



DK50-10

COMPRESSOR
KOMPRESSOR
COMPRESSEUR
КОМПРЕССОР
SPREŻARKA
KOMPRESOR

DK50-10



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DATE OF LAST REVISION
DATUM DER LETZTEN ÜBERARBEITUNG
DATE DE LA DERNIÈRE RÉVISION
ДАТА ПОСЛЕДНЕЙ РЕДАКЦИИ
DATA OSTATNIEJ AKTUALIZACJI
DÁTUM POSLEDNEJ REVÍZIE
DATUM POSLEDNÍ REVIZE

03/2018

NP-DK50-10-2_03-2018-MD
112000354-000

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IMPORTANT INFORMATION

1. CONFORMITY WITH THE REQUIREMENTS OF EUROPEAN UNION DIRECTIVES

This product conforms to the requirements of the Medical Device Directive (93/42/EEC) and the Machinery Directive (2006/42/EC), 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 dental unit, instruments, and devices in laboratories where the parameters and properties of the compressed air are suitable for the specific application.



Compressed air supplied by the compressor is unsuitable for use with artificial lung ventilation devices without further filtration

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.

3. WARNINGS AND SYMBOLS

The following symbols are used in the user manual, device and its packaging to denote important details and information:



General warnings



Danger, electric shock hazard



Read the user manual!



CE marking



Compressor is controlled automatically and may start without warning



Caution! Hot surface



Ground connection



Terminal for ground connection



Alternating current



Handling mark on package – FRAGILE



Handling mark on package – THIS SIDE UP



Handling mark on package – KEEP DRY



Handling mark on package – TEMPERATURE LIMITATIONS



Handling mark on package – LIMITED STACKING



Mark on package – RECYCLABLE MATERIAL



Manufacturer

4. WARNINGS

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

4.1. General warnings

READ THE USER MANUAL CAREFULLY BEFORE USING THE DEVICE AND KEEP IT FOR FUTURE USE!

- The user manual supports the correct installation, operation and maintenance of the product. Careful review of this manual will provide the information necessary for the correct operation of the product for its intended use.
- Original packaging should be retained for the return of the device. Only the original packaging ensures protection of the device during transport. If it is necessary to return the product during the warranty period, the manufacturer is not liable for damages caused by improper packaging.
- This warranty does not cover damages originating from the use of accessories other than those specified or recommended by the manufacturer.
- The manufacturer only guarantees the safety, reliability and function of the device if:
 - installation, new settings, changes, expansion, and repairs are performed by the manufacturer or an organisation authorised 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 the applicable safety and technical standards at the time of 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.

4.2. General safety warnings

The manufacturer designed and manufactured the product to minimise all risks when used correctly for the intended use. The manufacturer considers it its obligation to lay down the following general safety precautions.

- Use and operation of the product must comply with all laws and local regulations valid in the place of use. The operator and user are responsible for following all the appropriate regulations in the interests of performing work safely.
- Only the use of original parts guarantees the safety of operating personnel and the flawless operation of the product itself. Only the accessories and parts mentioned in the technical documentation or expressly approved by the manufacturer should be used.
- The operator must ensure that the device is functioning correctly and safely before every use.
- The user must be familiar with the operation of the device.
- Do not use the product in environments with a risk of explosion.
- The user must inform the supplier immediately if any problem directly related to the operation of the device occurs.

4.3. Safety warnings on protection from electric current

- The device must only be connected to a properly installed, earthed socket.
- Before the product is plugged in, ensure that the mains voltage and frequency stated on the product are in compliance with the values of the mains.
- Prior to putting the device into operation check for any damage to the connected pneumatic lines and electrical wiring. Replace damaged pneumatic lines and electrical wirings immediately.
- Immediately disconnect the product from the mains (remove power cord from the socket) in hazardous situations or in the case of a technical malfunction.
- During all repairs and maintenance, ensure that:
 - the mains plug is removed from the power socket
 - pressure is vented from the air tank and pipes
- The product shall only be installed by a qualified technician.

5. STORAGE AND TRANSPORT

The compressor is shipped from the factory in a transport packaging. This protects the device from damage during transport.



The original compressor packaging must be used for transport whenever possible. Transport the compressor in an upright position, always secured with transport fixation.



Protect the compressor from moisture, dirt and extreme temperatures during transport and storage. Store the compressor in its original packaging in a warm, dry, and dust-free area. Do not store near any chemical substances.



Keep the packaging material, if possible. If not, please dispose of the packaging material in an environmentally-friendly way. Packaging cardboard can be recycled with old paper.



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

Ambient conditions for storage and transport

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

Temperature: -25°C to $+55^{\circ}\text{C}$, 24 h at up to $+70^{\circ}\text{C}$
Relative humidity: 10% to 90% (non-condensing)

6. TECHNICAL DATA

Compressors are designed for dry and ventilated indoor environments with the following conditions:

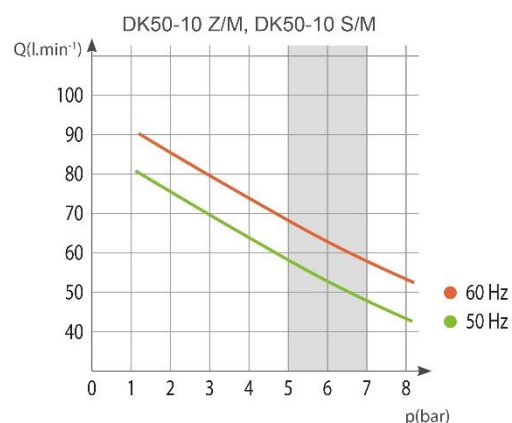
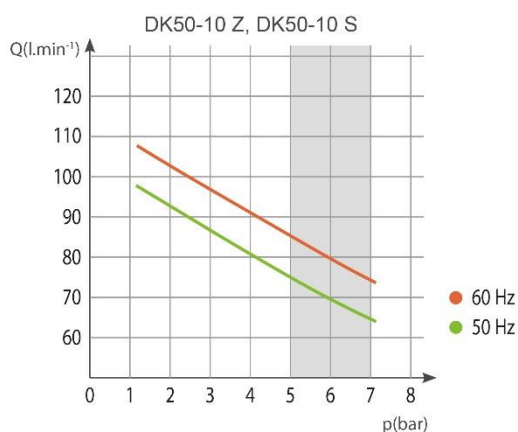
Temperature : +5°C až +40°C,
 Max. relative humidity.: 70%,
 Max. absolute humidity. 15 g/m³

Tab.1

5 – 7 bar		DK50-10 Z		DK50-10 S		DK50-10 Z/M		DK50-10 S/M	
Nominal voltage / frequency (*)	V / Hz	230 / 50/60	115 / 60	230 / 50/60	115 / 60	230 / 50/60	115 / 60	230 / 50/60	115 / 60
Capacity at 5 bar	Lit.min-1	75/85	85	75/85	85	58/68	68	58/68	68
Working pressure (**)	bar	5.0 – 7.0		5.0 – 7.0		5.0 – 7.0		5.0 – 7.0	
Capacity with KJF-1 at 5 bar	Lit.min-1	75/85	85	75/85	85	-		-	
Max. current	A	3.8/4.8	8.9	3.8/4.8	8.9	4.1/5.1	9.1	4.1/5.1	9.1
Motor power	kW	0.55		0.55		0.55		0.55	
Air tank volume	Lit.	10		10		10		10	
Air quality – filtration	µm	-		-		0.3		0.3	
Maximum operating pressure of safety valve	bar	8.0		8.0		8.0		8.0	
Noise level at 5 bar	LpfA [dB]	≤64/≤66	≤66	≤46/≤49	≤49	≤65/≤67	≤67	≤49/≤52	≤52
Operating mode		100%		100%		100%		100%	
PDP - drying performance at 7 bar		-		-		≤ +3°C		≤ +3°C	
Time to fill air tank from 0 to 6 bar	s	50/44	44	50/44	44	70/60	60	70/60	60
Dimensions (net) w x d x h	mm	485x350x553		580x440x655		544x350x553		649x440x655	
Net weight (****)	kg	38 (***)		53 (***)		44		61	
Classification under EN 60601-1		Class I.							

Notes:

- (*) When ordering, state the version of the compressor
- (**) For other range of pressure:consult with supplier
- (***) Weight of compressors with a KJF1 unit _add 3 kg
- (****) Information about the weight is for informative purposes only and applies to the product without any additional accessories.



Tab. 2

6 – 8 bar		DK50-10 Z		DK50-10 S		DK50-10 Z/M		DK50-10 S/M	
Nominal voltage / frequency (*)	V / Hz	230 / 50/60	115 / 60	230 / 50/60	115 / 60	230 / 50/60	115 / 60	230 / 50/60	115 / 60
Capacity at 6 bar	Lit.min-1	70/80	80	70/80	80	60/70	70	60/70	70
Working pressure (**)	bar	6.0 – 8.0		6.0 – 8.0		6.0 – 8.0		6.0 – 8.0	
Capacity with KJF-1 at 6 bar	Lit.min-1	70/80	80	70/80	80	-		-	
Max. current	A	3.9/4.9	9	3.9/4.9	9	4.1/5.1	9.2	4.1/5.1	9.2
Motor power	kW	0.55		0.55		0.55		0.55	
Air tank volume	Lit.	10		10		10		10	
Air quality – filtration	µm	-		-		0.3		0.3	
Maximum operating pressure of safety valve (****)	bar	12.0		12.0		12.0		12.0	
Noise level at 5 bar	LpFA [dB]	≤64/≤66	≤66	≤46/≤49	≤49	≤65/≤67	≤67	≤49/≤52	≤52
Operating mode		100%		100%		100%		100%	
PDP drying performance at 7 bar		-		-		≤ +3°C		≤ +3°C	
Time to fill air tank from 0 to 7 bar	s	60/51	51	60/51	51	72/61	61	72/61	61
Dimensions (net) w x d x h	mm	485x350x553		580x440x655		544x350x553		649x440x655	
Net weight (****)	kg	38 (***)		53 (***)		44		61	
Classification under EN 60601-1		Class I.							

