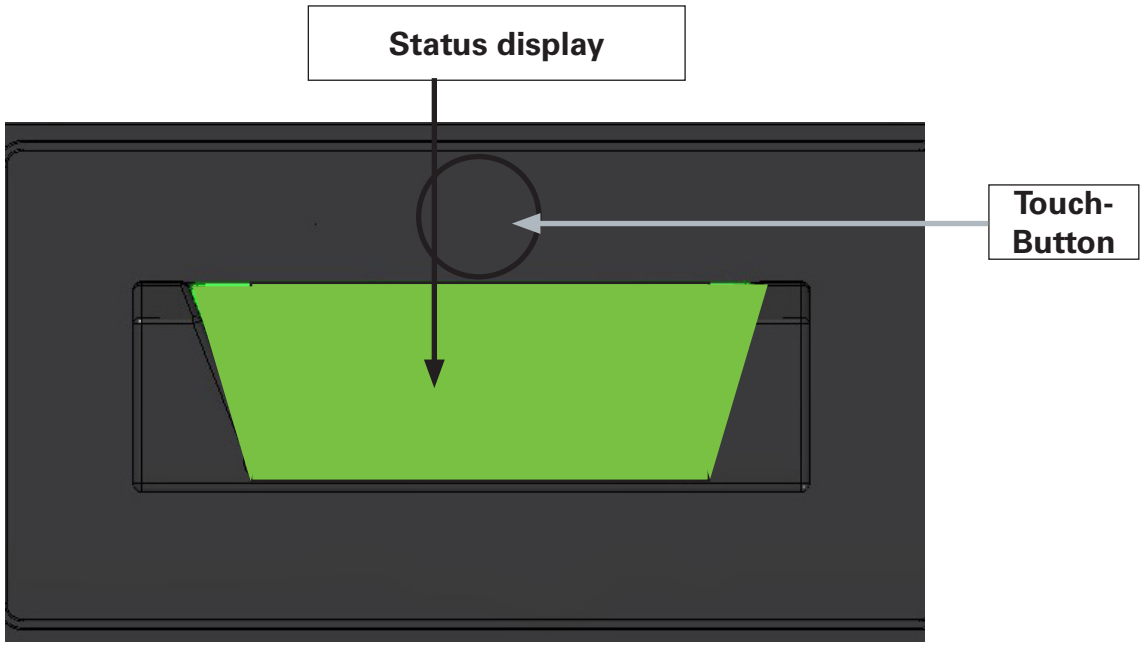
Pressure relief can cause loud noises and possibly damage the ear!

- Wear hearing protection for your own safety!

9 Operation

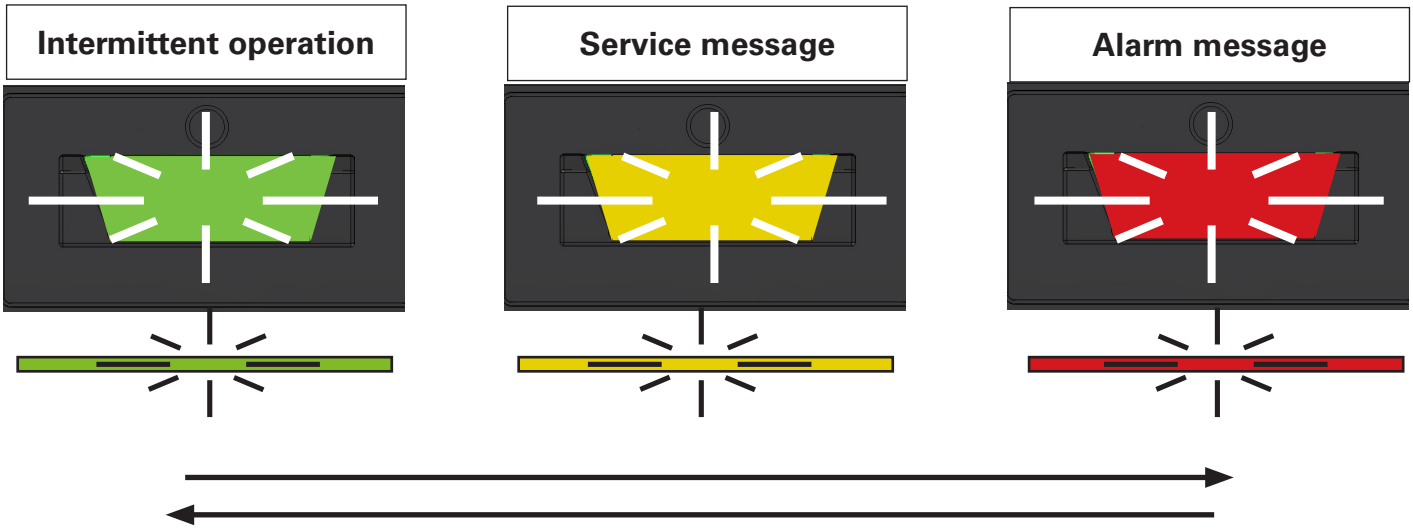
After commissioning, the current operating status of the dryer is displayed by means of an LED light. Dryer operation is fully automatic, no further operating steps are required.

LED



LED

The status indicator lights up green continuously during normal operation and flashes continuously during intermittent operation. In the event of an alarm/service, the status display flashes yellow or red (depending on the type of message). The service messages can be reset or acknowledged using the touch button (see chapter 11 "Service and alarm messages"). Alarm messages disappear automatically as soon as the faults have been rectified.



LED

All three status display messages can also appear one after the other if all events happen to occur at the same time.

10 Decommissioning

For dryers that run in continuous operation, the following steps are necessary for decommissioning:

1. Close the shut-off valve behind the dryer (valve B, see illustrations "Bypass line" in chapter 8.1).
2. Leave the control unit in operation until both adsorbers are fully regenerated.
3. Take the control unit out of operation by disconnecting the mains cable from the power supply.

Avoid in any case that compressed air is still flowing through the dryer after decommissioning, as otherwise there is a risk of overloading the desiccant and it can no longer be regenerated by the drying system.

10.1. Depressurization of the system

1. Decommission the system properly (see also chapter 10).
2. Close the shut-off valve A (see illustrations "Bypass line" in chapter 8.1).
3. Depressurize the system.

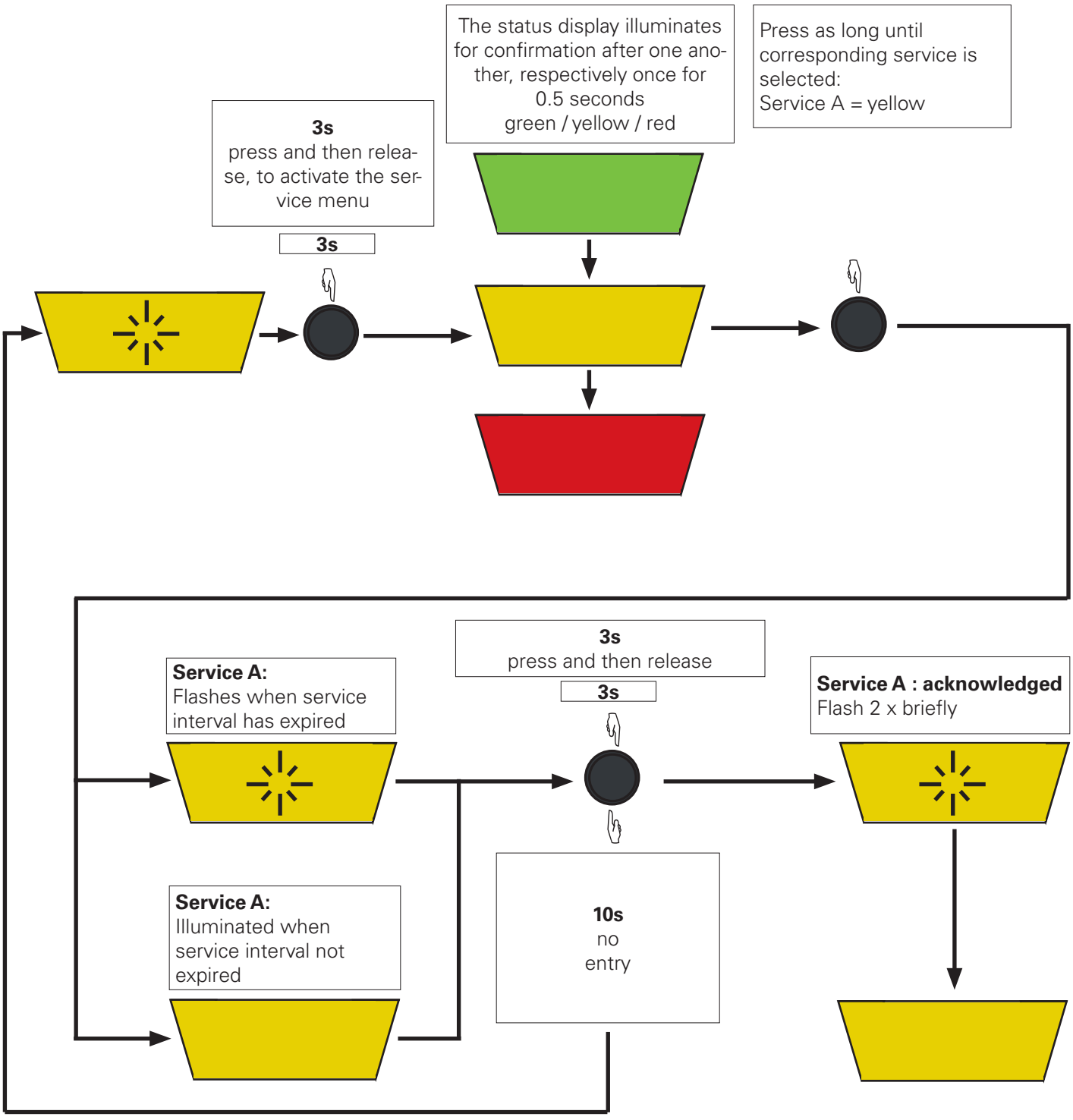
11 Service and alarm messages

11.1. Service messages

If service is required, the status display flashes yellow.

