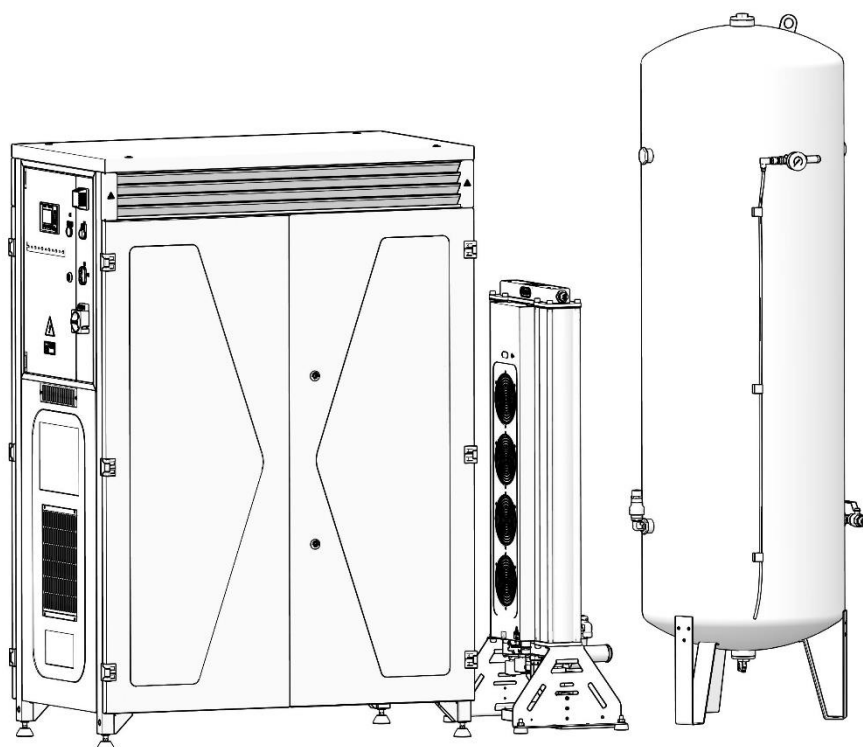




DK50 4X4VRT/M

DK50 6X4VRT/M

EN USER MANUAL



CE

COMPRESSOR

DK50 4x4VRT/M
DK50 6x4VRT/M



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IMPORTANT INFORMATION

1. CONFORMITY WITH THE REQUIREMENTS OF THE EUROPEAN UNION

This product conforms to the requirements of the Regulation (EU) on medical devices (MDR

2017/745) and is safe for the intended use if all safety instructions are followed.

2. INTENDED USE

The compressor is used as a source of clean, oil-free compressed air to power active medical devices where the parameters and properties of the compressed air are suitable for the specific application.

Any other use of the product beyond its intended use is considered an incorrect use. The manufacturer is not liable for any damages or injuries resulting from the incorrect use.



Compressed air supplied by the compressor is unsuitable for use with artificial lung ventilation devices

3. CONTRAINDICATIONS AND SIDE-EFFECTS

There are no contraindications or side-effects known.

4. SYMBOLS

The following symbols and marks are used in the User manual, on the device and its packaging:



General warning



Warning - risk of electric shock



Warning - compressor is controlled automatically



Warning - hot surface



General caution



Refer to instruction manual



CE – marking




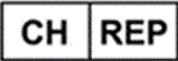














Medical device



Serial number



Article number

| | |
|---|---|
|  | Unique Device Identifier |
|  | Swiss Authorised Representative |
|  | Swiss Importer |
|  | Protecting earthing |
|  | Terminal for ground connection |
|  | Fuse |
|  | Compressed air inlet |
|  | Compressed air outlet |
|  | Control wire input |
|  | Package handling label – fragile |
|  | Package handling label – this side up |
|  | Package handling label – keep dry |
|  | Package handling label – temperature limits |
|  | Package handling label – limited stacking |
|  | Package label – recyclable material |
|  | Manufacturer |

5. NOTICE

The product is designed and manufactured to be safe for the user and its surrounding environment when used in the defined manner. Keep the following warnings in mind. This keeps risks to a minimum.

5.1. General warnings

CAREFULLY READ THE INSTRUCTIONS FOR USE BEFORE USING THE PRODUCT

AND STORE THEM CAREFULLY FOR FUTURE USE!

- The user manual aids in correct installation, operation and maintenance of the product. It is included with the product and must be kept close to it at all times. Careful review of this manual will provide the information necessary for the proper

operation of the product as intended.

- The product containing an adsorption-type dryer has a separate user manual.
- Only the original packaging ensures optimal protection of the equipment during transport. Save this packaging should you ever have to return the equipment. The manufacturer is not liable for damages caused by faulty packaging when returning a product for transport during the warranty period.
- Use a fork lift truck or similar hoisting equipment for any movement or handling of the product.
- This warranty does not cover damages originating from the use of optional equipment or consumables other than those specified or suggested by the manufacturer.
- The manufacturer only guarantees the safety, reliability and function of the equipment if:
 - Installation, new settings, changes, modifications and repairs are performed by the manufacturer or its representative, or a service provider authorized by the manufacturer.
 - The product is used pursuant to the user manual.
- The user manual corresponds to the configuration of the product and its compliance with applicable safety and technical standards at the time of its printing. The manufacturer reserves all rights for the protection of its configuration, methods and names.
- Translation of the user manual is performed in accordance with the best available knowledge. The Slovak version is to be used in the event of any uncertainties.

5.2. General safety warnings

The manufacturer designed and manufactured the product to minimise all risks when used correctly for the intended purpose. The manufacturer considers it responsible for specifying the following general safety

precautions.

- Use and operation of the product must comply with all local codes and regulations. The operator and user are responsible for following all appropriate regulations in the interests of performing work safely.
- Only the use of original parts guarantees the safety of operating personnel and reliable operation of the product itself. Only use optional equipment and parts mentioned in the technical documentation or expressly approved by the manufacturer.
- The manufacturer assumes no liability for any damages or other risks if any optional equipment or parts other than mentioned in the technical documentation or expressly approved by the manufacturer are used. This warranty does not cover damages originating from the use of optional equipment or consumables other than those specified or suggested by the manufacturer.
- The user must make sure that the equipment is functioning correctly and safely every time it is used.
- The user / operator must be capable of safely using and properly operating the product. The user must be trained to operate the product and must be experienced.
- Create operating regulations for the person operating the product.
- Wear hearing protection when starting the product, during operation and any time it is in operation.
- Operating the product in operating premises that may contain mixtures of flammable gases such as operating rooms or in areas that may contain explosive mixtures of particulate, such as coal dust, is prohibited.
- Flammable materials pose an explosion hazard!
- Use of the product in wet or damp environments is prohibited.
- The user shall inform the supplier

immediately if any problem occurs in direct connection with the operation of the equipment.

- Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and / or patient is established.

5.3. Electrical system safety warnings

- The equipment may only be connected to a properly installed socket connected to earth (grounded).
- Before the product is plugged in, make sure that the mains voltage and frequency stated on the product are the same as the power mains.
- Check for possible damage to the

product and the connected air distribution system before use. Replace damaged pneumatic and electrical conductors immediately.

- Immediately disconnect the product from the mains in hazardous situations or when a technical malfunction occurs.
- During repairs and maintenance, ensure that:
 - product is disconnected from the mains
 - pressure is released from all lines
- Only the manufacturer, or a qualified specialist trained by the manufacturer may install, modify or upgrade the product itself.
- Only a qualified electrician may install electrical components!

6. STORAGE AND TRANSPORT CONDITIONS

The compressor is shipped from the manufacturer in transport packaging. This protects the product from damage during transport.



Potential for damage to pneumatic components.

The compressor must be transported only when all air has been vented. Before moving or transporting the compressor, release all the air pressure from the tank and pressure hoses, from dryer chambers and drain condensate from the tank and from the condensate separator on the dryer.



Keep the original factory packaging in case the device needs to be returned Use the original factory packaging during transport as it provides optimum protection for the product.. If it is necessary to return the product during the warranty period, the manufacturer is not liable for damages caused by improper packaging.



The compressor is shipped in a vertical position and must be secured using transport straps.



Protect the compressor from humid and dirty environments and extreme temperatures during transport and storage. Do not store near any volatile chemical substances.



If not, please dispose of the original packaging material in an environmentally-friendly way. The packaging cardboard can be recycled with old paper.



Storing or shipping the equipment in any conditions other than those specified below is prohibited.

6.1. Ambient conditions

Products may only be stored and transported in vehicles that are free of any traces of volatile chemicals under the following climactic conditions:

Temperature

-25°C to +55°C, 24 h at up to +70°C

Relative humidity

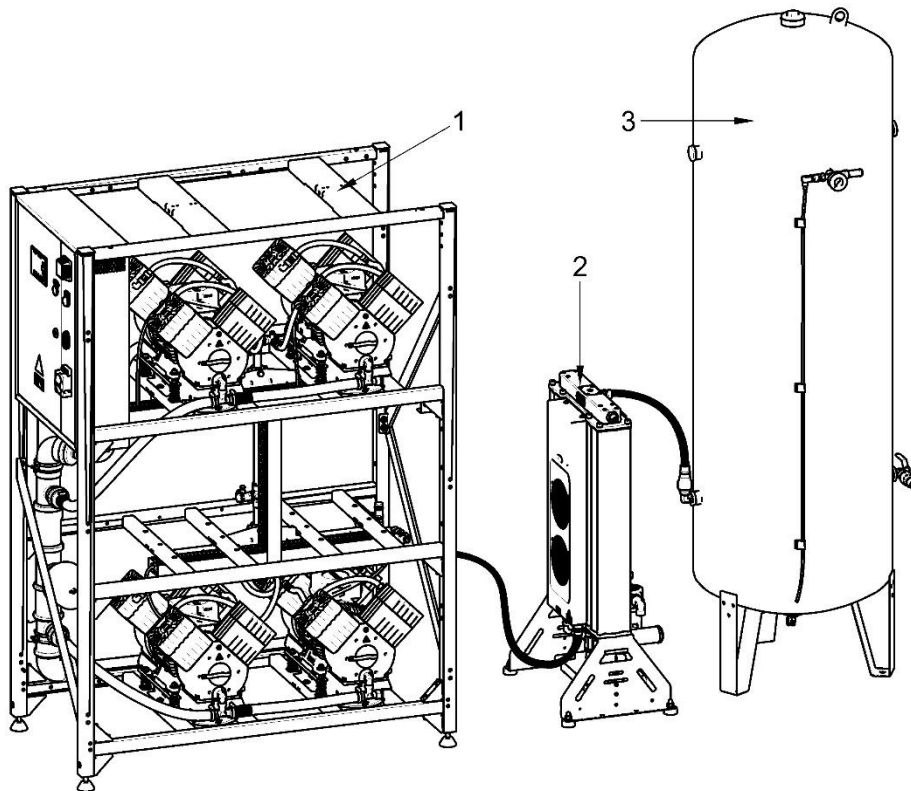
max. 90% (non-condensing)

PRODUCT DESCRIPTION

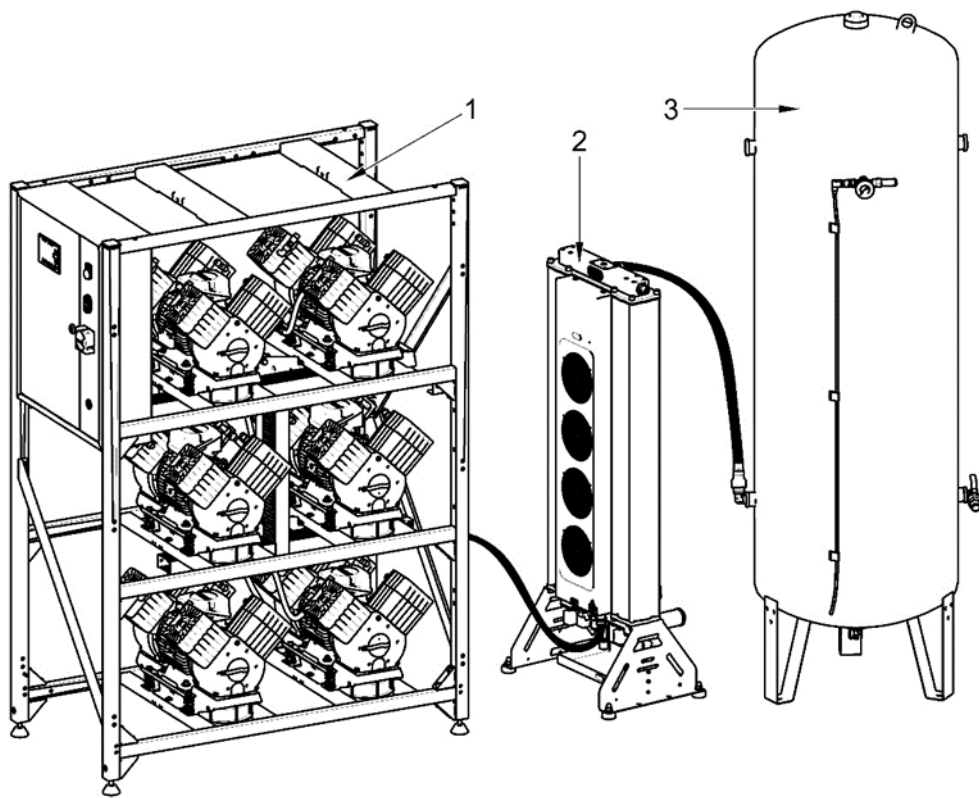
7. VARIANTS

The compressor is manufactured according to its intended application in the following variants:

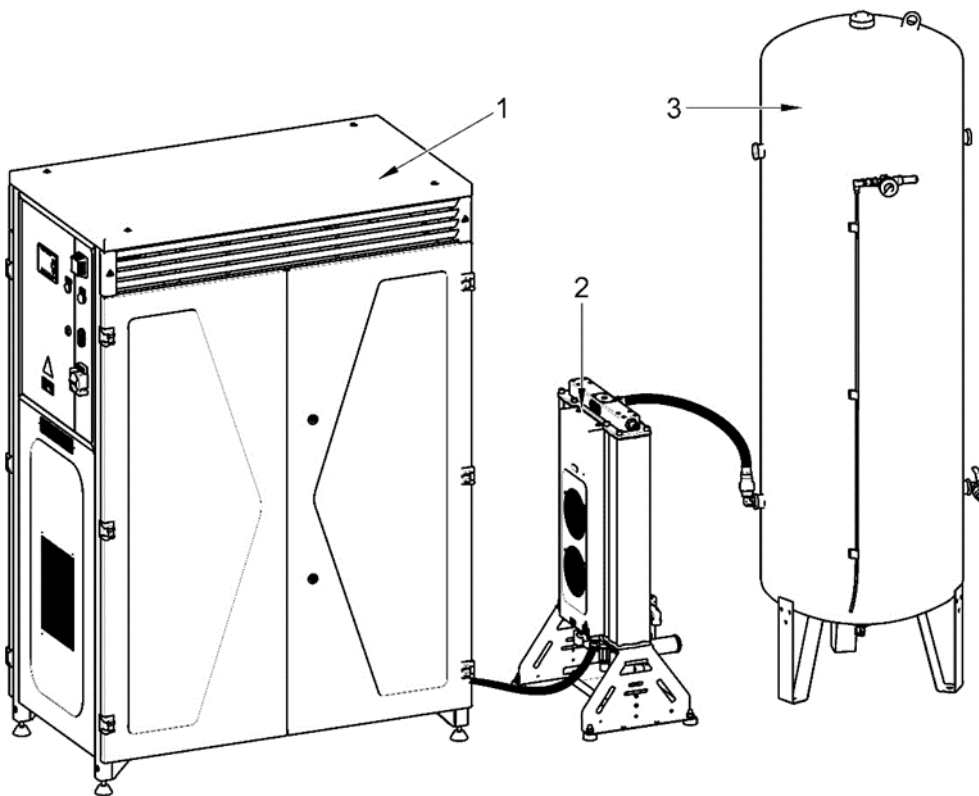
| | |
|-----------------------|---|
| DK50 4x4VRT/M | Composed of modules: |
| DK50 6x4VRT/M | 1 compressor module with 4 or 6 aggregates and controls for the assembled unit |
| | 2 adsorption dryer with connecting hoses |
| | 3 air tank module |
| DK50 4x4VRTS/M | Composed of modules: |
| DK50 6x4VRTS/M | 1 compressor module together with a noise reducing enclosure and comprised of 4 or 6 aggregates and controls for the assembled unit |
| | 2 adsorption dryer with connecting hoses |
| | 3 air tank module |



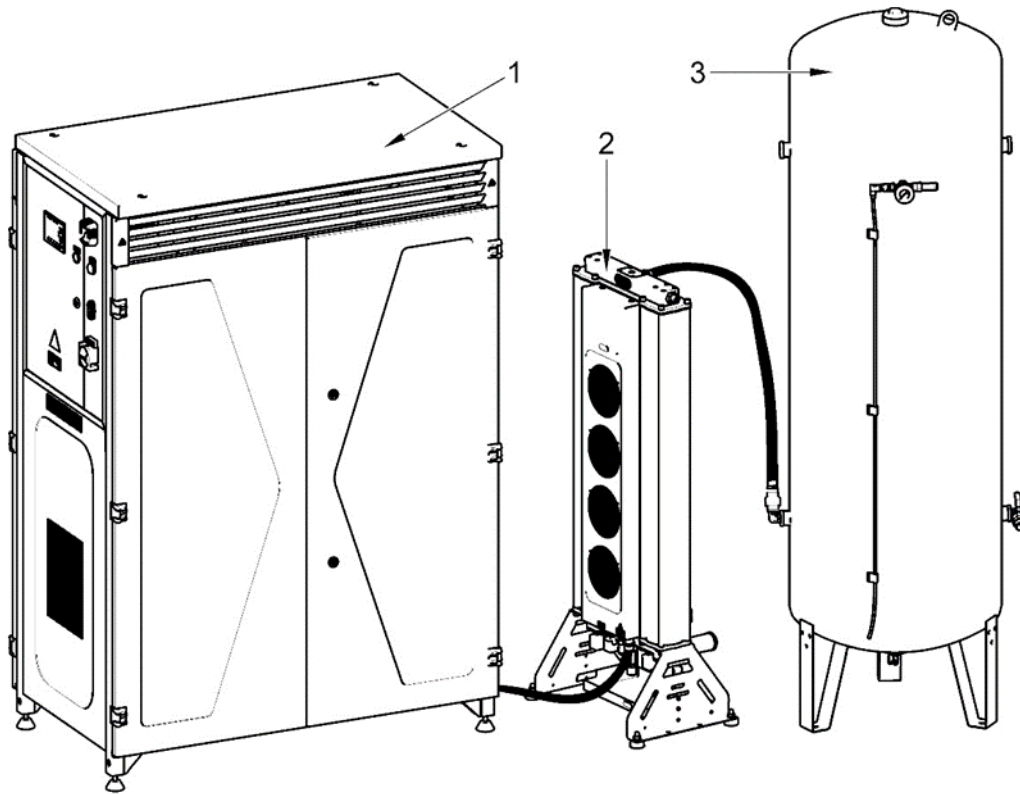
DK 50 4x4VRT/M



DK 50 6x4VRT/M



DK50 4x4VRTS/M



DK50 6x4VRTS/M

8. OPTIONAL EQUIPMENT



Optional equipment that are not included in the standard order must be ordered separately.

The device's CE marking does not cover optional equipment.

The DK50 4x4 VRT/M conversion kit converts the existing compressor into a fully functional DK50 6x4VRT/M compressor with the required parameters in an efficient manner at optimal cost.