Notes:

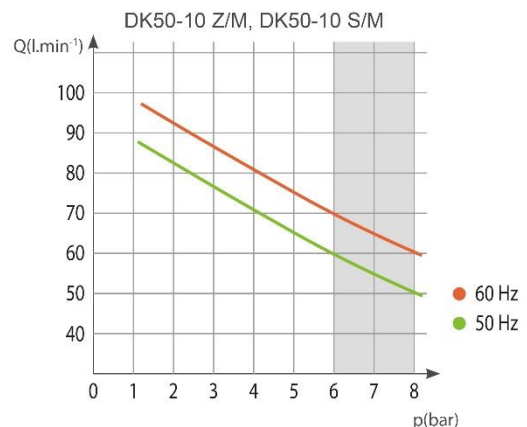
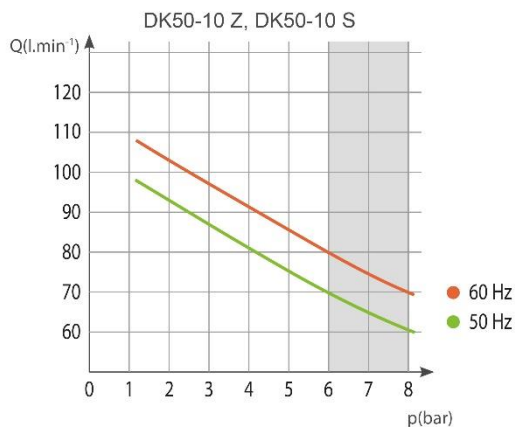
(*) When ordering, state the version of the compressor

(**) For other range of pressure:consult with supplier

(***) Weight of compressors with a KJF1 unit _add 3 kg

(****) Information about the weight is for informative purposes only and applies to the product without any additional accessories.

(*****) The permitted operating pressure of the safety valve can also be set to another value, e.g. 9 bar, upon agreement with the manufacturer.



Tab. 3

8 – 10 bar		DK50-10 Z		DK50-10 S		DK50-10 Z/M		DK50-10 S/M	
Nominal voltage / frequency (*)	V / Hz	230 / 50/60	115 / 60	230 / 50/60	115 / 60	230 / 50/60	115 / 60	230 / 50/60	115 / 60
Capacity at 8 bar	Lit.min-1	60/70	70	60/70	70	50/60	60	50/60	60
Working pressure (**)	bar	8.0 – 10.0		8.0 – 10.0		8.0 – 10.0		8.0 – 10.0	
Capacity with KJF-1 at 8 bar	Lit.min-1	60/70	70	60/70	70	-		-	
Max. current	A	4.1/5.1	9.2	4.1/5.1	9.2	4.3/5.3	9.4	4.4/5.4	9.4
Motor power	kW	0.55		0.55		0.55		0.55	
Air tank volume	Lit.	10		10		10		10	
Air quality – filtration	µm	-		-		0.3		0.3	
Maximum operating pressure of safety valve (****)	bar	12.0		12.0		12.0		12.0	
Noise level at 5 bar	LpFA [dB]	≤64/≤66	≤66	≤46/≤49	≤49	≤65/≤67	≤67	≤49/≤52	≤52
Operating mode		100%		100%		100%		100%	
PDP drying performance at 7 bar		-		-		≤ +3°C		≤ +3°C	
Time to fill air tank from 0 to 9 bar	s	85/75	75	85/75	75	96/82	82	96/82	82
Dimensions (net) w x d x h	mm	485x350x553		580x440x655		544x350x553		649x440x655	
Net weight (****)	kg	38 (***)		53 (***)		44		61	
Classification under EN 60601-1		Class I.							

Notes:

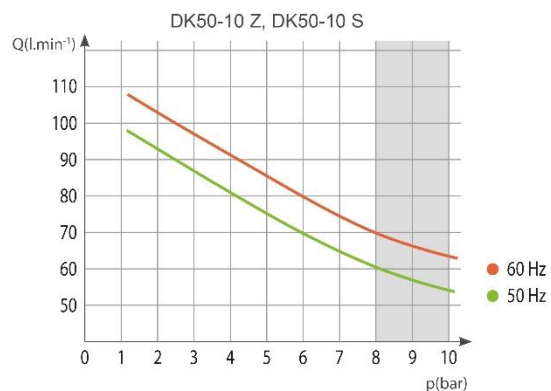
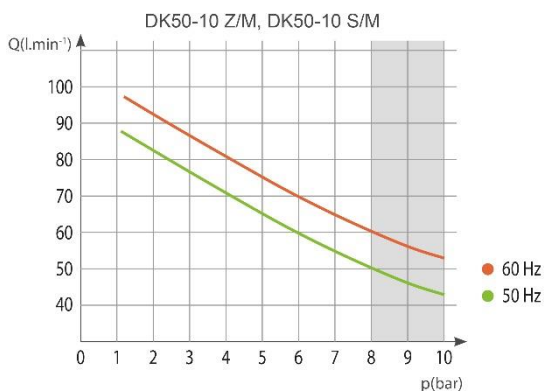
(*) When ordering, state the version of the compressor

(**) For other range of pressure:consult with supplier

(***) Weight of compressors with a KJF1 unit _add 3 kg

(****) Information about the weight is for informative purposes only and applies to the product without any additional accessories.

(*****) The permitted operating pressure of the safety valve can also be set to another value, e.g. 9 bar, upon agreement with the manufacturer.



6.1. Free air delivery (FAD) correction due to elevation

FAD correction table

Elevation [mamsl]	0 - 1500	1501 - 2500	2501 - 3500	3501 - 4500
FAD [l/min]	FAD x 1	FAD x 0.8	FAD x 0.71	FAD x 0.60

FAD („Free Air Delivery“) output related to conditions:

Elevation: 0 MASL

Atmospheric pressure : 101325 Pa

Temperature : 20°C

Relative humidity : 0%

7. PRODUCT DESCRIPTION

7.1. Variants

Compressor models are designed in the following variants:

DK50-10 Z - a base-mounted compressor for stand-alone installation in a given room

DK50-10 Z/K - a base-mounted compressor with a condensation and filtration unit (KJF1)

DK50-10 Z/M - a base-mounted compressor with an air dryer

DK50-10 S - a compressor in a cabinet with effective noise dampening for in-office installations

DK50-10 S/K - a compressor in a cabinet with a condensation and filtration unit (KJF1)

DK50-10 S/M - a compressor in a cabinet with an air dryer



DK50-10 Z



DK50-10 Z/M



DK50-10 S
DK50-10 S/M

7.2. Accessories

Accessories not included in the standard order must be ordered separately!

7.2.1. Automatic condensate drain

The automatic condensate drain (AOK) automatically drains condensate from the compressor's air tank based on a pre-set time interval. The condensate drain (AOK) is a suitable accessory for compressor models without dryers.

Type	Use	Kit article no.
AOK 10	DK50-10Z	447000001-046

7.2.2. Filters set

Compressors may be equipped with a filters set on the compressed air outlet if specified. The set of filters may be equipped with a pressure regulator. Filters set are suitable accessories for all the compressors specified above.

NOTE : If a higher level of air filtration is required, this specification must be agreed on with the supplier and made clear in the order.

Type	Use	Level of filtration (µm)	Pressure regulator	Kit article no.
FS 20R	DK50-10Z	-	yes	447000001-042
FS 20FR		5	yes	447000001-043
FS 20M		5+ 0.3	no	447000001-044
FS 20MR		5+ 0.3	yes	447000001-071
FS 20S		5+ 0.3 + 0.01	no	447000001-045
FS 20SR		5+ 0.3 + 0.01	yes	447000001-072
FS 21S	DK50-10Z/M	0.3 + 0.01	no	447000001-075
FS 21SR		0.3 + 0.01	yes	447000001-076

7.2.3. Condensation and filtration unit (KJF)

The compressor may be additionally fitted with a condensation and filtration unit (KJF-1 or KJFR-1). The KJF-1 or KJFR-1 ensure that the compressed air from the air tank is cooled in the cooler and the condensate is captured in the filter and automatically separated from the pneumatic distribution system. The compressed air is filtered at the same time.

Type	Use	Level of filtration (µm)	Pressure regulator	Kit article no.
KJF-1	DK50-10Z	5	no	450001011-001
KJFR-1			yes	450001011-002

8. PRODUCT FUNCTIONALITY

Compressor (Fig. 1)

The compressor aggregate (1) draws in atmospheric air through an inlet filter (8) and compresses it through a non-return valve (3) into an air tank (2) from which the device draws compressed air. If the pressure in the air tank drops to the switch-on pressure, the pressure switch (4) turns on the compressor and the compressor supplies compressed air into the air tank until it reaches the switch-off pressure, when the compressor switches off. The pressure hose is vented through the relief solenoid valve (13) once the compressor aggregate is shut off. The safety valve (5) prevents the pressure in the air tank from rising above the maximum allowed value. The drain valve (7) drains condensate from the air tank. Compressed, oil-free filtered air is stored in the air tank ready for use. Condensate must be drained from the air tank at regular intervals (see Chapter 18.1).