Service A

Replacing the filter elements. The illustration shows the "Standard" status display. For replacement intervals, see chapter 13.1 "Service intervals".



11.2. Alarm messages

In alarm case the status display flashes red. After troubleshooting it automatically goes out.

Advice on fault causes and troubleshooting can be found in chapter 12.2 "Troubleshooting".

12 Malfunctions

In this chapter we will explain to you:

- which faults can occur
- the causes of problems
- which measures must be taken to correct problems

You can get an overview of this in the corresponding overview list. List all fault messages, operating states and parameters settings at the time of the malfunction. In some troubleshooting instances, it is necessary to power down the equipment. In such a case, please follow these steps:

- Shut-down the equipment.

- Proceed as described for decommissioning (see also chapter 10). Put up a warning sign: Do not switch on the system!

- If necessary, depressurize the system (see also chapter 10.1).

- After working on the system, res tore it to its original state.

Important:
Troubleshooting may only be carried out by instructed persons or trained specialist personnel!

12.1. Possible causes of errors

Before identifying the cause of the malfunction, ensure the following areas are checked and in proper condition:

- Is there external equipment damage or missing parts?
- Any power to the equipment? Does the power being used correspond to the type listed on the type plate?
- Is the power supply to all electrical components and modules within the equipment guaranteed?
- Was the commissioning carried out correctly (see also chapter 8.1)?
- Are all external shut-off valves in the correct position (see also chapter 8.1)?
- Do the input parameters (max. flow rate, min. operating pressure, max. inlet temperature) correspond to the data on which the design is based?

12.2. Troubleshooting

Symptom	Possible cause		Solution
Dew point is too high Strong air flow around silencer	Shuttle valve does not work	Silencer dirty	Replace silencer
		Volume flow via dryer is too high	Reduce volume flow
		Ball damaged	Replace ball
	Pressure build-up incomplete	Regeneration valve diaphragms defective	Replace regeneration valves
		Incorrect or defective throttle	Replace throttle
		Dirty throttle	Clean the throttle
		Print build-up time too short	Reset the pressure and temperature
		Incorrect sequence during commissioning	1. Step: Pressurization 2. Step: Switch on control system
After electrical connection no function	Control unit has no operating voltage	Connection to the connection terminals on the inspection cover PCB not clamped	Check the contact pins
LEDs not functioning	Display board defective		Call customer service

13 Service and maintenance

13.1. Service intervals

The manufacturer recommends carrying out the following maintenance work within the specified maintenance intervals:

SERVICE INTERVALS					
Product	**Type Remark**	**1 year / 12 months**	**2 years / 24 months**	**3 years / 36 months**	**4 years / 48 months**
Service inspection	Checking / cleaning of: Silencer Solenoid valve Shuttle valves	**X**	**X**	**X**	**X**
Service kit A (Service A)		**X**	**X**	**X**	**X**
Cartridges			**X**		**X**

Filter elements

In order to ensure proper equipment operation, the filter elements should be changed when prompted by the message on the display or after a maximum of 8,760 operating hours or 1 year.

Desiccant cartridge

Oil in a liquid form can destroy the desiccant and significantly restrict equipment functioning. It is therefore necessary to ensure that the filter elements are replaced regularly. Failure to observe proper operating conditions (inlet temperature too high or operating pressure too low) can lead to desiccant overload which in turn can cause equipment malfunction. In order to ensure proper equipment operation, the desiccant cartridge should be changed when prompted by the message on the display or after a maximum of 17,500 operating hours or 2 years.

Service inspection scope

1. Visually check the adsorption dryers and filters
2. Checking of the prefilter and afterfilter elements and exchange of the filter elements
3. Test and clean the condensate drains
4. Check all valves, clean and lubricate as required
5. Check the silencer and replace if needed
6. Check all electrical components and signal lamps
7. Check adsorbent cartridge and exchange according to service schedule
8. Test leakage under pressure
9. Test run and final controller
10. Check the alternating switch over of the adsorption dryer
11. Restart the dryer
12. Check compressed air quality
13. Record data and inspection information in a service report

13.2. Service sets

Service sets DRYPOINT® ACC 005 -100		
Type	**Article no. cartridges**	**Number of cartridges complete**
005	1C4066361	2
010		4
015		6
025		10
035	1C4066364	4
050		6
065		8
080		10
100		12

Contents of Service kit A and wear parts DRYPOINT® ACC 005 -100		
Type	**Contents of Service kit A**	**Article no.**
005 -025	O-rings Wear part kits for solenoid valves Wear parts shuttle valve Silencer	1C4066362
035 -100		1C4066363

13.3. Maintenance

DANGER! Danger to life due to maintenance work!

Pressurized installations or systems can potentially cause serious injuries! Furthermore, unauthorized restarting of the power supply during maintenance may pose a risk of serious injury or even death to persons in the danger zone.

- Maintenance work may only be carried out by qualified and specially trained-personnel.
- Before starting any maintenance work, take the system out of operation and de-pressurize it. Before starting work, switch off all power supplies and secure them against being switched on again.
- Prevent people or objects from being hit by condensate or escaping compres-sed air.
- Attach a warning sign against restarting.
- Always wear personal protective equipment in the danger zone.

Once all maintenance work has been completed, put the system back into operation (see chapter 8).

Wear suitable gloves for all maintenance work such as changing filter elements or cartridges.

Dispose of waste in accordance with local disposal regulations. It is imperative that the desiccant cartridges / filter elements are disposed of properly.

When replacing the desiccant cartridges, the filter elements should also be replaced. Steps 13.3.1, 13.3.2 and 13.3.3 should then be carried out together.

Cleaning the dryer:
Never use flammable solvents to clean components. Mild cleaning agents such as household cleaners or glass cleaners are suitable. Ensure that the type plate is not damaged by the cleaning agent. Take appropriate safety precautions against toxic vapors from cleaning fluid.

Please use the maximum torques specified in the table below when tightening the screws. Check the torques of the screws during all maintenance work on the appliance and tighten them to the specified torque if necessary.

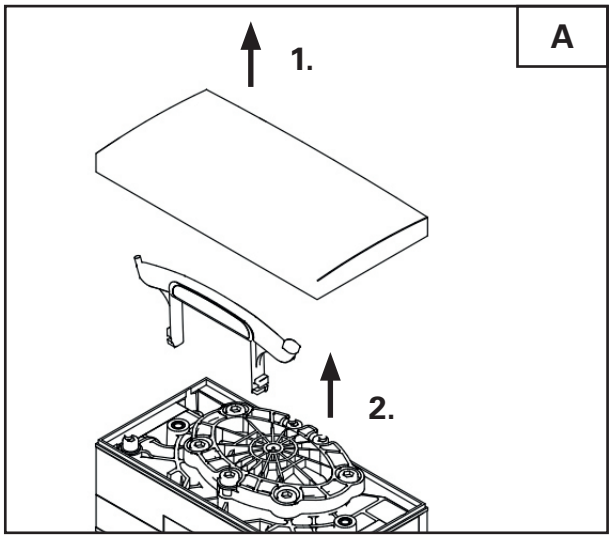
Tightening torques of screws	
Screw size	**Tightening torque (Nm)**
M4	**3.2**
M5	**4.0**
M8	**11.0**
M10	**11.0**

13.3.1. Prefilter cartridge replacement

Interval: **730 days**

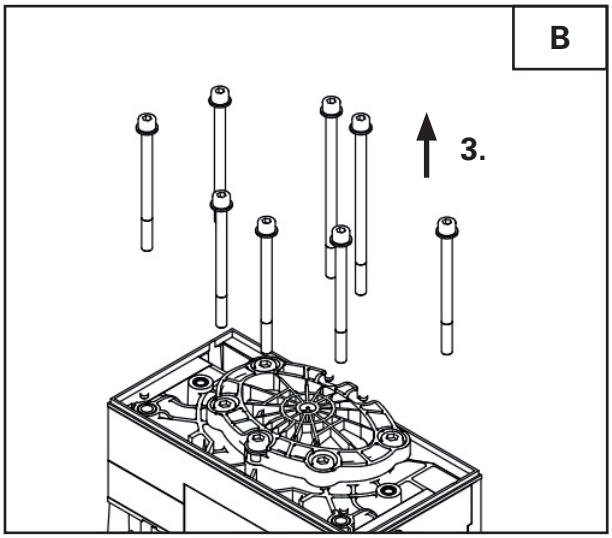
Follow the instructions in chapter 13.3

Remove the cartridges!