DK50 4x4VRT/M performance upgrade kit

If DK50 4x4VRT compressor performance is not keeping up with demand, a simple solution is to contact the manufacturer about the DK50 6x4VRT/M performance upgrade kit.

| Use | Central intake | Existing type of dryer | New type of dryer | Rated voltage / working pressure | Article number |
|----------------|----------------|------------------------|-------------------|----------------------------------|----------------|
| DK50 4x4VRT/M | no | AD 1000E | AD 1500E | 3x400 V / 50 Hz (6-8 bar) | 447000009-171 |
| DK50 4x4VRTS/M | | | | 3x400 V / 50 Hz (8-10 bar) | 447000009-172 |
| DK50 4x4VRT/M | yes | AD 1000E | AD 1500E | 3x400 V / 50 Hz (6-8 bar) | 447000009-173 |
| DK50 4x4VRTS/M | | | | 3x400 V / 50 Hz (8-10 bar) | 447000009-174 |

Central air pump intake kit

This kit provides a properly sized central intake filter located on the compressor module used to supply the intakes of the individual air pumps. This extends the central filter

replacement interval (to every 2000 hours) compared to the interval for changing the filters on individual compressors, and ensures simpler and faster central filter replacement.

| Use | Article number |
|----------------|----------------|
| DK50 4x4VRT/M | 447000001-021 |
| DK50 4x4VRTS/M | 447000001-020 |
| DK50 6x4VRT/M | 447000001-019 |
| DK50 6x4VRTS/M | 447000001-018 |

Set of compressed air outlet filters

The compressor may be equipped with a set of filters if specified. The filter set may be equipped with an air pressure regulator.



Where a different level of air filtration is required, this requirement must be agreed upon with the supplier and specified in the order.

| Type | Use | Level of filtration (µm) | Bypass function * | Article number |
|---------|------------------|--------------------------|-------------------|----------------|
| FS 40F | | 1 | | 604014119-000 |
| FS 40M | DK50 4x4VRT/M | 1+0.1 | no | 604014119-004 |
| FS 40S | | 1+0.01 | | 604014119-024 |
| FS 40AH | | 1+AC+HC (0.01) | | 604014119-005 |

| Type | Use | Level of filtration (µm) | Bypass function * | Article number |
|---------|------------------|--------------------------|-------------------|----------------|
| FS 41F | | 1 | | 604014119-006 |
| FS 41M | DK50 6x4VRT/M | 1+0.1 | no | 604014119-010 |
| FS 41S | | 1+0.01 | | 604014119-025 |
| FS 41AH | | 1+AC+HC (0.01) | | 604014119-011 |

*) These FS do not contain a filter bypass, which will ensure a continuous flow of air when replacing the filter element. Such a set

must be ordered separately.

Filter set regulator assembly

The compressor may be equipped with a pressure regulator of the compressed air outlet if specified. The regulator must be

selected according to the application to the filter set, or separately. The regulator shall ensure constant pressure at the outlet.

| Type | Use | Article number |
|--------------------|---------------|----------------|
| Regulator complete | DK50 4x4VRT/M | 604014125-000 |
| | DK50 6x4VRT/M | |

Filter set brackets



A suitable bracket must be ordered for every filter set.

| Type | Use | Article number |
|----------------------------|---------------|----------------|
| Compressor-mounted bracket | DK50 4x4VRT/M | 603014139-000 |
| Wall-mounted bracket | DK50 6x4VRT/M | 603014120-000 |

Compressor module enclosure (noise reducing)

Enclosing the compressor module reduces the noise generated by the compressor by up to 11 dB(a) compared to the compressor

module without the enclosure while ensuring sufficient cooling for the air pumps themselves for S1 class continuous operation.

| Use | With central intake | Article number |
|---------------|---------------------|----------------|
| DK50 4x4VRT/M | yes | 447000001-022 |
| DK50 6x4VRT/M | | |
| DK50 4x4VRT/M | no | 447000001-023 |
| DK50 6x4VRT/M | | |

9. PRODUCT FUNCTION

9.1. Compressor with adsorption dryer

Fig. 1: Compressor aggregates (12) draw in atmospheric air through the intake filters and compress it through non-return valves into the compressed air system. A connecting hose (13) connects this system to the external adsorption dryer (8). From the inlet to the dryer module, the air is first cooled in the integrated cooler (9) and then through the condensate separator (10), entering the active chamber with adsorbent (11), where the air is

dried. A portion of the air is fed into the second, regeneration chamber, where this air is used to remove moisture from the adsorbent, after which it is released through the silencer (21). The active chamber switches on a cyclical basis. Dry and filtered air then passes through the check valve into the air tank (2). The treated compressed air is ready for additional use in the air tank.

Fig. 1 - Compressor with dryer

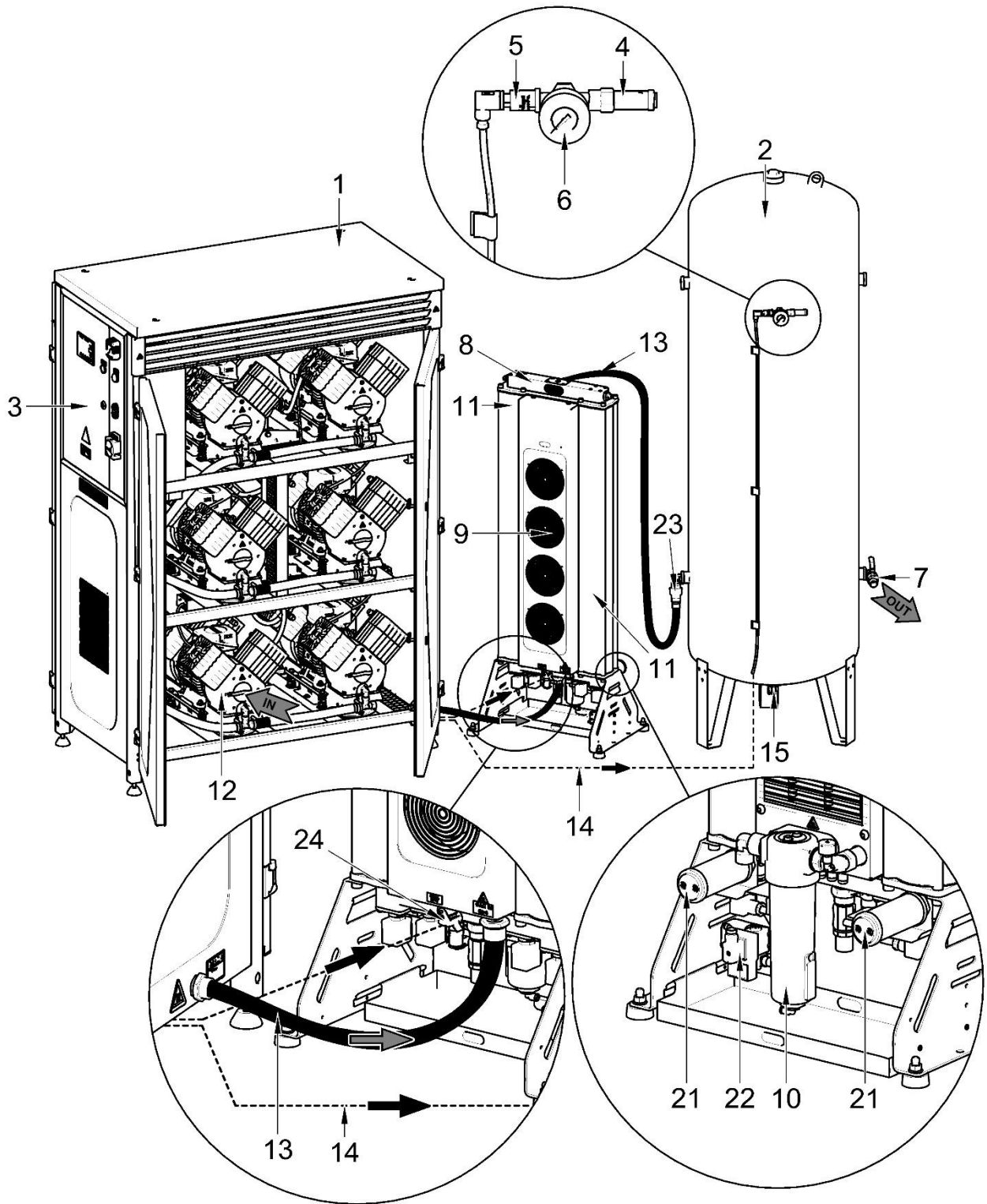
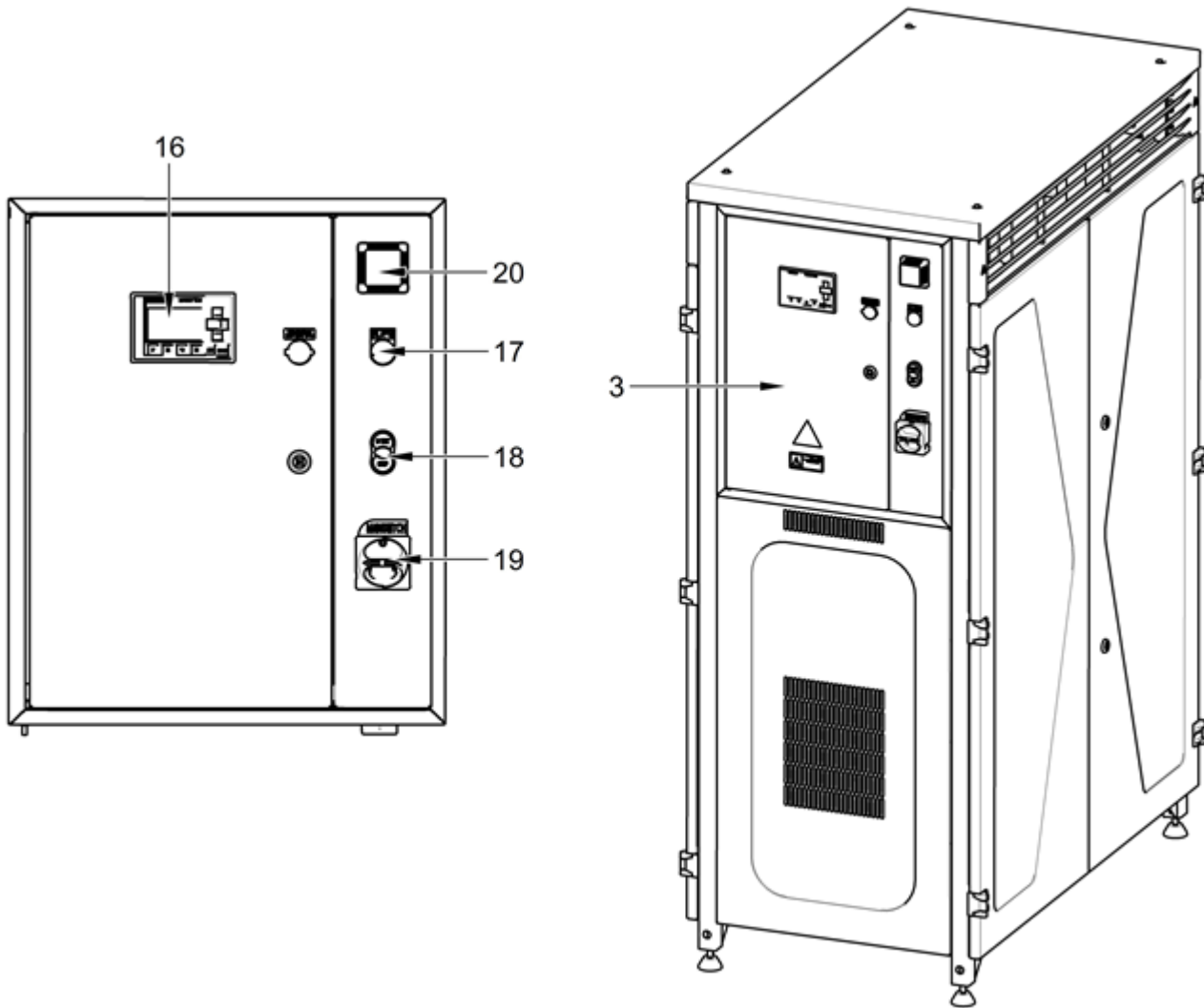


Fig. 2 – Electrical box / switchboard

**Descriptions for figures 1-2:**

- | | |
|---------------------------------|-------------------------------------|
| 1. Compressor module | 13. Connecting hoses |
| 2. Air tank | 14. Electrical cables |
| 3. Electrical box / switchboard | 15. Drain valve |
| 4. Safety valve | 16. Display |
| 5. Pressure sensor | 17. Indicator - alarm |
| 6. Pressure gauge | 18. Start/stop button |
| 7. Outlet valve | 19. Main switch |
| 8. Adsorption dryer | 20. Temperature sensor |
| 9. Integrated cooler | 21. Noise silencer |
| 10. Condensate separator | 22. Condensate drain solenoid valve |
| 11. Dryer chamber | 23. Non-return valve |
| 12. Air pump | 24. Connector |

TECHNICAL DATA

Compressors are designed for operation in dry, ventilated and dust-free indoor rooms under the following climactic conditions:

Temperature

+5°C to +40°C

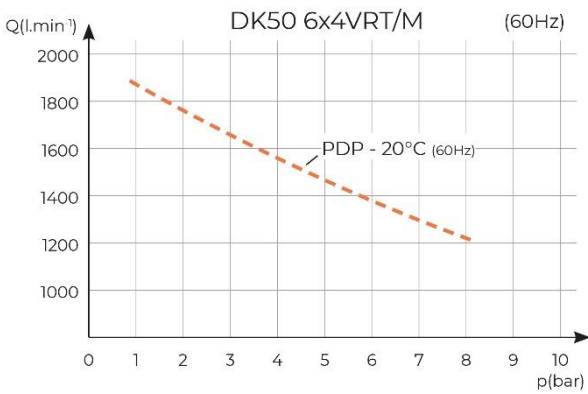
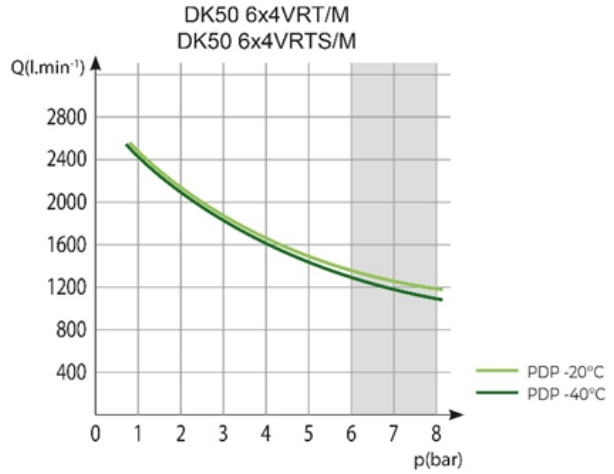
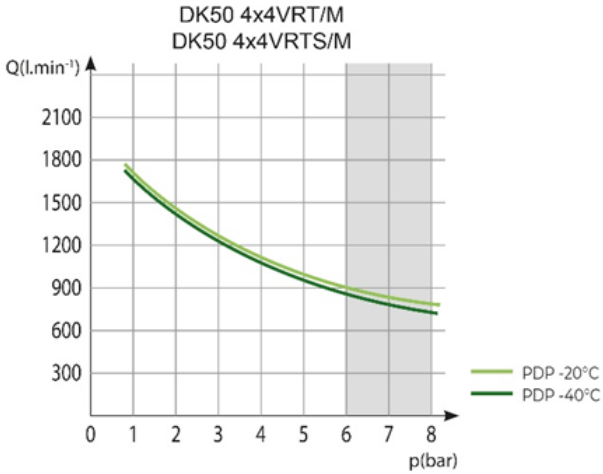
Relative humidity

max. 70%

| Working pressure 6 – 8 bar | | DK50 4x4VRT/M | DK50 4x4VRTS/M | DK50 6x4VRT/M | DK50 6x4VRTS/M |
|---|-------------------|--------------------------|---------------------------|--------------------------|---------------------------|
| Rated voltage | V, Hz | 3x400, 50 | 3x400, 50 | 3x400, 50 | 3x400, 50 |
| Frequency ^{a)} | | | | | 3x400, 60 |
| Output at 6 bar (FAD) at PDP-20°C | l/min. | 910 | 910 | 1370 | 1370 1385 |
| Output at 6 bar (FAD) at PDP-40°C | l/min. | 870 | 870 | 1300 | 1300 |
| Working pressure ^{b)} | bar | 6.0 – 8.0 | 6.0 – 8.0 | 6.0 – 8.0 | 6.0 – 8.0 |
| Rated current | A | 22 | 22 | 29 | 29 |
| Main circuit protection device rating | A | 25 | 25 | 32 | 32 |
| Main electrical feeder | mm ² | 4 | 4 | 6 | 6 |
| Enclosure | | IP10 | IP30 | IP10 | IP30 |
| Motor output | kW | 2.2 | 2.2 | 2.2 | 2.2 |
| Air tank capacity | l | 500 | 500 | 500 | 500 |
| Air quality – filtration | µm | - | - | - | - |
| Maximum operating pressure of safety valve | bar | 10.0 | 10.0 | 10.0 | 10.0 |
| Noise level at 5 bar (L _{pA}) | dB | ≤80 | ≤70 | ≤83 | ≤72 |
| Operating mode | % | S1-100 | S1-100 | S1-100 | S1-00 |
| PDP drying performance at 7 bar ^{d)} | °C | ≤ -20 ≤ -40 | ≤ -20 ≤ -40 | ≤ -20 ≤ -40 | ≤ -20 ≤ -40 |
| Time to fill air tank from 0 to 7 bar | s | 150 | 150 | 115 | 115 |
| Net weight ^{c)} | kg | 439 | 572 | 531 | 664 |
| Weight - compressor module | kg | 268 | 401 | 350 | 483 |
| Weight - dryer module | kg | 44 | 44 | 54 | 54 |
| Weight of air tank | kg | 127 | 127 | 127 | 127 |
| Net dimensions W x L x H | mm | 2875 x 2090 x 705 | 2875 x 2090 x 705 | 2875 x 2090 x 705 | 2875 x 2090 x 705 |
| Dimensions - compressor module (W x L x H) | mm | 1235 x 1720 x 630 | 1235 x 1755 x 705 | 1235 x 1720 x 630 | 1235 x 1760 x 705 |
| Dimensions – dryer module | mm | 530 x 965 x 350 | 530 x 965 x 350 | 530 x 1310 x 350 | 530 x 1310 x 350 |
| Air tank dimensions (W x L x H) | mm | 730 x 2090 x 705 | 730 x 2090 x 705 | 730 x 2090 x 705 | 730 x 2090 x 705 |
| Required cooling air changes in space | m ³ /h | 2250 | 2250 | 3000 | 3000 |
| Electrical class | | Class I. | | | |

- a) Specify the compressor version when ordering
- b) Consult any other range of pressure with the supplier
- c) Weight is indicative and only applies to the product without optional equipment
- d) Applies to ambient temperatures of <30°C PDP – pressure dew point

Dependence of compressor output on working pressure



| Working pressure 8 – 10 bar | | DK50 4x4VRT/M | DK50 4x4VRTS/M | DK50 6x4VRT/M | DK50 6x4VRTS/M |
|--|-------------------|----------------------|----------------------|----------------------|----------------------|
| Rated voltage Frequency ^{a)} | V, Hz | 3x400, 50 | 3x400, 50 | 3x400, 50 | 3x400, 50 |
| Output at 8 bar (FAD) at PDP-20°C | l/min. | 700 | 700 | 1050 | 1050 |
| Output at 8 bar (FAD) at PDP-40°C | l/min. | 660 | 660 | 1000 | 1000 |
| Working pressure ^{b)} | bar | 8.0 – 10.0 | 8.0 – 10.0 | 8.0 – 10.0 | 8.0 – 10.0 |
| Rated current | A | 23 | 23 | 30 | 30 |
| Main circuit protection device rating | A | 25 | 25 | 32 | 32 |
| Main electrical feeder | mm ² | 4 | 4 | 6 | 6 |
| Enclosure | | IP10 | IP30 | IP10 | IP30 |
| Motor output | kW | 2.2 | 2.2 | 2.2 | 2.2 |
| Air tank capacity | l | 500 | 500 | 500 | 500 |
| Air quality – filtration | µm | - | - | - | - |
| Maximum operating pressure of safety valve | bar | 11.0 | 11.0 | 11.0 | 11.0 |
| Noise level at 5 bar (L _{pA}) | dB | ≤80 | ≤70 | ≤83 | ≤82 |
| Operating mode | % | S1-100 | S1-100 | S1-100 | S1-00 |
| PDP drying performance at 7 bar ^{d)} | °C | ≤ -20 ≤ -40 | ≤ -20 ≤ -40 | ≤ -20 ≤ -40 | ≤ -20 ≤ -40 |
| Time to fill air tank from 0 to 7 bar | s | 165 | 165 | 130 | 130 |
| Net weight ^{c)} | kg | 439 | 572 | 531 | 664 |
| Weight - compressor module | kg | 268 | 401 | 350 | 483 |
| Weight - dryer module | kg | 44 | 44 | 54 | 54 |
| Weight of air tank | kg | 127 | 127 | 127 | 127 |
| Net dimensions W x L x H | mm | 2875 x 2090 x 705 | 2875 x 2090 x 705 | 2875 x 2090 x 705 | 2875 x 2090 x 705 |
| Dimensions - compressor module (W x L x H) | mm | 1235 x 1720 x 630 | 1235 x 1755 x 705 | 1235 x 1720 x 630 | 1235 x 1760 x 705 |
| Dimensions – dryer module | mm | 530 x 965 x 350 | 530 x 965 x 350 | 530 x 1310 x 350 | 530 x 1310 x 350 |
| Air tank dimensions (W x L x H) | mm | 730 x 2090 x 705 | 730 x 2090 x 705 | 730 x 2090 x 705 | 730 x 2090 x 705 |
| Required cooling air changes in space | m ³ /h | 2250 | 2250 | 3000 | 3000 |
| Electrical class | | Class I. | | | |

