

OIL-FREE

AIR FOR LIFE

DK50 2V/50



INSTALLATION, OPERATION AND MAINTENANCE MANUAL

ekom

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IMPORTANT INFORMATION

1. CE MARKING

Products labeled with the CE mark of compliance meet the safety guidelines (93/42/EEC) of the European Union.

2. WARNINGS

2.1. General warnings

- This Installation, Operation and Maintenance Manual is a part of the appliance and must be kept with the compressor. Careful review of this manual will provide the information necessary for correct operation of the appliance.
- The safety of operating personnel and trouble-free operation of the appliance are guaranteed only if original parts are used. Only accessories and parts mentioned in the technical documentation or expressly approved by the manufacturer can be used.
- If any other accessories or consumable materials are used, the manufacturer cannot be held responsible for the safe operation of the appliance. This guarantee does not cover damages originating from the use of accessories or consumable material other than those specified or suggested by the manufacturer.
- The manufacturer guarantees the safety, reliability and function of the appliance only if:
 - Installation, new settings, amendments, extensions and repairs are performed by the manufacturer or its representative, or a service provider authorized by the manufacturer
 - The appliance is used in accordance with this Installation, Operation and Maintenance Manual
- The manufacturer reserves all rights for the protection of its wiring diagrams, methods and names.
- Translation of Manual for Installation, Operation and Maintenance is carried out in accordance with the best knowledge. In the case of ambiguities, the Slovak version of the text prevails.

2.2. General safety warnings

The manufacturer developed and designed the equipment in such a way so that any risks were excluded if it is used according to intention. The manufacturer considers it to be its obligation to describe the following safety measures in order to exclude residual damages.

- Operation of the appliance must be in compliance with all local codes and regulations.
- Original packaging should be kept for the return of the appliance. Only the original packaging ensures protection of the appliance during transport. If it is necessary to return the appliance during the guarantee period, the manufacturer is not liable for damages caused by improper packaging.
- Each time the appliance is used, the operator must make sure that it is functioning correctly and safely.
- The user must fully understand the operation of the appliance.
- The product is not intended for operation in areas with a risk of explosion.
- If any problem occurs during use of the appliance, the user must inform his supplier immediately.

2.3. Electrical system safety warnings

- The appliance must be connected to earth (grounded).
- Before the appliance is plugged in, make sure that the mains voltage and mains frequency stated on the appliance are the same as the power mains.
- Prior to putting into operation it is necessary to check for possible damage of the equipment and connected air and electric distributions. Damaged pneumatic and electric lines must be immediately replaced.
- Immediately disconnect the appliance from the mains (pull out mains plug) if a technical failure occurs.
- During repairs and maintenance, ensure that:
 - The mains plug is pulled out from the socket
 - Pressure pipes are vented and pressure is released from the air tank.
- The appliance must be installed by an approved, qualified technician.

3. ALERT NOTICES AND SYMBOLS

In the Installation, Operation and Maintenance Manual and on packaging and product, the following labels or symbols are used for important information:

	Attention, see instructions for use
	Caution, risk of electric shock
	Consult instructions for use
	CE mark of compliance
	Compressor is remote-controlled and may start without warning
	Caution! Hot surface
	Earth (ground) connection
	Terminal for ground connection
	Fuse
	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

4. STORAGE AND TRANSPORT

The compressor is shipped in cardboard that protects the appliance from damage during transport.



Caution! For transport, always use the original packaging and secure the compressor in the upright position.



Protect the compressor from humidity and extreme temperatures during transport and storage. A compressor in its original packaging can be stored in a warm, dry and dust-free area. Do not store near any chemical substances.



Keep packaging material if possible. If not, please dispose of the packaging material in an environmentally friendly way and recycle if possible.



Caution! Before moving or transporting the compressor, release all the air pressure from the tank and hoses and drain the condensed water.

5. TECHNICAL DATA

	DK50 2V/50	DK50 2V/50S
Nominal voltage / frequency V / Hz	230 / 50 3x400/50	230 / 50 3x400/50
Efficiency of compressor at over-pressure 6 bar Lit.min ⁻¹	134	134
Efficiency of compressor with dryer at over-pressure 6 bar Lit.min ⁻¹	110	110
Maximal current A	7.4 4.5	7.6 4.7
Maximal current of compressor with dryer A	7.6 4.7	7.8 4.9
Motor performance kW	1.1 1.2	1.1 1.2
Air tank capacity Lit.	50	50
Pressure range bar	6,0 – 8,0	6,0 – 8,0
Maximum operating pressure of safety valve bar	12,0	12,0
Sound level L _{pfA} [dB]	71	56
Mode of operation of compressor	CONTINUAL S 1	CONTINUAL S 1
Mode of operation of compressor with dryer	CONTINUAL S 1	CONTINUAL S 1
Dimensions of compressor / of compressor with dryer w x l x h mm	595x475x770 / 580x585x775	750x715x1015
Weight of compressor / of compressor with dryer kg	56 / 61	108 / 114
Drying point of compressor Atmospheric condensation point	-20°C	
Version EN 60 601-1	Appliance of type B, class I	

Climatic conditions during storage and transport

Temperature : -25°C to +55°C, 24 h to +70°C
Relative air humidity : 10% to 90 % (no condensation)

Climatic operation conditions

Temperature : +5°C to +40°C
Relative air humidity : 70%

5.1. FAD efficiency correction for differences in 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 efficiency refers to conditions at an elevation of 0 mamsl:

Temperature: 20°C
Atmospheric pressure: 101325 Pa
Relative humidity: 0%

6. PRODUCT DESCRIPTION

6.1. Model variations and their uses

Compressors are the source of clean, oil-free compressed air used to drive dental appliances and equipment.

Compressors models are designed for the following uses:

Dental compressors DK50 2V/50 - are designed for independent placement of the compressor in any area.

Dental compressors DK50 2V/50/M -are designed for independent placement of the compressor in any area and feature a membrane dryer.

Dental compressors DK50 2V/50S - feature soundproof boxes suitable for placing in the dentist's surgery.

Dental compressors DK50 2V/50S/M - feature soundproof boxes and a membrane dryer.



DK50 2V/50



SKRINKA



Without additional filtration equipment, the compressed air from a compressor is not suitable for the operation of breathing appliances or similar equipment.

7. FUNCTION

Compressor (Fig.1)

The compressor (1) draws in air through a filter (8) and compresses it through a check valve (3) into an air tank (2). The connected apparatus draws the compressed air from the air tank until the pressure drops to a default preset level on the air-pressure switch (4) switching the compressor on. The compressor again compresses air into the nozzle until the maximum pressure is reached and the compressor switches off. After compressor aggregate is switched off, pressure hose shall be pressure-release solenoid valve (10). Safety valve (5) prevents the pressure in air chamber from rising above the maximal allowed value. The drain valve (7) releases the condensate from the air nozzle. Compressed, clean air free from oil traces is stored in the air tank ready for use.

Compressor with membrane dryer (Fig.3)

The compressor unit (1) pulls in outside air through the inlet filter (8) and compresses it through the cooler (11), filter (13) and micro-filter (12) to the dryer (9) and on through the check valve (3) as dry clean air in the air tank (2). Condensate from the filter and micro-filter is automatically drained into the collection vessel. The dryer provides continuous drying of the compressed air. Dry, clean compressed air free from oil traces is stored in the air tank ready for use.

Compressor box (Fig.4)

The soundproof box is compact yet allows sufficient exchange of cooling air. It can be placed in a dentist's office. The ventilator (14) 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 a prolonged operation of the compressor, when temperature in a casing rises above 40°C, the cooling ventilator of the casing (22) shall be switched on automatically. After the area in housing is cooled down under ca 32°C, the ventilators shall be automatically switched off.

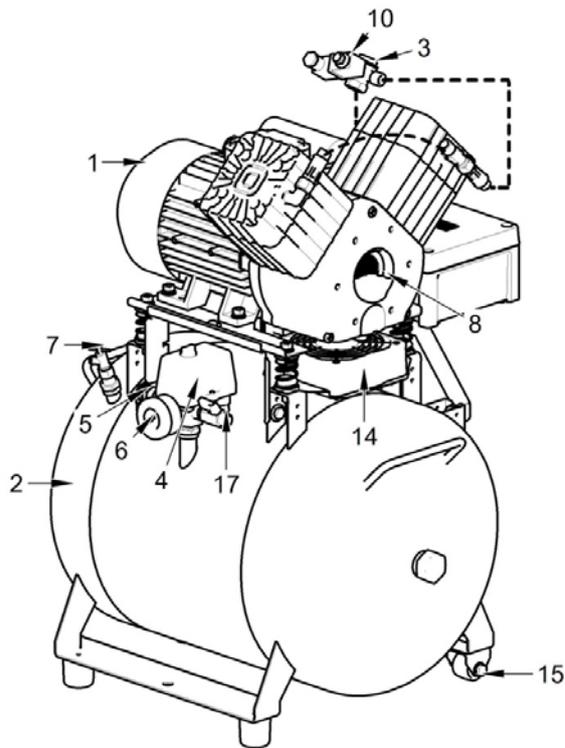


Make sure that nothing impedes the free flow of air under and around the compressor. Never cover the hot air outlet on the top back side of the case.



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

Fig.1 - Compressor



1. Compressor motor
2. Air tank
3. Check valve
4. Pressure switch
5. Safety valve
6. Manometer
7. Condenser outlet
8. Input filter
9. Dryer
10. Solenoid valve
11. Cooler
12. Micro-filter
13. Filter
14. Compressor fan
15. Wheels
16. Check valve
17. Stopper
18. Bottle
19. Magnetic bottle holder
20. Pulling system
21. Wall stopper
22. Box fan
23. Thermo switch
24. Switch
25. Manometer
26. Connector of casing
27. Hose of manometer
28. Connecting reinforcement