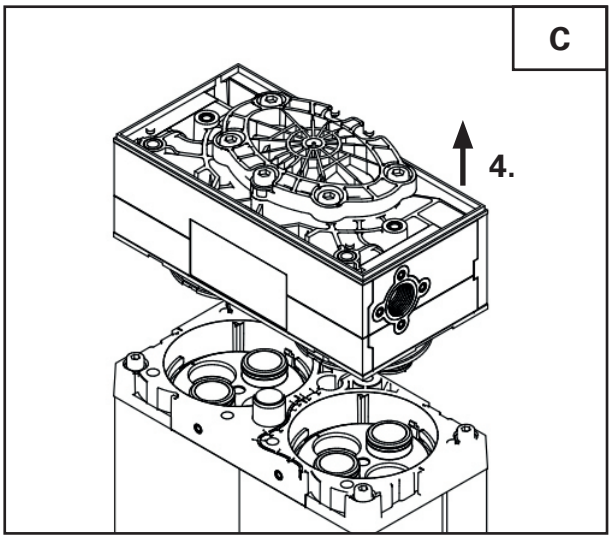


1. Pull out the upper covers of the cartridges (covers are magnetically attached).

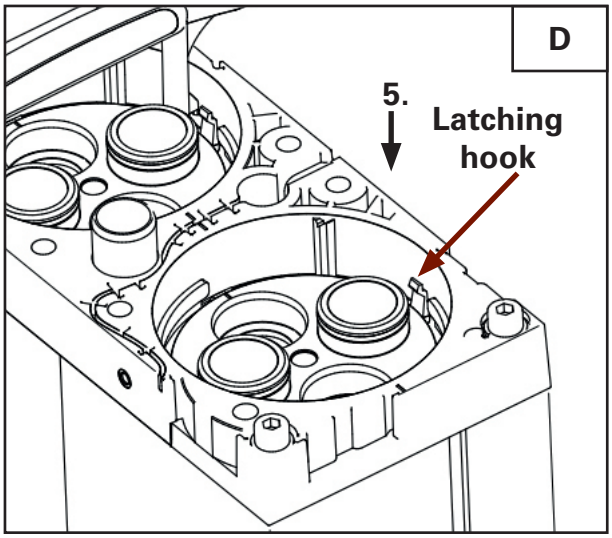
2. Pull the cartridge lifter upwards and put it to one side.



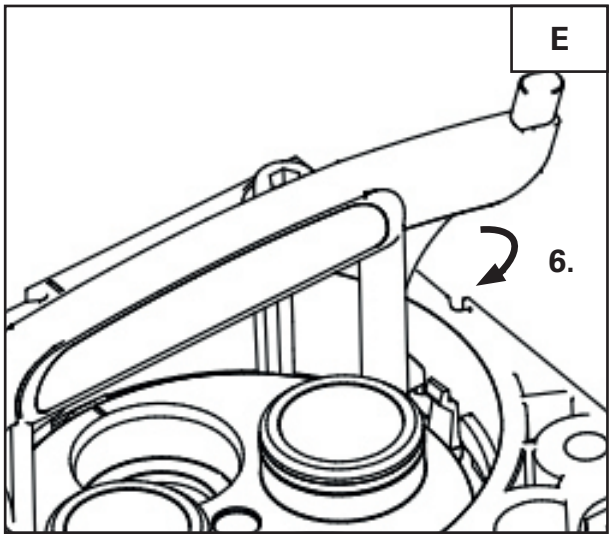
3. Remove the upper screws of the adsorber cover by turning them counterclockwise.



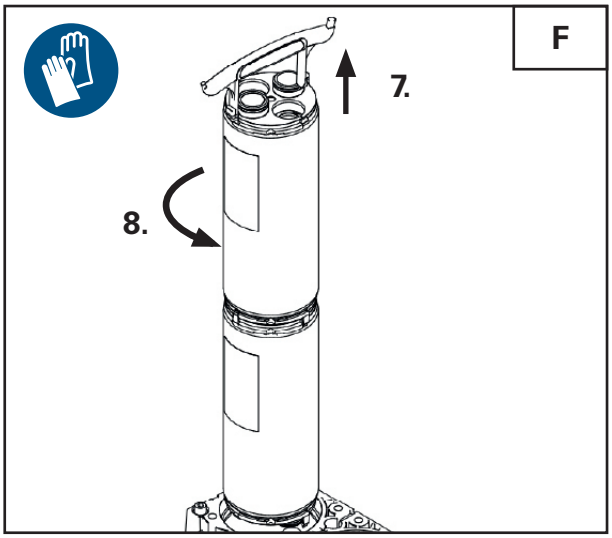
4. Remove the adsorber cover.



5. Place the cartridge lifter on the upper part of the 1st cartridge next to the locking hooks.

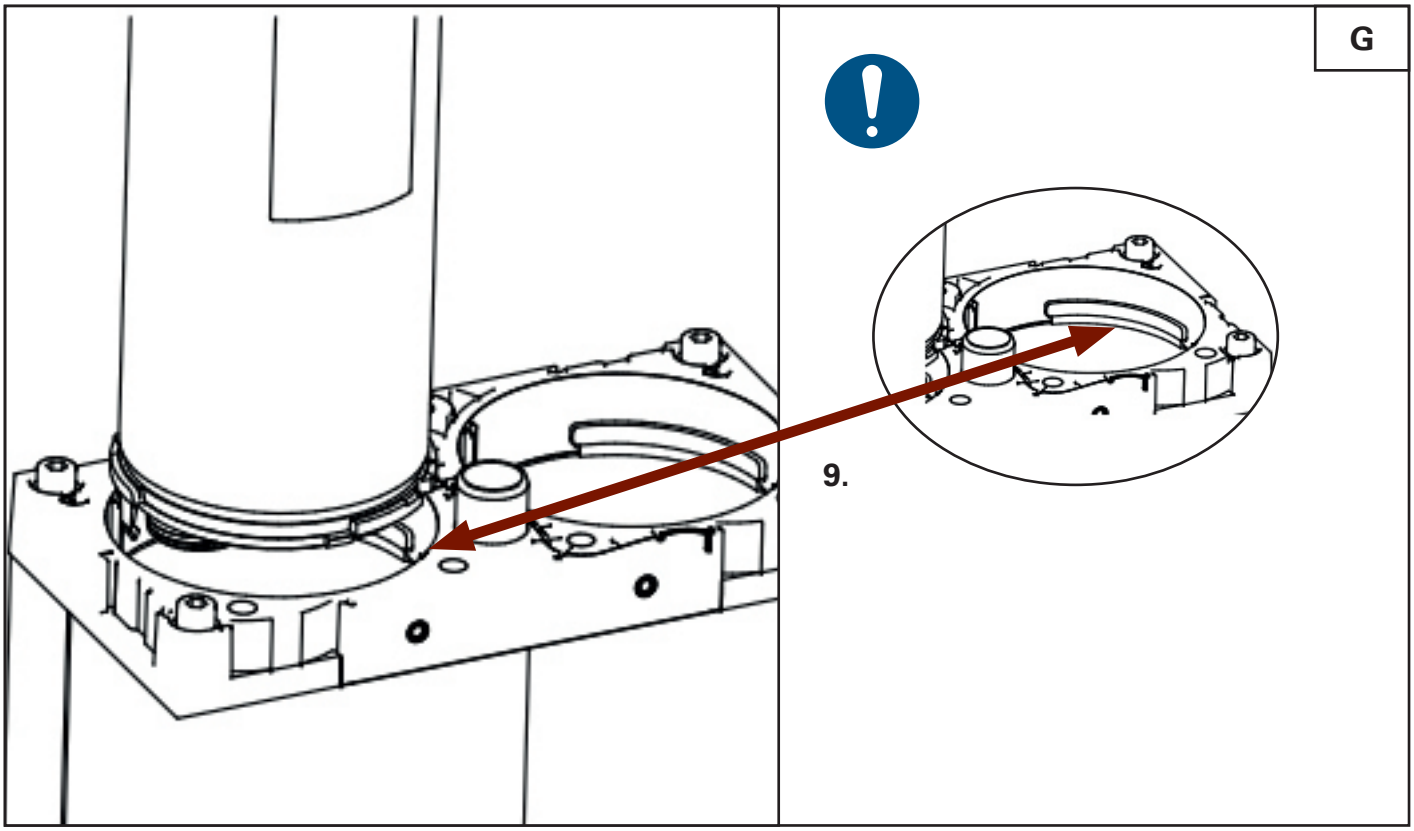


6. Turn the cartridge lifter clockwise until the lugs of the cartridge lifter are under the snap-in hooks of the cartridge.