Compressor with membrane dryer (Fig. 3)

The compressor aggregate (1) draws in atmospheric air through an inlet filter (8) and compresses it, feeding it through the coolers (14) and the filter (15) into the dryer (9) and the dry, clean air is then fed through the non-return valve (3) into the air tank (2). A part of the air is released from the dryer with the captured moisture, which is manifested as a light air stream along the body of the dryer (9). Condensate from the filter is automatically drained at regular intervals into the collecting bottle via the condensate drain solenoid valve (16). The dryer ensures continuous drying of the compressed air. The drain valve (7) drains condensate from the air tank when drying performance is checked. Compressed, oil-free filtered air is stored in the air tank ready for use.

The pressure vessel does not need to be drained.

Compressor with condensation and filtration unit (Fig. 2)

The compressor aggregate (1) draws in air through an inlet filter (8) and compresses it through a non-return valve (3) into the air tank (2). Compressed air from the air tank flows through a cooler (10) that cools the compressed air. The condensed moisture is trapped in the filter (11) and automatically separates as condensate (12) into the collecting bottle. Compressed, oil-free filtered air is ready for use.

Condensate must be drained from the air tank at regular intervals (see Chapter 18.1).

Compressor cabinet

The soundproof cabinet provides compact covering of the compressor, allowing sufficient exchange of cooling air. With its design it can be placed in a dentist's office as a part of furniture. The fan under the aggregate of a compressor provides cooling of compressor and it is in operation at the same time with an engine of the compressor. After prolonged use the temperature in the case may rise above 40°C, causing the cooling fan blower to automatically turn on. After cooling the case area to 32°C the fan blower turns off automatically.



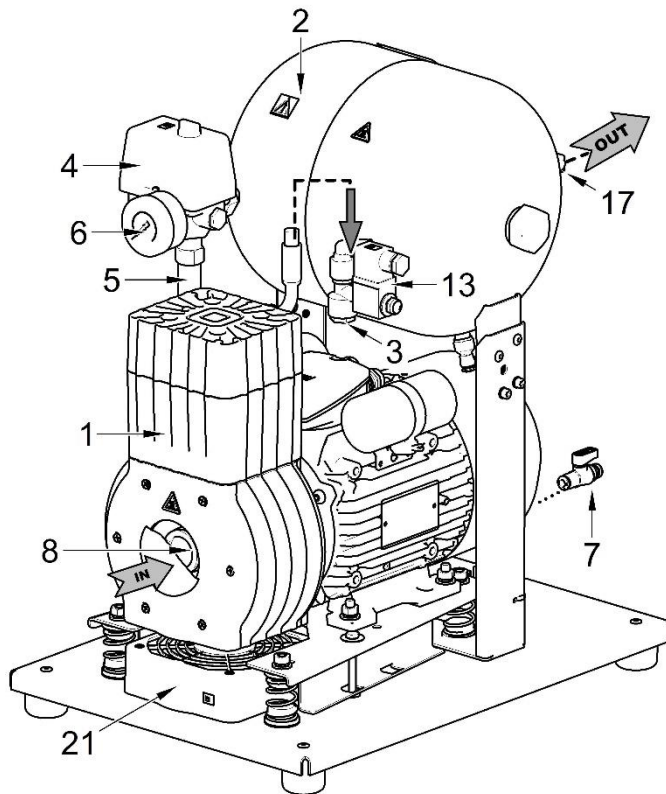
Make sure that nothing impedes the free flow of air under and around the compressor. Never cover the hot air outlet on the top back side of the case.



If placing the compressor on a soft floor such as carpet, create space for ventilation between the base and floor or the cabinet and floor, e.g. underpin the footings with hard pads.

The 8-10 bar compressor model is equipped with an hour counter (Fig. 4).

Fig. 1 - DK50-10 Z - Compressor



Description for Figures 1-4

- 1. Compressor aggregate
- 2. Air tank
- 3. Non-return valve
- 4. Pressure switch
- 5. Safety valve
- 6. Pressure gauge
- 7. Drain valve
- 8. Inlet filter
- 9. Dryer
- 10. Pipe cooler
- 11. Filter
- 12. Condensate outlet
- 13. Solenoid valve
- 14. Dryer cooler
- 15. Filter
- 16. Condensate drain solenoid valve
- 17. Compressed air outlet
- 18. Circuit breaker switch
- 19. Bottle
- 20. Magnetic holder
- 21. Fan
- 22. Switch
- 23. Hour counter
- 24. Connector
- 25. Cabinet fan