Fig.2 – Compressor with dryer

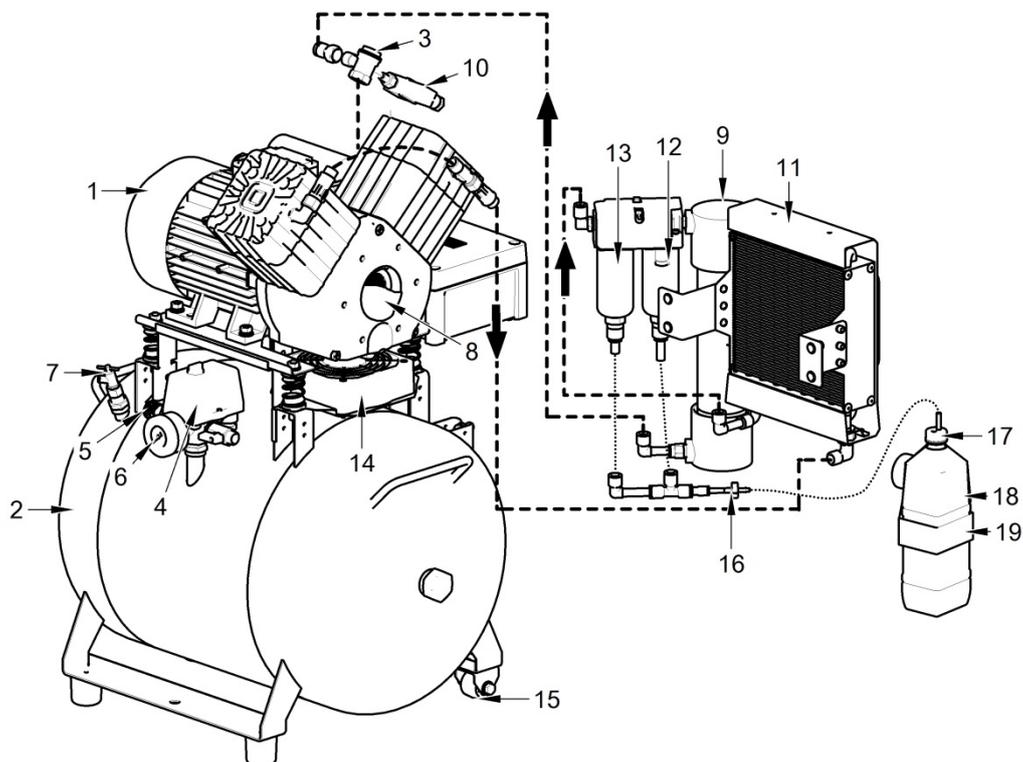
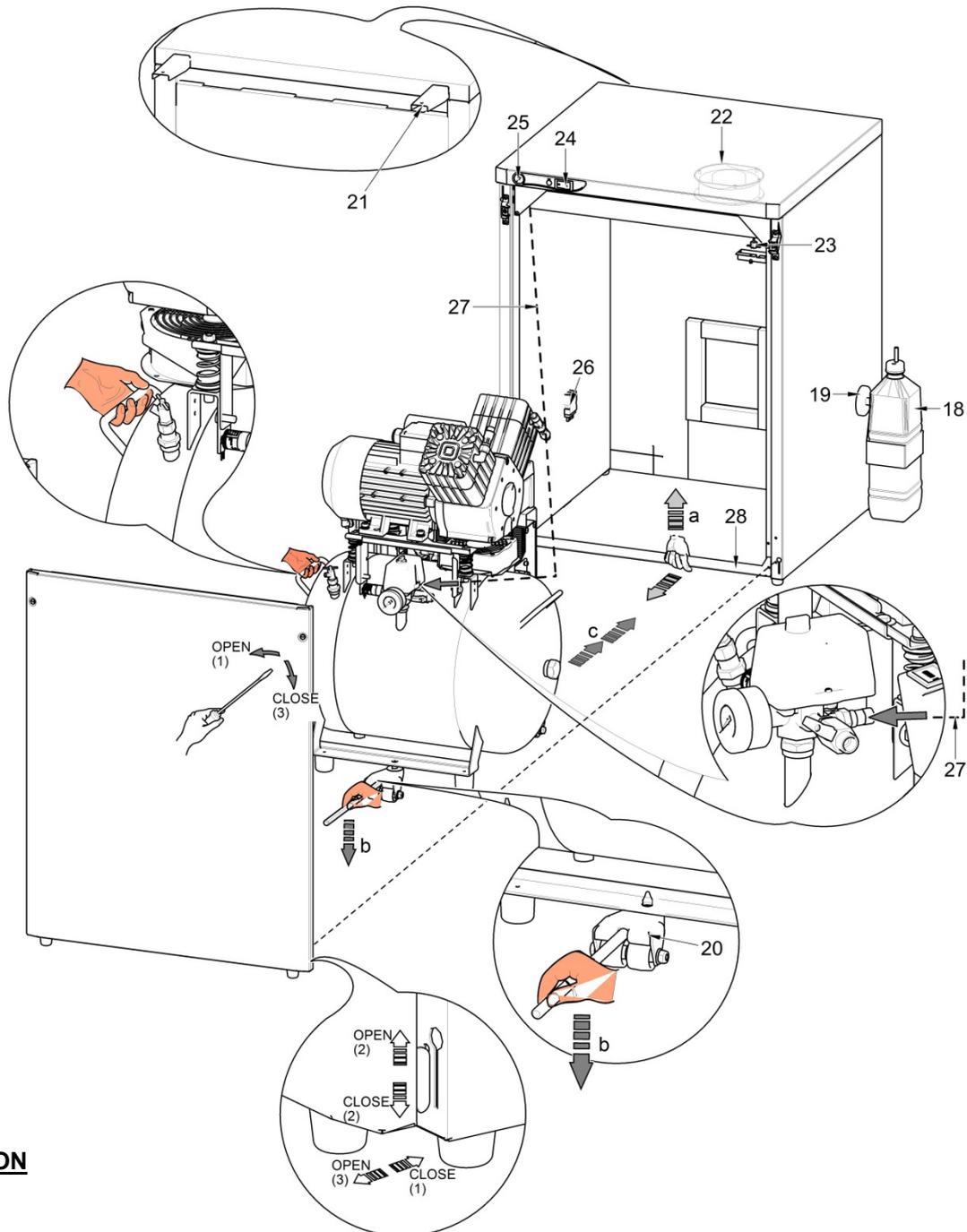


Fig.3 - Box



INSTALLATION

8. USE

- The appliance must be installed and operated in a dry, well ventilated and dust-free area where ambient temperature is within the range of +5°C to +40°C and relative air humidity does not exceed 70%. Otherwise, failure-free operation of the compressor cannot be guaranteed. The compressor must be installed so that it is accessible at all times for operation and maintenance. Please ensure that the appliance label is accessible.
- The appliance must stand on a flat, sufficiently stable base. See paragraph 5 (Technical data) when positioning or lifting the compressor.
- Compressors cannot be exposed to outdoor environments. The appliance cannot be used in moist or wet environments. Do not use the compressor in the presence of explosive gases, dust or combustible 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 use other than that described in this manual is not covered by the guarantee, and the manufacturer is not liable for any damages that may result. The operator/user assumes all risk.

9. INSTALLATION



Only qualified personnel can install and start up the appliance and train operating personnel in its correct use and maintenance. 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.



Caution! When in operation, the compressor is hot. Burns or fire may result if contact is made by the operator or any flammable material.



Electric cord for connection to electric mains and air hoses may not be broken. The power cord may not be exposed to pulling, pressure and excessive heat.

9.1. Placement of the compressor

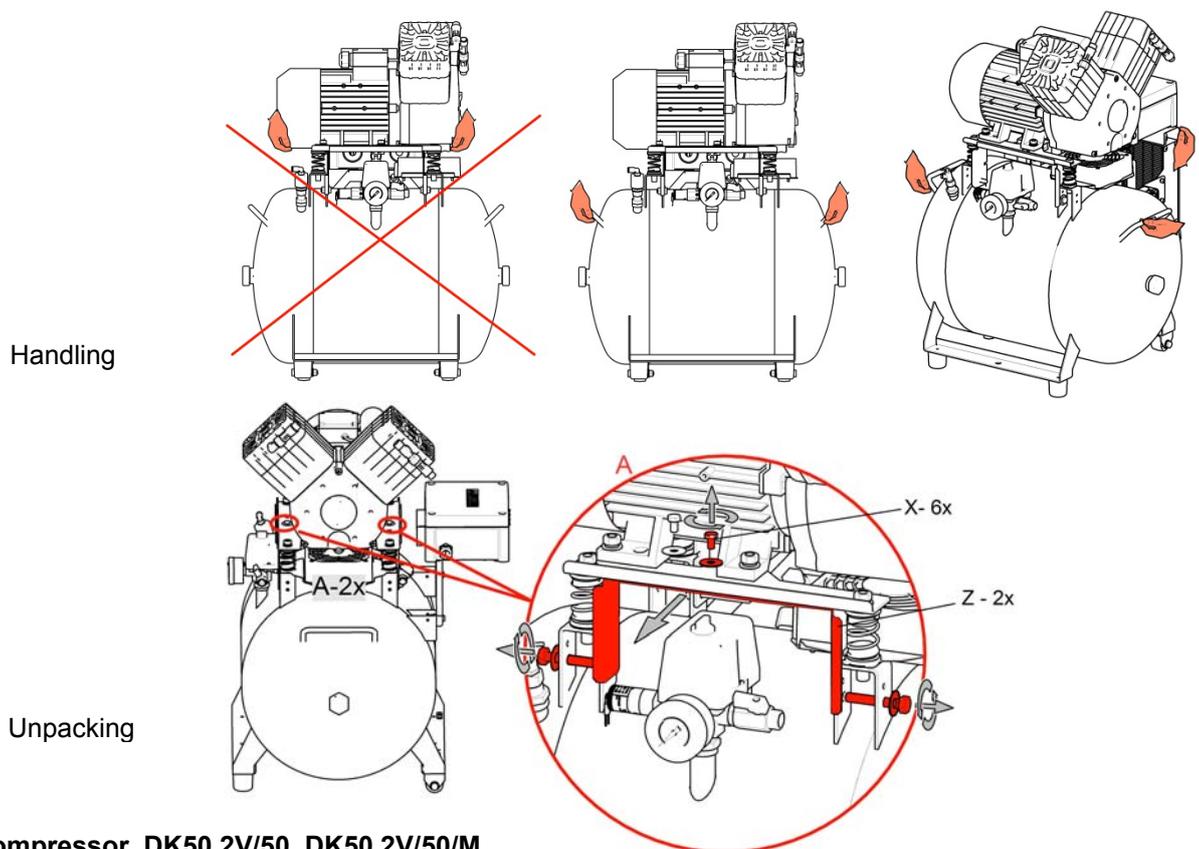


Fig.4 Unpacking

Dental compressor DK50 2V/50, DK50 2V/50/M (Fig.4)

After removing all packaging material, place the product on the floor and remove stabilization parts Y (Detail A). Connect output hose with end-piece to the appliance. Plug the mains cord plug into a socket.

Dental compressor in box DK50 2V/50S (Fig.3, Fig.4)

After unpacking, place the product onto the floor in a room, release it from packaging materials and remove fixation parts (Y) - detail A. Place a wall end stop (21) 2 pcs on compressor casing in the rear, upper part of the casing and fit in the casing on the required place. The end-stops shall ensure the sufficient distance of the casing from the wall for thorough ventilation. For fitting the compressor in the place to the casing it is necessary to disassemble the casing door and take off the connecting reinforcement (28) in the front bottom part of the casing. Protrude the pressure hose under the casing and fix it to the appliance in a suitable manner. Grasp the compressor at its handle and using the transport mechanism (20) and the built-in castors (15) place it to the casing. Embed the hose (27) of manometer (25) of the casing to fast-on coupling on the compressor, place back the connecting reinforcement (28) and connect output pressure hose to the compressor.

Connect the connector (26) of casing to the compressor and connect the electric mains plug to mains socket.

In case of disassembling the compressor it is necessary to disconnect the connector of soundproofing box by using the screwdriver.

(Fig.5)



Fig.5

Dental compressor in DK50 2V/50S/M, (Fig.3, Fig.4)

After removing all packaging material, place the product on the floor and remove stabilization parts Y (Detail A). Place the compressor into housing similarly as in the previous paragraph. Prior to placing the compressor into housing, protrude house for condensate drain via hole in housing and connect it to a bottle (18). Magnetic holder (19) with a vessel (18), for entrapping the condensate from the dryer may be fitted onto any vertical part of casing, or from front on its door. When fixing the holder with a vessel at the housing side it is necessary to consider a space of at least 11 cm between the housing and furniture. Distance smaller than the specified one may cause problem with handling of the vessel.

9.2. Compressed air outlet

(Fig.6)

Lead the pressure hose from the output of compressed air (1) to the appliance – dental set.

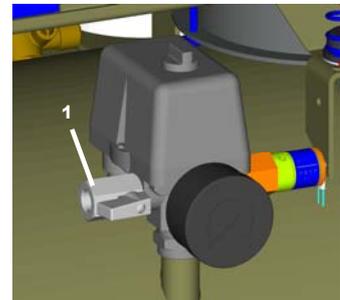


Fig.6

9.3. Electrical connection



Plug the electrical cord into the mains.

The appliance is equipped with a grounded plug. Make sure this connection complies with local electrical codes. The mains voltage and frequency must comply with the data stated on the appliance label.