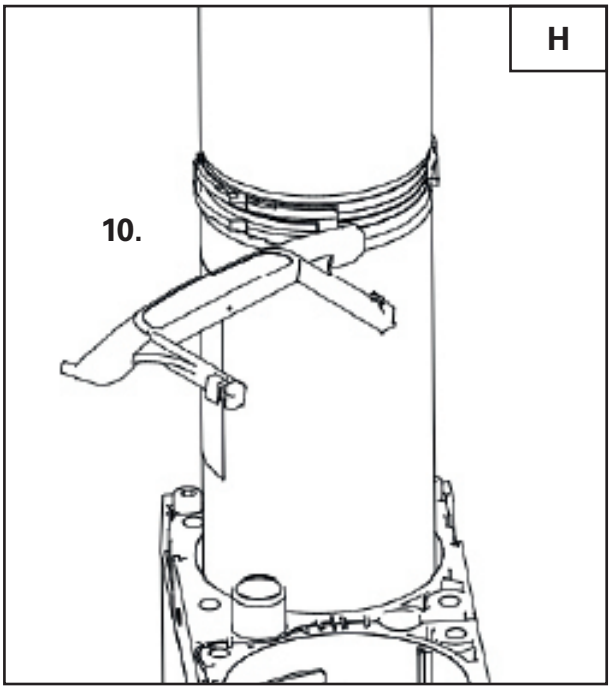


7. Pull out the first two cartridges so that the lower cartridge protrudes slightly from the cartridge profile.

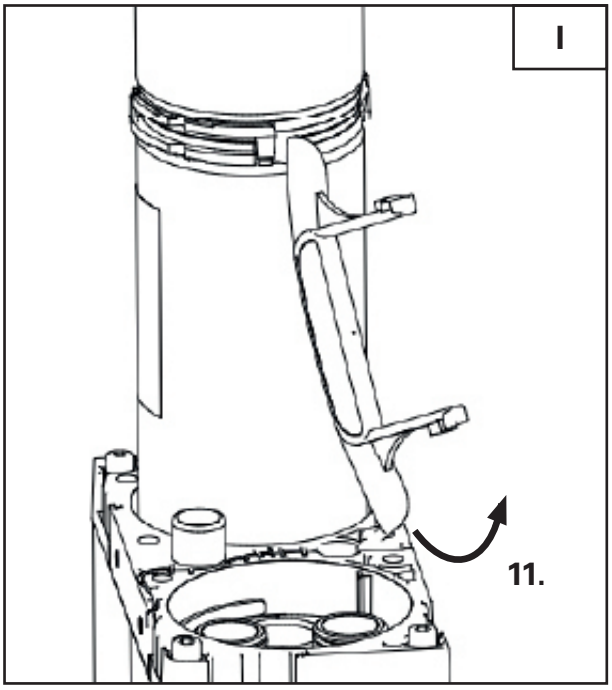
8. Turn the cartridges 1/4 turn counterclockwise.



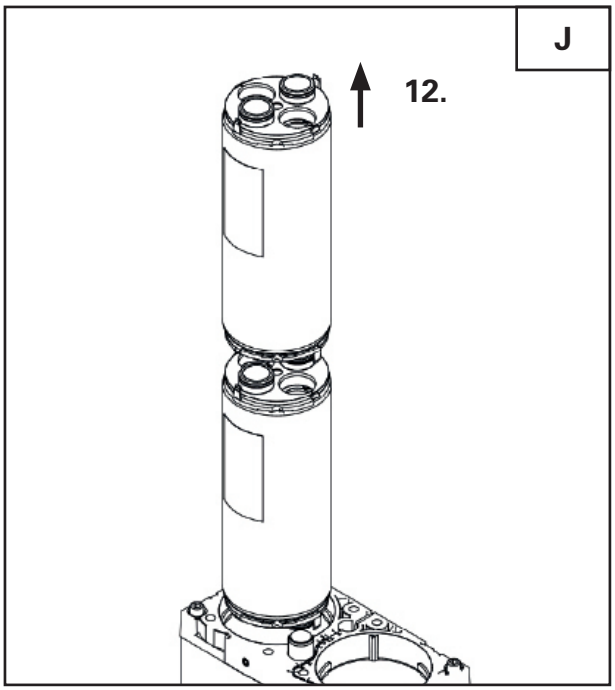
9. **Important**!
The lower cartridge must sit on the collar of the upper part of the adsorber so that it does not fall back into the adsorber profile.



10. Slide the cartridge lifter between the 1st and 2nd cartridge.



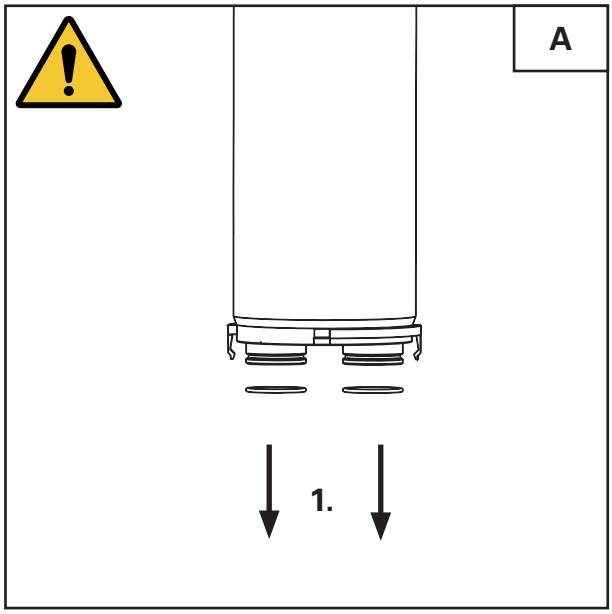
11. Turn the cartridge lifter 90° counterclockwise to release the cartridges from each other.



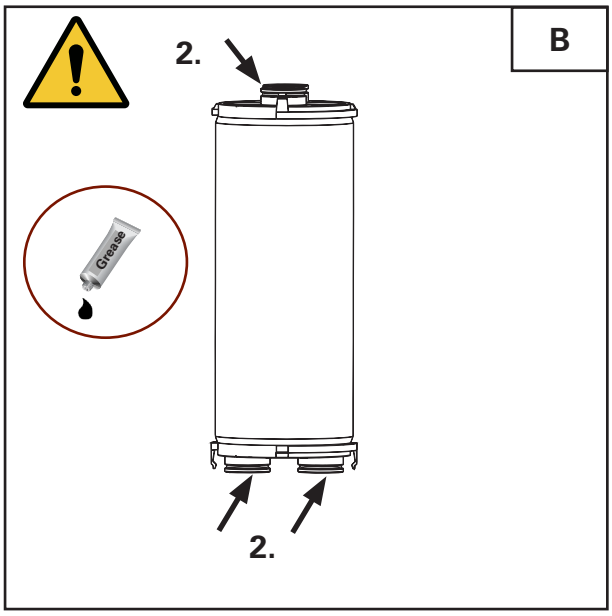
12. Remove the upper cartridge.

Repeat steps D to J to remove the remaining cartridges.

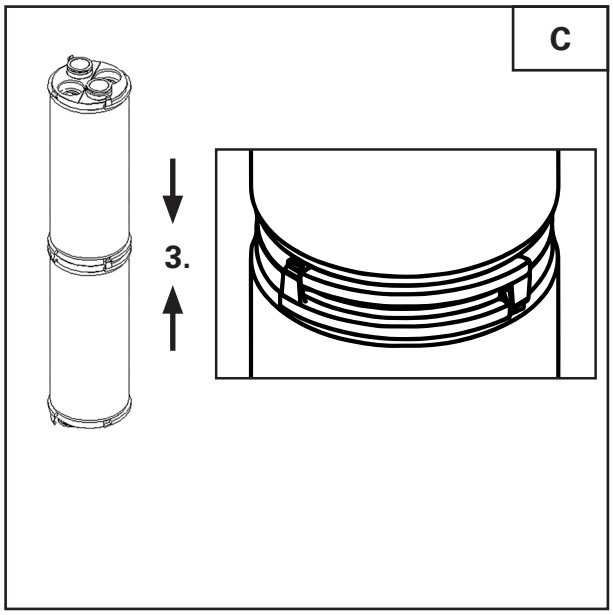
Installation of the new cartridges!



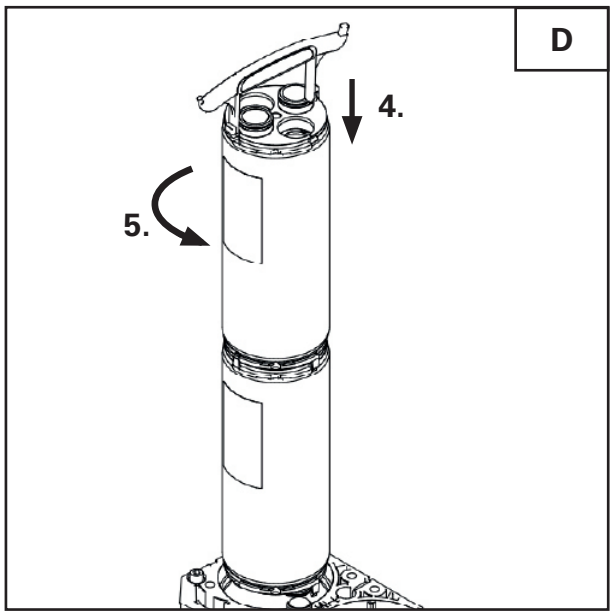
1. Remove the lower seals from **the bottom** cartridge.



2. **Lightly grease** the seals of all cartridges with a suitable lubricant!