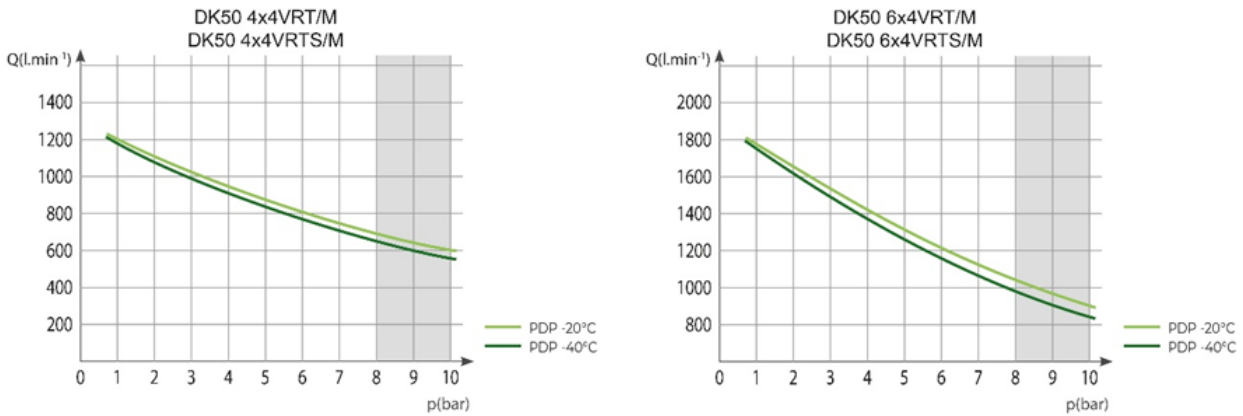
^{a)} Specify the compressor version when ordering

^{b)} Consult any other range of pressure with the supplier

^{c)} Weight is indicative and only applies to the product without optional equipment

^{d)} Applies to ambient temperatures of <30°C PDP – pressure dew point

Dependence of compressor output on working pressure



FAD correction of capacity for altitude

Capacity given in the form of FAD („Free Air Delivery“) applies to the following conditions:

| | | | |
|----------------------|-----------|-------------------|------|
| Altitude | 0 m.n.m. | Temperature | 20°C |
| Atmospheric pressure | 101325 Pa | Relative humidity | 0% |

To calculate FAD compressor capacity in dependence on altitude, it is necessary to apply correction factor according to the following table:

| | | | | |
|------------------------------|---------|-------------|-------------|-------------|
| Altitude [m.n.m.] | 0 -1500 | 1501 - 2500 | 2501 - 3500 | 3501 - 4500 |
| FAD correction factor | 1 | 0.80 | 0.71 | 0.60 |

INSTALLATION



Risk of incorrect installation.
 Only a qualified technician may install the compressor and place it into operation for the first time. Their duty is to train operating personnel on the use and maintenance of the equipment. An entry is made in the equipment installation record to certify installation and operator training. (See warranty card).

10. INSTALLATION CONDITIONS

- The compressor may only be installed and operating in dry, well-ventilated and clean environments under the conditions specified in the Technical Data chapter.



Risk of damage to the device.
 The equipment may not be operated outdoors or in otherwise wet or damp environments.



Risk of explosion.
 Do not use the equipment in the presence of explosive gases, dust or combustible liquids.

- The compressor must be installed so that it is accessible at all times for operating and maintenance. Please ensure that the nameplate on the device is readily accessible.
- The compressor must stand on a flat, sufficiently stable base (be aware of the weight of the compressor, see the Technical Data chapter).
- The compressor on the operator's side must be at least 70 cm from the wall to allow air flow for cooling purposes and to ensure the safety of the operator and maintenance personnel.
- Approximately 70% of the electrical energy used by the compressor aggregates is converted to heat, and

therefore the rooms in which the compressor is installed must have additional ventilation to provide sufficient air exchange for cooling purposes (see the Technical Data chapter).



Burn or fire hazard! Caution! Hot surface!

Portions of the compressor, dryer and connecting hoses between the dryer and compressor may be hot and reach hazardous temperatures during compressor operation that may harm materials or operating staff.



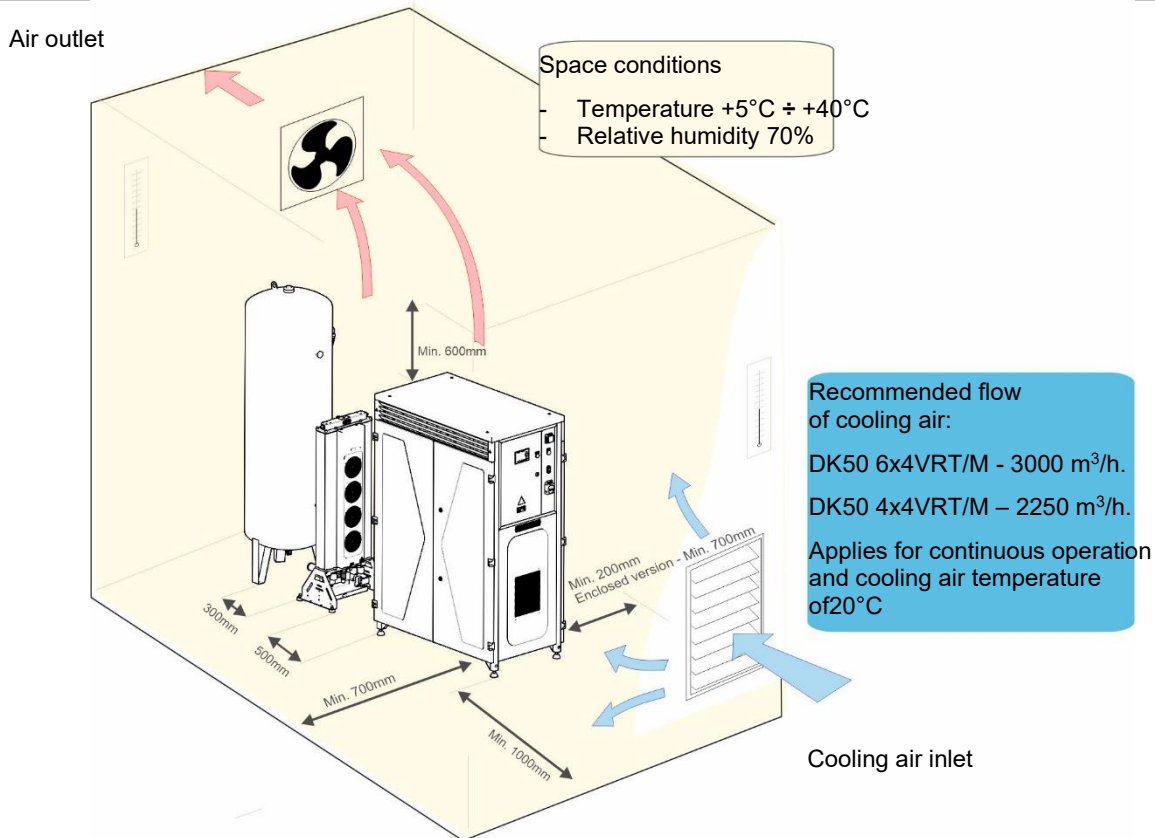
High temperature hazard

Placing air flow impediments upstream or downstream of the cooler is prohibited. The temperature of internal and external parts of the equipment may rise to hazardous levels.



You may notice a “new product” odour when you first place the product into service (for a short period of time). This odour is temporary and does not impede the normal use of the product. Ensure the space is properly ventilated after installation.

Fig. 3: Equipment installation



11. COMPRESSOR ASSEMBLY

11.1. Handling and releasing the compressor

- Unpack the compressor (compressor modules, dryer and air tank) from the packaging and remove the transport anchors from the pallet. All modules

are secured to pallets.

- Use a fork lift or similar hoisting equipment to handle and position the product.

Position the compressor module at the site of installation. (Fig. 4 A)

Fig. 4: Handling the compressor module

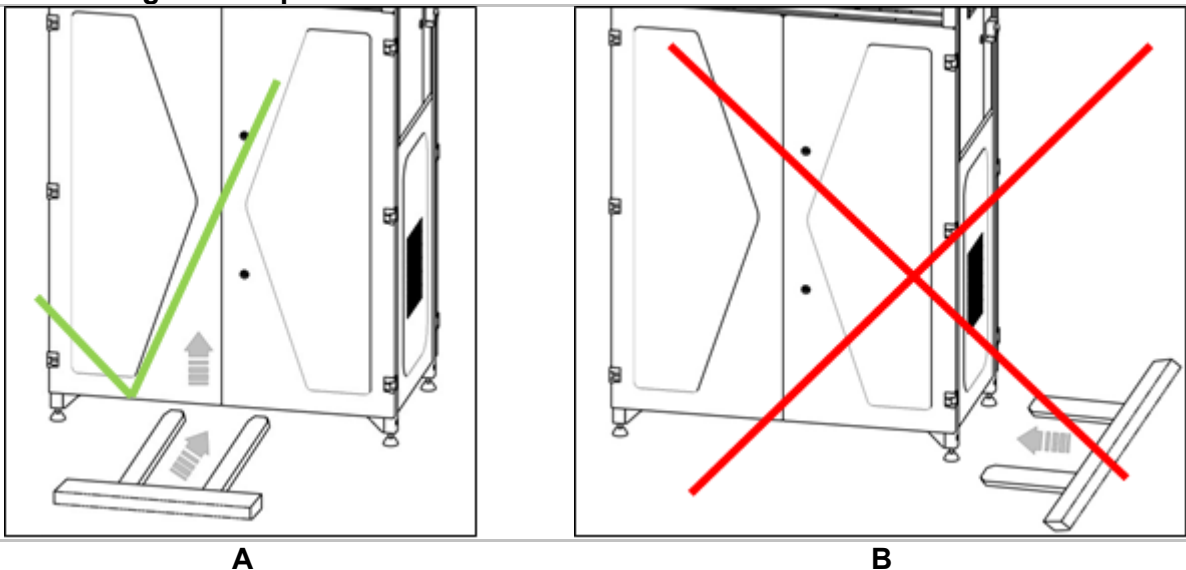
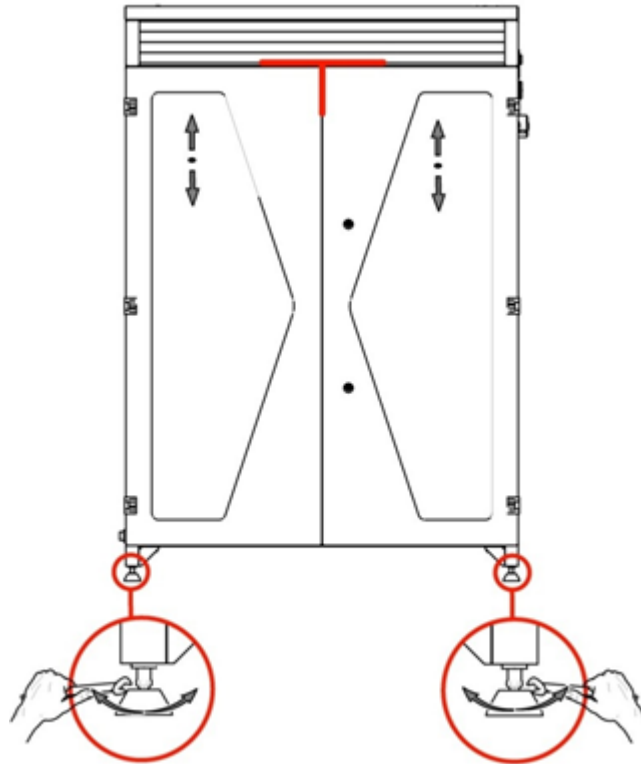
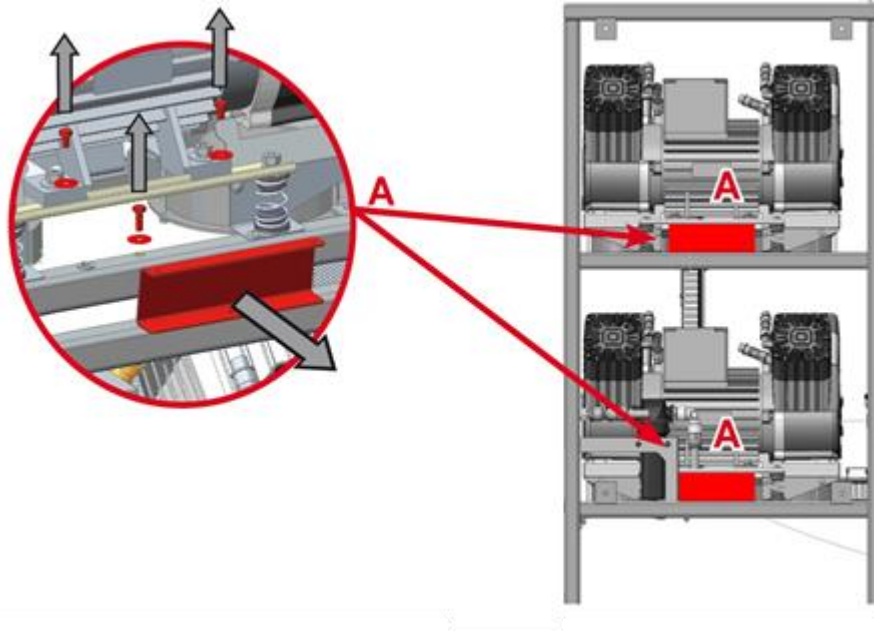


Fig. 5: Levelling the compressor

Prior to installation, ensure that the compressor is free of all transport packaging and stabilizers to avoid any risk of damage to the product.

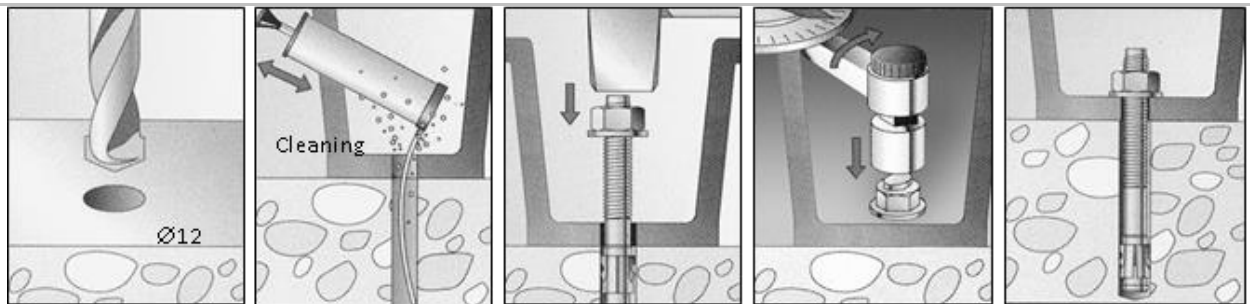
Remove all devices used to secure the aggregates once the compressor is installed and levelled at the site of final installation.

Fig. 6: Releasing the air pumps

- Remove the transport stabilisers from the air pumps (Fig. 6).
- DK50 4x4VRT/M – 8 mounts.
- DK50 6x4VRT/M – 12 mounts

Air tank assembly

Fig. 7: Handling the air tank



- Position the air tank at the site of installation and anchor it to the floor. (Fig. 7)

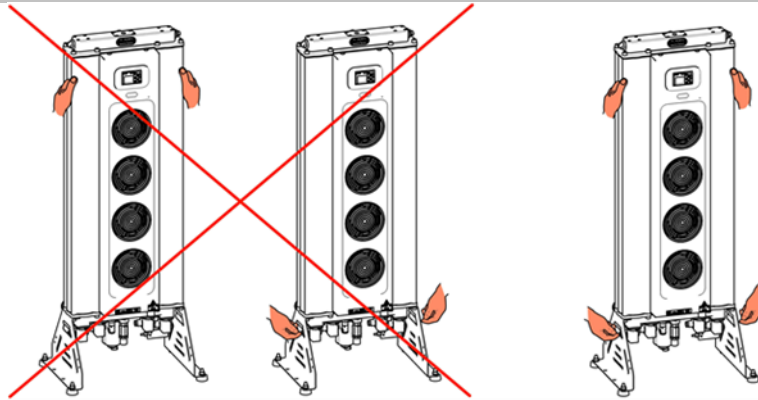
Assembly of the AD dryer

- Remove the dryer from the packaging.
- Install the dryer in its operating position (Fig. 8).



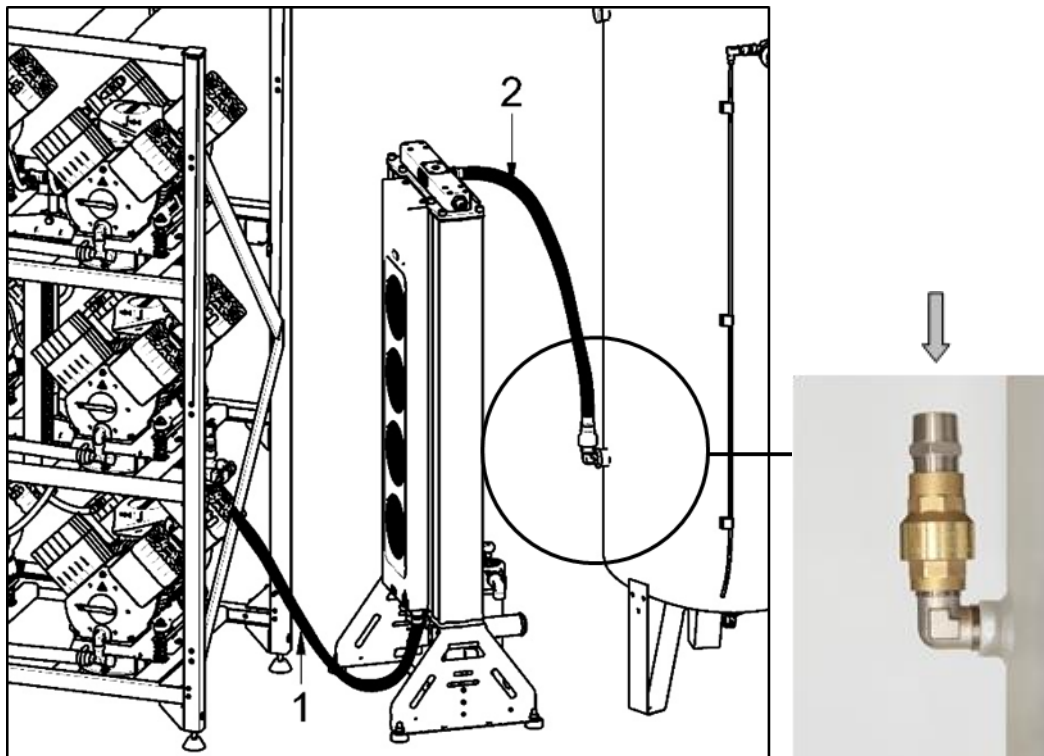
At least two persons are needed to handle the equipment.

Integrated handles are installed on the lower brackets on the product. Each person must grasp the equipment with one hand on a handle and the other behind the dryer chamber when moving the equipment.