(Fig.7)

- Keep the socket easily accessible to ensure that in an emergency the appliance can be safely disconnected from the mains.
- Connection to the power distribution box must be max.16 A.
- The connection of the earth ground pin \varnothing 6mm (1) with other appliances must be completed in accordance with local electrical codes. The female socket (2), which is not included in the standard set, is an optional accessory.

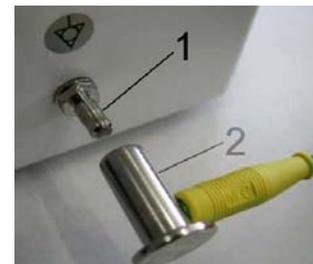


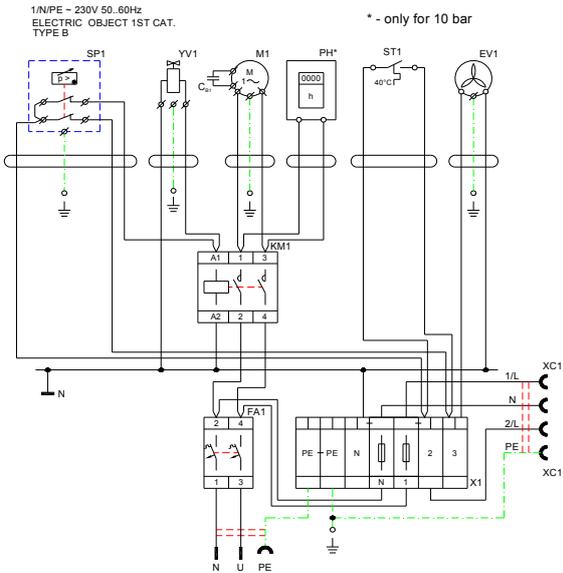
Fig.7



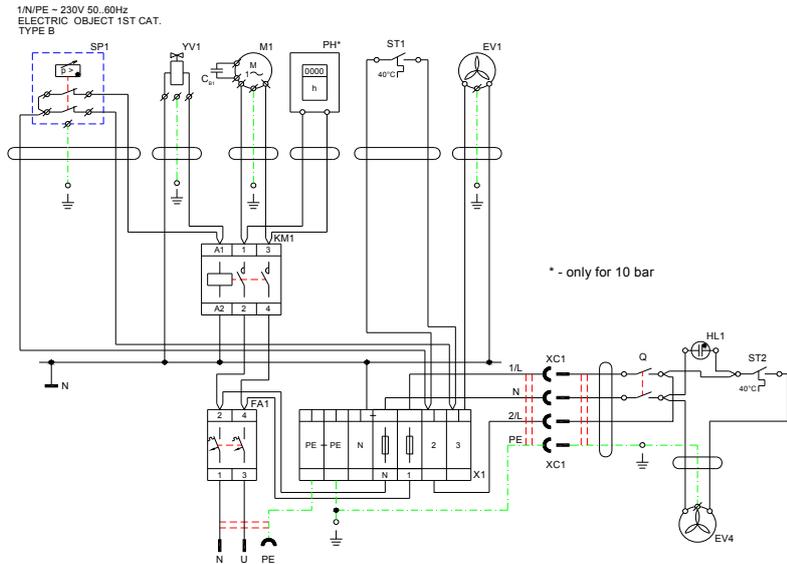
Electrical cable may not contact the hot parts of a compressor. Insulation could be damaged!

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

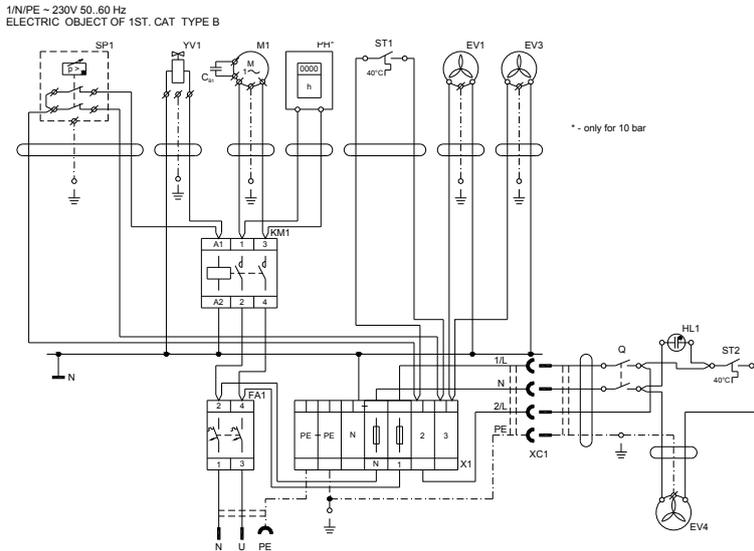
10. WIRING DIAGRAMS



DK50 2V / 50

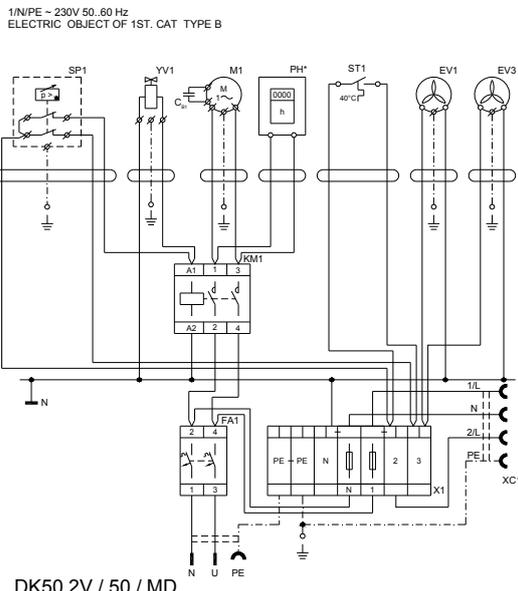


DK50 2VS / 50



DK50 2VS / 50 / MD

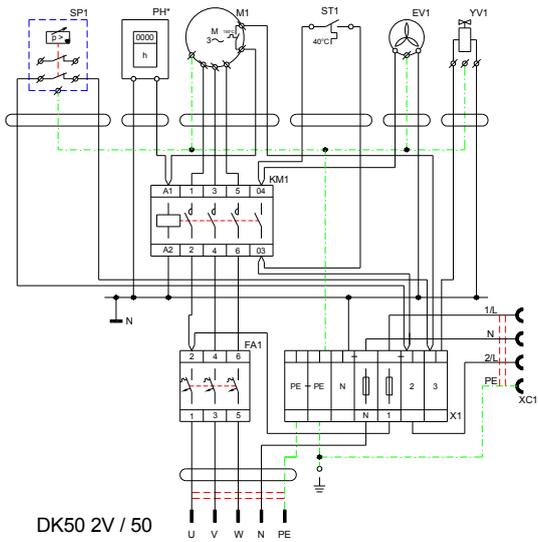
- SP Pressure switch
- EV1 Fan of compressor
- ST1 Thermo switch
- EV3 Fan of dryer
- M1 Motor of compressor
- FA1 Breaker
- YV1 Solenoid valve
- KM1 Contactor
- X1 Terminal
- PH1* Hour counter
- XC1 Connector
- Q Switch
- HL1 Glowlamp
- ST2 Thermo switch of box
- EV4 Fan of box
- CB1 Capacitor



DK50 2V / 50 / MD

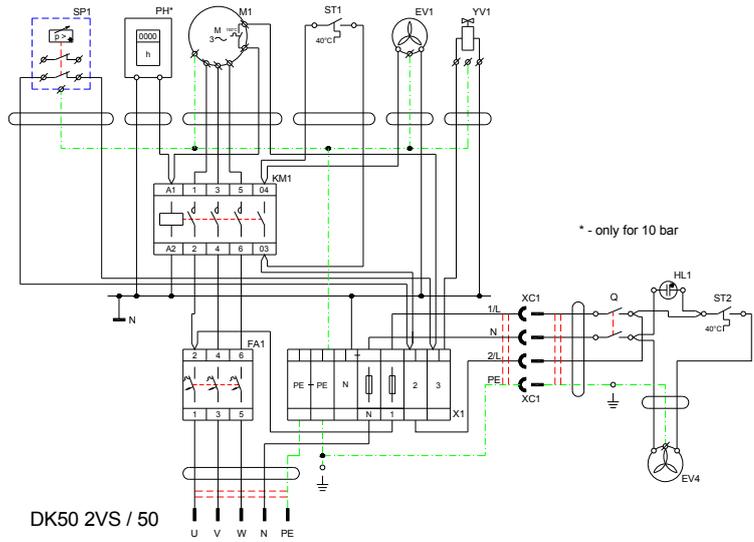
3/N/PE ~ 400/230 V 50 Hz
 MAINS TN-S (TN-C-S)
 ELECTRIC OBJECT 1ST CAT.
 TYPE B

* - only for 10 bar



DK50 2V / 50

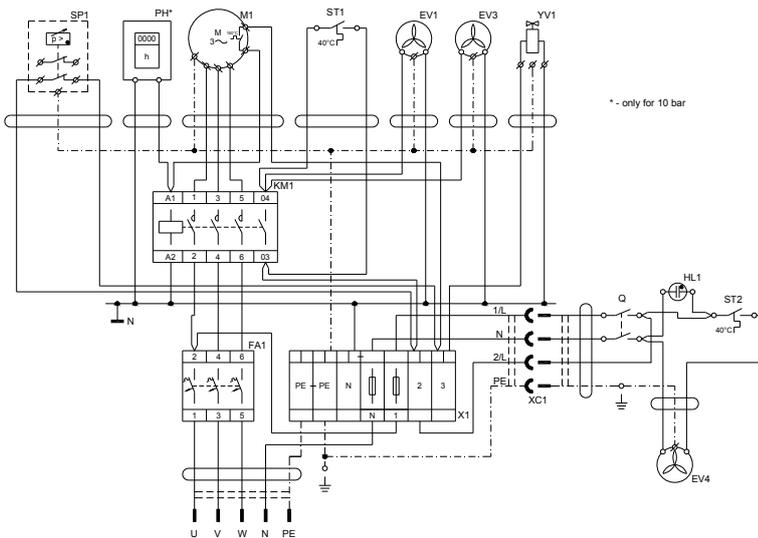
3/N/PE ~ 400/230 V 50 Hz
 MAINS TN-S (TN-C-S)
 ELECTRIC OBJECT 1ST CAT.
 TYPE B



DK50 2VS / 50

* - only for 10 bar

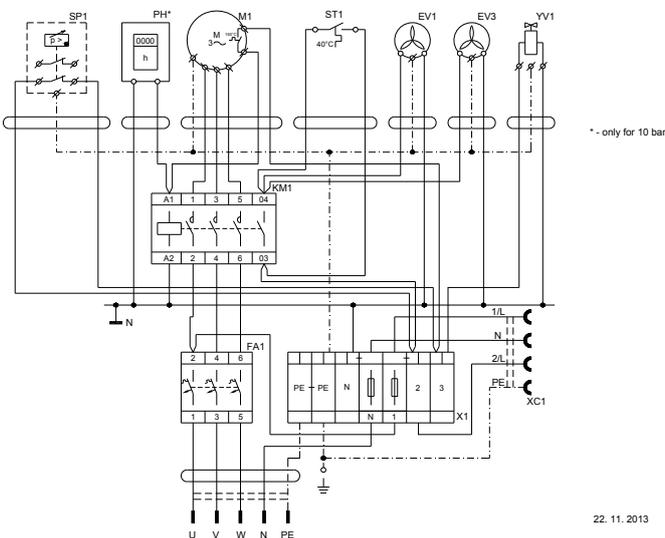
3/N/PE ~ 400/230 V 50 Hz
 MAINS TN-S (TN-C-S)
 ELECTRIC OBJECT 1ST CAT.
 TYPE B



DK50 2VS / 50 / MD

- SP Pressure switch
- EV1 Fan of compressor
- ST1 Thermo switch
- EV3 Fan of dryer
- M1 Motor of compressor
- FA1 Breaker
- YV1 Solenoid valve
- KM1 Contactor
- X1 Terminal
- PH1* Hour counter
- XC1 Connector
- Q Switch
- HL1 Glowlamp
- ST2 Thermo switch of box
- EV4 Fan of box