Fig. 2 – DK50-10 Z/K - Compressor with condensation and filtration unit KJF1

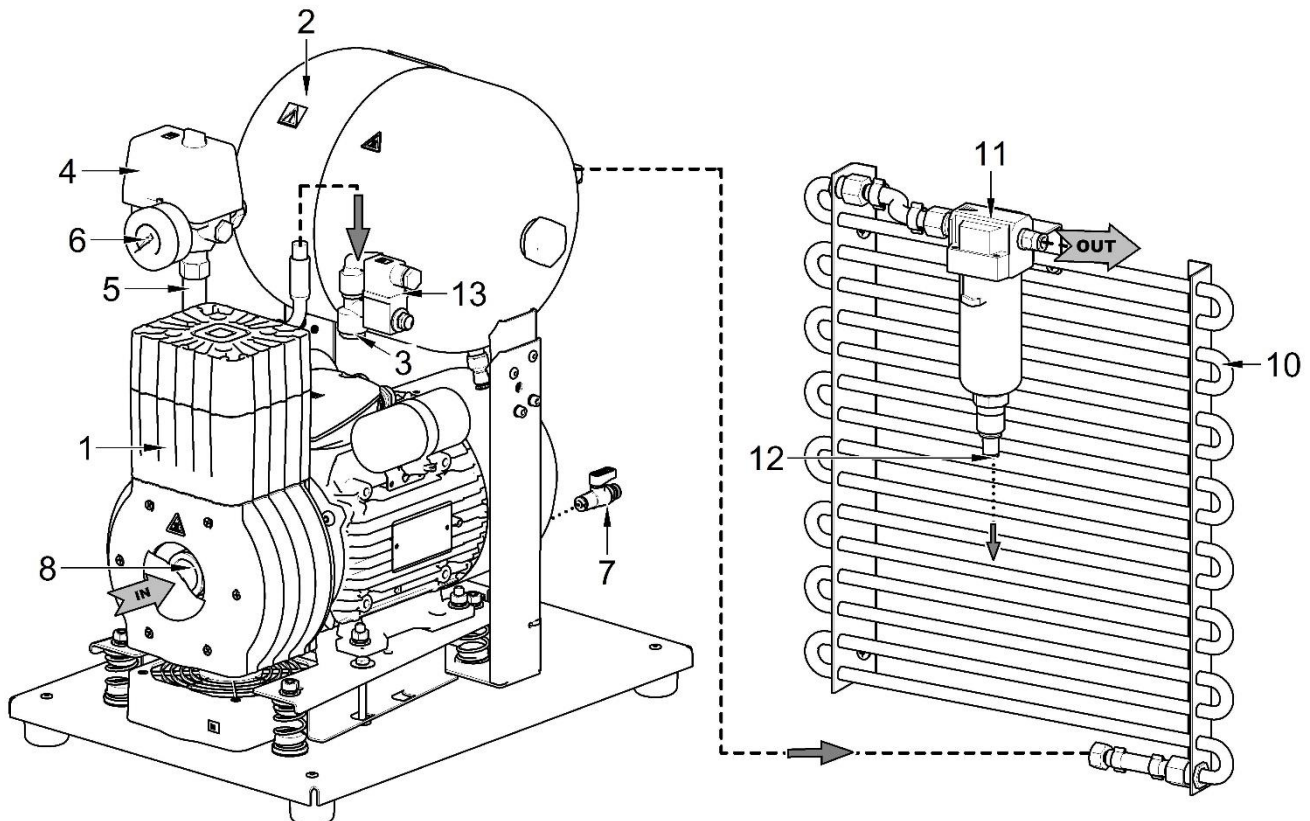


Fig. 3 - DK50-10Z/M- Compressor with dryer

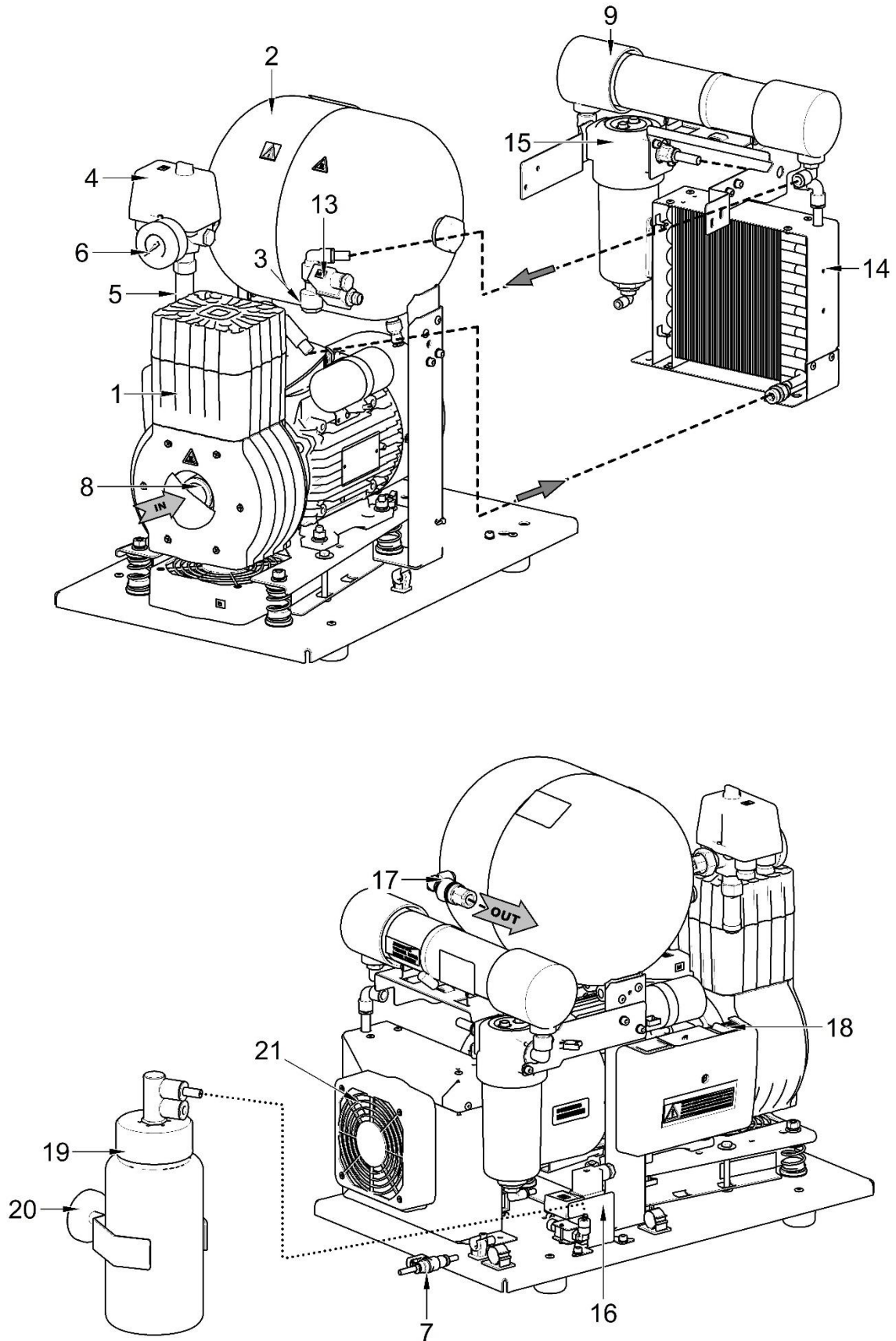
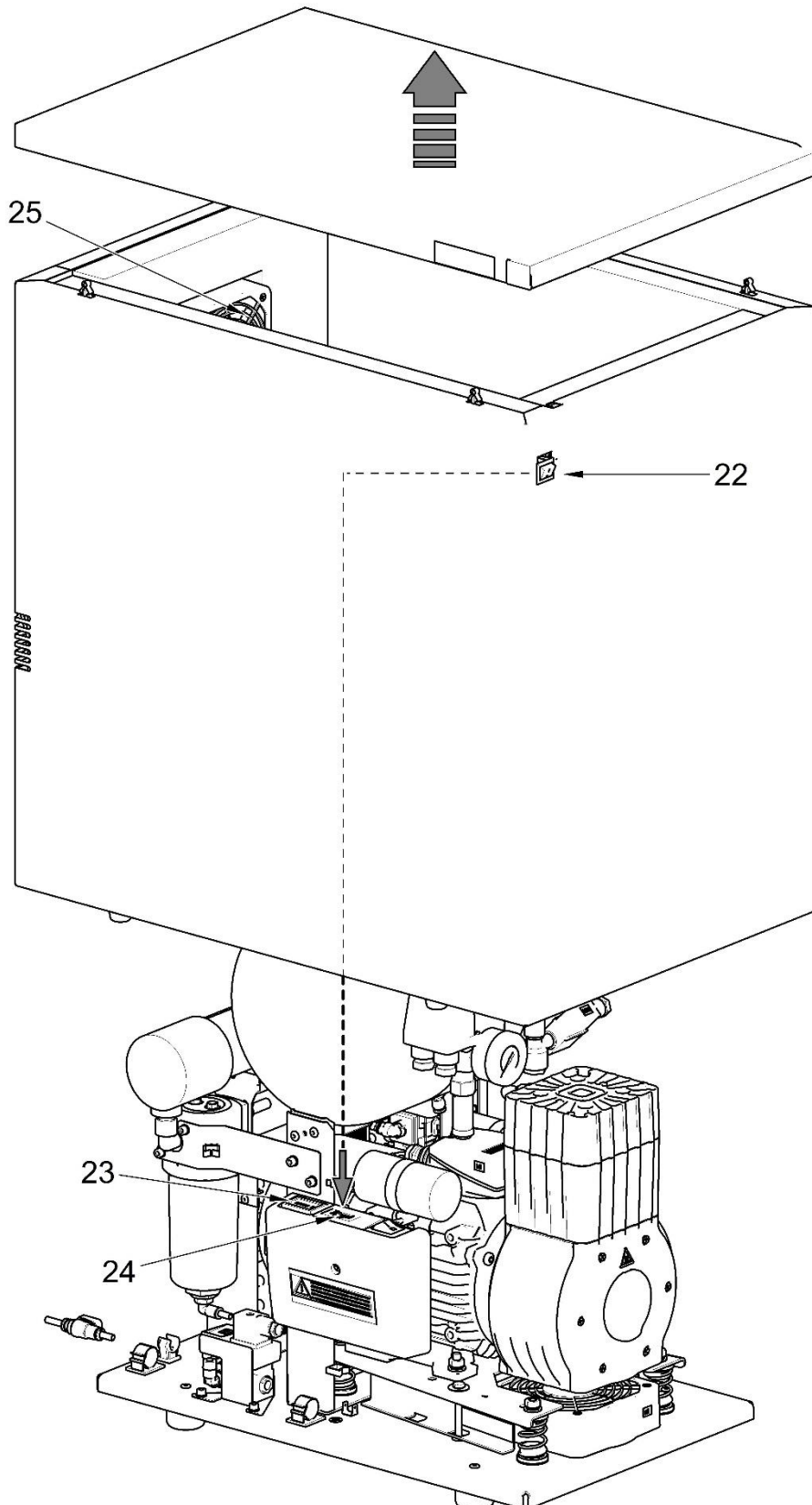
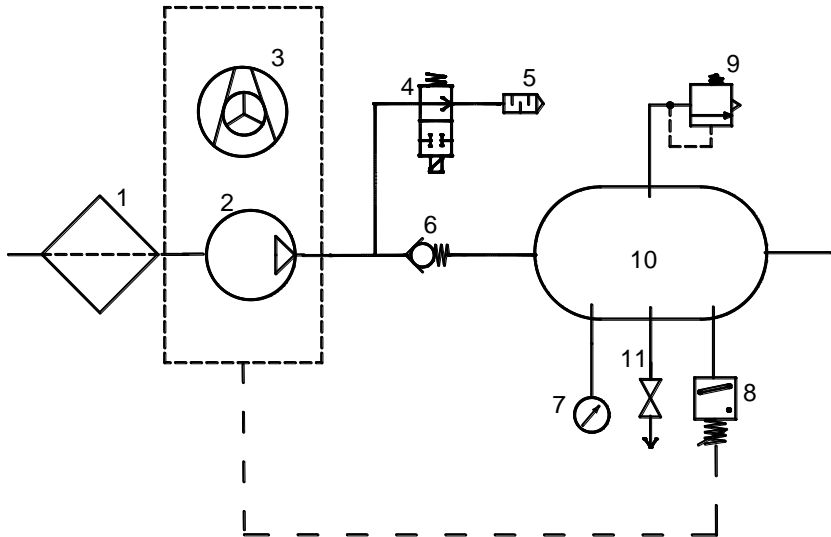


Fig. 4 - Compressor DK50-10 S/M (8-10bar)

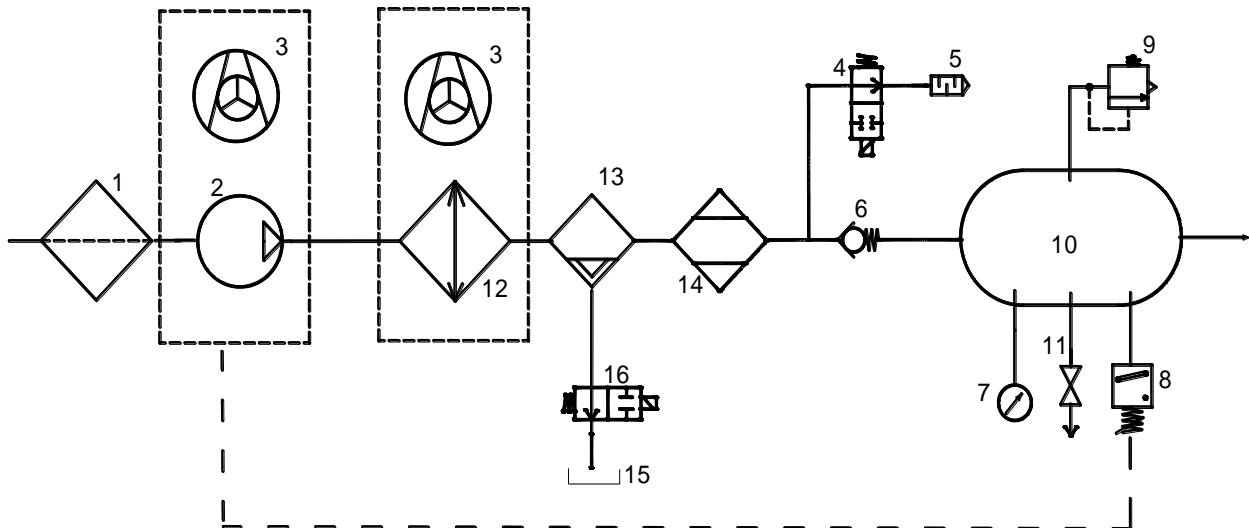


9. PNEUMATIC DIAGRAM

DK50-10 Z, DK50-10 S



DK50-10 Z/M, DK50-10 S/M



Legend for compressed air diagram

- | | |
|---------------------|-------------------------------------|
| 1. Inlet filter | 9. Safety valve |
| 2. Compressor | 10. Air tank |
| 3. Fan | 11. Drain valve |
| 4. Relief valve | 12. Cooler |
| 5. Noise silencer | 13. Coalescence filter |
| 6. Non-return valve | 14. Membrane dryer |
| 7. Pressure gauge | 15. Condensate drain bottle |
| 8. Pressure switch | 16. Condensate drain solenoid valve |