Fig. 8: Handling the dryer

12. PNEUMATIC CONNECTION

Connect compressor module, dryer module, and the air tank with the provided hoses. (Fig. 9)

**Fig. 9: Connecting the compressor module, dryer and air tank**

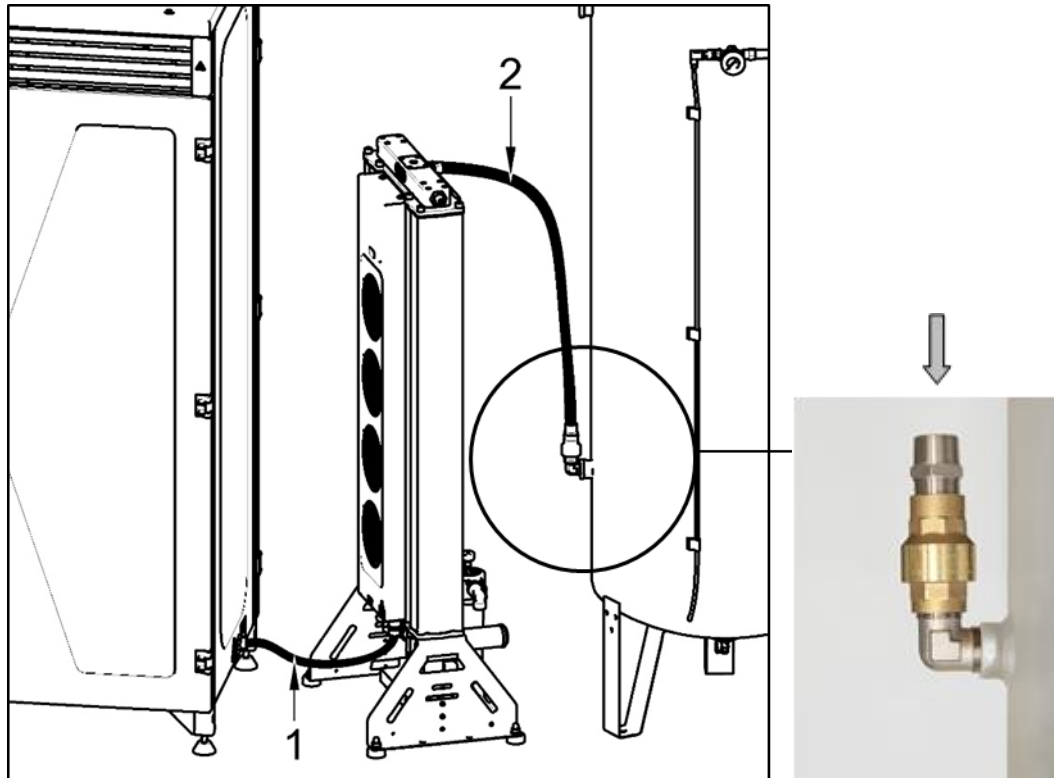


Fig. 10: Connecting the enclosed compressor module, dryer and air tank

| | hose length 1 [mm] | hose length 2 [mm] |
|----------------|--------------------|--------------------|
| DK50 4x4VRT/M | 1000 | 1000 |
| DK50 4x4VRTS/M | 600 | 600 |
| DK50 6x4VRT/M | 1300 | 1000 |
| DK50 6x4VRTS/M | 600 | 1000 |

AD dryer compressed air inlet

- Connect to the compressor outlet (Fig. 10).
- A G 3/4" connection is installed

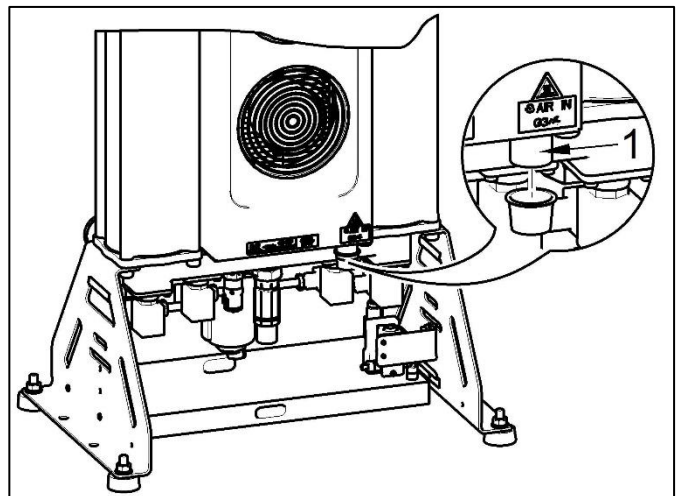


Fig. 11: Compressed air inlet



**Burn or fire hazard! Caution!
Hot surface!**

When installing the connecting hoses at the inlet to the air dryer, ensure that the temperature is not hazardous if it was to come into contact with an operator or other material.

AD dryer compressed air outlet

- Connect the outlet from the dryer (1) to the air inlet on the air tank.
- A G 3/4" connection is installed.

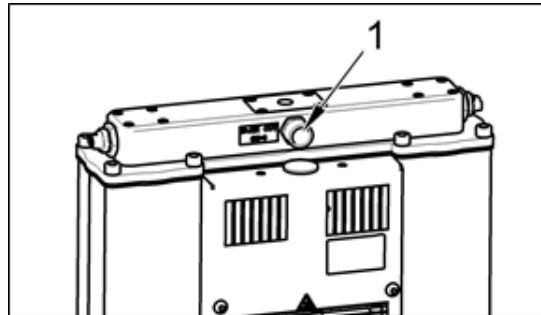


Fig. 12: Compressed air outlet

Condensate outlet from dryer

- Connect a hose to the outlet (1) from the automatic condensate drain (2) to

drain piping or to the provided collection vessel.

A noise silencer is recommended when connecting directly to drain piping.

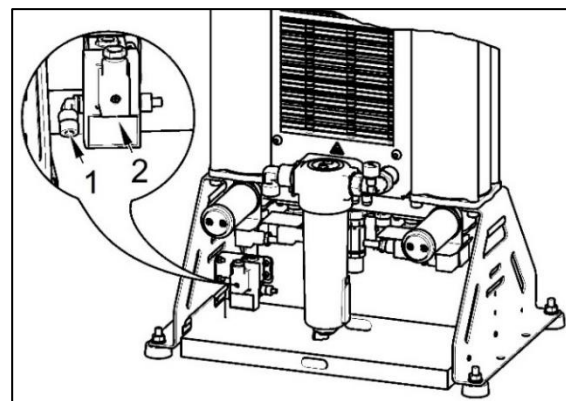
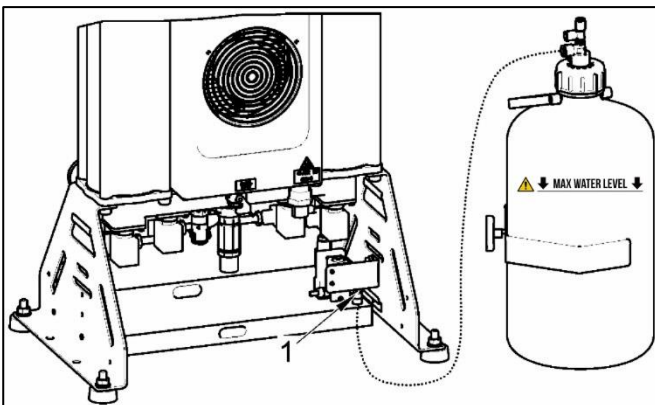


Fig. 13: Condensate drain

A G3/4" ball valve is installed on the compressed air outlet from the air tank.

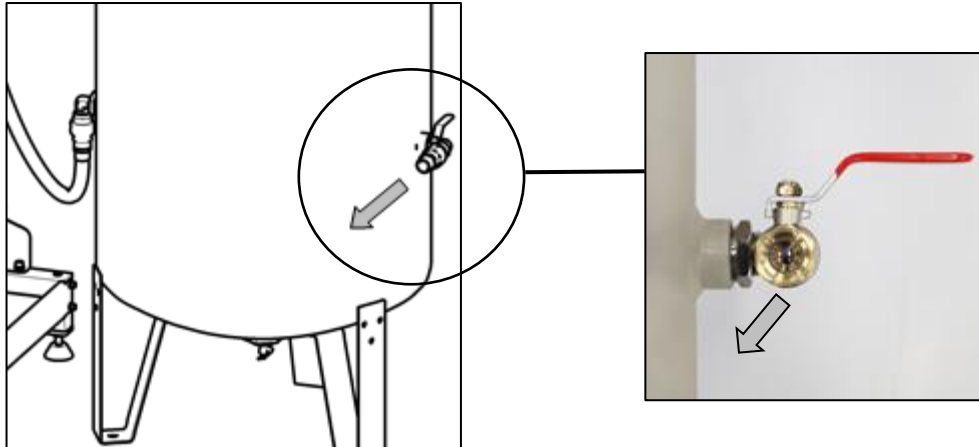


Fig. 14: Air outlet from the air tank



Potential for damage to pneumatic components.

Ensure the air hoses are not kinked.

13. ELECTRICAL CONNECTION



Unauthorised interference hazard

Only a qualified electrician may install electrical components!



Risk of damage to the device.

The operator is obliged to provide circuit protection devices for the equipment per the specifications in valid technical standards.



The product is delivered without a power cord.

- Connect the compressor module to the dryer module using cable W22 (Fig. 15).

- Connect the compressor module to pressure sensor B1 located on the air tank using cable W23, which is terminated with a valve connector. (Fig. 17)

The manufacturer recommends protecting cabling loose on the floor (W22 and W23) with a cable bridge.

- Connect the individual power cord conductors to the power terminals L1, L2, L3, N(BU), PE(GN/YE). (Fig. 19)
- Recommended configuration of phase conductors: L1-BN, L2-BK, L3-GY.
- Cord type (minimum requirements) H05 VV-F_5G6

Route the power cord out of the enclosure as illustrated. (Fig. 18)

Fig. 15: Connecting the compressor to the dryer

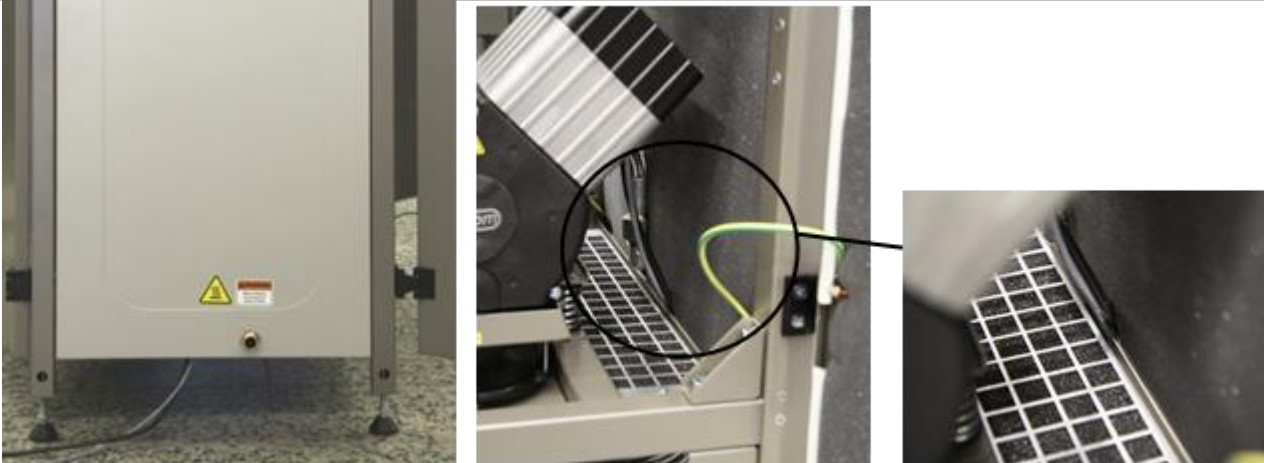
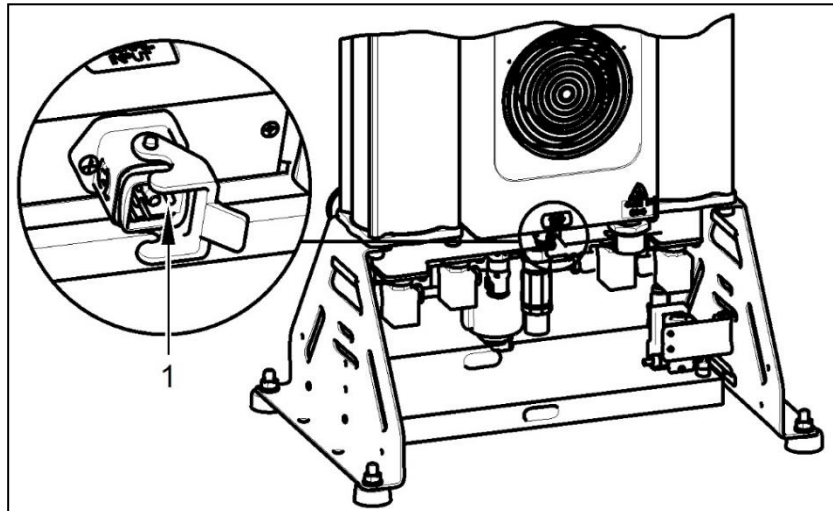


Fig. 16: Connecting the control signal

1. Harting connector

SIGNAL
INPUT



- Proper routing of the electrical cable to the dryer





Fire hazard and risk of electric shock.

Ensure the electrical cable does not touch hot parts of the device or connecting hoses.

Fig. 17: Connecting the compressor to the pressure sensor

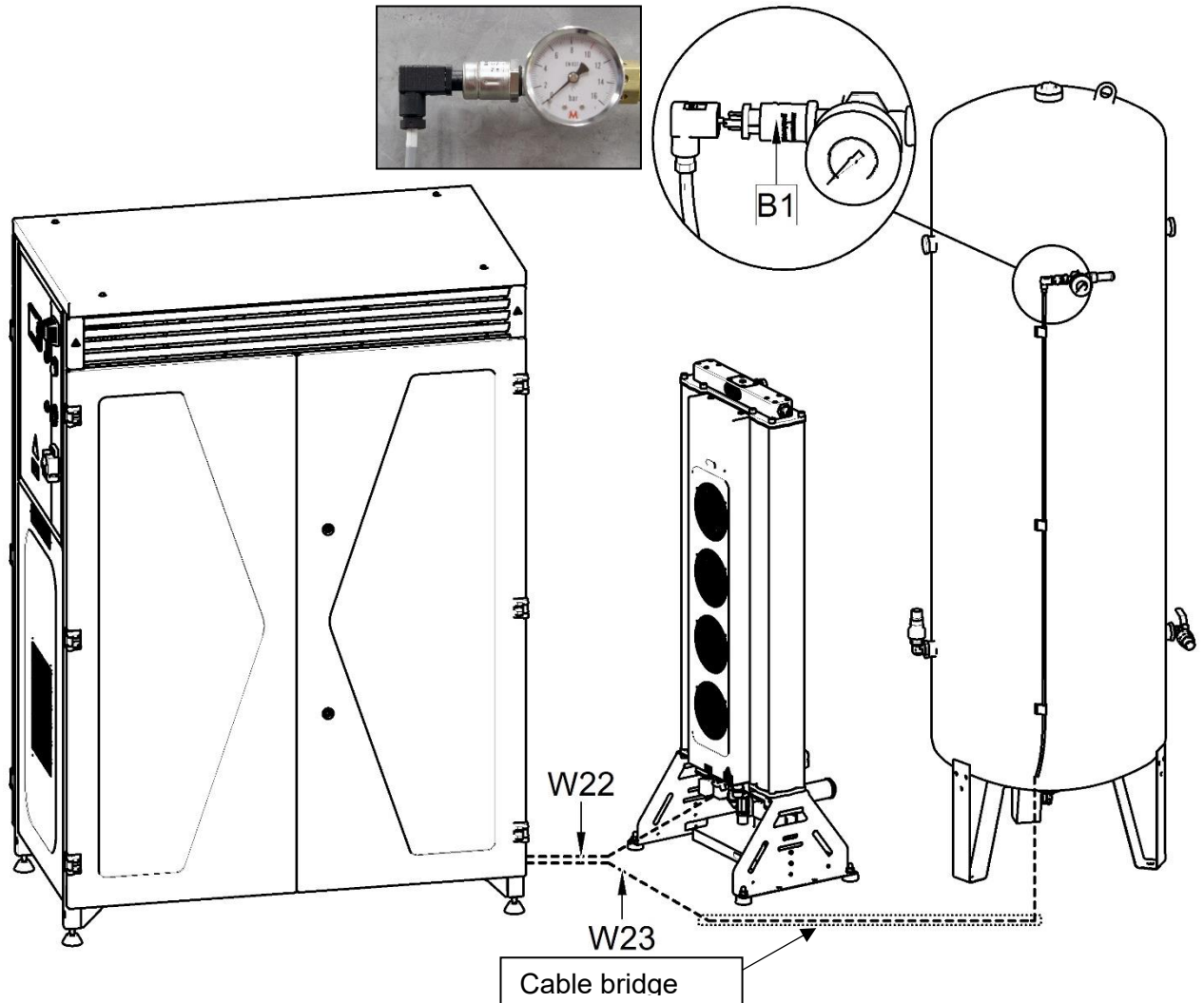


Fig. 18: Electrical cord

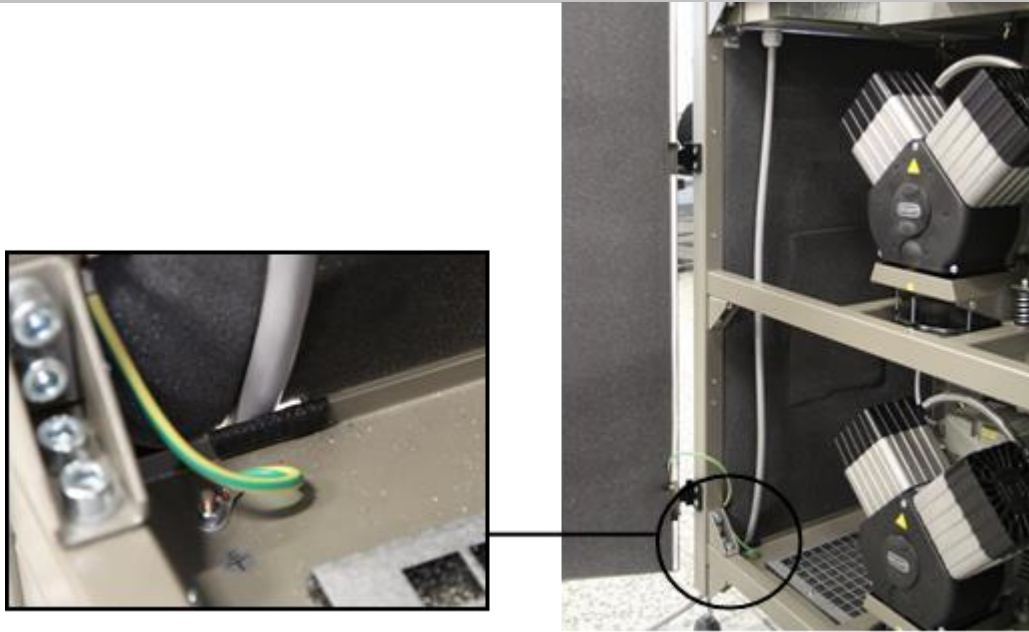
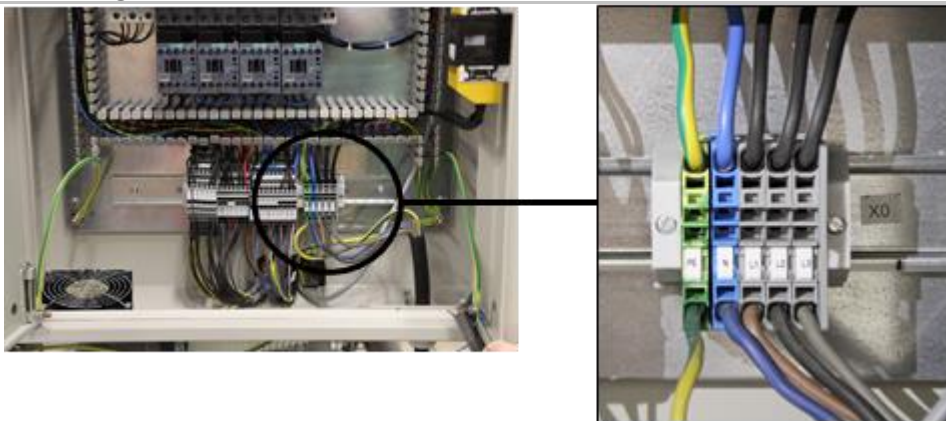


Fig. 19: Connecting the power cord



Description of air pump controls (only for DK50 6x4VRTM)

The air pumps are controlled in trios based on real demand. One trio is always set as the DUTY (e.g. M1-3) and the others as STAND-BY (e.g. M4-6). The set of three Stand-by air pumps operate under the following conditions (see Fig. 20)

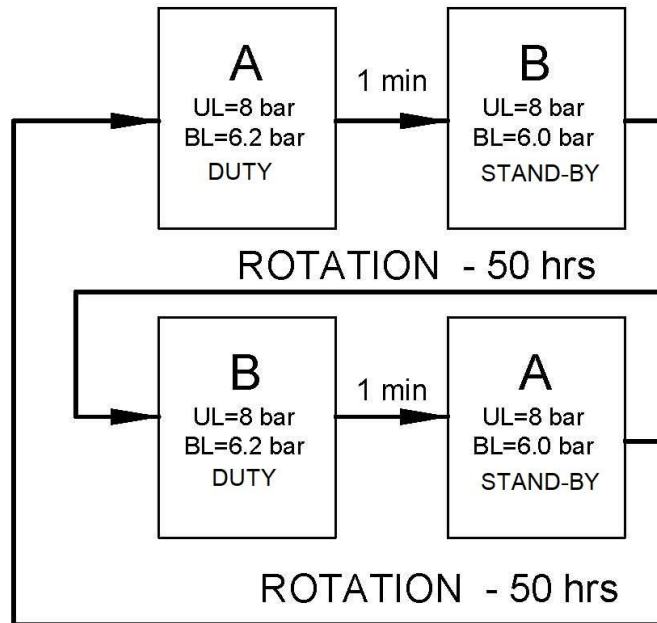
- A waiting period (pressurising to the upper limit) of 1 minute under strong

demand and 2 minutes under weak demand

- Pressure drops below 6.2 bar (STAND-BY)
- Motor failure in the DUTY section

The lower limit settings ROTATE every 50 hours to ensure all the air pumps are evenly loaded.