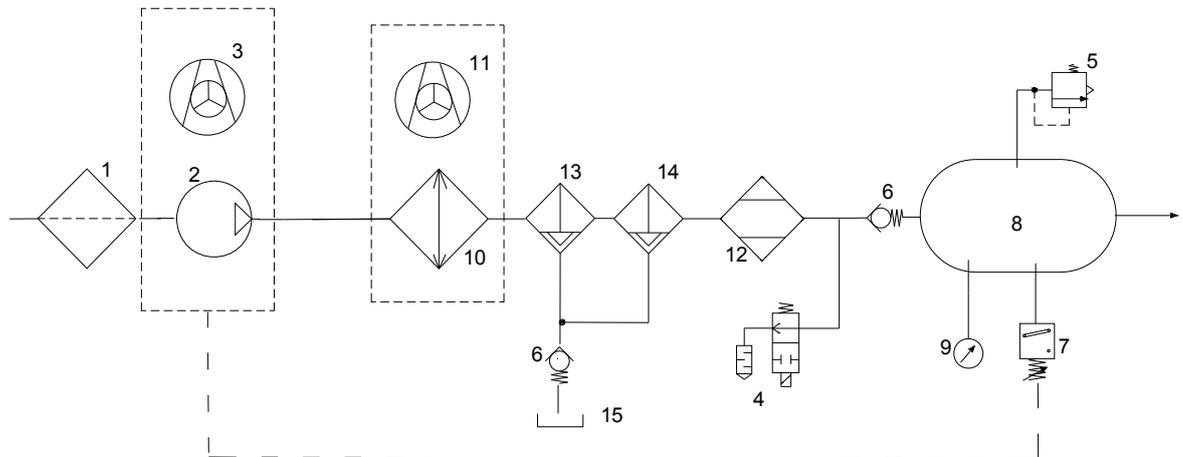
3/N/PE ~ 400/230 V 50 Hz
 MAINS TN-S (TN-C-S)
 ELECTRIC OBJECT 1ST CAT.
 TYPE B



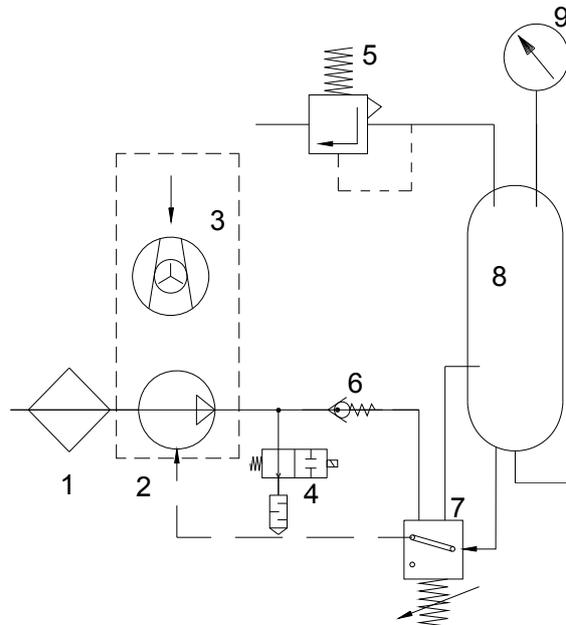
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11. PNEUMATIC DIAGRAM



DK50 2V/50/M



DK50 2V/50

- 1 Input filter
- 2 Compressor motor
- 3 Compressor Fan
- 4 Solenoid valve
- 5 Safety valve
- 6 Check valve
- 7 Pressure switch
- 8 Air tank
- 9 Manometer
- 10 Cooler
- 11 Cooler Fan
- 12 Dryer
- 13 Filter
- 14 Microfilter
- 15 Bottle

12. FIRST OPERATION

(Fig.8)

- Make sure that all stabilizers used during transport were removed.
- Check that all pressurized air line connections are secure.
- Connect to the mains.
- Start compressor at pressure switch (2) by turning switch (3) to position "I."
- For kompressor in the box turn the switch (24) (Fig.3) at the front part of the soundproof box to the position "I" – green light indicates that the appliance is on.

Compressor - At first operation the air tank is pressurized until it reaches a preset level when the compressor automatically switches off. As the air is used, the compressor works in automatic mode, switched on or off by the pressure switch.

Compressor with dryer - during operation the accessory dryer removes moisture from the compressed air passing through it.



The compressor is not equipped with an emergency power supply.

OPERATION



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



**The compressor has hot surfaces.
Burns or fire may result if contact is made.**



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



Automatic start: when pressure in the tank drops to the pressure switch's lower limit level, the compressor automatically switches on. The compressor automatically switches off after reaching the pressure switch's upper limit level.

Compressor with dryer

A correct function of the drier depends on the compressor's operation and no attendance is required. The pressure vessel need not be sludged, because the pressure air entering the air chamber is already dried.

- It is forbidden to alter the working pressures of pressure switch set by manufacturer. The operation of the compressor at working pressure lower than the switching pressure demonstrates the overload of the compressor (high air consumption) by the appliance, leakages in pneumatic distributions, failure of aggregate or drier.
- Prior connecting drier to air chamber, that was used with compressor without drier, it is necessary to clean interior surface of air chamber and perfectly remove condensed liquid. Then interconnect electric part of drier with compressor according to wiring diagram in accord with valid regional regulations.



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!
Dryer operation at a pressure of 0.5 Bar below the minimum working pressure can lower the dew point at the outlet by more than 10°C!



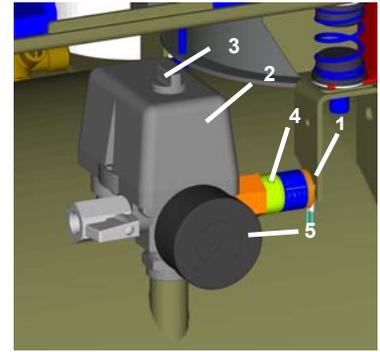
The dryer will be irrevocably damaged and need replacement if operated at any temperature above the maximum working temperature!

13. SWITCHING THE COMPRESSOR ON

(Fig.8)

Switch on the compressor at the pressure switch (2) by turning the knob (3) to position "1.", (for compressor in the box switch (24) Fig.3 on the front part of the compressor box), The compressor sends pressurized air to the air tank. As the compressed air is used, the pressure in the air nozzle drops to a preset level, the compressor switches on and the air nozzle fills with compressed air. After reaching the cutoff pressure the compressor turns off automatically and the cycle is repeated. Check the value of switching-on and switching-off pressure on pressure gauge. The values may be within a tolerance of $\pm 10\%$. Air pressure in air chamber must not exceed maximal permitted operation pressure.

Fig.8



Never tamper with the pressure switch (2). Adjustments are not allowed. The pressure switch (2) has been set by the manufacturer and further setting of switching on and off pressure may be carried out only by a qualified expert trained by the manufacturer.

MAINTENANCE

14. MAINTENANCE SCHEDULE

Notice!

The operating entity is obliged to ensure that all tests of the equipment are carried out repeatedly at least once within every 24 months (EN 62353) or in intervals as specified by the applicable national legal regulations. A report must be prepared on the results of the tests (e.g.: according to EN 62353, Annex G), including the measurement methods used.

Maintenance that must be performed	Chapter	Time interval	Performed by
1 x day	Release condensate - At high air humidity	14.1	operating staff
1 x week			
1 x year	• Check safety valve	14.2	qualified technician
	• Replace filter and micro-filter elements	14.4 14.5	operating staff
	• Check tightness of joints Overall examination of device	Service documentation	qualified technician
	• Clean the cooler ribs and the fan	14.6	qualified technician
1 x 2 years	• Perform "Repeated Test" according to EN 62353	14	qualified technician
1 x 2 years or after 5000 hours	• Replacement of the input filter and prefilter	14.3	qualified technician

15. MAINTENANCE



**Repair work beyond normal maintenance can be performed only by qualified personnel or the manufacturer's representative.
Use only spare parts and accessories approved by the manufacturer.**



Prior to any maintenance or repair work, switch off the compressor and disconnect it from the mains (pull out the mains plug).



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

TO ENSURE THAT THE COMPRESSOR WORKS CORRECTLY, PERFORM THE FOLLOWING MAINTENANCE TASKS AT REGULAR INTERVALS (CHAPTER 14):

15.1. Condensation drain valve

Compressors (Fig.9)

During regular use, release condensation from the pressure tank. Switch off the compressor at the mains. Reduce air pressure in the appliance to max. 1 bar by releasing air via a connected device. Place the vessel under release valve and open the drain valve (1). Wait until condensation is fully drained from the pressure tank. Close drain valve (1).

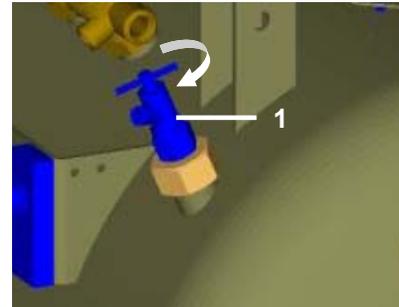


Fig.9

Compressors with air dryer

In the case of a regular operation condensate is automatically excreted via air dryer and it is entrapped in a bottle. Take out the bottle from a holder, release cap and pour out the condensate.

15.2. Safety valve check

(Fig.8)

When the compressor is operated for the first time, make sure that the safety valve is working properly. Turn screw (4) of safety valve (1) several rotations to the left until the safety valve releases air. Let the safety valve blow out for only a few seconds. Turn screw (4) to the right until it seats, closing the valve.



The safety valve must never be used for depressurizing 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 blowing air out.

15.3. Replacement of the input filter and prefilter

(Fig.10)

At the lid of the compressors crankcase is an input filter (1) and prefilter (3).

Replacing of the input filter:

- Hand pull the rubber stopper (2).
- Remove used and dirty filter.
- Input new filter and set rubber stopper.

Replacing of the prefilter:

- Hand pull prefilter (3).
- Replace old prefilter with new.

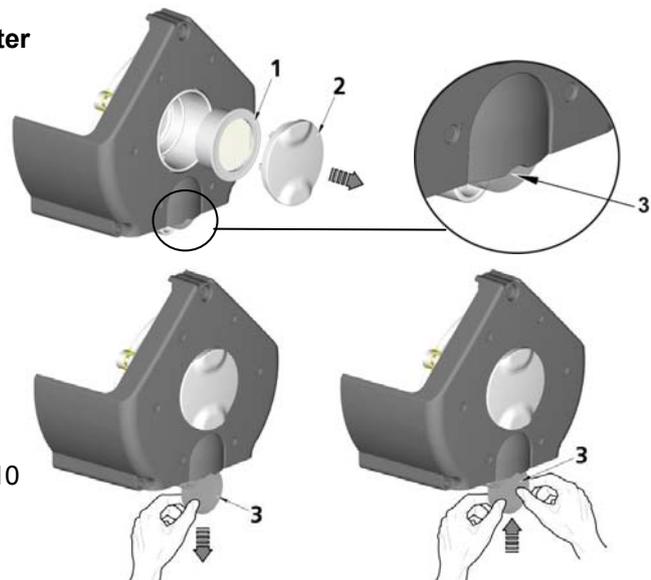


Fig.10

15.4. Replace the filter element

(Fig.11)

Loosen a safety-catch (1) on a filter regulator by pulling it down.