INSTALLATION

10. CONDITIONS FOR USE

- Compressors may only be installed and operating in dry, well-ventilated and clean environments with environmental parameters that meet the requirements specified in Chapter 6, Technical data. The compressor must be installed so that it is accessible at all times for operating and maintenance. Please ensure that the label 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 Chapter 6, Technical data).
- Compressors may not be operated outdoors or in otherwise wet or damp environments. Do not use the compressor in the presence of explosive gases, dust or flammable liquids.
- Before connecting the compressor to medical equipment, the supplier must confirm that it meets all requirements for its use. Refer to the technical data of the product for this purpose. When a unit is to be built-in, classification and evaluation of compatibility must be done by the manufacturer or supplier of the product to be used.
- Any other use or use outside this framework is not considered as intended use. The manufacturer is not responsible for any damages arising from such use. The operator/user assumes all risks.



Only a qualified professional may install the compressor and place it into operation for the first time. This professional is obliged to train operating staff as to the use and maintenance of the device. Installation and training of all operators shall be confirmed by the installer's signature on the certificate of installation.



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



Parts of the aggregate may be hot and reach hazardous temperatures during compressor operation and may pose a contact risk for operators or materials. Burn or fire hazard! Caution! Hot surface!

Ambient operating conditions

Temperature: +5°C to +40°C,
Max. relative humidity: 70%,
Max. absolute humidity: 15 g/m³.

11. PLACEMENT OF THE COMPRESSOR



The device shall only be installed by a qualified professional.

- Unwrap the compressor from the packaging.

11.1. Handling and releasing the compressor

- Position the compressor at the site of future operation (Fig. 5)

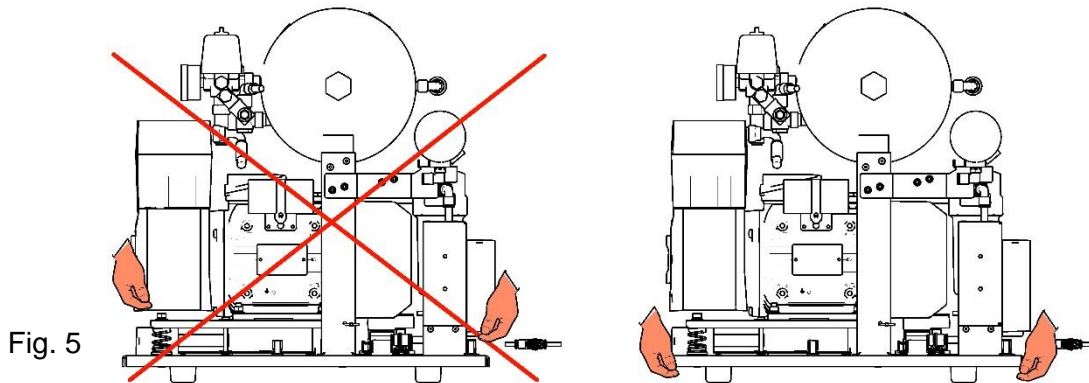


Fig. 5

- Remove the transport stabilisers from the aggregates. (Fig. 6)



Remove all devices used to secure the compressor aggregates once the compressor set has been installed and mounted at the site of final installation!

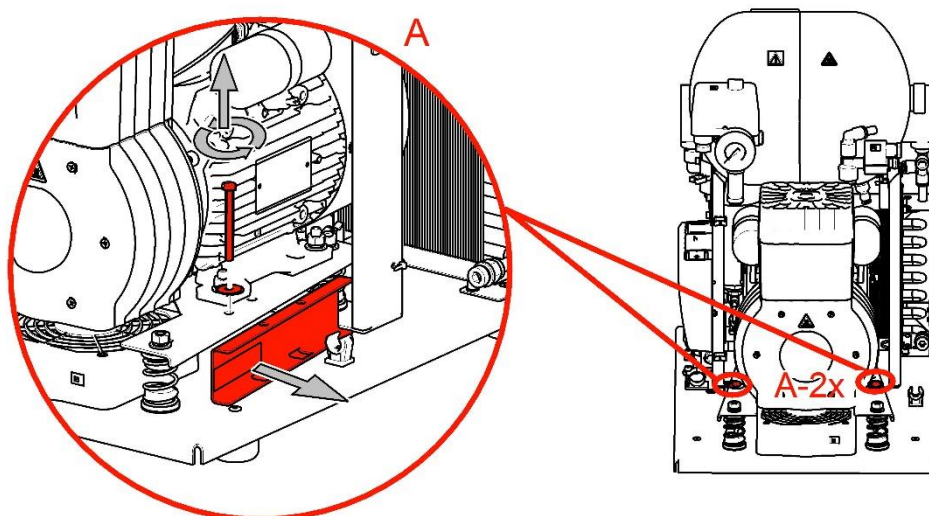


Fig. 6

12. PNEUMATIC CONNECTIONS

12.1. Compressed air outlet (Fig. 7)

Connect a pressure hose terminated at one end with a sliding quick connector (1) to the compressed air outlet (2) on the compressor and connect the hose to the compressed air system or directly to the device, in this case dental device.



Fig. 7



12.2. Condensate outlet (Fig.8)

- Connect the condensate drain hose to the condensate collecting bottle on compressors with dryers.



Fig. 8



- Route the hose through the opening in the rear wall of the cabinet near the compressor (with or without a dryer).

13. ELECTRICAL CONNECTIONS

The product is equipped with a grounded plug. Insert the mains plug into a rated mains socket.



Ensure full compliance with all local electrical codes. The mains voltage and frequency must comply with the data stated on the device's label.

- Keep the socket easily accessible to ensure that in an emergency the device can be safely disconnected from the mains.
- Connection to the power distribution cabinet must be max.16 A.



The cabinet for the DK50-10S/M 10 bar model compressor is equipped with a cooling fan and a switch. The cabinet must be connected using the provided cord with connector to the matching connector on the compressor's electrical panel. (Fig. 4)



Ensure the electrical cable does not touch hot compressor components. Risk of electric shock!

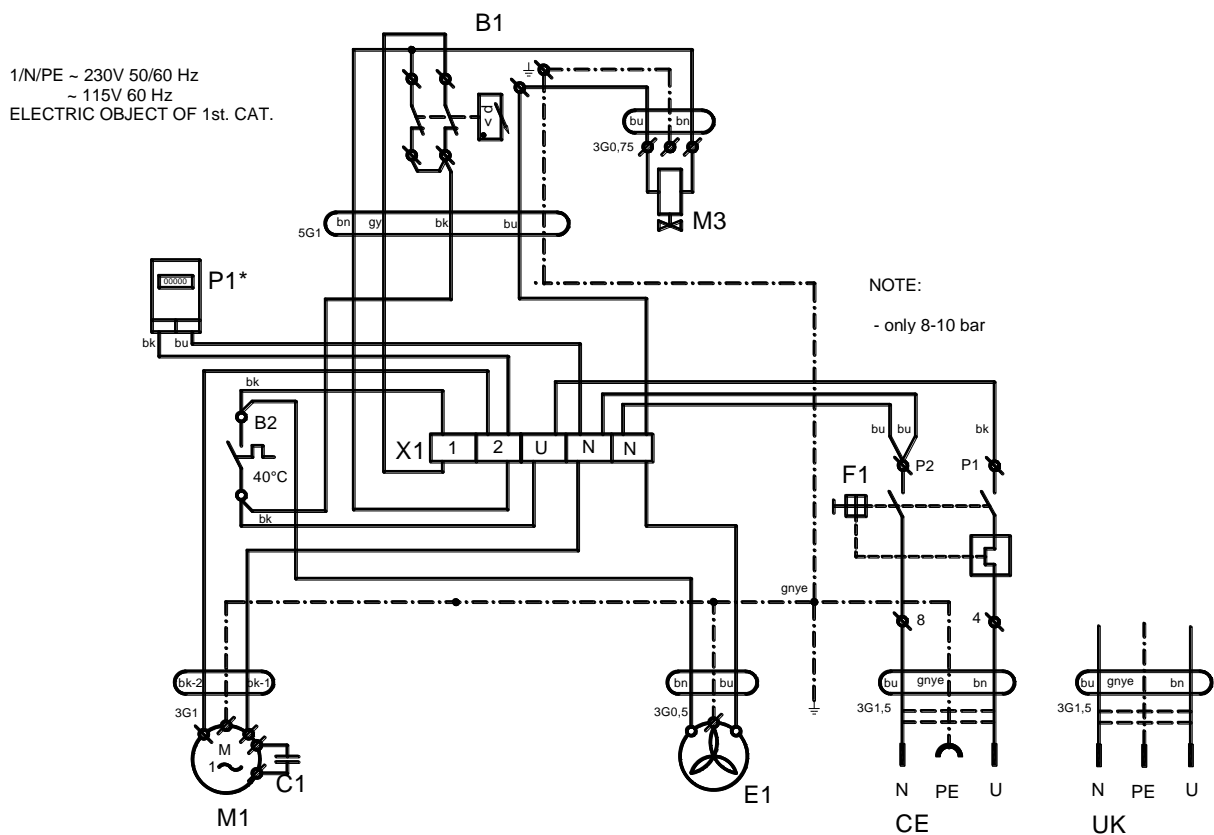


If any electrical cord or air hose is damaged it must be replaced immediately.