Fig. 20: Air pump controls only for DK50 6x4VRTM



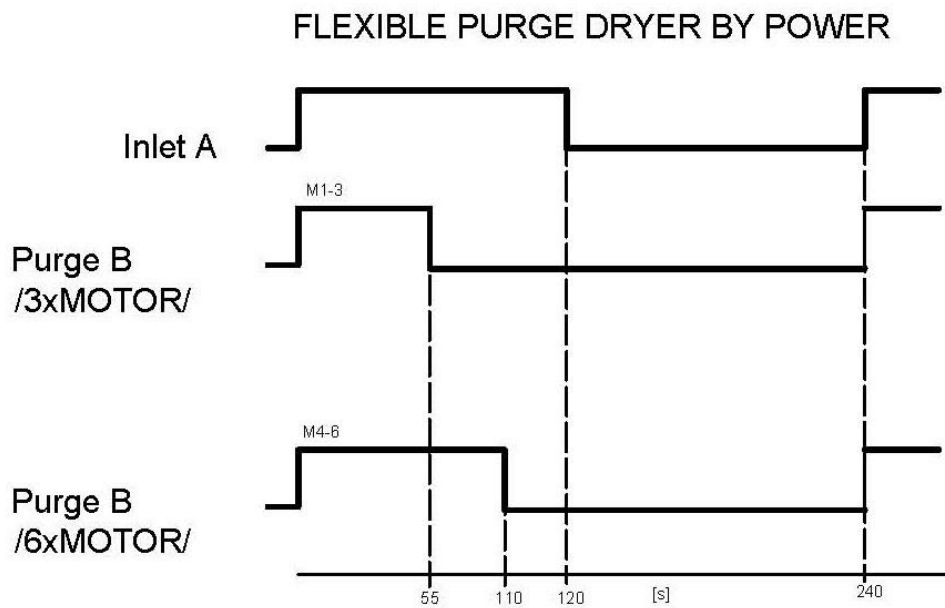
- A – motors M1-M3
- B – motors M4-M6
- UL – upper limit
- BL – bottoms limit → Duty = 6.2, Stand-by = 6.0

Description of adsorption dryer solenoid valve control

The inlet valves (Inlet A and B) switch every 120 seconds.

The regeneration valves open variably based on the real load, e.g. if all motors are running, flushing is set to 110 seconds, while if one trio set is running, flushing is set to 55 seconds.

Fig. 21: Solenoid valve diagram



Ethernet connection

The compressor may be connected to an Ethernet 10/100 M network via the controller as follows:

- 1 Use the RJ-45 connector on the switchboard door to connect a cable to the Ethernet network.
- 2 The user shall then request IT staff to connect the compressor to the customer's Ethernet network. The equipment's default IP addresses are: BM=192.168.0.3, TDE=192.168.0.2, sub-mask =255.255.255.0.
- 3 The user shall request the configuration of IP addresses (specific or requested) from the manufacturer before the compressor

is shipped.

- 4 The user then configures the IP addresses (specific, requested) based on the manual (see the service manual) or uses the compressor manufacturer's technical support for such purposes.

Web server

The controller has an integrated Web Server function that facilitates compressor monitoring via a PC, smartphone or tablet using a conventional web browser (Mozilla, Opera, Safari, Google Chrome, etc.)

The process for logging into the Web Server function once the compressor is connected to an Ethernet network is as follows:

- Open the web browser on a PC, smartphone or tablet and enter the IP address of the controller (in this case 192.168.0.3).



- Enter the password "LOGO" and click on the "LOG on" button.



- After logging in, the browser displays the first screen showing the system information for the controller itself: module generation, type, firmware (FW), IP address and activity status.



- Click on the "LOGO! BM" function in the browser to display the current virtual status of the display screen. Navigate through the screen using the ESC and cursor keys the same as on the real display.



Monitoring memory variables

The “LOGO! Variable” function is the other option for monitoring compressor parameters using selected memory variables. Click the “LOGO! Variable” button on the display to bring up a screen and then use the “Add Variable” button to select specific memory variables for monitoring based on the mapping provided by the compressor manufacturer.

Variables assigned based on addresses and models may be viewed in the MAPPING PARAMETERS table (see the Annex chapter).

Select the variable parameters (per the annex) sequentially in the Range, Address, Type and Display Format columns. Variable values are shown in the Value column. The monitoring table may then appear as follows:

| Del | Range | Address | Type | Display Format | Value | ModValue | Modify |
|-----|-------|---------|-------|----------------|--------|----------|--------|
| X | VM | 0 | DWORD | SIGNED | 0 | | ✓ |
| X | VM | 4 | WORD | SIGNED | -250 | | ✓ |
| X | VM | 6 | WORD | SIGNED | -500 | | ✓ |
| X | VM | 8 | WORD | SIGNED | -500 | | ✓ |
| X | VM | 10 | DWORD | SIGNED | 120000 | | ✓ |
| X | VM | 14 | DWORD | SIGNED | 0 | | ✓ |
| X | VM | 26 | WORD | SIGNED | -50 | | ✓ |
| X | VM | 28 | WORD | SIGNED | 0 | | ✓ |

Buttons: Add Variable, Modify All Values

Note:

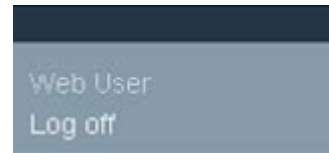
- Time values are displayed in minutes. For instance, address 10 displays 120000 in minutes, which is 2,000

hours.

- Analogue values (pressure and temperature) are displayed without decimal places.

Logging out from the Web server:

- Click on the button in the upper left corner.



14. COMMISSIONING

- Make sure all transport stabilizers were removed.
- Check that all compressed air hose connections are correct.
- Ensure the power cord is properly connected to the mains and other cables are connected (compressor-

dryer and compressor-air tank).

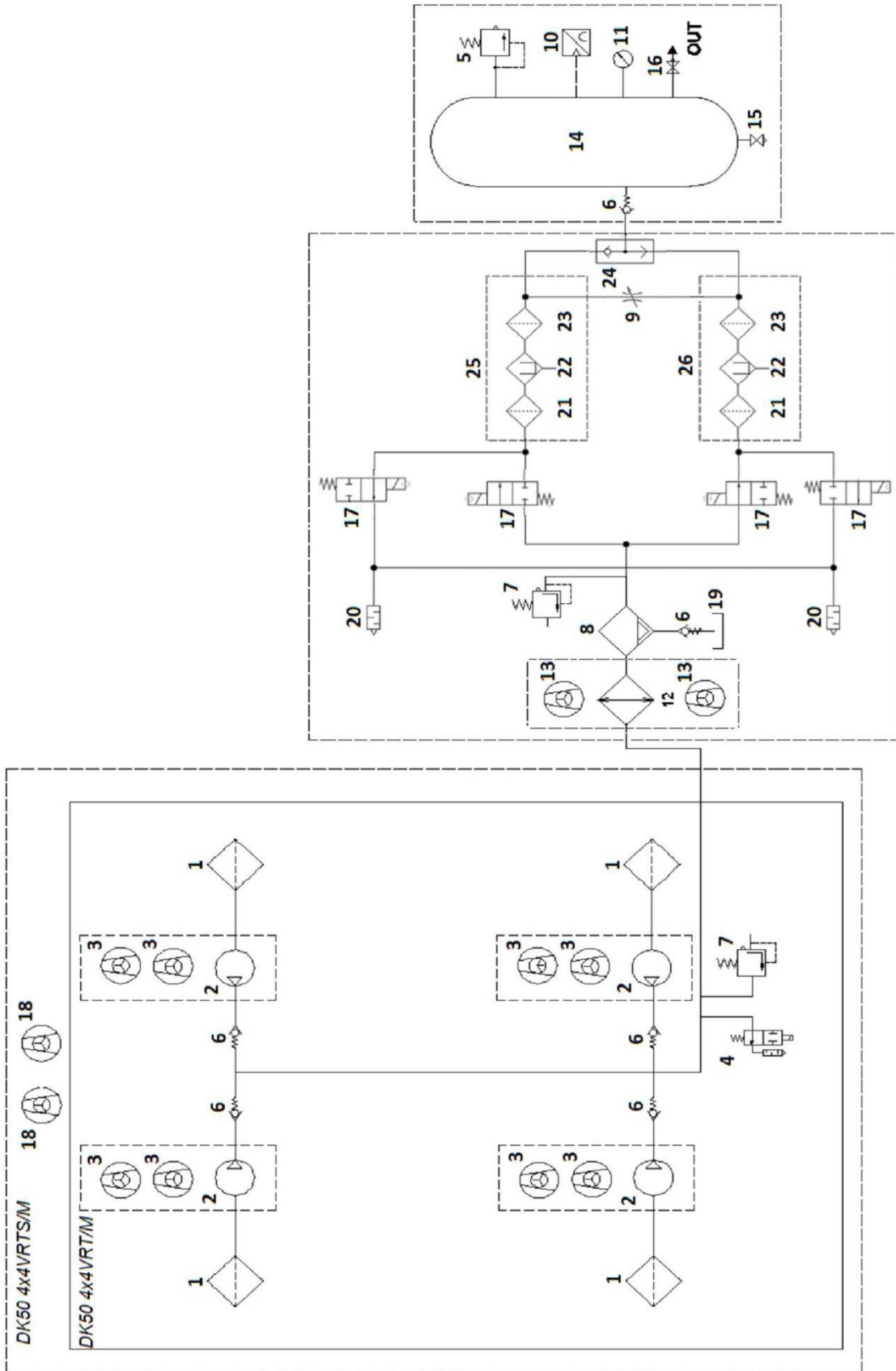
- Check to ensure the outlet valve is in the OFF position.



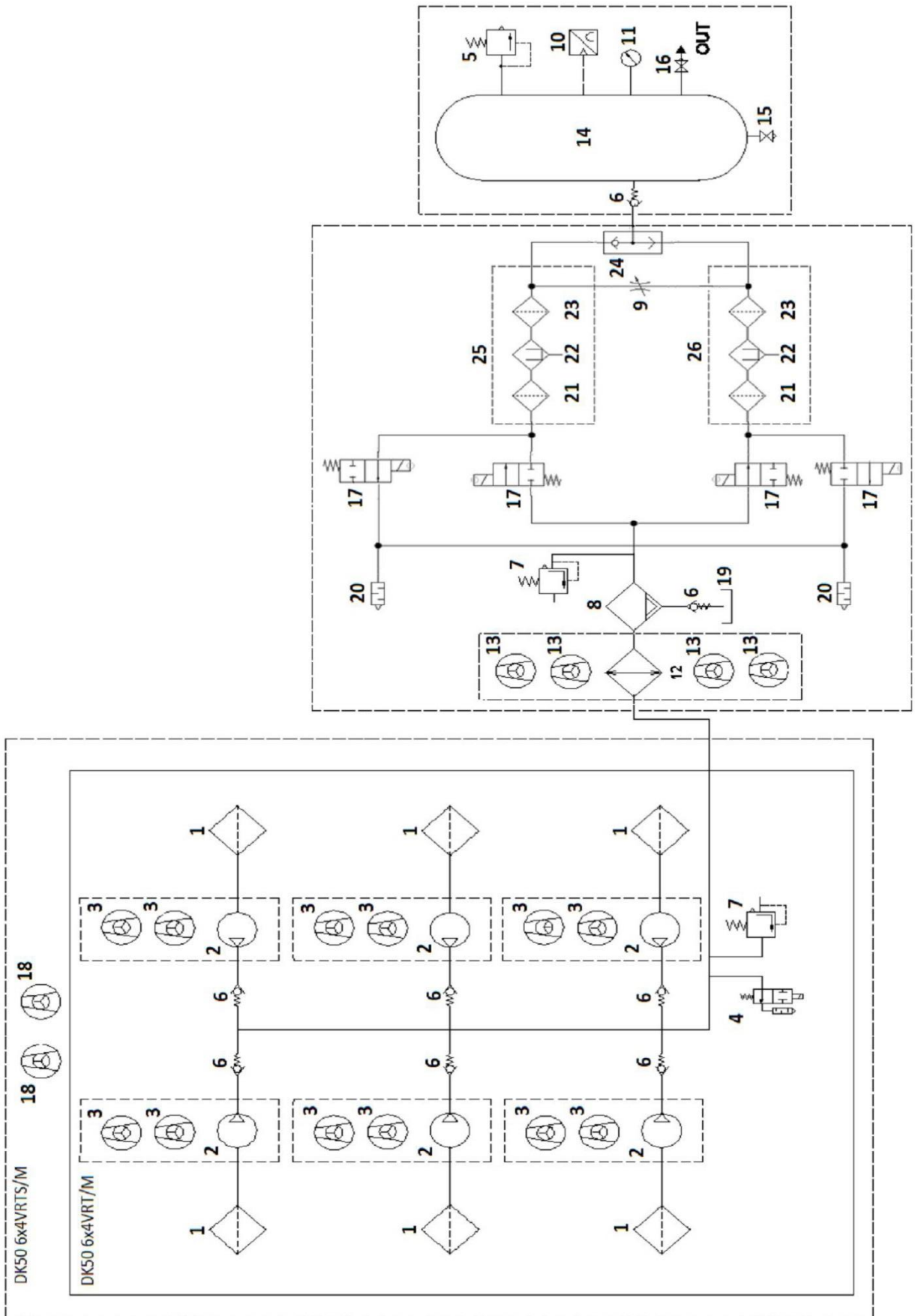
The compressor is not equipped with a backup power supply.

15. PNEUMATIC DIAGRAMS

DK50 4x4VRT/M, DK50 4x4VRTS/M



DK50 6x4VRT/M, DK50 6x4VRTS/M



Description to pneumatic diagrams:

- | | |
|--------------------------|----------------------------------|
| 1. Inlet filter | 14. Air tank |
| 2. Air pump | 15. Drain valve |
| 3. Compressor fan | 16. Outlet valve |
| 4. Solenoid valve | 17. Dryer solenoid valve |
| 5. Safety valve | 18. Central fan |
| 6. Non-return valve | 19. Condensate collection vessel |
| 7. Pressure relief valve | 20. Noise silencer |
| 8. Condensate separator | 21. Coarse inlet filter |
| 9. Jet | 22. Adsorption filtration |
| 10. Pressure sensor | 23. Coarse outlet filter |
| 11. Pressure gauge | 24. OR logic valve |
| 12. Cooler | 25. Dryer chamber 1 |
| 13. Cooler fan | 26. Dryer chamber 2 |

OPERATION

ONLY TRAINED PERSONNEL MAY OPERATE THE EQUIPMENT!



Risk of electric shock.

In case of emergency, disconnect the compressor from the mains (pull out the mains plug).



Burn or fire hazard.

When the compressor is running, the connecting hose between the compressor and dryer and parts of the dryer and aggregate may be hot enough to burn people or other material.



Warning - compressor is controlled automatically.

Automatic start. The compressor automatically switches on when the pressure in the air tank drops to the pressure switch's lower limit level. The compressor automatically switches off once the pressure in the tank reaches the shut-off pressure.



Potential for damage to pneumatic components.

The working pressure settings for the pressure switch set by the manufacturer cannot be changed. Compressor operation at a working pressure below the switching pressure indicates high air usage (see the Troubleshooting chapter).



Risk of damage to the dryer.

The dryer may suffer damage if operated at ambient temperatures above its maximum working pressure as specified in the Technical Data chapter.



Required drying performance can only be achieved when following the defined operating conditions.

Drying performance will decline and the achieved dew point will drop if the dryer is operated at any pressure below the minimum working pressure.



During prolonged operation of the compressor, the temperature inside the enclosed model may increase to over 40°C. At this point the cooling fan in the enclosure and the compressor fan automatically switch on. The fans switch off automatically once the space is cooled to below 32°C.

16. SWITCHING ON THE COMPRESSOR

- Turn the main switch (19) into the “I” position on the compressor switchboard. The white indicator P1

(17) lights up and the display (16) on the switchboard door shows the following message:

RUN HOURS: operating hours

PRESSURE: current pressure

TEMP_IN: internal temperature (only for enclosed version)

TEMP_OUT: outdoor temperature

DK50 4x4 VRTM

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | R | Y | E | R | A | D | 1 | 0 | 0 | 0 | E | V | 1 | . | 0 | 4 | |
| * | | P | R | E | S | S | | S | T | A | R | T | * | | | | |
| H | O | U | R | S | R | U | N | : | | | | 0 | | h | | | |
| P | R | E | S | S | U | R | E | | | | 9 | . | 5 | 2 | b | a | r |
| T | E | M | P | _ | I | N | | | | | - | 1 | 9 | . | 7 | ° | C |
| T | E | M | P | _ | O | U | T | | | | 1 | 9 | . | 8 | ° | C | |

DK50 6x4 VRTM

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | R | Y | E | R | A | D | 1 | 5 | 0 | 0 | E | V | 1 | . | 0 | 3 | |
| * | | P | R | E | S | S | | S | T | A | R | T | * | | | | |
| H | O | U | R | S | R | U | N | : | | | | 0 | | h | | | |
| P | R | E | S | S | U | R | E | | | | 4 | . | 9 | 8 | b | a | r |
| T | E | M | P | _ | I | N | | | | | - | 1 | 9 | . | 7 | ° | C |
| T | E | M | P | _ | O | U | T | | | | 1 | 9 | . | 8 | ° | C | |

- Press the "START" button (18) on the switchboard.

The display shows:

RUN HOURS: operating hours

STAND BY MODE or RUN MODE

Time-To-Go MTN: shows the time remaining until compressor maintenance is required

Note: TEMP_IN reads “N/A” for compressor models with no cover

TEMP_OUT: ambient temperature around the compressor

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | R | E | S | S | U | R | E | | | | 5 | . | 6 | 4 | b | a | r | | |
| T | E | M | P | _ | O | U | T | | | | 2 | 2 | . | 5 | ° | C | | | |
| T | E | M | P | _ | I | N | | | | | N | / | A | | | | | | |
| | | S | T | A | N | D | | B | Y | | M | O | D | E | | | | | |
| | | R | U | N | | H | O | U | R | S | : | | | | | | 0 | | |
| T | i | m | e | - | T | o | - | G | o | | M | T | N | | | 2 | 0 | 0 | 0 |

Press the START button to turn on all the compressor aggregates. The pressure sensor monitors the pressure in the air tank.

The aggregates operate in automatic mode, and are switched on and off (see the section

on working pressures in the Technical Data chapter) by the controller depending on the compressed air usage. The compressors sequentially turn off once the switching pressure is reached.