Turn the container slightly (2) and pull out.

Unbolt the filter holder (3).

Change the filter bed (4), bolt the filter holder.

Put the filter container on and secure it by turning it until the safety-catch is fixed.



Fig.11

Filter	Order number	Filter insert	Order number
AF30 F02C 6 A PU	025200276-000	AF 30P-060S 5 μm	025200061-000

15.5. Replacing the micro-filter element

(Fig.12)

Loosen a safety-catch (1) on a micro filter by pulling it down.

Turn the container slightly (2) and pull out.

Unbolt the filter (3).

Change and bolt the filter bed.

Put the filter container on and secure it by turning it until the safety-catch is fixed.



Fig.12

Micro-filter	Order number	Filter insert	Order number
AFM30-F02C-6-A-PU	025200277-000	AFM 30P-060AS 0,3 μm	025200076-000

15.6. Clean the cooler ribs and the fan

For permanently high efficiency, it is necessary to maintain the whole equipment and especially the cooler's fan and the cooler itself clean – 1x year suck or blow settled dust out with compressed air from the surface of the cooling ribs and the fan.

16. STORAGE

If the compressor will not be used for a prolonged time period, drain any condensate from the air tank. Then turn on the compressor for 10 minutes, keeping the drain valve open (1) (Fig.9). Switch off the compressor by switch (3) at pressure switch (2) (Fig.8), close the drain valve and disconnect the appliance from the mains.

17. DISPOSING OF THE APPLIANCE

- Disconnect the appliance from the mains.
- Release air pressure in the pressure tank by opening the drain valve (1) (Fig.9).
- The components of the product are non-toxic.
- Dispose of the appliance following all environmental regulations.

18. 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 appliance without notice. Any changes made will not affect the functional properties of the appliance.

19. SOLVING PROBLEMS



Caution! Before proceeding, depressurize the air tank to zero and disconnect the appliance from the mains.



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

Troubleshooting can be performed only by qualified personnel.

FAILURE	POSSIBLE CAUSE	REMEDY
Compressor does not start	No voltage in pressure switch Disconnected winding of motor, damaged thermal protection Faulty capacitor Seizure of piston or another rotary part Pressure switch does not switch on	Check voltage in socket Check fuse – replace faulty one Loosen terminal – tighten it Check power cord – replace faulty one Replace motor or re-wind it Replace capacitor Replace damaged parts Check the function of pressure switch
Compressor often switches on	Air leak in pneumatic distribution system Leaking check valve Greater volume of condensed liquid in pressure vessel	Check pneumatic distribution system – seal loose joint Clean valve, replace seals, replace valve Drain condensed liquid
Prolonged running of compressor	Air leak in pneumatic distribution system Worn piston ring Contaminated input filter and prefilter Defective solenoid valve	Check pneumatic distribution system – seal loose joint Replace worn piston ring Replace contaminated filters with the new ones Repair or change the valve
Compressor is noisy (knocking, metal noises)	Damaged bearing of piston, piston rod, motor bearing Loose or cracked spring	Replace damaged bearing Replace damaged spring
Dryer doesn't dry (condensed water in the tank)	inoperative cooler ventilator	replace ventilator check supply of electric energy
	Damaged dryer	Replace dryer
	Dirty automatic condensate drain on filters	clean / replace
	Dirty filter and micro-filter elements	Replace old elements with new elements

The internal surfaces of the air tank must be cleaned and all condensed liquid must be removed after a dryer failure.

Check the dew point of the air leaving the air tank (see Chapter 5 - Technical Data) in order to protect connected equipment from damage!

ANNEX TO NP- DK50 2V/50

Annex is integral part of Instructions for use!

DK50 2V/50	- 406201005-002
DK50 2V/50S	- 406202005-001
DK50 2V/50/M	- 4062010B5-002
DK50 2V/50S/M	- 4062020B5-001
DK50 2V/50	- 406201005-003
DK50 2V/50/M	- 4062010B5-003

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MAINTENANCE	13
PARTS LIST.....	14

TECHNICAL DATA

(Replaced - not apply chapter 5 in NP DK50 2V/50)

	DK50 2V/50/M	DK50 2V/50S	DK50 2V/50	DK50 2V/50S/M
Nominal voltage / frequency V / Hz	230 / 50	230 / 50	230 / 50	230 / 50
Efficiency of compressor at over- pressure 6 bar Lit.min ⁻¹	90 **	140	140	90**
Maximal current of compressor A	8	7.6	7.4	8.2
Motor performance kW	1.1	1.1	1.1	1.1
Air tank capacity Lit.	50	50	50	50
Pressure range bar	6.0 – 8.0	6.0 – 8.0	6.0 – 8.0	6.0 – 8.0
Maximum operating pressure of safety valve bar	12.0	12.0	12.0	12.0
Sound level L _{pfA} [dB]	≤ 71	≤ 56	≤ 71	≤ 56
Mode of operation of compressor	Continual S 1	Continual S 1	Continual S 1	Continual S 1
Model of dryer	NDL020 	–	–	NDL020 
Dimensions of compressor w x l x h mm	595x585x770	750x715x1015	595x475x770	595x585x770
Weight of compressor kg	66	108	56	118
Weight of compressor packaged in cardboard kg	78	123	68	133
Drying point of compressor	Pressure dew point to - 40°C	-	-	Pressure dew point to - 40°C
Version EN 60 601-1	Appliance of type B, class I	Appliance of type B, class I	Appliance of type B, class I	Appliance of type B, class I

(*)Part of the efficiency of compressor (cca 25%) is used for regeneration of the dryer

Replaced - not apply chapter 5 in NP DK50 2V/50)

	DK50 2V/50 406201005-003	DK50 2V/50/M 4062010B5-003
Nominal voltage / frequency V / Hz	230 / 50	230 / 50
Efficiency of compressor at over- pressure 8 bar Lit.min ⁻¹	100	90 **
Maximal current of compressor A	7.4	8
Motor performance kW	1.1	1.1
Air tank capacity Lit.	50	50
Pressure range bar	8.0 – 10.0	8.0 – 10.0
Maximum operating pressure of safety valve bar	12.0	12.0
Sound level L _{pfA} [dB]	≤ 71	≤ 71
Mode of operation of compressor	Continual S 1	Continual S 1
Model of dryer	-	NDL020 
Dimensions of compressor w x l x h mm	595x475x770	595x585x770
Weight of compressor kg	56	66
Weight of compressor packaged in cardboard kg	68	78
Drying point of compressor	-	Pressure dew point to - 40°C
Version EN 60 601-1	Appliance of type B, class I	Appliance of type B, class I

(*)Part of the efficiency of compressor (cca 25%) is used for regeneration of the dryer

(*) **Maximal adjustment of outlet air pressure on regulator is 8 bar**

FUNCTION

DK50 2V/50 - 406201005-002

1. Compressor motor
2. Air tank
3. Check valve
4. Pressure switch
5. Safety valve
6. Manometer
7. Input filter
8. Air output
9. Solenoid valve
10. Quick coupling
11. Plug
12. Hose of manometer (applies for connecting to the box)
13. Filterregulator
14. Bottle
15. Holder
16. Plug

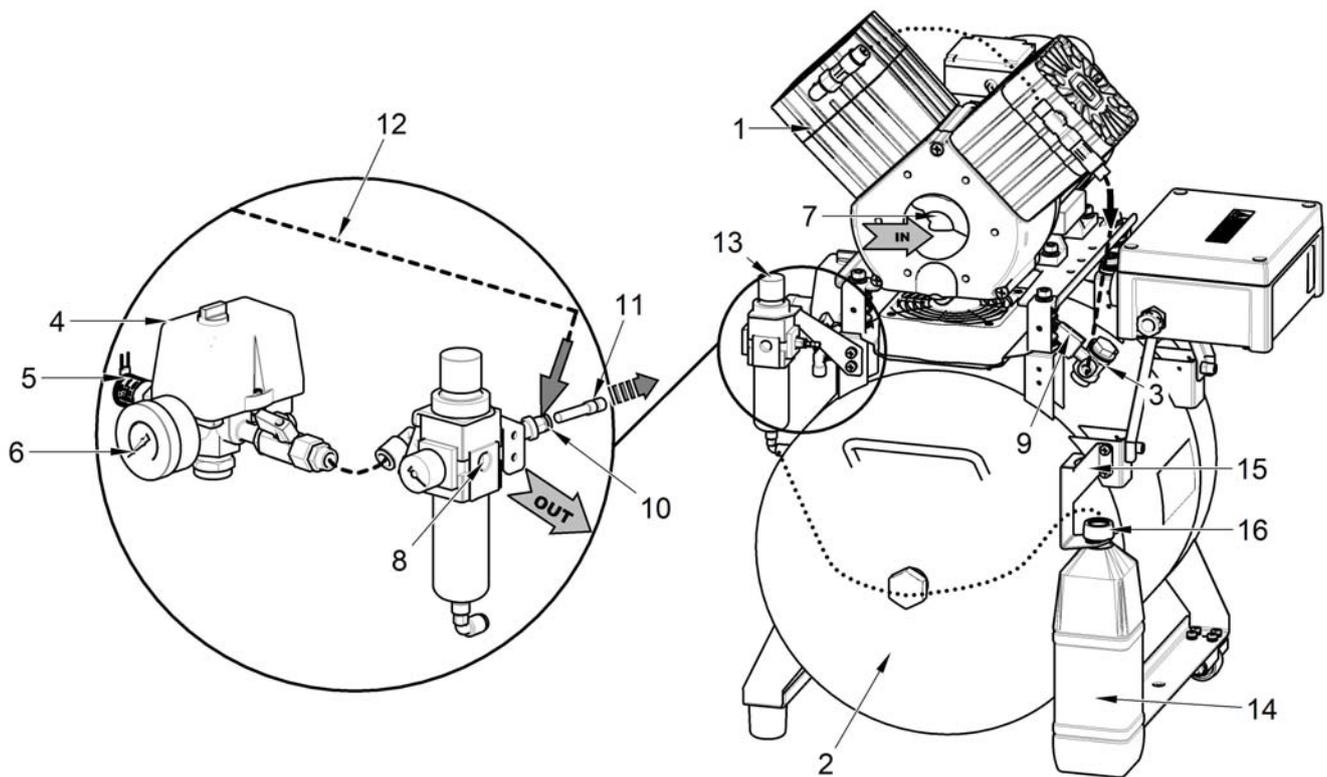


Fig. A

DK50 2V/50S - 406202005-001

1. Compressor motor
2. Air tank
3. Check valve
4. Pressure switch
5. Safety valve
6. Manometer
7. Input filter
8. Air output
9. Solenoid valve
10. Quick coupling
11. Plug
12. Hose of manometer
13. Regulator
14. Bottle
15. Holder
16. Plug
17. Autodrain