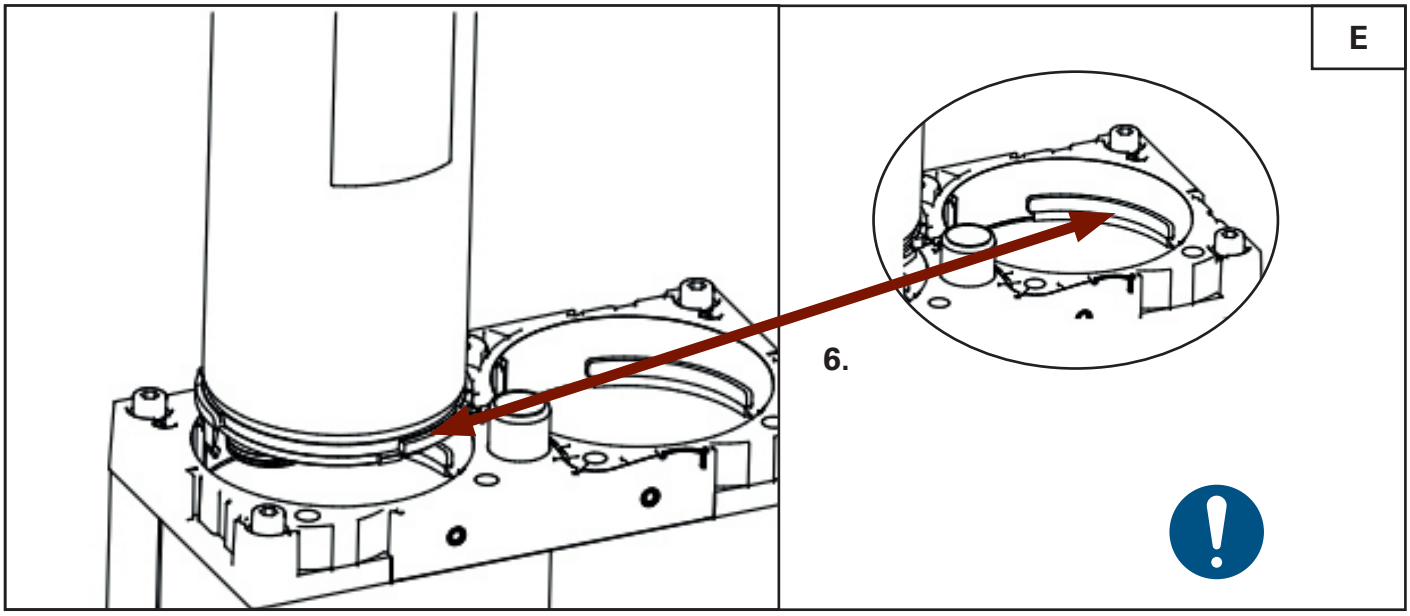


3. Connect 2 cartridges together. Ensure that the bottom seals (see **step A**) have been removed from the bottom cartridge.

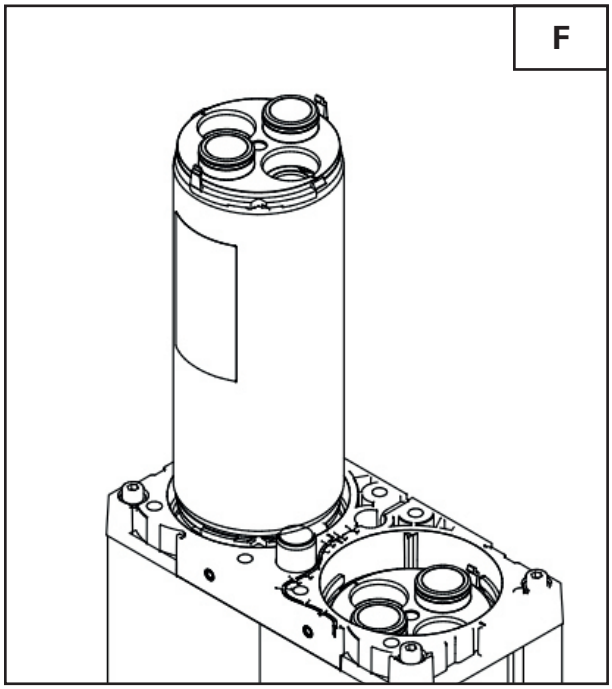


4. Insert both cartridges into the adsorber profile using the cartridge lifter.

5. Turn the cartridges 1/4 turn counterclockwise.

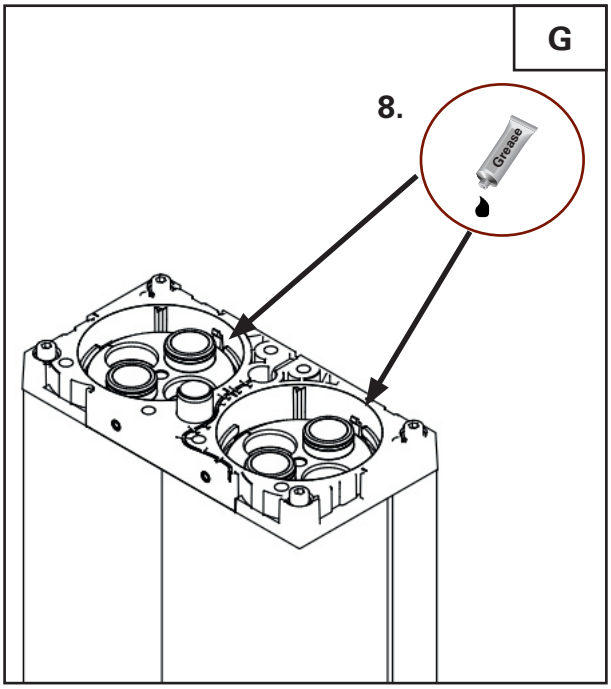


6. Important!
The upper cartridge must sit on the collar of the upper part of the adsorber so that it does not fall back into the adsorber profile.



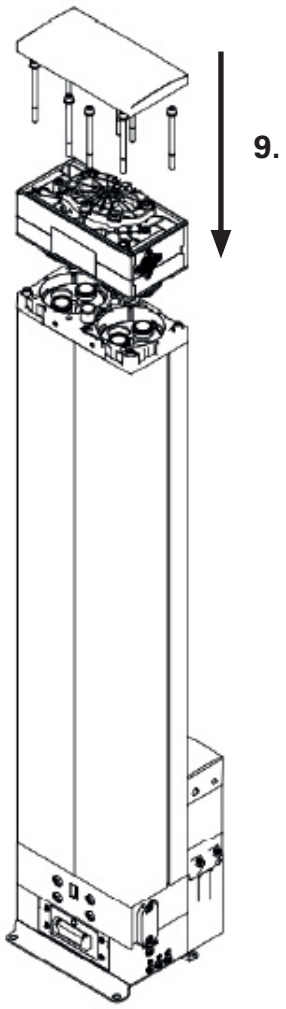
7. Repeat steps **A** to **F** to install the remaining cartridges.

Pay particular attention to step A for the bottom cartridge of the second adsorber tank!



8. Grease the seals of the adsorber cover with a suitable lubricant!

H



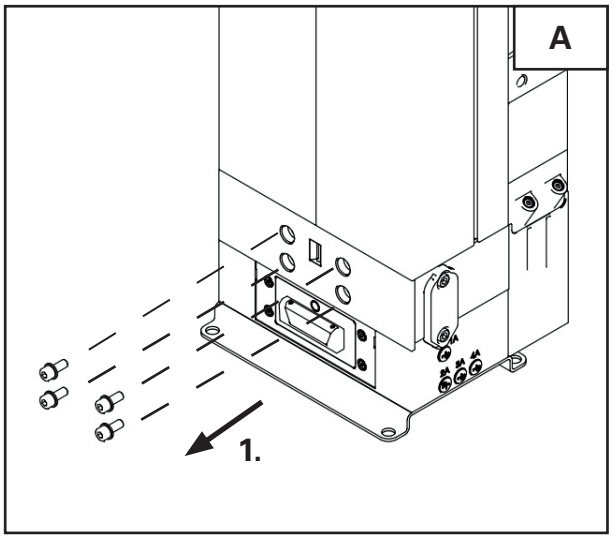
9. Secure the adsorber cover and top covers with screws. Do not forget the washers.

13.3.2. Shuttle valve maintenance / throttle replacement

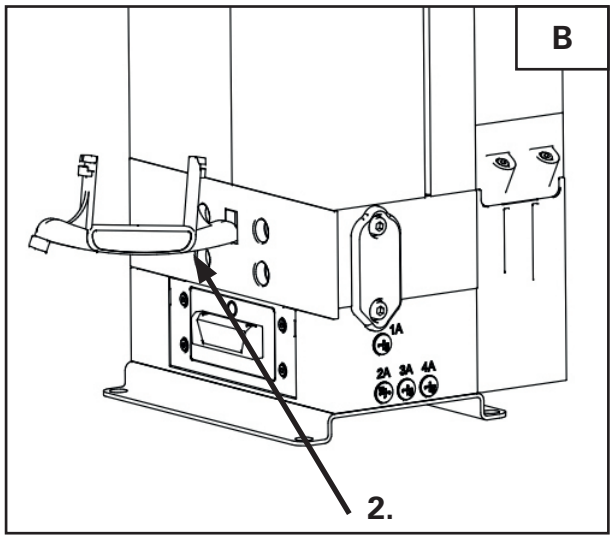
Interval: **365 days**

Follow the instructions in chapter 13.3

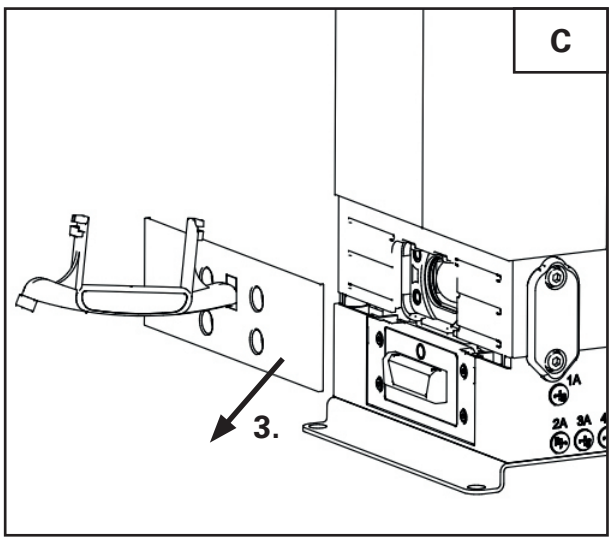
Changeover valve at the bottom!