The motors may be shut down by pressing the STOP button (18), after which the display returns to the start screen.

Note: The START button is pre-set to "RETENTIVITY=ON", which means that if the compressor has been activated once using the START button, the system remembers this action and there is no need to press the START button to start up the compressor in the event of a power loss or if the compressor has been turned off.

- Motors are on

RUN MODE – all aggregates are switched on

RUN HOURS: operating hours

TIME-TO-GO MN - time to the next maintenance / service work (in hours).

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | R | E | S | S | U | R | E | | 4 | . | 9 | 8 | b | a | r | | | |
| T | E | M | P | _ | O | U | T | | 1 | 9 | . | 8 | ° | C | | | | |
| T | E | M | P | _ | I | N | | | - | 1 | 9 | . | 7 | ° | C | | | |
| A | G | G | R | E | G | A | T | E | S | | " | O | N | " | | | | |
| H | O | U | R | S | | R | U | N | | | 0 | h | | | | | | |
| T | I | M | E | - | T | O | - | G | O | | M | T | | 2 | 0 | 0 | 0 | h |

- Motors are switched off

PRESSURE: current working pressure

STANDBY MODE – all aggregates are switched off

RUN HOURS: operating hours

TIME-TO-GO MN - time to the next maintenance / service work (in hours).

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | R | E | S | S | U | R | E | | 8 | . | 0 | 8 | b | a | r | | | |
| T | E | M | P | _ | O | U | T | | 1 | 9 | . | 8 | ° | C | | | | |
| T | E | M | P | _ | I | N | | | - | 1 | 9 | . | 7 | ° | C | | | |
| A | G | G | R | E | G | A | T | E | S | | " | O | F | F | " | | | |
| H | O | U | R | S | | R | U | N | | | 0 | h | | | | | | |
| T | I | M | E | - | T | O | - | G | O | | M | T | | 2 | 0 | 0 | 0 | h |

The pressure sensor monitors the pressure in the air tank. The pressure is shown on the display.



Check all air line connections and check for compressed air leaks. Remedy all leaks that are identified.

Slowly open the outlet valve to the ON position. The compressor starts and runs until

Normal operation

Aggregates operate in automatic mode and are switched on and off based on the demand for compressed air. When the pressure in the air tank drops to the switching pressure, the compressors automatically switch on in a sequence. This ensures that the required pressure is delivered to the air tank in the shortest possible time.

Two screens are shown on the display during the normal operation of the equipment:

the pressure in the entire compressed air system stabilises. The aggregates then gradually turn off at the switching pressure.

Complete a record for the installation of the compressor assembly and commissioning (see warranty card).

Shutting down the compressor

Press the STOP button (18) to shut down the compressors.

16.1. Controller – operation and alarms

The controller controls the aggregates, monitors their operation, analyses faults, reports alarm and indicates when maintenance is required after defined intervals are met.

The controller assesses the ambient and internal temperature of the compressor, working pressure and operating hours.

These values, alarms and service interval information are shown on the display. Temperatures above the critical values are shown as alarms.

The control panel on the controller has four cursor buttons ▲, ▼, ►, ◀, ESC and OK buttons, and four function buttons F1-F4, which trigger the following:

F1 - in alarm display mode, press to switch back to normal operating mode for 60 seconds. Backlit screen.

F2 – information on operating hours and maintenance intervals.

| | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPERATING HOURS | | | | | | | | | | | | | | | | |
| T | O | T | A | L | H | O | U | R | S | : | 0 | h | | | | |
| | | | | | | | | | | | 0 | h | | | | |
| | | | | | | | | | | | 0 | h | | | | |
| T | I | M | E | - | T | O | - | G | O | M | T | 2 | 0 | 0 | 0 | h |
| N | U | M | B | E | R | o | f | M | T | : | 0 | x | | | | |

F3 – scrolls through:

- Motor malfunctions
- Number of motor starts
- Maximum temperatures

| | | | | | | | | | | | | | | | | | | | |
|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FAILURES | | | | | | | | | | | | | | | | | | | |
| M | O | T | . | S | T | A | R | T | E | R | / | C | O | U | N | T | E | R | / |
| M | 1 | : | | | | 0 | | | | M | 2 | : | | | | 0 | | | |
| M | 3 | : | | | | 0 | | | | M | 4 | : | | | | 0 | | | |
| M | 5 | : | | | | 0 | | | | M | 6 | : | | | | 0 | | | |

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|--|--|--|--|---|---|
| NUMBER | | | | | | | | | | | |
| OF SWITCHING : | | | | | | | | | | | |
| M | O | T | O | R | S | | | | | 1 | x |
| F | A | N | S | | | | | | | 1 | x |

| | | | | | | | | | | | |
|---|--|--|--|-----|--|--|--|-----|--|--------|--|
| M A X I M A L T E M P E R A T U R E : | | | | | | | | | | | |
| T E M P _ O U T : | | | | | | | | | | 2 3 °C | |
| T E M P _ I N : | | | | | | | | | | 0 °C | |
| O U T : | | | | 0 x | | | | 0 h | | | |
| I N : | | | | 0 x | | | | 0 h | | | |
| T H E R M O S T _ B 2 : O F F | | | | | | | | | | | |

F4 - SERVICE TECHNICIAN BUTTON
 (after completing service or maintenance work - hold for 5 seconds to reset the 2,000 hour maintenance interval.)

Note: Pressing F1-3 on the control panel turns on the display back light for 30 seconds.

Pressing F2:

HOURS METER - aggregate operating hours

TIME -TO -GO MN - time to next maintenance/service

TOTAL HOURS: - total compressor operating hours

NUMBER of MN – number of completed maintenance (service) checks confirmed using the F4 button

The screen automatically returns to the home screen after 10 seconds.

Equipment operation

Normal operating mode is shown when the equipment is operating and the functional and control buttons are used to browse through the following:

| | | | | | | | | | | | |
|-------------------------------|--|--|--|--|--|--|--|--|--|-----------|--|
| O P E R A T I N G H O U R S | | | | | | | | | | | |
| T O T A L H O U R S : | | | | | | | | | | 0 h | |
| R U N H O U R S : | | | | | | | | | | 0 h | |
| F A N H O U R S : | | | | | | | | | | 0 h | |
| T I M E - T O - G O M T | | | | | | | | | | 2 0 0 0 h | |
| N U M B E R o f M T : | | | | | | | | | | 0 x | |

Pressing F3:

This permits browsing through different auxiliary screens. E.g. displays the number of overload faults for motors M1 to M6 (motor circuit breaker disconnects the motor from power). The circuit breakers must be manually turned to the ON position to remedy the malfunction.

The screen automatically returns to the home screen after 10 seconds.

| | | | | | | | | | | | | | | | |
|---|--|--|--|---|--|--|--|-------|--|--|--|---|--|--|--|
| F A I L U R E S | | | | | | | | | | | | | | | |
| M O T . S T A R T E R / C O U N T E R / | | | | | | | | | | | | | | | |
| M 1 : | | | | 0 | | | | M 2 : | | | | 0 | | | |
| M 3 : | | | | 0 | | | | M 4 : | | | | 0 | | | |
| M 5 : | | | | 0 | | | | M 6 : | | | | 0 | | | |

| | | |
|-----------------------|-----|-----|
| NUMBER | | |
| OF SWITCHING : | | |
| MOTORS | 1 x | |
| FANS | 1 x | |
| MAXIMAL TEMPERATURE : | | |
| TEMP_OUT : | 23 | °C |
| TEMP_IN : | 0 | °C |
| OUT : | 0 x | 0 h |
| IN : | 0 x | 0 h |
| THERMOST_B2 : OFF | | |

Pressing F4:

F4 is only active if the maintenance screen appears once 2000 hours of operation have been passed (see the maintenance alarm). Press and hold F4 for at least 5 seconds to set a new interval. The screen switches back to normal operating mode once the new interval is set.

Note: Only service personnel are authorised to configure a new service interval using the F4 button.

| | | |
|-----------------|----|--------|
| ATTENTION! | | |
| PREPARATION | | |
| FOR MAINTENANCE | | |
| TIME - TO - GO | MT | 2000 h |

Alarms



The equipment has an intelligent monitoring system that generates an alarm signal based on priority (medium priority alarms have higher priority than low priority alarms).



Alarm signals have a higher priority than maintenance/service interval signals.

The maintenance/service interval is measured from the first time the equipment is energised. All alarm messages are accompanied by the orange P2 /Alarm/ indicator lights up.

Low priority alarm conditions

- Expiry of defined maintenance / service interval

This alarm activates once the 2,000 hour maintenance/service interval expires. The display shows the following details:

SERVICE ACCORDING TO INSTRUCTIONS FOR USE

TOTAL HOURS - total time the equipment has been connected to power

RUN HOURS – equipment operating hours

The display lights up orange.

Note: Press F1 to switch to the normal operating mode screen for 60 seconds.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | E | R | V | I | C | E | A | C | C | O | R | D | I | N | G | t | o |
| I | N | S | T | R | U | C | T | I | O | N | S | f | o | r | U | S | E | |
| T | O | T | A | L | H | O | U | R | S | : | | | | | | | 1 | h |
| | | | | | | | | | | | | | | | | | 0 | h |
| S | e | t | u | p | N | e | w | I | n | t | e | r | v | a | l | : | | |
| H | o | l | d | F | 4 | l | e | a | s | t | 5 | s | e | c | | | | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | E | R | V | I | C | E | A | C | C | O | R | D | I | N | G | t | o | |
| I | N | S | T | R | U | C | T | I | O | N | S | f | o | r | U | S | E | |
| T | O | T | A | L | H | O | U | R | S | : | | | | | | | 0 | h |
| | | | | | | | | | | | | | | | | | 0 | h |
| S | E | T | U | P | N | E | W | I | N | T | E | R | V | A | L | : | | |
| H | O | L | D | F | 4 | L | E | A | S | T | 5 | s | e | c | | | | |

The compressor supplies air to the compressed air system as needed and without restriction.

Call in service personnel to perform the required service.

Note: Only service personnel are authorised to configure a new service interval.

Press F4 and hold for at least 5 seconds to confirm the completion of

maintenance/service.

The display then changes to the normal operating mode screen.

This indicates the new maintenance interval has been set on the controller from this time forward.



Any maintenance or service work must be recorded in the compressor's service log.

- Compressor module ambient temperature exceeds the limit.

WARNING - high ambient temperature alarm.

The display lights up orange.

This alarm appears if the ambient temperature exceeds the 40°C limit for at least 30 seconds. The aggregates operate normally.

The display otherwise shows the current ambient air temperature.

The alarm clears when the temperature drops below the limit.

The compressor supplies air to the compressed air system as needed and without restriction.

| | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
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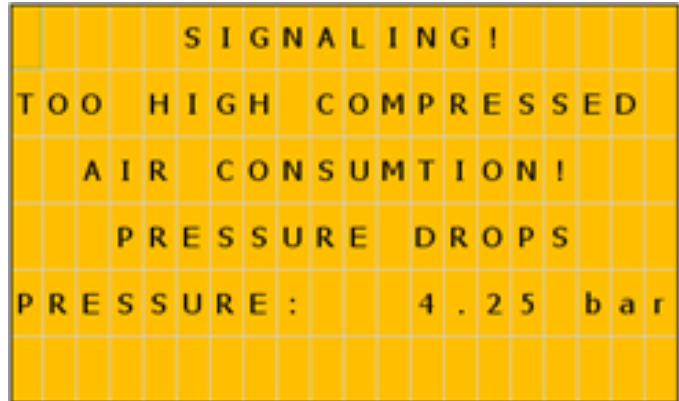
SIGNALING – low pressure alarm at elevated compressed air demand.

The display lights up orange.

PRESSURE - current pressure in the system

The display automatically disappears once the air pressure is above 3 bar.

The compressor supplies air to the compressed air system as needed and without restriction.



Medium priority alarm conditions

- Air pump malfunction

The message on the display (FAULT) and the P2-ALARM indicator lights up (17) indicate that the aggregate is not running (a motor circuit breaker (Q1 - Q6) is tripped due to current overload).

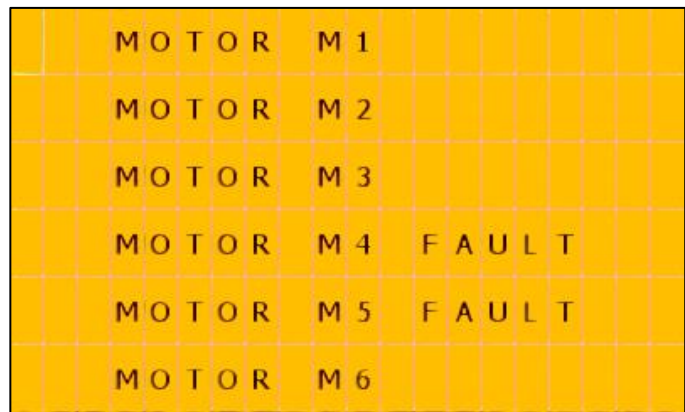
The display lights up orange.

The other aggregates are working normally.

The screen disappears once the malfunction is remedied and the motor circuit breaker is manually placed back in the "ON" position. The display for normal operation is shown.

The compressor only supplies compressed air to the central line through the functional aggregates.

All alarms are automatically recorded on an SD card.



Alarm signals have priority over maintenance interval signals. As such, the light will indicate an alarm from any of the aggregates.



All error signals are connected to controller output K3:Q3.2 and to terminals X1:44 and X1:45 (in the control panel) as NON VOLT ALARM SIGNAL.

Data collection

Data is recorded on a micro SD card in a slot in the base module. Malfunction and operating event data is recorded on this card. Information is saved in “.csv” formatted files. The system sequentially saves data into 50 files, each of which may have up to 20,000 lines.

To copy data from the SD card, manually remove the card and load the data using Excel onto a PC or remotely via the Ethernet network.

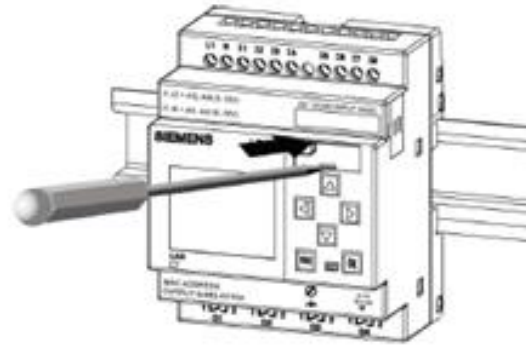


Fig. 22: Data collection

17. SWITCHING OFF THE COMPRESSOR

Use the main switch, Q10, to switch off the compressor for maintenance or other reasons; the switch also functions as a central stop button. The compressor is disconnected from the mains with the exception of the mains terminal block X0.

Vent the air tank by disconnecting from the

central compressed air circuit and opening the outlet valve (Fig. 14) or the drain valve.



Power terminals X0 remain energised even when main switch Q10 is in the “O” (off) position.

PRODUCT MAINTENANCE

18. PRODUCT MAINTENANCE



The operator shall secure the completion of repeated testing of the equipment at least once every 24 months (EN 62353) or at the intervals defined by the applicable national regulations. A record of the test results must be made (e.g.: as per EN 62353, Annex G), along with the measurement methods.

The equipment has been designed and manufactured to keep maintenance to a minimum. The following work must be performed to preserve the proper and reliable operation of the compressor.



Unauthorised interference hazard.

Repair work outside the framework of standard maintenance (see Chapter 18.1) may only be performed by a qualified technician (an organisation authorized by the manufacturer) or the manufacturer's customer service.

Standard maintenance work (see Chapter 18.1) may only be performed by the operator's trained personnel.

Only use manufacturer-approved replacement parts and optional equipment.



Danger of injury or equipment damage.

Prior to commencing compressor maintenance, it is necessary to:

- check if it is possible to disconnect the compressor from the appliance in order to avoid any risk of injury to the person using the appliance or other material damage;
- turn off the compressor;
- disconnect it from the mains (pulling the cord out of the mains socket);
- vent the compressed air from the air tank.

Prior to commencing dryer maintenance work, first:

- shut off the compressed air supply to the dryer
- turn the main switch on the side of the switchboard to the "0" position;
- check the pressure indicator on the dryer and if there is still pressure, it must first be vented from the dryer chamber.



Venting compressed air poses an injury hazard.

Wear eye protection, i.e. goggles, when venting compressed air from the compressed air circuit (air tank) and from the dryer chamber.

**Burn hazard.**

When the compressor is running or shortly thereafter, certain portions of the air pump, the compressor's compressed air system, parts of the dryer and connecting hoses between the compressor and dryer may be hot - do not touch these components.

Allow the equipment to cool down before maintenance, service or connecting/disconnecting the compressed air supply!

The work below may only be performed by trained personnel as follows:



Before beginning any of the following maintenance work, first switch the main switch on the side of the switchboard to the "0" position.



Please follow the recommended service intervals for the equipment to ensure proper and safe operation.

18.1. Maintenance intervals

| Time interval | Performed by operator | | | Performed by qualified technician | | | | | | | | | |
|--|--------------------------|--|---------|-----------------------------------|---------|--------|--------|--------|--------|--------------------|-------------|-------------|------------|
| | Set of replacement parts | Chap. | 16000 h | 12000 h | 10000 h | 8000 h | 6000 h | 4000 h | 2000 h | Once every 2 years | Once a year | Once a week | Once a day |
| Check of product operation | - | 18.2 | | | | | | | | | | | x |
| Condensate drain | - | 18.5 | | | | | | | | | | | x |
| Cleaning the compressor inlet filters ^{a)} | - | 18.8 | | | | | | | | | | x | |
| Check of cooler and fan - dryer | - | 18.20 | | | | | | | | | x | | |
| Cleaning the compressor inlet filters ^{a)} | - | 18.8 | | x | | | | | | | | | |
| Replacement the compressor inlet filters ^{a)} | 604031770-000 | 18.8 | | x | | | | | | | | | |
| Check compressor fans operation | - | Visual check of rotation during air pump operation | | | | | | | | | | | |
| Compressor fan replacement (6-8 bar) | 035300016-000 | | | | | | | | | | | | |
| Compressor fan replacement (8-10 bar) | 035300016-000 | | | | | | | | | | | | |
| Check of cooler and cooler fan | - | 18.20 | | | | | | | | | | | x |

a) Only applicable to compressors with enclosures
 b) Only applicable to DK50 6x4VRT/M compressors
 c) Only applicable to DK50 4x4VRT/M compressors

| Time interval | Performed by qualified technician | | | | | | | | | | |
|--------------------------|--------------------------------------|--|---|--------------------|--|-----------------------|--------------------------------|--|---|------------------------------|--------------------------|
| | Inspection of electrical connections | Check the operation of the non-return valves | Check the function of the pressure sensor | Relief valve check | Checking the operation of temperature sensor switching | Check of safety valve | Check solenoid valve operation | Inlet filter replacement | Replacement of the dryer's internal filters | Compressor performance check | Set of replacement parts |
| Once a day | | | | | | | | | | | |
| Once a week | | | | | | | | | | | |
| Once a year | | | | | | x | | x | | | |
| Once every 2 years | | | | | | | | | | | |
| 2000 h | x | | x | x | x | | | x | | | |
| 4000 h | x | x | x | x | x | x | x | x | | | |
| 6000 h | x | | x | x | x | | | x | | | |
| 8000 h | x | x | x | x | x | x | x | x | | | |
| 10000 h | x | | x | x | x | | | x | x | | |
| 12000 h | x | x | x | x | x | x | x | x | | | |
| 16000 h | | | | | | | | | | | |
| 20000 h | | | | | | | | | x | | |
| Chap. | 18.4 | 18.10 | 18.12 | 18.22 | 18.12 | 18.7 | 18.11 | 18.6 | 18.16 | 18.9 | |
| Set of replacement parts | - | - | - | - | - | - | - | 604031761-000 ^{b)} 604031762-000 ^{c)} | 025200322-000 | - | |

a) Only applicable to compressors with enclosures
b) Only applicable to DK50 6x4VRT/M compressors
c) Only applicable to DK50 4x4VRT/M compressors

| Time interval | Performed by | qualified technician | | | | | | | | | | | | | | |
|---|--------------|--------------------------|-------|---------|---------|---------|---------|--------|--------|--------|--------|--------------------|-------------|-------------|------------|---|
| | | Set of replacement parts | Chap. | 20000 h | 16000 h | 12000 h | 10000 h | 8000 h | 6000 h | 4000 h | 2000 h | Once every 2 years | Once a year | Once a week | Once a day | |
| Check pneumatic connections for leaks | | - | 18.3 | | | x | | | | | | | | | | |
| Replacement of cassettes with adsorbent media AD1000E dryer | | 603031810-000 | 18.17 | x | | | | | | | | | | | | |
| Replacement of cassettes with adsorbent media AD1500E dryer | | 603031804-000 | 18.17 | x | | | | | | | | | | | | |
| Replacement of the dryer's logic valve ball | | 069000442-000 | 18.18 | x | | | | | | | | | | | | |
| Replacement of the dryer's silencer | | 025400339-000 | 18.19 | x | | | | | | | | | | | | |
| Replacement of the dryer's NC solenoid valve | | 025300117-001 | 18.21 | x | | | | | | | | | | | | |
| Conduct the "Repeated test" as per EN 62353 | | - | 18 | | | | | | | | | | | | | x |

- a) Only applicable to compressors with enclosures
- b) Only applicable to DK50 6x4VRT/M compressors
- c) Only applicable to DK50 4x4VRT/M compressors

18.2. Check of product operation

- Check aggregate condition – the aggregates should be operating normally without excessive vibration or noise. Troubleshoot any problem or call in service personnel if trouble is detected.
- Visually inspect fan operation – the fans must be operating when the aggregates are running. Troubleshoot any problem or call in service personnel if trouble is detected.
- Check to ensure the power cord, the cable for the pressure sensor on the air tank and the connecting compressed air hoses are undamaged. Replace damaged components or call in service personnel.
- Check the ambient temperature at the display – the ambient temperature must be below the temperature limit (40°C). Cool the space if the temperature is high.
- Check for alarm conditions on the display – troubleshoot and remedy all alarms.