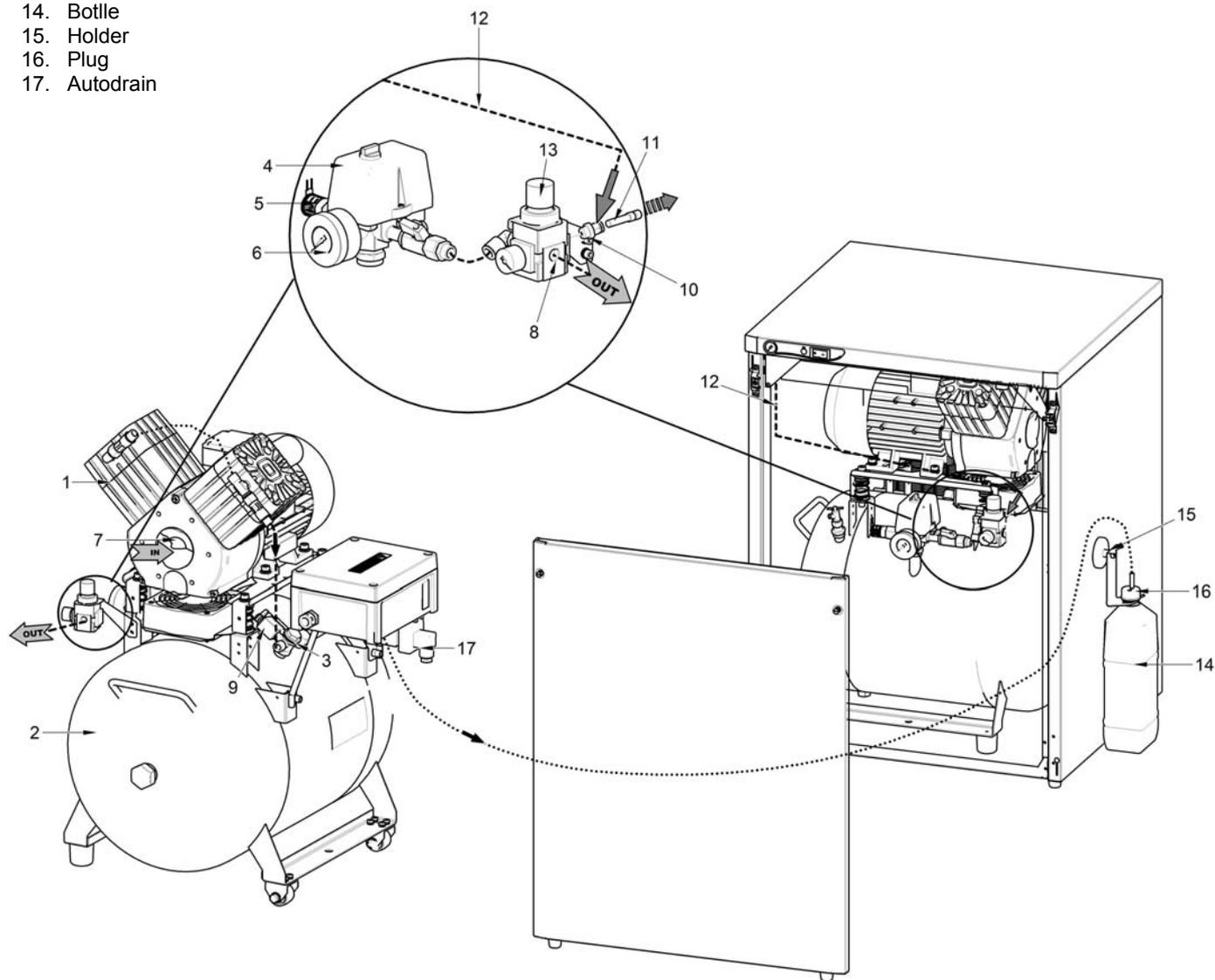


Fig. B

DK50 2V/50/M - 4062010B5-002
DK50 2V/50S/M - 4062020B5-001

1. Compressor motor
2. Air tank
3. Check valve
4. Pressure switch
5. Safety valve
6. Manometer
7. Input filter
8. Air output
9. Solenoid valve
10. Quick coupling
11. Plug
12. Hose of manometer
13. Cooler
14. Dryer
15. Control panel
16. Holder
17. Bottle
18. Silencer
19. Regulator
20. Magnetic holder
21. Pressure switch 2 (Condor)

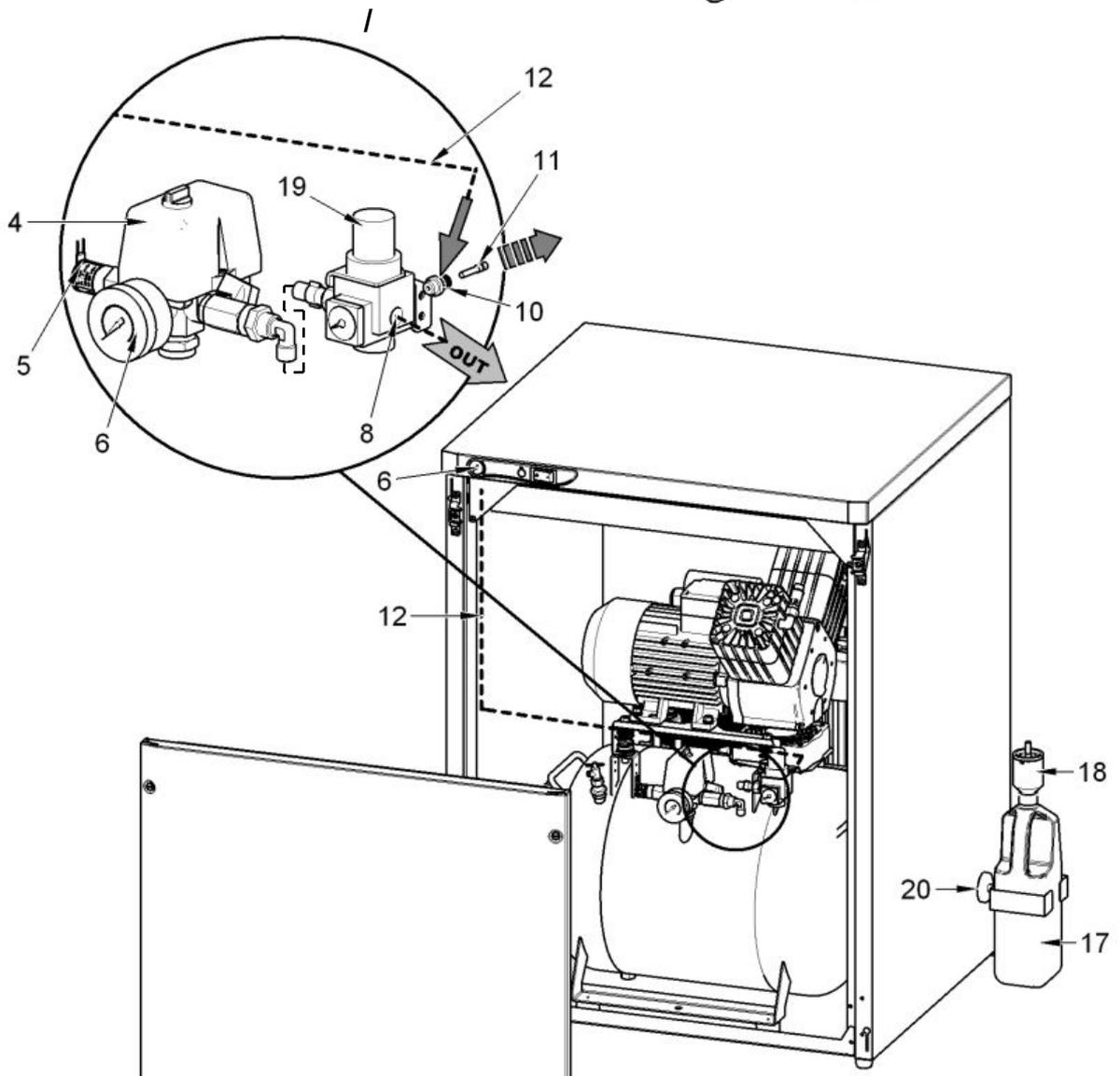
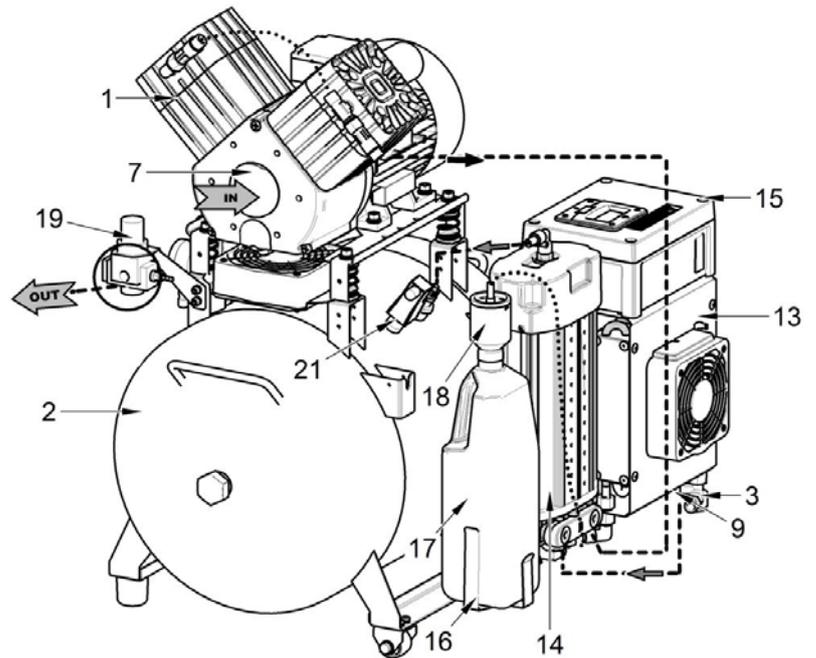


Fig. C

DK50 2V/50 - 406201005-003

1. Compressor motor
2. Air tank
3. Check valve
4. Pressure switch
5. Safety valve
6. Manometer
7. Input filter
8. Air output
9. Solenoid valve
10. Quick coupling
11. Plug
12. Hose of manometer (applies for connecting to the box)
13. Regulator
14. Hour meter