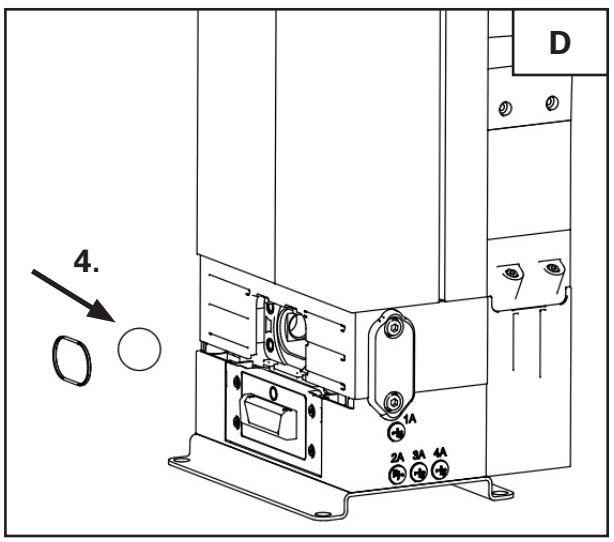
1. Remove 4 screws from the lower shuttle valve cover.



2. Insert the cartridge lifter into the recess in the lower retractable valve cover.



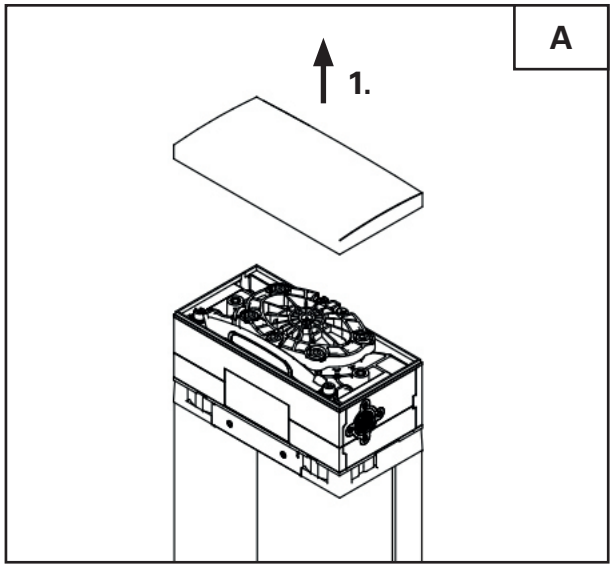
3. Remove the cartridge lifter together with the shuttle valve cover.



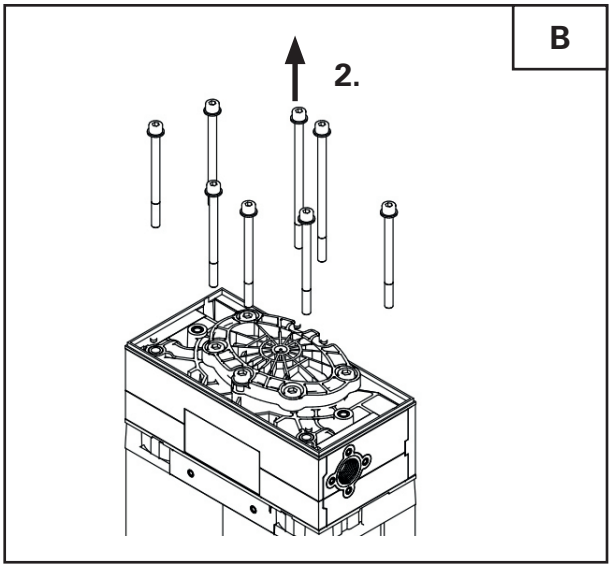
4. Remove the shuttle valve ball and replace it with a new one.

Assembly is carried out in reverse order.

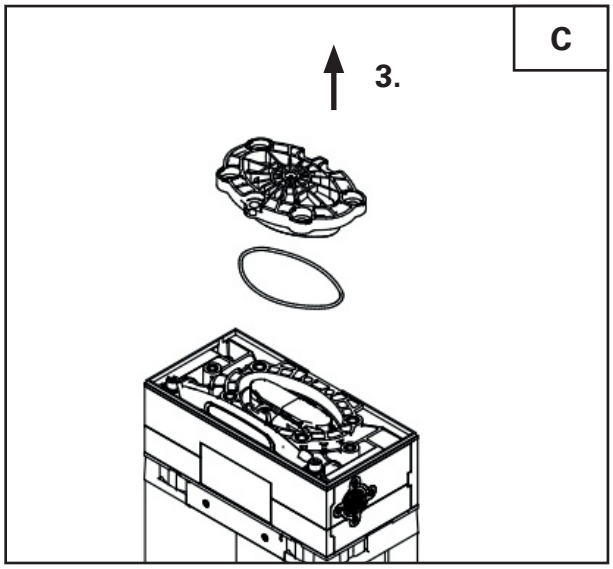
Change upper valve / replace throttle!



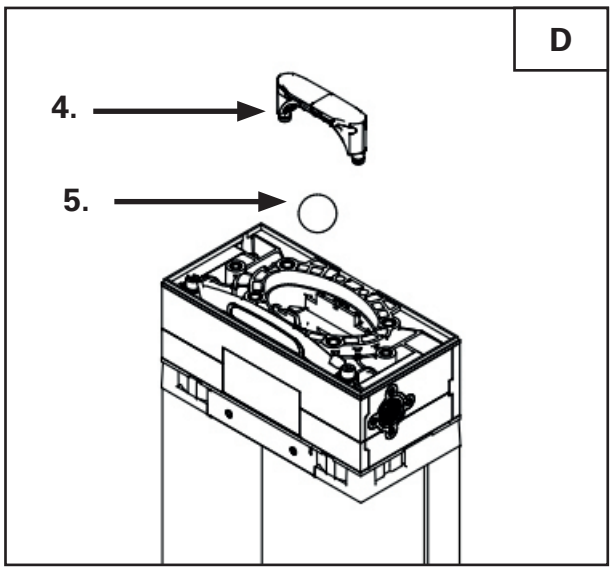
1. Pull off the top cover of the cartridges (cover is magnetically attached).



2. Loosen and remove the 8 screws of the upper shuttle valve cover by turning them anticlockwise.



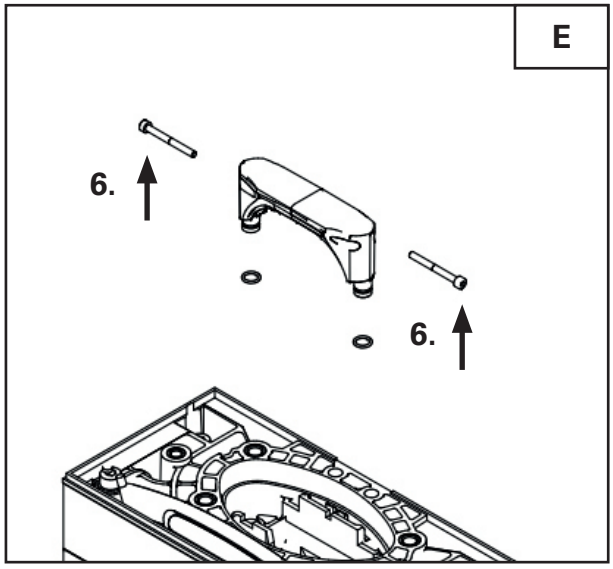
3. Remove the upper shuttle valve cover.



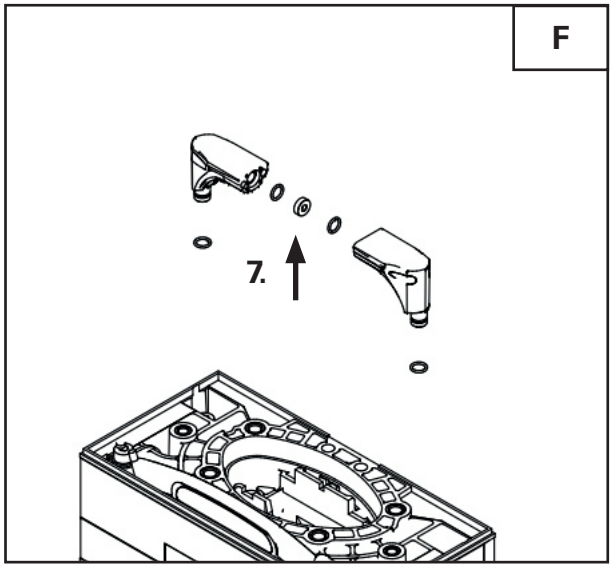
4. Pull out the throttle housing.
5. Remove the shuttle valve ball and replace it with a new one.

Assembly is carried out in reverse order.
Note the washers.
If the throttle is to be replaced, please continue with the following steps E and F.

Replace throttle!