18.3. Check the compressed air connections for leaks and inspect the equipment

Leak testing

- Check the compressor's compressed air lines for leaks during operation – pressure supplied by the compressor.
- Use a leak analyser or soapy water to check all joints and connections for leaks. Tighten or reseal the connection where leaks are found

Inspecting the equipment

- Check the condition of the compressor aggregate for normal operation and noise levels.
- Fan operation check – the fans must be running during the defined compressor work cycles.
- Check the filter condition – clean dirty

filters or replace with new filters.

- Check the solenoid valves in the valve module.
- Check the operation of the automatic condensate drain.
- Call in service personnel if a malfunction is suspected.

18.4. Inspection of electrical connections



Risk of electric shock.

Inspect the product's electrical connections when the mains are disconnected.

- Check the mechanical function of the main switch Q10 and the START-STOP buttons, S1 and S2.
- Check the power cord, conductors connected to the X1 terminal strip and the main switch to ensure they are undamaged. Inspect to ensure the connection terminals are properly supported to relieve tension.
- Check to ensure all threaded conductor terminals are tight (on motor circuit breakers Q1-6, circuit protection devices F1-3, contactors Q11-16 and Q20-21, etc.). Tighten all loose terminals with a screwdriver.
- Visually inspect the connection of individual cables to the terminal strip X1 (spring clips) and the LOGO! Control system (screw terminals).
- Inspect all screw terminals for the protective green and yellow PE grounding conductors in the switchboard, the motor section, the cooling unit and the pressure vessel. Tighten any loose terminals.
- Inspect the connector X50 (dryer and cooler) and the pressure sensor (B1) (in the pressure vessel).

18.5. Condensate drain



A wet floor resulting from overflow from the vessel poses a slip hazard.

The volume of the collection vessel must not exceed the defined maximum level.

Regularly empty the condensate collection vessel.



Switch off the compressor every time before emptying the vessel!

Condensate from compressors with air dryers is automatically drained into a vessel to collect condensate.

- Monitor the level in the vessel using the markings (depending on the volume of the vessel), and empty at least once a day.

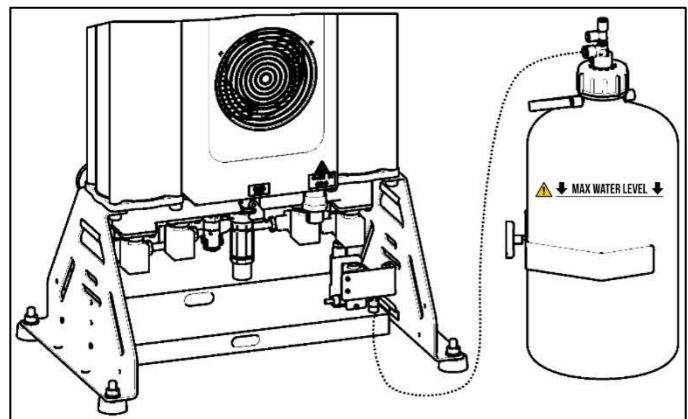


Fig. 23: Check of the condensate collection vessel

18.6. Inlet filter replacement



The filters located in the compressor aggregate enclosure cover must be replaced at defined intervals.

Intake filter replacement:

- Pull out the rubber plug by hand (2).
- Remove the dirty intake filter (1).
- Insert a new filter and replace the rubber plug.

Pre-filter replacement:

- Pull out the pre-filter by hand (3).
- Replace with a new one and insert it back.

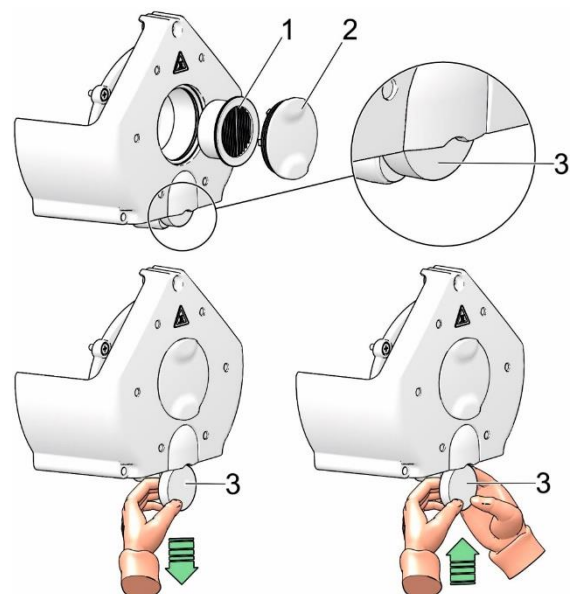


Fig. 24: Inlet filter replacement

18.7. Check of safety valve



Damage to the safety valve could cause pressure to rise to hazardous levels.

Never use the safety valve to release the air pressure in the air tank. This could damage the safety valve. The valve is set to the maximum permitted pressure by the manufacturer.

Never adjust a safety valve.



Venting compressed air poses an injury hazard.

Wear safety glasses when inspecting a safety valve.

- Turn the screw on the safety valve several rotations to the left until the safety valve releases air.
- Let the safety valve vent for only a few seconds.
- Turn the screw to the right until it seats, closing the valve.

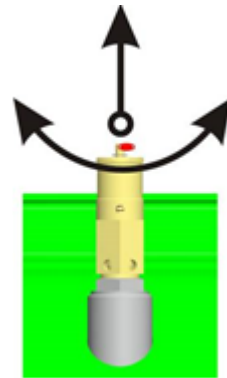


Fig. 25: Check of safety valve

18.8. Compressor intake filter cleaning/replacement

Only applicable to enclosed products.

Clean or replace the intake filters are defined intervals:

- Remove the nuts (1) and covers (4) on the lower part of the enclosure beneath the aggregates two times and remove the filters (5).
- Remove the nuts (1) and covers (2) inside the enclosure three times and remove the filters (3).
- Clean or wash the filters, if heavily contaminated, in a solution of soapy water and allow to dry completely.
- Reinstall the filters once dry (reverse the procedure to reassemble).

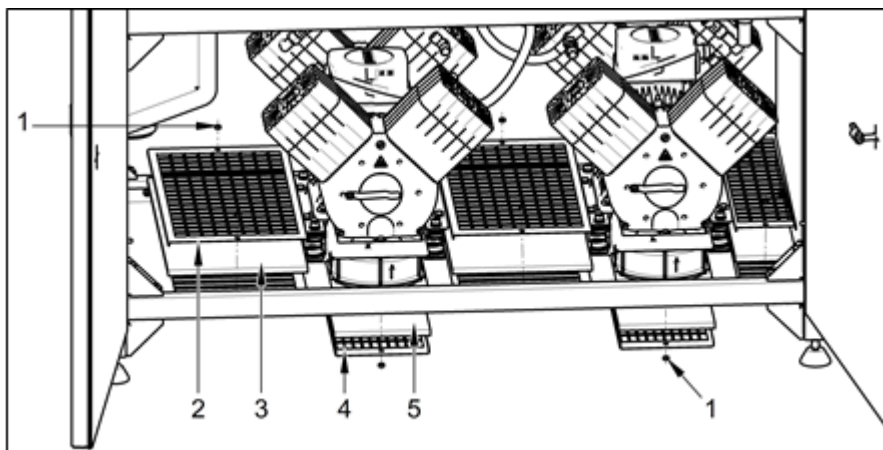


Fig. 26: Compressor inlet filter cleaning/replacement

- At Point A, remove the foam, remove the 4 screws (5), washers (6) and remove the suction filter cover (7). (Fig. 27)
- Remove the 2 nuts (8) on the filter bracket (9) and remove the filter (10).
- At Point B (on the sides (11), remove the 2 nuts (12), washers (13), release the filter bracket (14) and remove the filter (15).
- Clean or wash the filters, if heavily contaminated, in a solution of soapy water and allow to dry completely.
- Reinstall the filters once dry (reverse the procedure to reassemble).

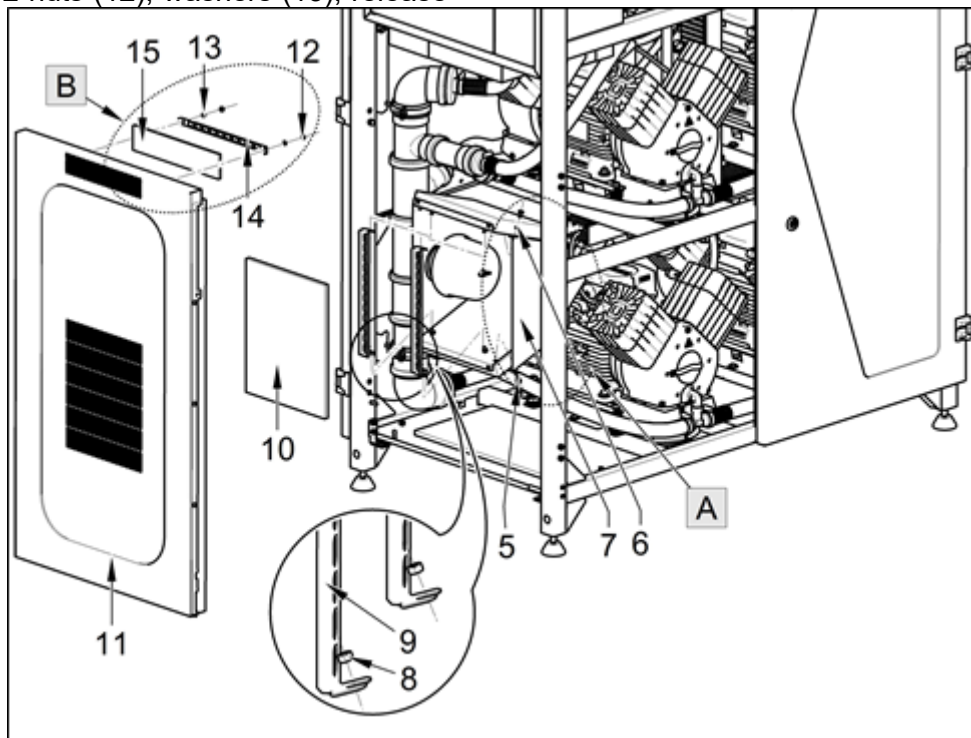


Fig. 27: Compressor inlet filter cleaning/replacement

18.9. Compressor performance check

- Turn off the compressor using the STOP button.
- Vent the air pressure in the air tank to zero.
- Turn on the compressor using the START button.
- Measure the time to fill the air tank from 0 to 7 bar.
- The measured value must be less than the data provided in the “Technical Data” table.

18.10. Check of non-return valve operation

Compressed air line:

Check for the proper operation of all non-

return valves in the compressed air line and the disconnection of pressure hoses from air pumps.



One aggregate must be running at all times, while the others may be shut off using the current protection device in the switchboard. No compressed air may leak from the check valves.

Air tank:

Check for proper operation of the non-return valve on the air tank by disconnecting the pressure hose from the valve.



Use of aggressive detergents and disinfectants containing alcohol and chlorides can lead to surface damage and discolouration.



Shut off the compressed air source before venting pressure from the equipment

AD dryer maintenance

18.15. Venting pressure from the dryer

The equipment is designed to permit the safe venting of pressure within 10 seconds after the compressor is shut off.

If pressure is not automatically vented from the dryer, then the pressure may be vented manually.



Venting compressed air poses an injury hazard

Wearing hearing protection is recommended given the noise generated by the venting process.

Venting pressure using the display screen

Press ESC+▼ in the display screen to vent pressure from the equipment.

- First, shut off the compressed air source.
- Then press and hold ESC+▼, which will open all the solenoid valves (inlet and regeneration) for 10 seconds and then vent the pressure from the equipment and connected pneumatic circuits and elements that are not separated from the equipment by the check valve

Manual venting of pressure

- Turn off the compressor.
- Open the vent plugs on the outlet module on the equipment (Fig. 30).

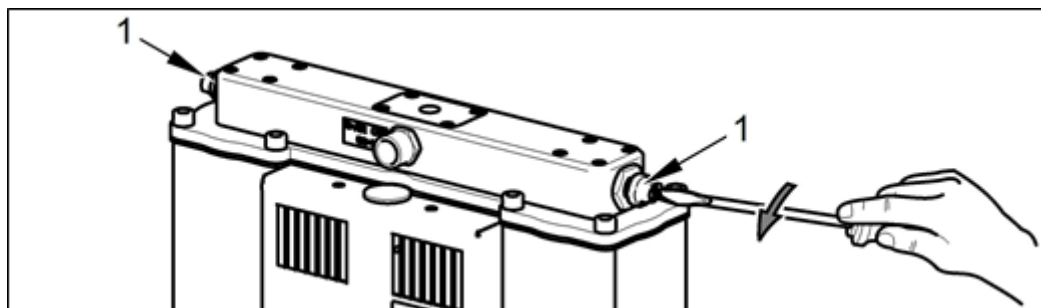


Fig. 30: Venting pressure from the dryer chambers

- Disconnect the hose (2) from the lower part of the condensate separator (3) (Fig. 31).

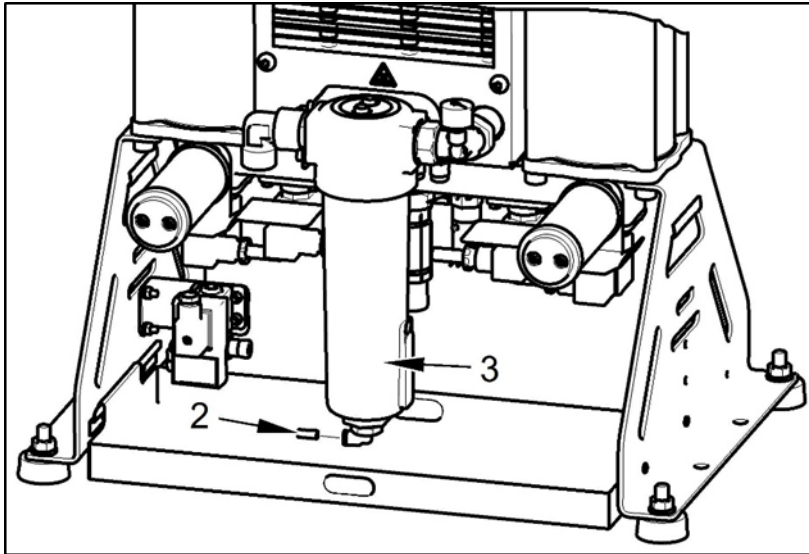


Fig. 31: Venting pressure from the cooler and condensate separator

The process of manually venting pressure from the equipment is complete after approximately 2 minutes.

18.16. Replacement of the dryer's internal filters



Working with pressurised pneumatic components poses a risk of injury.

Prior to any work, disconnect the equipment from the mains, shut off the compressor and vent all pressure in the equipment to zero.

In normal operation, filter replacement must be performed in the upper part of the dryer at the defined interval.

- Turn off the compressor.
- Check the pressure in the dryer.
- If the dryer chambers are under pressure, proceed in accordance with Chapter 17.15.
- Unscrew the 8 screws (1).
- Disassemble the outlet panel (2) on which the filters (3) are mounted.
- Unscrew the dirty filters (3) and replace with new filters.
- Check the seal (4) on the bottom of the outlet module and replace if necessary.
- Reverse the procedure to reassemble.
- Switch on the compressor.
- Check for any dryer leaks.

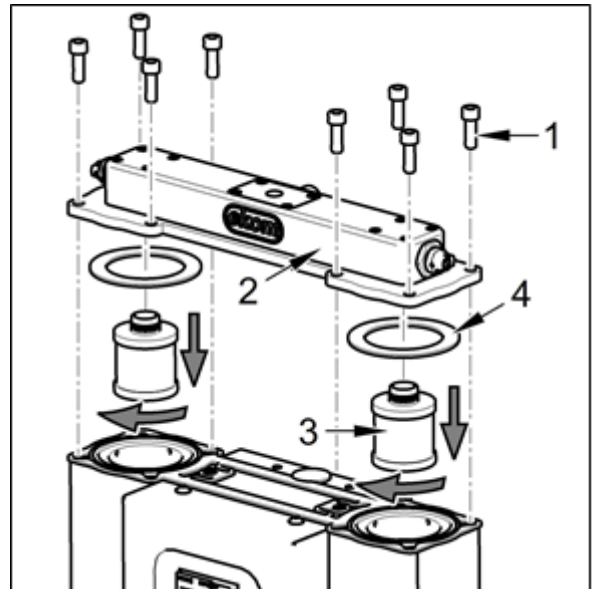


Fig. 32: Replacement of internal filters

18.17. Replacement of cassettes with adsorbent media

cassettes with adsorbent media must be performed at the defined interval.

In normal operation, the replacement of the

- Turn off the compressor.
- Check the pressure in the dryer.
- If the dryer chambers are under pressure, proceed in accordance with Chapter 17.15.
- Unscrew the 8 screws (1).
- Remove the outlet panel (2).
- Pull out and replace the cassettes (3) with new parts.
- Check the seal (4) on the bottom of the outlet module and replace if necessary.
- Reverse the procedure to reassemble.
- Switch on the compressor.
- Check for any dryer leaks.

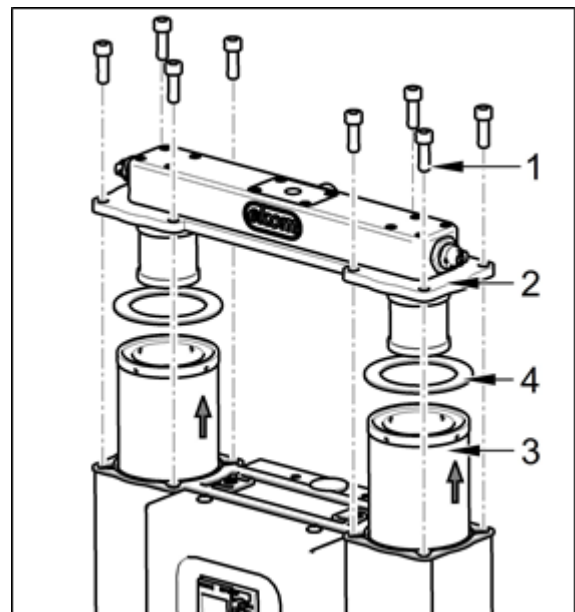


Fig. 33: Replacement of cassettes with adsorbent media

18.18. Replacement of the logic valve ball

- Turn off the compressor.
- Check the pressure in the dryer.
- If the dryer chambers are under pressure, proceed in accordance with Chapter 17.15.
- Unscrew the 4 screws (1) and remove the cover (2).
- Remove the ball cover (3).
- Replace the ball (4).
- Check the nozzles (5) and clean as necessary.
- Reverse the procedure to reassemble.
- Check for leaks and the operation of the logic valve and nozzles – check for the cyclical switching of the chambers.