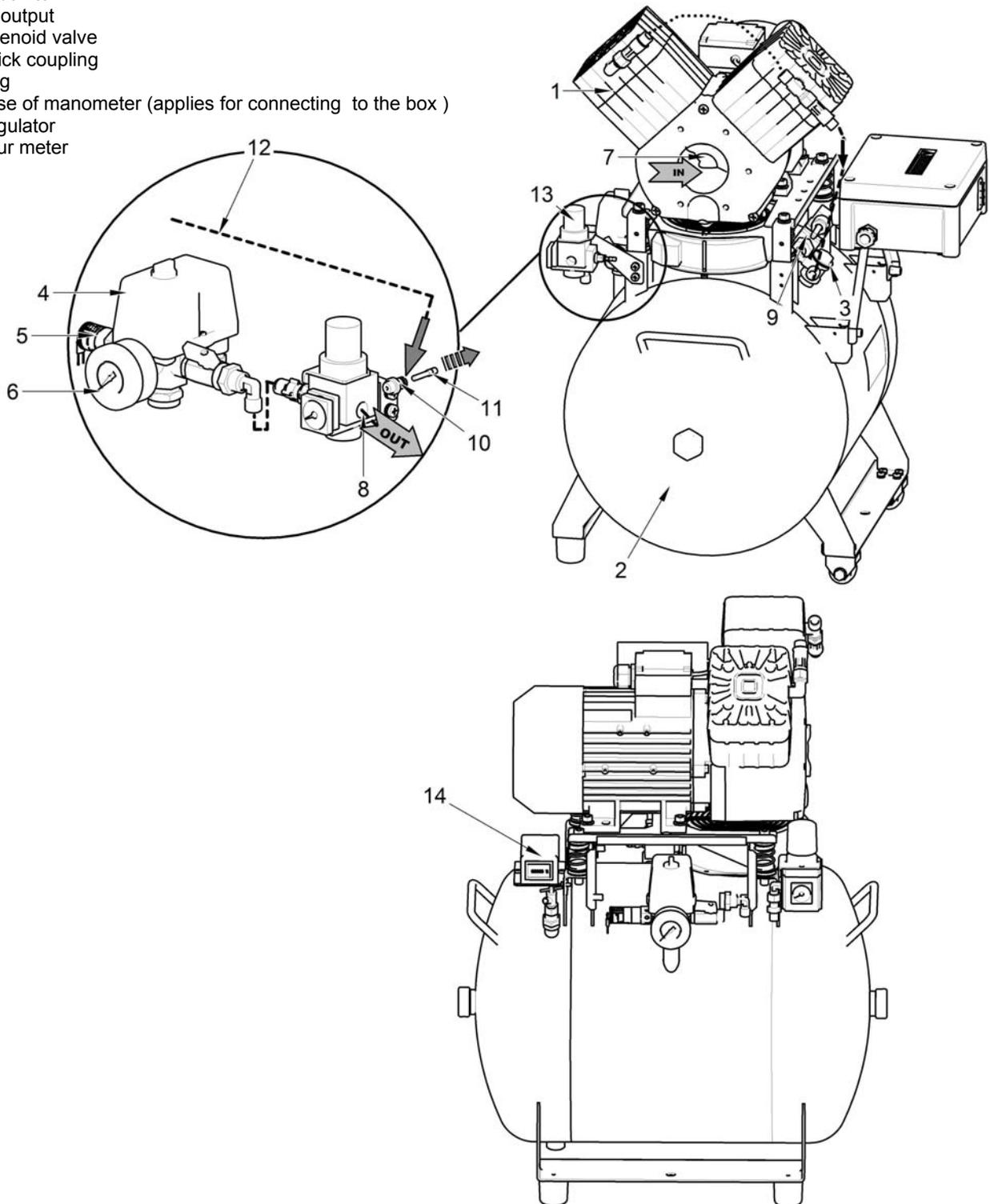


Fig. D

DK50 2V/50/M - 4062010B5-003

1. Compressor motor
2. Air tank
3. Check valve
4. Pressure switch
5. Safety valve
6. Manometer
7. Input filter
8. Air output
9. Solenoid valve
10. Quick coupling
11. Plug
12. Hose of manometer
13. Cooler
14. Dryer
15. Control panel
16. Holder
17. Bottle
18. Silencer
19. Regulator
20. Pressure switch 2 (Condor)
21. Hour meter

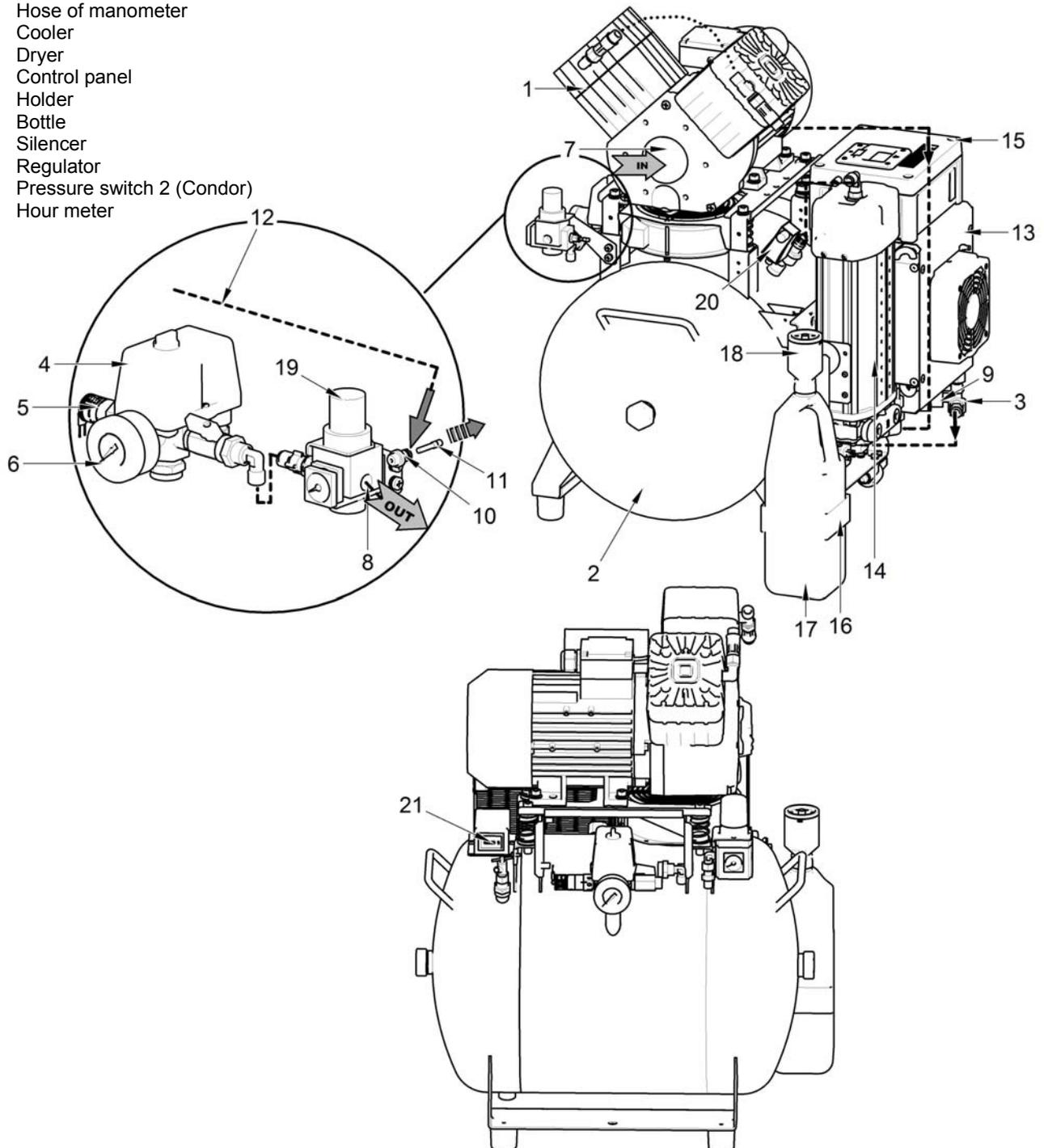
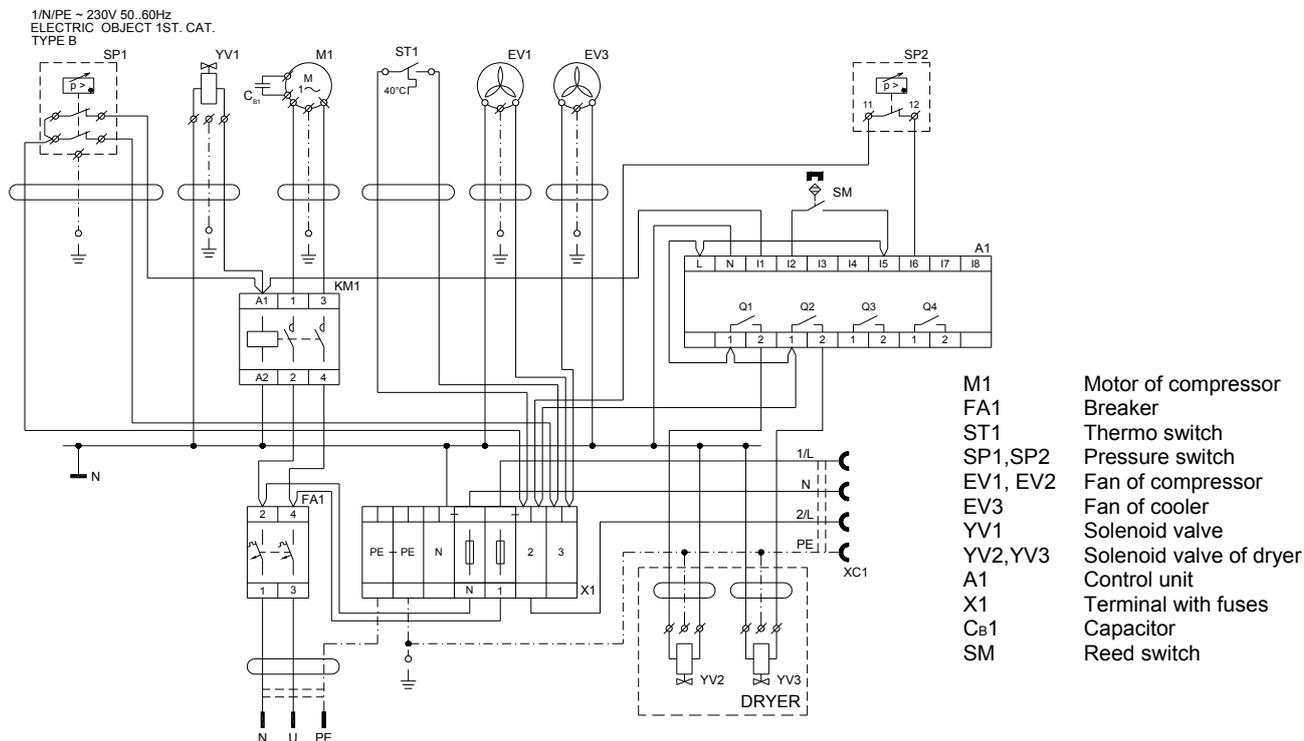
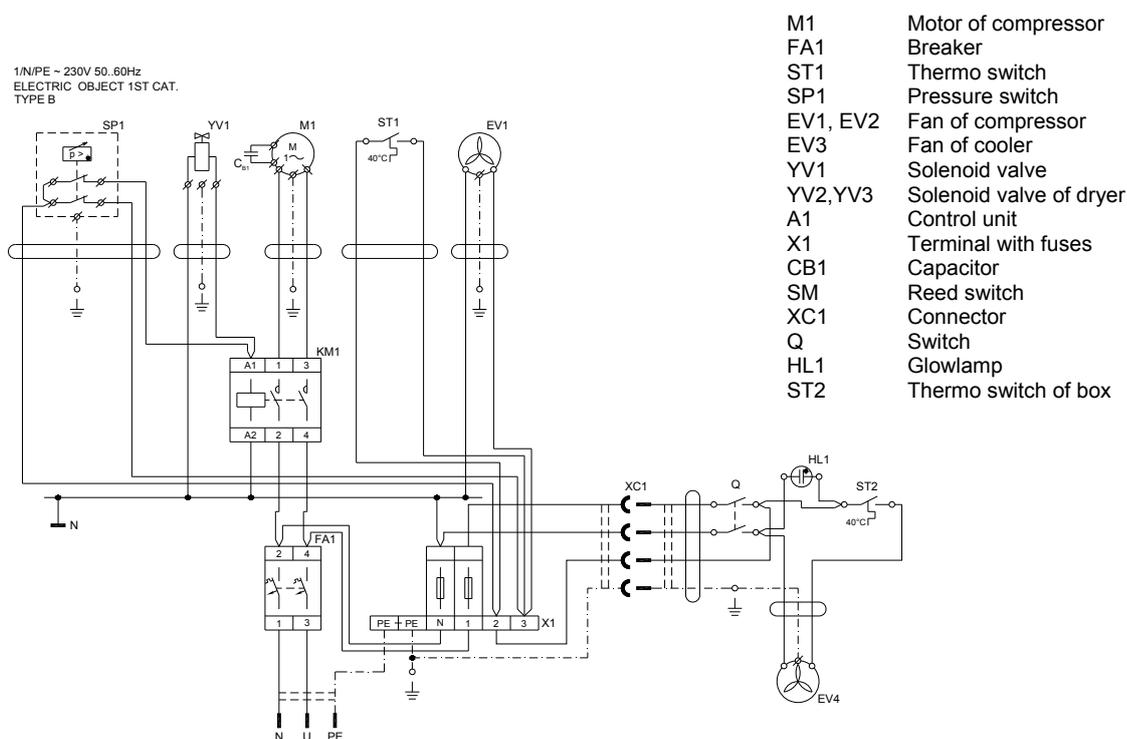