6. Loosen the 2 screws of the nozzle housing.



7. Dismantle the throttle housing and replace the throttle.

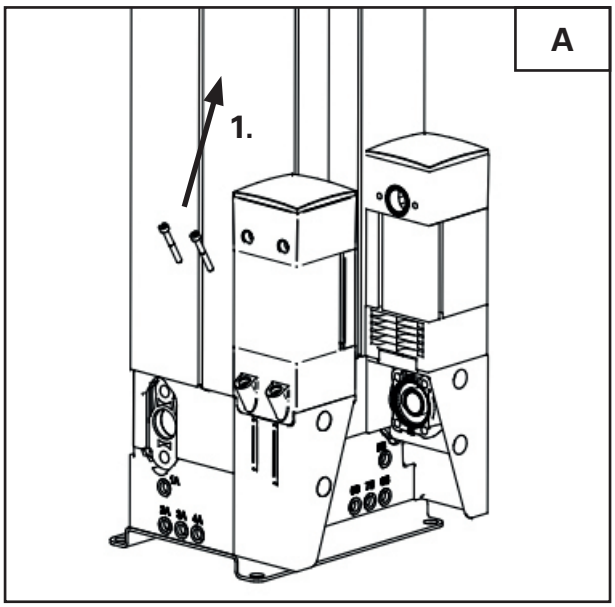
The throttle type depends on the operating pressure. Please ensure that the correct throttle type is used in accordance with chapter 7.3.

Assembly is carried out in reverse order.

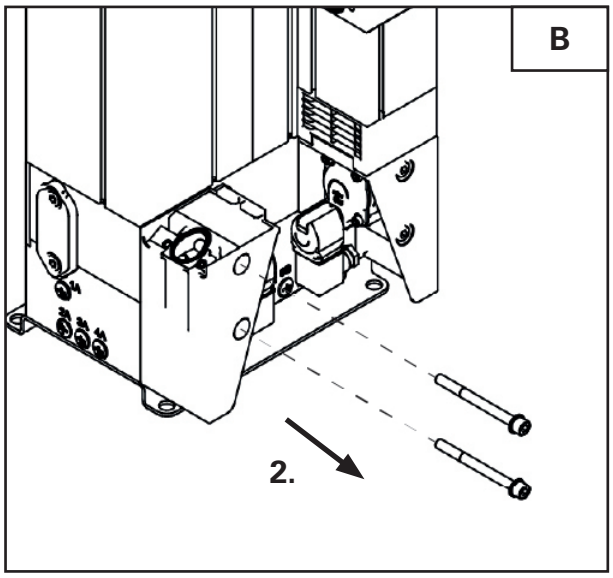
13.3.3. Maintenance solenoid valves

Interval: **365 days**

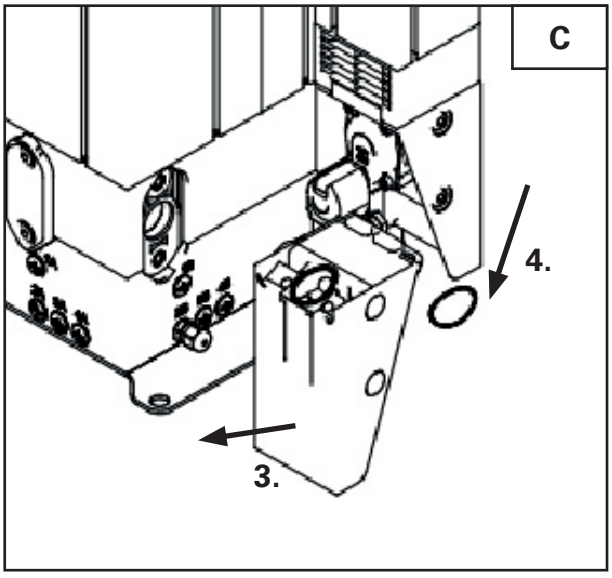
Follow the instructions in chapter 13.3



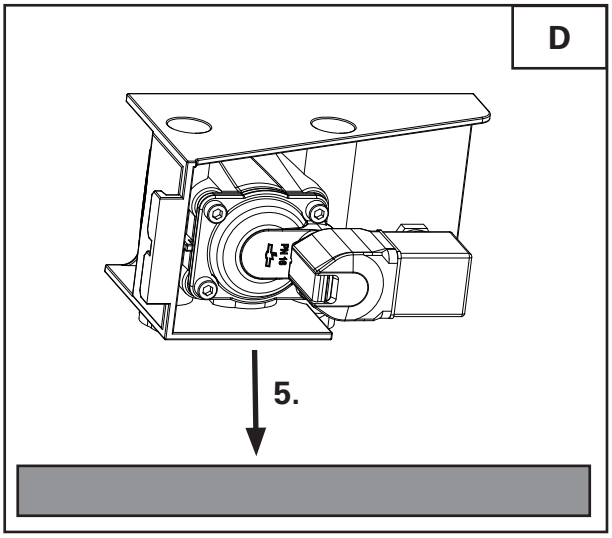
1. Loosen the two upper screws of the left-hand silencer housing by turning them anticlockwise.



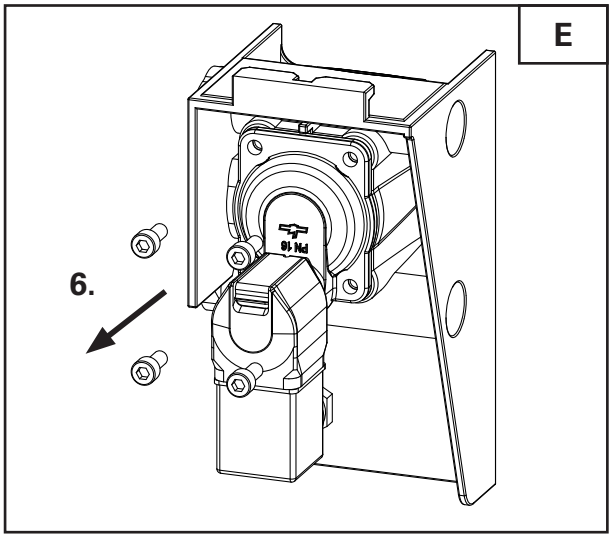
2. Loosen the two lower screws of the silencer housing by turning them counterclockwise.



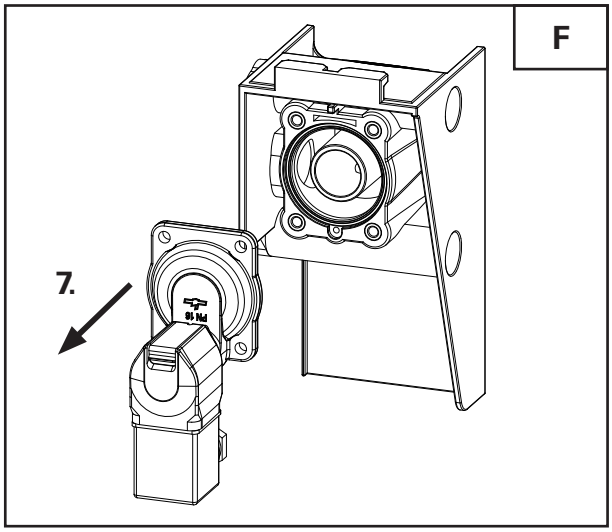
3. Remove the valve carrier and, if possible, place it on a table.
4. Make sure that the O-ring is not lost.



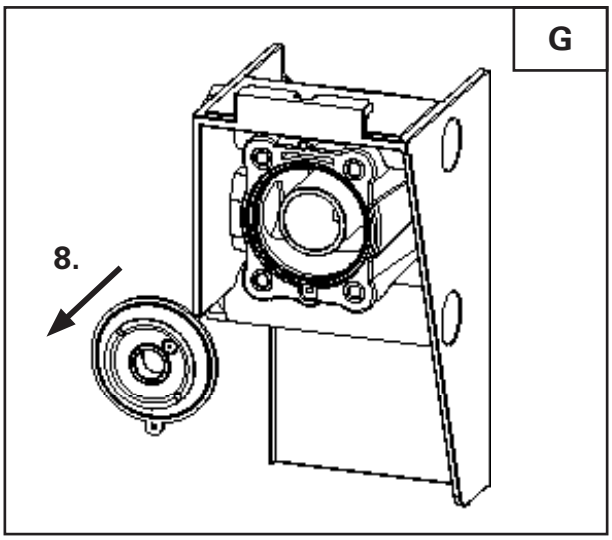
5. If possible, place the valve carrier on a table.



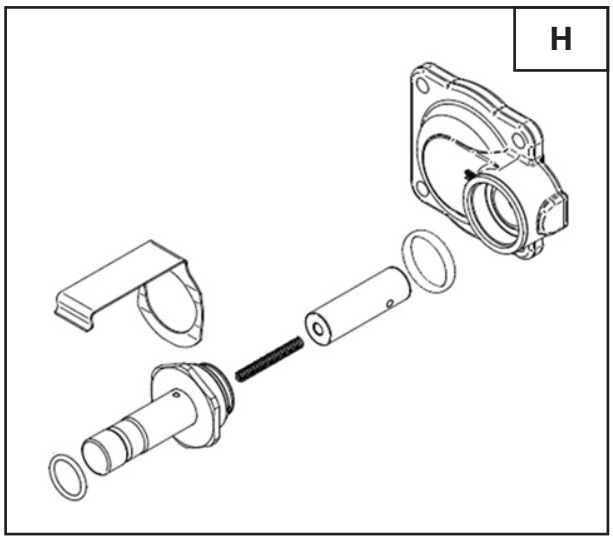
6. Loosen the 4 screws of the membrane cover by turning them anti-clockwise.