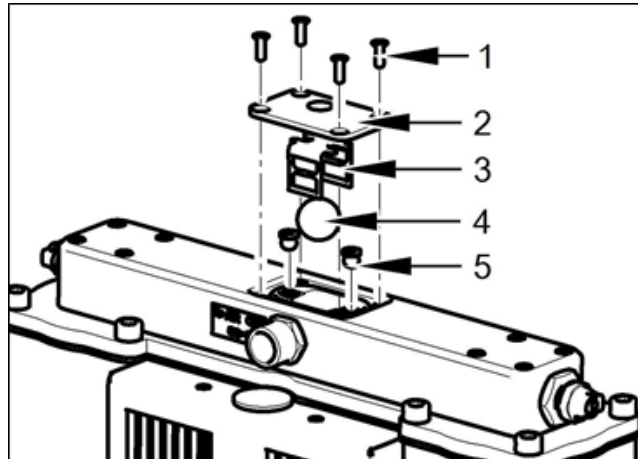


Fig. 34: Replacement of the logic valve ball

18.19. Replacement of the dryer's silencer



Working with pressurised pneumatic components poses a risk of injury.

Operating the equipment without silencers generates high levels of noise. Only replace silencers when the equipment is shut down.

- Unscrew the silencer (1).
- Install a new silencer.

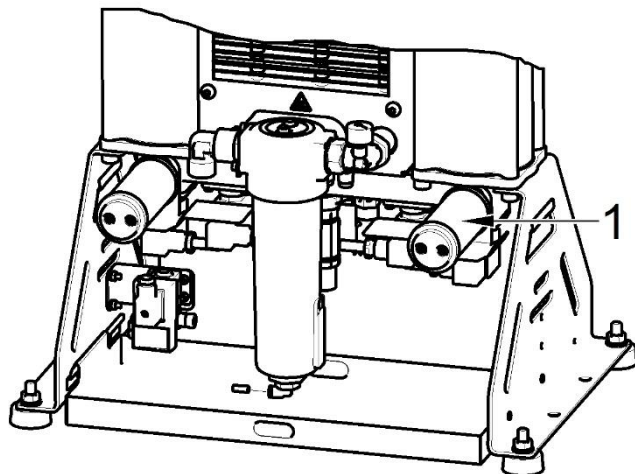


Fig. 35: Replacement of the silencer

18.20. Inspecting the cooler and fan

The equipment, in particular the compressor fan, cooler fan, and the cooler, must be kept clean to ensure efficient drying. Remove dust from the surface of the cooling fins and fans by vacuuming or blowing down with compressed air.

18.21. Replacement of solenoid valves



Risk of electric shock.

Shut off the compressed air source, turn off the equipment and disconnect it from the mains before working on the equipment.



Working with pressurised pneumatic components poses a risk of injury.

Disconnect the equipment from the mains and vent the pressure in the equipment and the pneumatic system to zero before working on the equipment.

In normal operation, the solenoid valves in the bottom of the dryer must be replaced at the defined interval.

- Turn off the compressor.

- Check the pressure in the dryer.
- If the dryer chambers are under pressure, proceed in accordance with Chapter 17.15.
- Unscrew the 1 screw from the valve connector (1).
- Disconnect the valve connector (1).
- Unscrew the 4 screws (2).
- Remove the solenoid valve (3).
- Remove the valve seal (4-1) from the body. (Fig. 37)
- Physically clean the valve seat surface to remove any impurities.
- Physically clean the 16 screws to remove the thread locking adhesive.
- Install the solenoid valve (Fig. 37).
- Install the new valve seal (4-1).
- Install the new solenoid valve using the 4 screws (2) and use a thread locking adhesive on the threads of the screws (such as Loctite 243).
- Reattach the solenoid valve connector and attach with a screw.
- Switch on the compressor.
- Check for any dryer leaks.

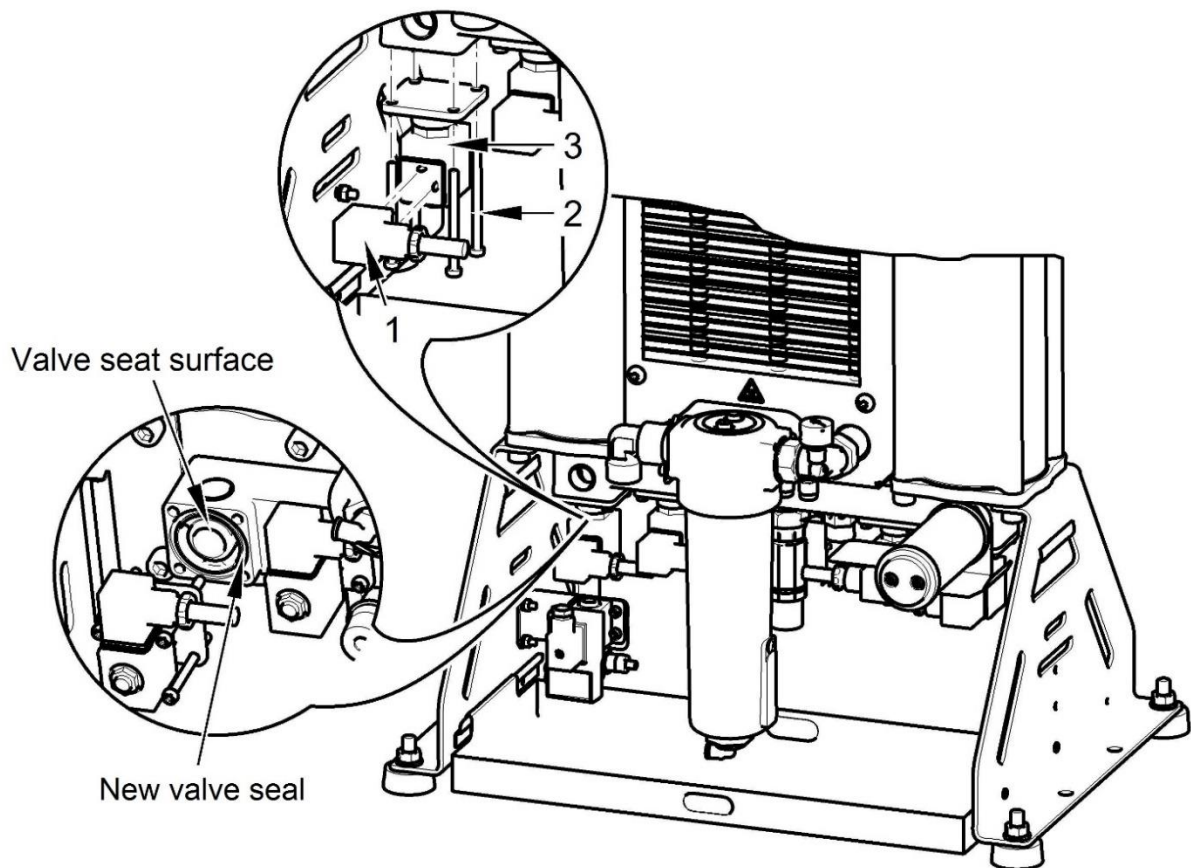


Fig. 36: Solenoid valve replacement

Solenoid valve assembly

Replacement solenoid valves are delivered as disassembled replacement parts. The new valve must be assembled before a solenoid valve is replaced.

- Mount the valve coil (4-5) onto the valve body (4-4) and secure with the

nut (4-6).

- Insert the valve membrane spring (4-3) into the membrane (4-2) and the insert into the assembled valve coil and body assembly.
- Then mount the valve seal (4-1) onto the dryer body.

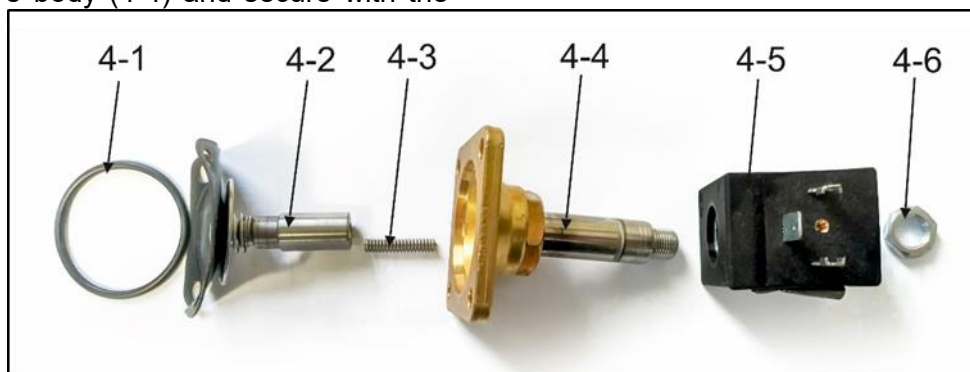


Fig. 37: Solenoid valve assembly

18.22. Pressure relief valve

The pressure relief valve automatically begins to vent air from the system if the pressure in the compressed air circuit exceeds its pre-set value. The pressure relief valve closes as the pressure drops.



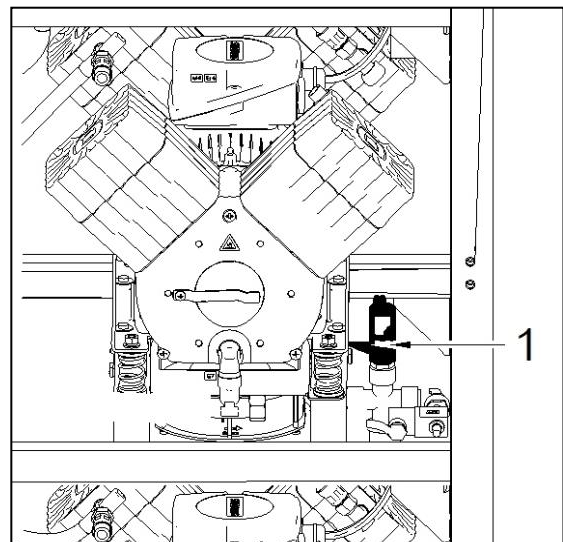
The pressure in the compressed air circuit can only increase because of an increase in flow resistance in the compressed air lines or as a result of a dryer malfunction (e.g. solenoid valve malfunction), and therefore the repeated opening of the relief valve requires a dryer function check and repairs if necessary!



Consultation with the manufacturer is required before any adjustment is made to the relief valve!

The outlet openings on the relief valve may not be blocked and the egress of compressed air through them may not be restricted.

1 Compressor pressure relief valve



2 Dryer pressure relief valve

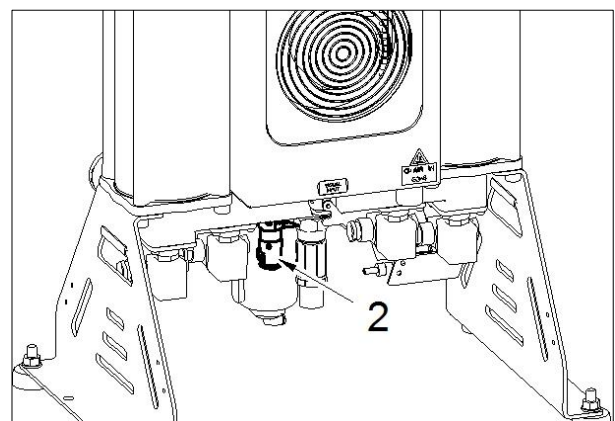


Fig. 38: Pressure relief valve

TROUBLESHOOTING



Risk of electric shock.
Before interfering with the equipment, first disconnect it from the mains (remove the power socket).



Troubleshooting may only be performed by a qualified service technician.



Working with pressurised pneumatic components poses a risk of injury.



Damage to the safety valve could cause pressure to rise to hazardous levels.

Never adjust a safety valve.

Before interfering with the equipment, vent the air tank and the compressed air system to zero pressure.

| Malfunction | Possible cause | Solution |
|--|--|---|
| Compressor does not start | Problem with electrical power source | Main breaker is off |
| | Power loss | Check mains voltage |
| | | Loose terminal in switchboard – tighten |
| | | Check the primary power connection - replace if damaged |
| Pressure switch failed | Check terminals and operation of the pressure switch - replace if damaged | |
| Any of the air pumps does not start up (indicator is on) | Loss of power to motor | Check mains voltage |
| | | Check the function of the contactor, and thermal relays - replace if damaged |
| | | Loose terminals at the motor terminal strip - tighten or replace if damaged or broken |
| | Motor winding shorted, damaged /open thermal protection/ high ambient temperature | Replace the motor / decrease the ambient temperature |
| | Seized up piston or other moving component (mechanical damage to a moving part) | Replace damaged parts |
| Controller malfunction | Check controller operation, check to ensure software is present - replace if damaged or upload the correct program | |
| RUN/STOP indicator is not green | Loss of connection between controller and expansion module | Check connection – replace if damaged |
| | Power loss | Check mains voltage |
| | | Loose terminal in switchboard – tighten |
| | Problem with electrical power source | Check the primary power connection - replace if damaged |
| Controller or expansion module malfunction | Main breaker is off | |
| Air pumps switch often, even without demand for air | Replace failed controller or expansion module | |
| | Air leak in compressed air distribution system | Check compressed air distribution system – seal loose joints |
| | Leaky check valves | Test check vales and clean, or replace if damaged |

| | | |
|--|---|---|
| | Leak through solenoid valves once regeneration is complete | Clean the check valve - replace if damaged |
| | Leak at pressure sensor and safety valve | Test their function and clean, or replace if damaged |
| Output of certain air pumps is reduced, extended run cycle | Air pump leaking | Check connections on the air pump for leaks – tighten leaking connections |
| | Worn piston rings | Replace worn piston |
| | Gasket between cylinder head and valve plate damaged | Replace gasket, tighten |
| | Intake filter is plugged | Replace old filter with a new filter |
| One of the air pumps is noisy (knocking, metal noises) | Damaged motor bearing | Replace damaged bearing |
| | Damaged piston bearing, piston rod | Replace damaged piston |
| | Failed (cracked) rubber mount spring | Replace damaged spring with new spring |
| High ambient temperature causes compressors to switch off in vertical stacks (overheating) | Lack of ventilation in compressor room | Secure suitable ambient conditions |
| | Cooling fans for aggregates, cooler and enclosure do not work | Defective fans - replace Defective temperature switch - replace |
| Degraded drying performance – high-pressure dew point (condensed water in the air) | Low operating pressure | Reduce the demand for air, check the output from the compressed air source, fix any leaks in the distribution system |
| | Regeneration solenoid valve not working | Check coil operation, replace if damaged |
| | Air regeneration nozzle plugged | Clean or replace the nozzle (see product maintenance) |
| | Cooling fan not working | Check the power source to the fan Replace damaged fan |
| | Dirty cooler | Inspect the cooler and clean as necessary |
| | Silencer plugged at outlet from regeneration valve | Inspect the silencers. Clean or replace the silencer if flow resistance is too high or if heavily soiled. |
| Dryer emitting high levels of noise | Damaged fan | Replace damaged fan |
| | Damaged silencer | Replace the silencer |
| | Air leaking through relief valve at dryer inlet | Check the dryer connection to the mains and dryer connections, check dryer operation, check the dryer's working pressure, and replace defective components. |
| Air leaking through relief valve at dryer inlet | Compressor running at high working pressure | Check the compressor's working pressure setting |
| | Dryer inlet solenoid valve not working | Check coil operation, replace if damaged Inspect the condition of the valve - clean the valve or replace if problems persist |
| | High pressure in equipment resulting from plugged filters | Check the internal filters and accessory filter assemblies. Clean or replace dirty filters. |

Once a fault is cleared and after reassembling the dryer, the condensate must be drained from the air tank, then dry the air tank, and the dryer must be regenerated, best when using continuous compressor operation at a

pressure of around 7.0 bar for a period of at least 1 hour.



Check the moisture content of the air exiting the air tank (see the Technical data chapter) to prevent damage to connected downstream equipment.

19. REPAIR SERVICE

Warranty and post-warranty repairs must be done by the manufacturer, its authorized representative, or service personnel approved by the supplier.

Attention.

The manufacturer reserves the right to make changes to the equipment without notice. Any changes made will not affect the functional properties of the equipment.

20. LONG-TERM SHUTDOWN

If the compressor will not be used for a prolonged time period, it is recommended to drain all condensate from the air tank and the condensate separator. Then turn on the compressor for 10 minutes, keeping the drain

valve on the air tank open (15) (Fig. 1). Switch off the compressor using the main switch (19) (Fig. 2), close the condensate drain valve and disconnect the equipment from the mains.

21. DISPOSAL OF DEVICE

- Disconnect the equipment from the mains.
- Release the air pressure in the pressure tank by opening the drain valve (15) (Fig. 1).
- Dispose of the equipment following all applicable regulations.
- Entrust a specialised company to sort and dispose of waste.
- Worn out components have no negative environmental impact.

ANNEX**22. MAPPING PARAMETERS**

| Parameter VM Mapping | | | | | | |
|----------------------|---|------------------|-------|---------|--|--|
| ID | Block | Parameter | Type | Address | | |
| 1 | C019 HOURS RUN [Hours Counter] | OT - hour:minute | DWord | 0 | | |
| 2 | SF018 PRESSURE [Mathematic instruction] | Aq amplified | Word | 4 | | |
| 3 | SF023 TEMP_OUT [Analog Amplifier] | Ax, amplified | Word | 6 | | |
| 4 | SF052 TEMP_IN [Analog Amplifier] | Ax, amplified | Word | 8 | | |
| 5 | C019 HOURS RUN [Hours Counter] | MN - hour:minute | DWord | 10 | | |
| 6 | C037 COUNTER_MN [Up/Down counter] | Counter | DWord | 14 | | |
| 7 | SF025 MAX_TEMP_OUT [Max/Min] | Maximum value | Word | 26 | | |
| 8 | SF050 MAZ_TEMP+IN [Max/Min] | Maximum value | Word | 28 | | |
| 9 | C038 TOTAL HOURS [Hours Counter] | OT - hour:minute | DWord | 30 | | |
| 10 | C091 HIGH CONSUMP [Up/Down counter] | Counter | DWord | 34 | | |
| 11 | C095 FAULT M1 [Up/Down counter] | Counter | DWord | 38 | | |
| 12 | C096 FAULT M2 [Up/Down counter] | Counter | DWord | 42 | | |
| 13 | C099 FAULT M3 [Up/Down counter] | Counter | DWord | 46 | | |
| 14 | C098 FAULT M4 [Up/Down counter] | Counter | DWord | 50 | | |
| 15 | C100 FAULT M5 [Up/Down counter] | Counter | DWord | 54 | | |
| 16 | C101 FAULT M6 [Up/Down counter] | Counter | DWord | 58 | | |
| 17 | C041 SWITCH MOTOR [Up/Down counter] | Counter | DWord | 62 | | |

| | | | | | |
|----------|-------------------------------|----------|--------------|--------------|---------|
| Creator: | Uta, Yarek Milan | Project: | Installation | Customer: | |
| Checked: | Uta, Yarek Milan | File: | | Diagram No.: | 4ZA-439 |
| Date: | 5/23/17 3:33 PM/2018-11-17 AM | | | Page: | 1/2 |

| Parameter VM Mapping | | | | | |
|----------------------|-------------------------------------|-----------|-------|---------|--|
| ID | Block | Parameter | Type | Address | |
| 18 | C045 SWITCH FAN [Up/Down counter] | Counter | DWord | 70 | |
| 19 | C111 MN NDM COUNT [Up/Down counter] | Counter | DWord | 74 | |
| 20 | C130 FAULT M7 [Up/Down counter] | Counter | DWord | 78 | |
| 21 | C119 FAULT M8 [Up/Down counter] | Counter | DWord | 82 | |
| 22 | C088 FAULT M9 [Up/Down counter] | Counter | DWord | 86 | |

| | | | | | |
|----------|-------------------------------|---------------|-------------------------------|--------------|---------|
| Creator: | Ing. Vanek Milan | Project: | DK50 & X4VRTSM / OMI or NDM / | Customer: | 4ZA-439 |
| Checked: | Ing. Masar Jozef | Installation: | 8X4VRTM_OMI_V1.00_090218.lld | Diagram No.: | |
| Date: | 5/23/17 3:33 PM/2/18 11:17 AM | File: | | Page: | 2 / 2 |



DK50 4X4VRT/M

DK50 6X4VRT/M

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