14. CONNECTION DIAGRAM

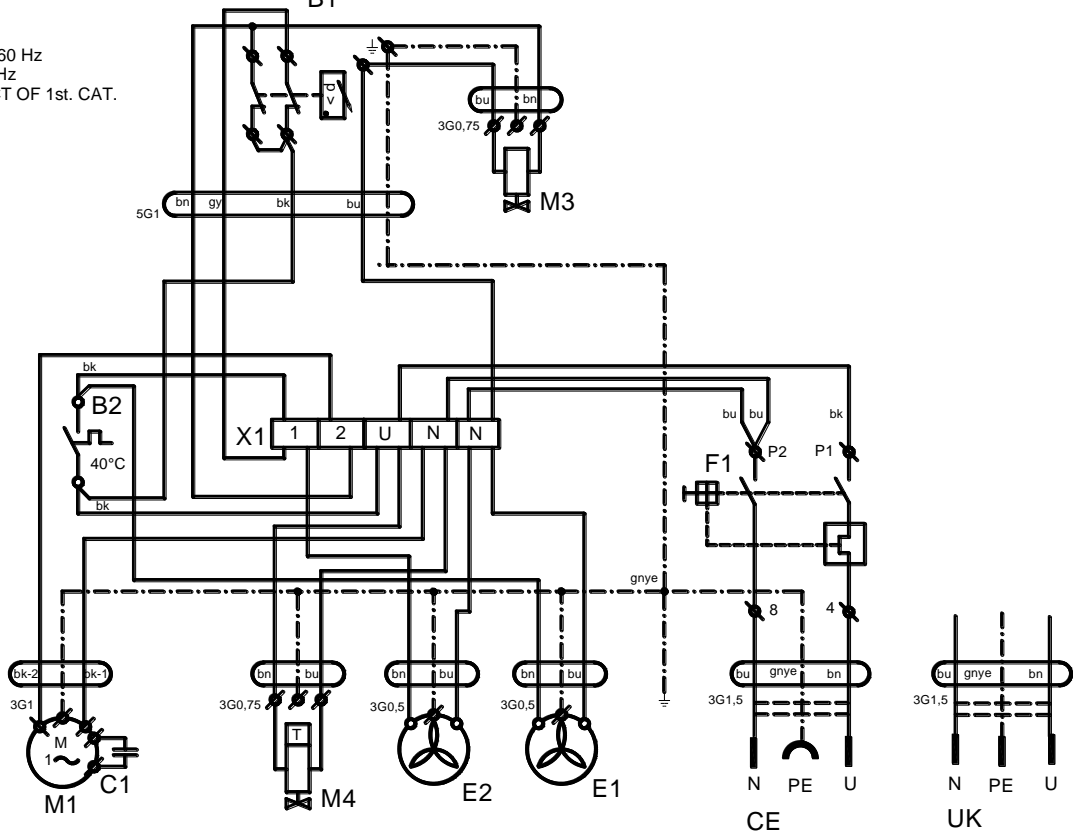
DK50-10 Z, DK50-10 S

5-7 bar, 6-8 bar, 8-10 bar



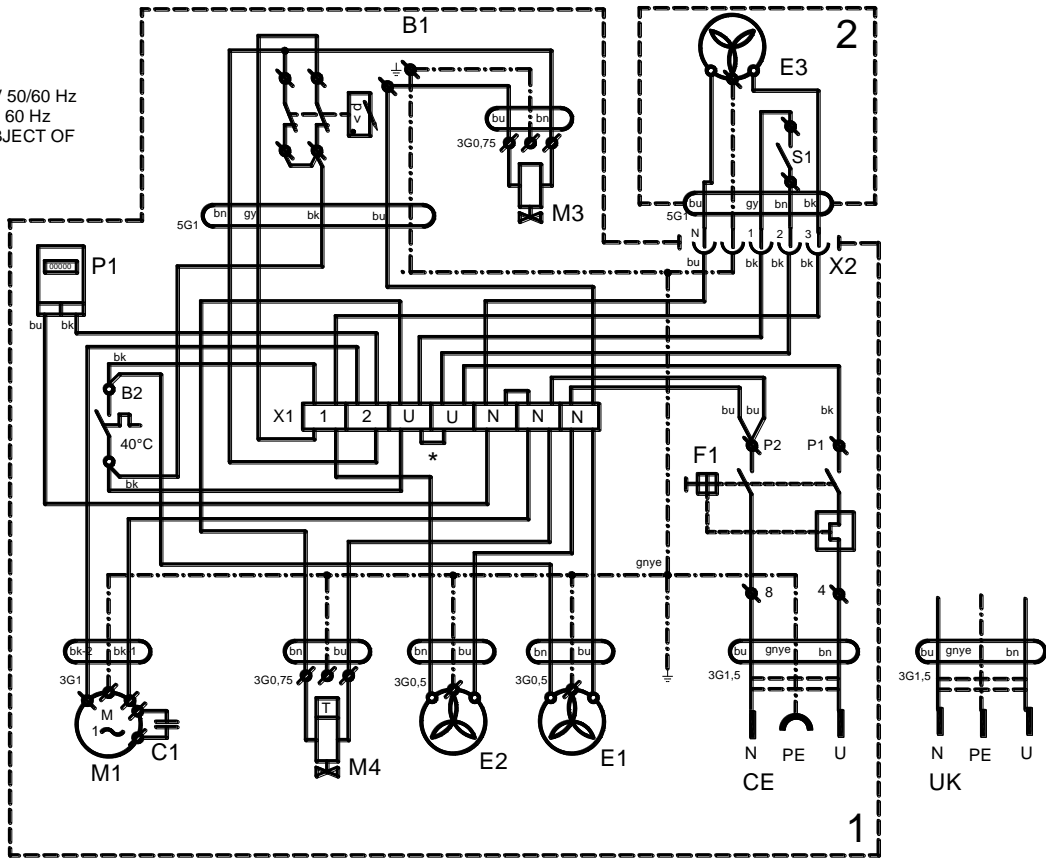
DK50-10 Z/M, DK50-10 S/M **5-7bar, 6-8 bar**

1/N/PE ~ 230V 50/60 Hz
 ~ 115V 60 Hz
 ELECTRIC OBJECT OF 1st. CAT.



DK50-10 Z/M, DK50-10 S/M **8-10 bar**

1/N/PE ~ 230V 50/60 Hz
 ~ 115V 60 Hz
 ELECTRIC OBJECT OF 1st. CAT.

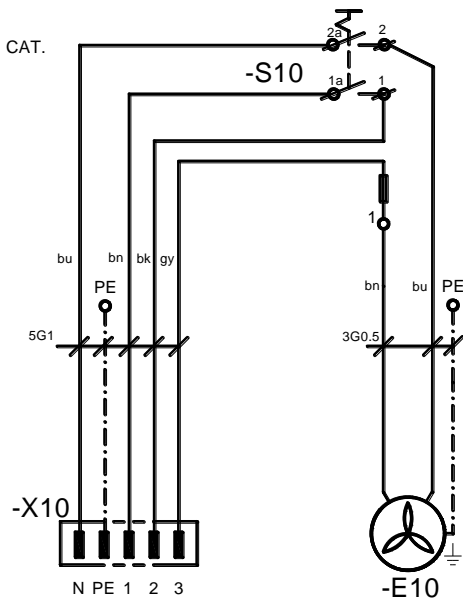


* - only for DK50-10 Z/M version

1-Compressor
 2-Cabinet

Cabinet for DK50-10 S/M 8-10bar

1/N/PE ~ 230V 50/60 Hz
ELECTRIC OBJECT OF 1st. CAT.



Legend for electrical diagram

- | | | | |
|---------|--------------------|-----|------------------------|
| M1 | Compressor motor | C1 | Capacitor |
| E1 | Compressor fan | B1 | Pressure switch |
| E2 | Dryer fan | X1 | Terminal box |
| M3 | Relief valve | F1 | Breaker switch |
| B2 | Temperature switch | M4 | Condensate drain valve |
| E3,E10 | Cabinet fan | P1 | Hour counter |
| X10, X2 | Connector | S10 | Switch |

OPERATION



IN CASE OF EMERGENCY, DISCONNECT THE COMPRESSOR FROM THE MAINS (PULL OUT THE MAINS PLUG).



THE COMPRESSOR AGGREGATE HAS HOT SURFACES. BURNS OR FIRE MAY RESULT IF CONTACT IS MADE.



During prolonged operation of the compressor, the temperature in the cabinet may increase to over 40°C. At this point the cooling fan automatically switches on. After cooling the space to under 32°C, the fan switches off.



Automatic start: when pressure in the pressure tank decreases below the switch-on pressure, the compressor automatically switches on. The compressor automatically switches off when pressure in the air tank reaches the switch-off pressure.

- The working pressure settings for the pressure switch set by the manufacturer cannot be changed. Compressor operation at a working pressure below the switch-on pressure indicates high air consumption (see the chapter Malfunctions)



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!