7. Remove the valve cover.



8. Remove the old diaphragm and insert the new one.
Repeat steps A to G with the right solenoid valve.



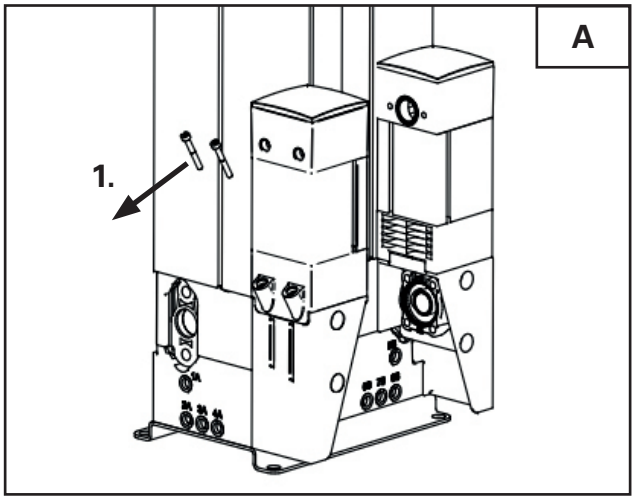
9. Loosen the diaphragm assembly from the diaphragm cover using an open-end wrench. Replace the O-rings, the spring and the armature.

Assembly is carried out in reverse order.

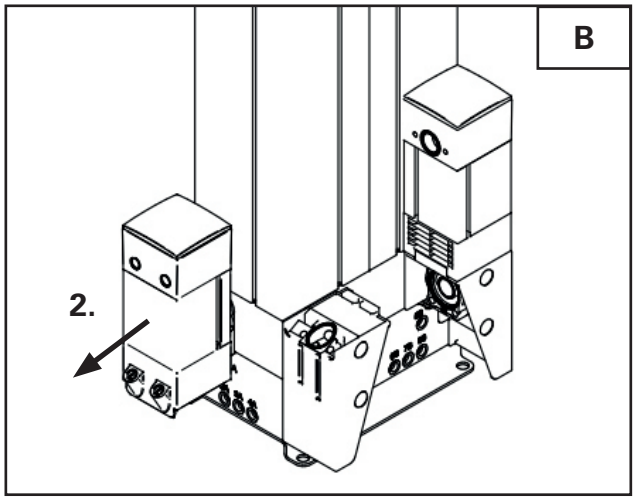
13.3.4. Silencer maintenance

Interval: **365 days**

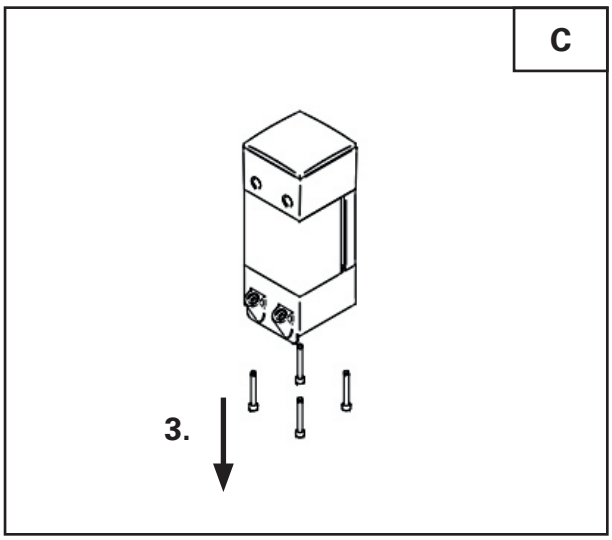
Follow the instructions in chapter 13.3



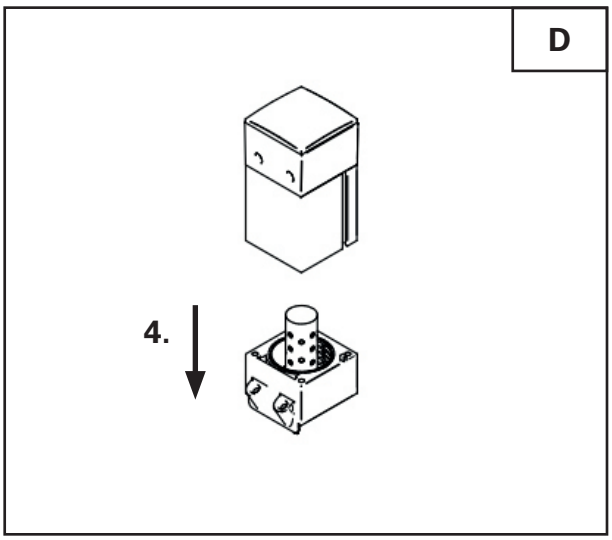
1. Loosen the two screws of the silencer housing by turning them anticlockwi se.



2. Pull the silencer housing forward.

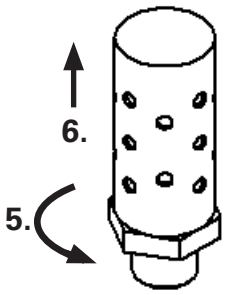


3. Loosen the four lower screws of the silencer housing by turning them counterclockwise.



4. Remove the silencer base together with the silencer(s).

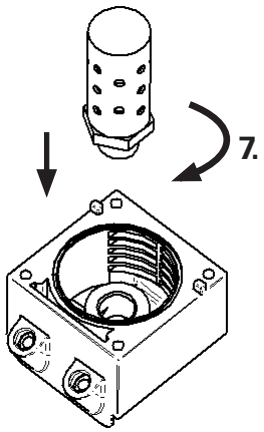
E



5. Loosen the silencer by turning it counterclockwise.

6. Remove the silencer.

F



7. Screw in the new silencer by turning it clockwise.

Repeat steps A to F with the left-hand silencer.

Assembly is carried out in reverse order.

14 Dismantling

The DRYPOINT® ACC adsorption dryer must be dismantled with the utmost care and in compliance with all relevant safety regulations. Improper disassembly can lead to serious injury and damage to property.

DANGER! Sudden escape of compressed air due to residual pressure in the system!

Uncontrolled escape of compressed air can lead to hearing damage or serious injury!

- The system must be completely depressurized before starting disassembly!

DANGER OF ELECTRIC SHOCK!

Contact with live components may result in serious injury, malfunctions, operating faults or product damage!

- Before starting disassembly, the appliance must be properly disconnected from the power supply and secured against being switched on again.

CAUTION! Lift heavy loads!

Incorrect lifting can result in personal injury.

- Depending on its size, lift the adsorption dryer ergonomically correctly and close to your body. If necessary, use a crane or a suitable lifting device.

14.1. Dismantling steps

1. **Wear suitable personal protective equipment (PPE):**
- Hearing protection (due to the high noise level during pressure relief)
- Safety goggles (to protect against escaping particles)
- Protective gloves (to protect against sharp edges, hot surfaces and oil residue)

2. **Disconnect the power supply:**
- Disconnect the device completely from the power supply
- Secure against being switched on again (e.g. by disconnecting the plug and attaching a warning sign)

3. **Depressurize the system:**
- Close the ball valve at the inlet
- Slowly open the drain valve to completely release the residual pressure via the silencer
- Ensure that there is no residual pressure in the system (e.g. by checking the pressure gauge)

4. **Preparation of the load suspension (if necessary):**
- Estimate the weight of the components
- For heavier components, plan suitable lifting equipment or assistants

5. **Loosen connections:**
- Now carefully remove all mechanical connections between the DRYPOINT® ACC adsorption dryer and the rest of the system using a suitable tool.
- To do this, loosen the screw connections at the inlet and outlet through which the adsorption dryer is connected to the pipes of the overall system. Ensure that you proceed in a controlled manner to avoid damaging the connection points.

15 Waste disposal

The product and accessories must be disposed of properly at the end of their useful life, e.g. by a specialist company.

Improper disposal

Improper disposal of parts and components can result in environmental damage.

- All parts and components must be disposed of properly and in accordance with the applicable local (national) legal requirements and regulations. This applies in particular to the desiccant cartridges.
- The separate, environmentally friendly disposal of materials promotes the recycling of materials.
- Electrical and electronic components must be disposed of by a specialist disposal company.
- In the event of any uncertainties regarding disposal, consult the regional waste disposal company.

Improper storage

Improper storage of used parts and components can lead to environmental damage.

- Store all parts and components properly and in accordance with the applicable regional legal-requirements and regulations.
- Storage rooms should be free of dust, aggressive chemicals, direct sunlight and strong temperature fluctuations in order to avoid material damage or ageing.
- Desiccant cartridges in particular must be stored in their original packaging or in suitable, moisture-protected containers to prevent premature saturation due to ambient moisture.

The following requirements must be met before disposal:

- The product and accessories are taken out of service and dismantled
- The product and accessories have been cleaned and any media residue has been removed

16 Technical support

If you have any technical questions, please contact the following addresses:

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D-41468 Neuss
Phone +49 2131 988 1000

info@beko-technologies.com
www.beko-technologies.com

Please state the following data in any correspondence or telephone call with us:

- **Dryer type**
- **Serial number***
- **Year of construction***

* The serial number and year of manufacture can be found on the type plate on your system. Photos by e-mail are also possible and helpful.

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