WHEN THE DRYER IS OPERATED AT AMBIENT TEMPERATURE THAT IS HIGHER THAN MAXIMUM OPERATING TEMPERATURE, THE DRYER MAY BE DAMAGED!

15. COMMISSIONING

- Make sure all transport stabilizers were removed.
- Check that all pressurized air line connections are secure.
- Check to ensure power is connected correctly to the compressor.
- Check the position of the breaker switch; it should be in the "I" position; if the switch remains in the "0" position, turn the breaker switch (4) to the "I" position. (Fig. 9)
- Check to see if the DK50-10S/M cabinet (8-10 bar models only) is connected to the compressor using the cable with the connector. (Fig. 4)
- For DK50-10 S/M (8-10 bar) compressors, turn on the switch (5) on the front of the cabinet to the "I" position and the green indicator indicates the operational status of the device. (Fig. 9)



The compressor is not equipped with a backup power supply.

16. SWITCHING THE COMPRESSOR ON

(Fig. 9)

Start compressor at the pressure switch (1) by turning the switch (2) to the “I” position. Check the position of the breaker switch to ensure it is in the “I” position. If not, turn the switch (4) to the “I” position. For DK50-10 S/M (8-10 bar) compressors, also turn on the switch (5) on the front of the cabinet and the green indicator will turn on. The compressor begins running, the air tank is filled, and the switching pressure and pressure switch turn the compressor off. The compressor operates in automatic mode, switched on and off by the pressure switch, depending on compressed air consumption.

Check the values of the switch-on and switch-off pressure using the pressure gauge (3). A tolerance of $\pm 10\%$ is acceptable. The pressure in the air tank must not exceed the permitted operating pressure.

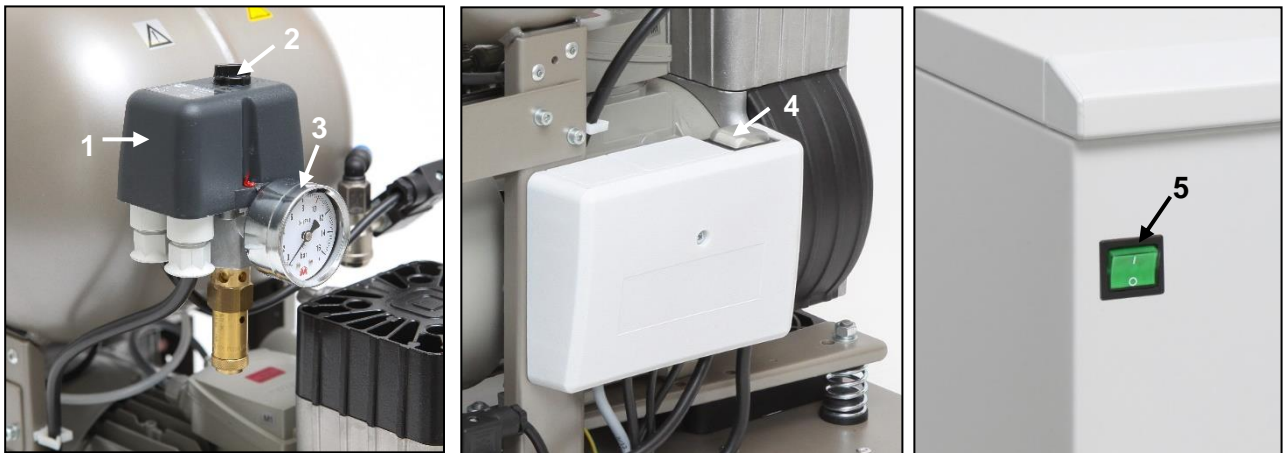


Fig. 9



Adjustments to the pressure range on the compressor’s pressure switch are prohibited. The pressure switch (1) was set up by the manufacturer and only a qualified technician trained by the manufacturer may make any changes to its settings.

Compressor – when first started and placed into service, the compressor fills the air tank until the switching pressure and the pressure switch turn off the compressor. The compressor operates in automatic mode, switched on and off by the pressure switch, depending on compressed air usage.

Compressor with dryer – the compressor operates in the same manner as above, only the compressed air passes through a cooler that removes moisture from the compressed air.

Compressor with a condensation and filtration unit (KJF-1) - during usage by the device, the compressed air passes through the KJF-1 unit, where the air is cooled, filtered and condensed liquid is captured and automatically drained into a collecting bottle.

17. COMPRESSOR SHUT-DOWN

(Fig.9)

Compressor shut-down for service or any other reason is performed at the pressure switch (1) by turning the alternation switch (2) to the “0” position and **pulling the mains plug from the socket**. This disconnects the compressor from power supply. Then open the drain valve (Fig. 10) to decrease the pressure in the air tank to zero.

MAINTENANCE

18. DEVICE MAINTENANCE

Warning!

The operator shall ensure completion of repeated testing of the device at least once every 24 months (EN 62353) or at intervals defined by applicable national legal regulations. A record of these test results shall be completed (e.g. per EN 62353, Annex G) together with the measurement methods.

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



Before starting compressor maintenance work, it is necessary to check if the compressor can be disconnected from the device to ensure that the person using the device is not at risk of health damage and there is no risk of any other material damages!



Aggregate components (head, cylinder, pressure hose, etc.) are very hot during and shortly after compressor operation – do not touch these components!



**Repair works beyond normal maintenance can be performed only by qualified personnel or the manufacturer's customer service.
Use only spareparts and accessories approved by the manufacturer.**



PROTECT EYESIGHT, WEAR GOGGLES, WHEN VENTING COMPRESSED AIR FROM THE COMPRESSED AIR CIRCUIT (AIR TANK).

The 8-10 bar compressor model is equipped with an hour counter (Fig. 4).

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



BEFORE STARTING ANY MAINTENANCE WORK, FIRST DISCONNECT THE COMPRESSOR FROM THE MAINS (PULL OUT THE MAINS PLUG) AND VENT THE COMPRESSED AIR FROM THE AIR TANK.

18.1. Maintenance intervals

Time interval	once a day	once a week	once a year	once every 2 years	2000 hours	4000 hours	6000 hours	8000 hours	10000 hours	12000 hours	Chapter	Set of spare parts	Performed by
Product operational checks	x										18.2	-	user
Drain condensate from the air tank)** - At high humidity	x										18.5	-	user
Drain condensate from the air tank)** - At normal humidity		x									18.5	-	user
Product function check		x									8	-	user
Leak check connections and inspect device			x								18.3	-	qualified professional
Inspection of electrical connections			x								18.4	-	qualified professional
Cooler and fan check			x								18.10	-	qualified professional
Filter element replacement in the dryer filter			x								18.8	025200304-000	qualified professional
Filter element replacement in the KJF-1			x								18.9	025200061-000	qualified professional
Safety valve check			x								18.6	-	qualified professional
Conduct a "repeated test" per EN 62353				x							18	-	qualified professional
Aggregate inlet filter replacement)*				x		x		x		x	18.7	025200126-000	qualified professional

)* data is presented in hours; if not possible, then the data is considered in years

)** only for compressors without dryers

18.2. Operational checks

- 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 cable and pneumatic hoses are undamaged. Replace damaged components or call in service personnel.
- Check the ambient temperature – the ambient temperature must be below the temperature limit (40 °C). Cool the space if the temperature is high.
- On the compressor with dryer – open the plug on the condensate collecting bottle to drain the condensate

18.3. Pneumatic connection leakage check and device inspection

Leakage check:

- Perform the leakage check of pneumatic connections when the compressor is operating – pressurizing.
- Use a leakage analyser or soapy water to check all joints and connections for leaks. Tighten or reseal the connection where leaks are found.

Device inspection:

- 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 of temperature switch operation (B2) – heat the temperature switch to a temperature above 40°C (e.g. using a heat gun, being careful not to warp any plastic pieces nearby). Fan EV1 (and EV2 for a compressor with dryer) will start up once the temperature reaches 40°C so long as power is connected to the compressor.
 - Check filter condition – the filters must be undamaged and sufficiently clean.
 - Check the condition of the aggregate itself - ensure there is no contamination inside the crankcase or play in the crankshaft
- Replace any defective parts as needed.

18.4. Inspection of electrical connections



Check all electrical connections on the device with the mains disconnected!

Inspection

- Check the mechanical function of the main switch.
- Check to ensure the power cable and connected wires are undamaged.
- Visually inspect the connection of individual cables to the terminal strip.
- Inspect all screw terminals for the protective green and yellow PE grounding conductor.

18.5. Condensate drain

Compressors (Fig. 10)

Draining the condensate from the pressure vessel is recommended during regular operation. Switch off the compressor at the mains and lower the pressure to a maximum of 1 bar, for instance, by venting air through the connected device. Place the hose with the drain valve into a vessel prepared in advance and open the drain valve (1) to remove the condensate from the tank.

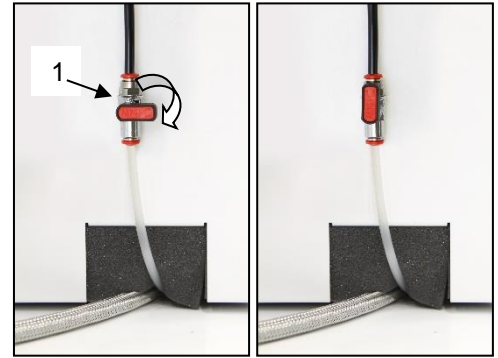


Fig. 10

Compressors with condensation and filtration unit (Fig. 11)

During regular use, condensation is automatically drained via the drain valve of the condensation unit filter. To check that the automatic drain is working properly, open the valve (4) of the drain vessel (2) by turning to the left. Release a small amount of condensate from the vessel. Close the valve (4) by turning to the right.

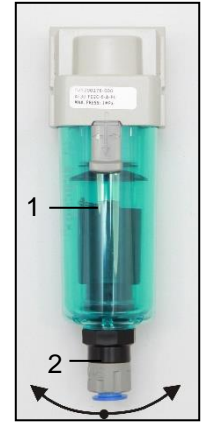


Fig. 11

Both compressor types can be equipped with an automatic condensate drain on the air tank to allow condensate to drain without operator intervention (see the Scope of Delivery – Accessories chapter).

Compressors with air dryer (Fig. 12)

Condensate from compressors with air dryers is automatically drained into a collecting bottle. The bottle must be drained regularly, see Chapter 18.1



Fig. 12



THE FOLLOWING IS REQUIRED BEFORE ANY FOLLOW-UP CHECKS:

For DK50-10S and DK50-10S/M compressors with a cabinet - remove / lift up the box.

For the DK50-10S/M 10 bar compressor model with a cabinet - remove the cover of the cabinet, disconnect the cabinet connector from the compressor connector and remove / lift up the box.

18.6. Safety valve check

(Fig. 13)

When the compressor is operated for the first time, make sure that the safety valve is working properly. Turn the screw (2) on the safety valve (1) several rotations to the left until the safety valve releases air. Let the safety valve vent for only a few seconds. Turn the screw (2) to the right until it seats, closing the valve.



Fig. 13



Never use the safety valve to vent air pressure in the air tank. It could damage the safety valve. The valve is set to the maximum permitted pressure by the manufacturer. Adjustments are not permitted!



WARNING! COMPRESSED AIR CAN BE DANGEROUS. WEAR EYE PROTECTION WHEN VENTING ANY AIR. COMPRESSED AIR MAY DAMAGE THE EYES OR CAUSE VISION PROBLEMS.

18.7. Inlet filter replacement

(Fig. 14)

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

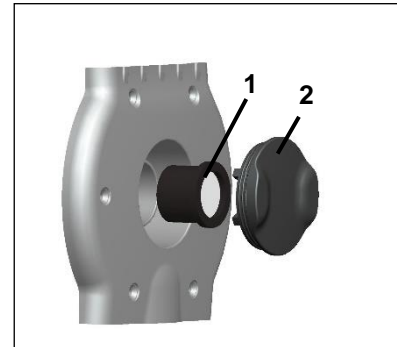


Fig. 14

18.8. Filter element replacement

(Fig. 15)

- Remove the hose (1) from the quick connector.
- Use a wrench (2) to release the filter vessel (3) and remove.
- Pull down on the filter element (4) to remove.
- Insert a new filter element.
- Re-install the filter vessel.
- Gently tighten the filter vessel with the wrench.
- Re-install the hose on the quick connector.

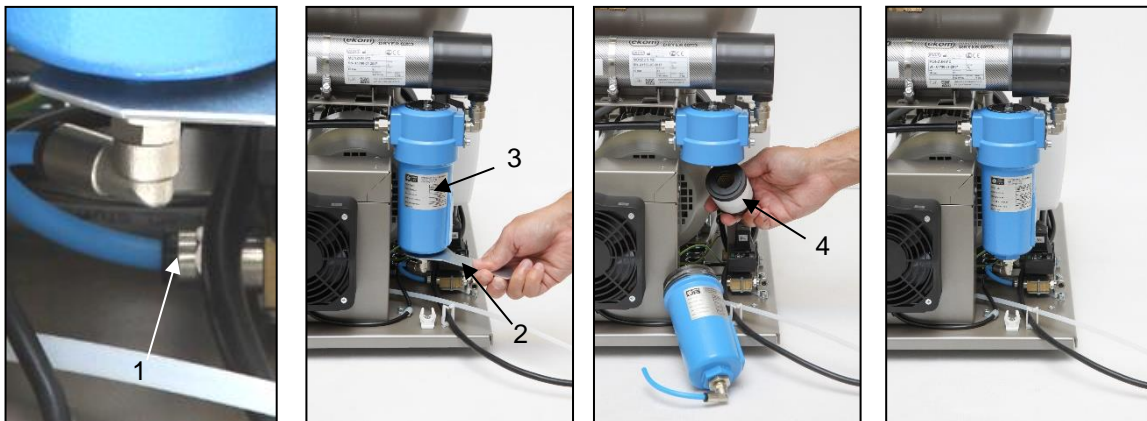


Fig. 15

18.9. Filter element replacement in the KJF-1 unit



Before proceeding, vent the air tank to zero pressure and disconnect the device from power.

(Fig. 16)

- Release the catch (1) on the filter by pulling down, rotate the vessel (2) and pull out.
- Pull out the holder with filter (3), rotate and take out from the vessel.
- Rotate the filter retainer (4).
- Replace the filter element (5) and reinstall the filter retainer (4), secure by rotating.
- Place the filter bracket (3) back into the vessel and rotate to secure it in the place.
- Reinstall the filter housing and rotate to secure it until the catch clicks.



Fig. 16

18.10. Cooler and fan check (Fig.3)

The equipment altogether, and especially the compressor fan, cooler fan (21) and cooler (14), must be kept clean to ensure efficient drying performance; vacuum or blow down the cooling fins and fans with compressed air to remove any dust from the surface.

TROUBLESHOOTING

CAUTION! BEFORE PROCEEDING, DEPRESSURIZE THE AIR TANK TO ZERO AND DISCONNECT THE DEVICE FROM THE MAINS.

For permanently high efficiency of drying, it is necessary to maintain the whole device, and mainly fan clean – regularly clean the surface of fan and cooling fins of cooler.

Troubleshooting can be performed only by qualified personnel.

MALFUNCTIONS	POSSIBLE CAUSE	REMEDY
Compressor does not start	No voltage at the pressure switch Motor winding failure, damaged thermal overload protection Faulty capacitor Seized piston or other rotating part Pressure switch does not switch	Check voltage in socket Check the breaker switch - and switch to the "I" on position Loose conductor at terminal – tighten Check the electrical cord – replace defective cord Replace motor or windings Replace capacitor Replace damaged parts Check the function of the pressure switch
Compressor often switches on	Air leak in compressed air distribution system Leaking non-return valve Large volume of condensed liquid in pressure vessel Low compressor performance	Check compressed air distribution system – seal loose joints Clean non-return valve, replace seals, replace non-return valve Drain condensed liquid Check the time to fill the air tank
Low pressure in air tank (compressor running constantly)	High air usage by device, Leak from pneumatic distribution system, Low aggregate output Aggregate malfunction Dryer malfunction	
Prolonged operation of the compressor	Leak from pneumatic distribution system Worn piston ring Inlet filter is plugged Defective solenoid valve	Check compressed air distribution system – seal loose joint Replace worn piston ring Replace old filter with a new filter Repair or change the valve or coil
Compressor is noisy (knocking, metal noises)	Damaged piston bearing, piston rod, motor bearing Loose or cracked spring	Replace damaged bearing Replace damaged spring
Dryer doesn't dry (condensed water in the air) *	Cooling fan not working	Replace the fan Check the power source
	Damaged dryer	Replace the dryer
	Non-functioning automatic condensate drain	Clean / replace

)* After a dryer malfunction, the interior surfaces of the air tank must be thoroughly cleaned and all condensed liquid removed.

Check the dew point of the air leaving the air tank (see Chapter 6 - Technical data) to protect the device from damage!

19. REPAIR SERVICE

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

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

20. STORAGE

If the compressor will not be used for a prolonged time period, drain all condensate from the air tank. Then turn on the compressor for 10 minutes, keeping the drain valve open (1) (Fig. 10). Switch off the compressor using the switch (2) at the pressure switch (1) (Fig. 9), close the drain valve and disconnect the device from the mains.

21. DISPOSAL OF THE DEVICE

- Disconnect the device from the mains.
- Release air pressure in the pressure tank by opening the drain valve (1) (Fig. 10).
- Dispose of the device following all applicable environmental regulations.
- Entrust a specialised company to sort and dispose of waste.
- Worn out components have no negative environmental impact.

ANNEX / ANHANG/ ANNEXE / ПРИЛОЖЕНИЕ / ZAŁĄCZNIK / PRÍLOHA / PŘÍLOHA**22. INSTALLATION RECORD**

1. Product: (model) DK50-10Z DK50-10S DK50-10Z/K DK50-10S/K DK50-10Z/M DK50-10S/M		2. Serial number:	
3.1. User's name:			
3.2. Address of installation:			
4. Equipment connected to the compressor:			
5. Installation / Commissioning:		6. Contents of operator training:	
A. Product completeness check **	Y	A. Description of the product and functions**	Y
	N		N
B. Documentation completeness check **	Y	B. Product operation: turning on/off, controls, control procedures, data on the display panel, alarms, operation in alarm conditions**	Y
	N		N
C. Installation/connection to equipment **	Y	C. Product maintenance: maintenance intervals, maintenance procedure, service intervals, operating activities**	Y
	N		N
D. Functional test **	Y	D. Safety measures, warnings – their meaning and compliance **	Y
	N		N
Notes::			
7. Operator instructed on safety measures, operations and maintenance:			
Name :		Signature:	
Name:		Signature:	
Name :		Signature:	
8. Installation and instruction performed by – First name/Last name		Signature:	
Company:		Address:	
Phone:			
Email:		Date:	
9. Distributor:			
Company:		Adresa:	
Contact person:			
Phone:		Email: :	

** mark with an "X" in points 5 and 6 (Y - yes /N - no). Enter any observations from points 5 and 6 into the "Notes" section



DK50-10



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NP-DK50-10-2_03-2018-MD
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