Fig. E

WIRING DIAGRAMS

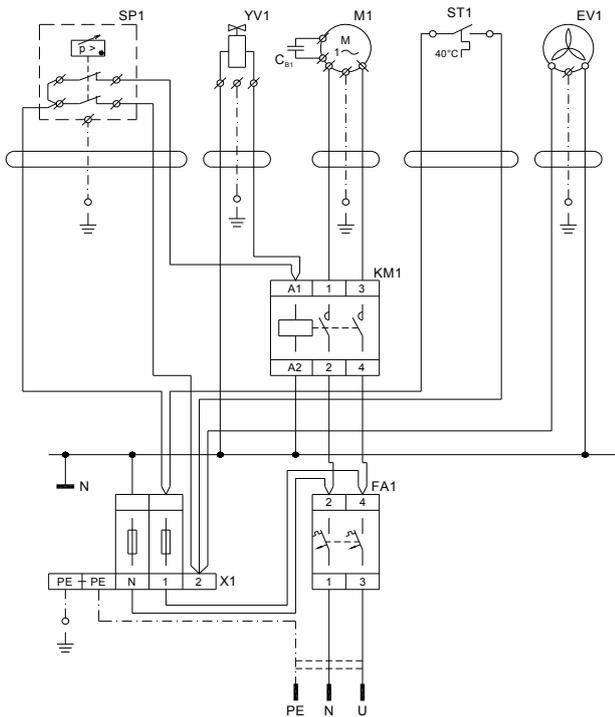


DK50 2V/50/M - 4062010B5-002



DK50 2V/50S - 406202005-001

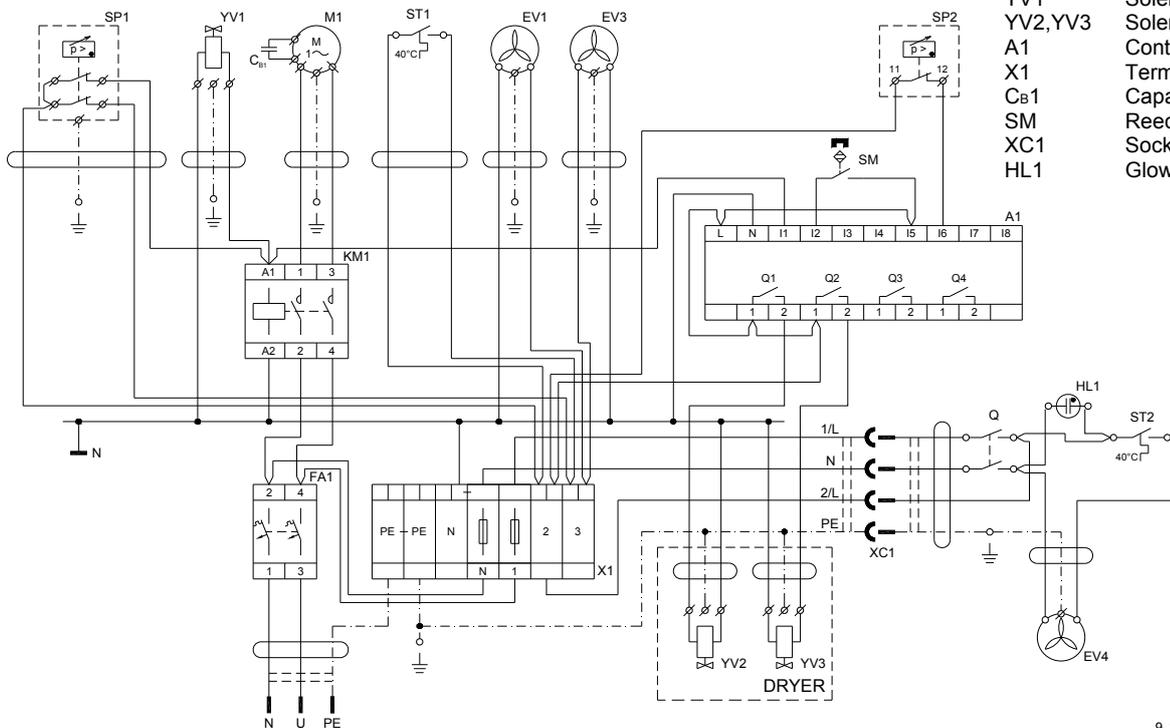
1/N/PE ~ 230V 50, 60Hz
ELECTRIC OBJECT 1ST. CAT.
TYPE B



- SP1 Pressure switch
- EV1 Fan of compressor
- ST1 Thermo switch
- M1 Motor of compressor
- FA1 Breaker
- YV1 Solenoid valve
- KM1 Contactor
- X1 Terminal

DK50 2V/50 - 406201005-002

1/N/PE ~ 230V 50Hz
ELECTRIC OBJECT 1ST. CAT.
TYPE B

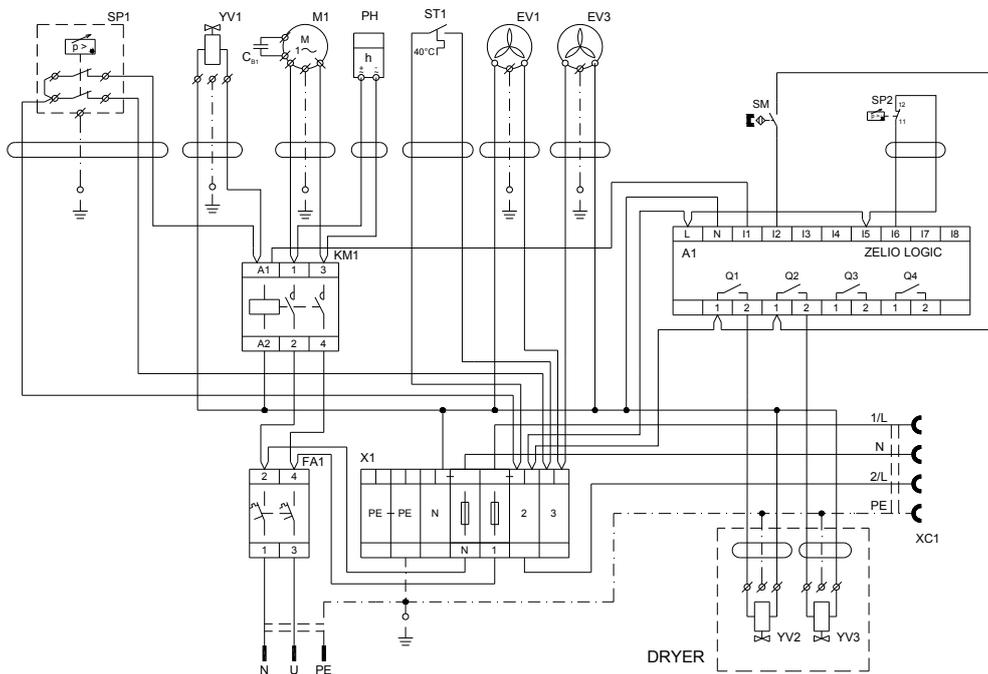


- M1 Motor of compressor
- FA1 Breaker
- ST1, ST2 Thermo switch
- SP1, SP2 Pressure switch
- EV1, EV3 Fan of compressor
- EV4 Fan of cooler
- YV1 Solenoid valve
- YV2, YV3 Solenoid valve of dryer
- A1 Control unit
- X1 Terminal with fuses
- CB1 Capacitor
- SM Reed switch
- XC1 Socket
- HL1 Glowlamp

DK50 2V/50S/M - 4062020B5-001

9. 3. 2012

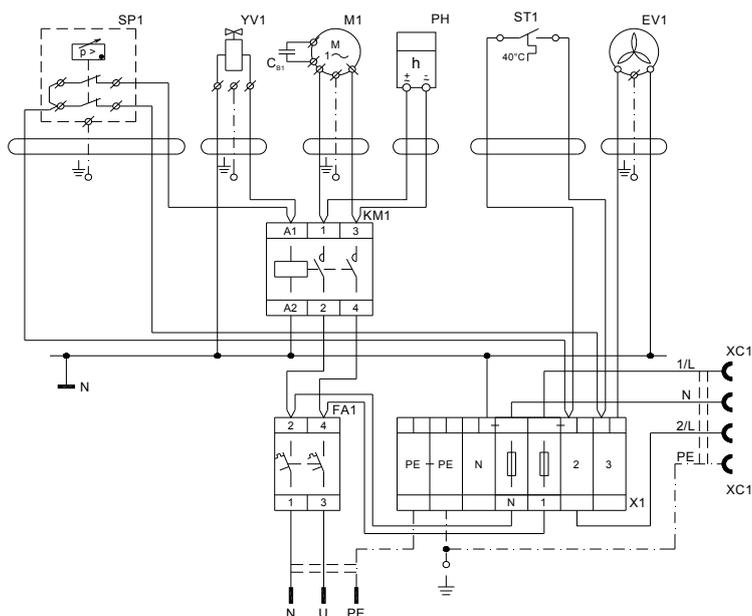
1/N/PE ~ 230V 50..60Hz
ELECTRIC OBJECT 1ST. CAT.
TYPE B



- | | |
|----------|-------------------------|
| M1 | Motor of compressor |
| FA1 | Breaker |
| ST1 | Thermo switch |
| SP1, SP2 | Pressure switch |
| EV1, EV2 | Fan of compressor |
| EV3 | Fan of cooler |
| YV1 | Solenoid valve |
| YV2, YV3 | Solenoid valve of dryer |
| A1 | Control unit |
| X1 | Terminal with fuses |
| Cb1 | Capacitor |
| SM | Reed switch |
| PH | Hour meter |

DK50 2V/50/M - 4062010B5-003

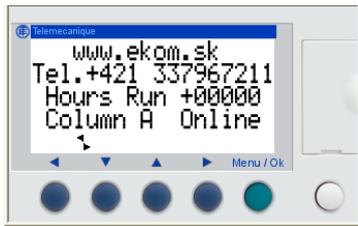
1/N/PE ~ 230V 50..60Hz
ELECTRIC OBJECT 1ST. CAT.
TYPE B



- | | |
|-----|---------------------|
| SP1 | Pressure switch |
| EV1 | Fan of compressor |
| ST1 | Thermo switch |
| M1 | Motor of compressor |
| FA1 | Breaker |
| YV1 | Solenoid valve |
| KM1 | Contact |
| X1 | Terminal |
| PH | Hour meter |

DK50 2V/50 - 406201005-003

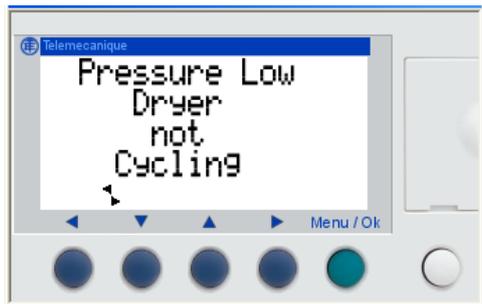
CONTROL PANEL SCREENS FOR THE NDL DRYER



- Supplier
- Supplier contact
- Operating hours
- Chamber A (B) in operation

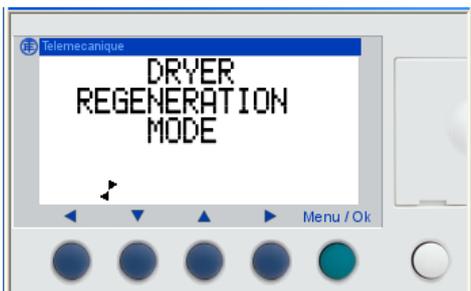
Status messages

- Low pressure



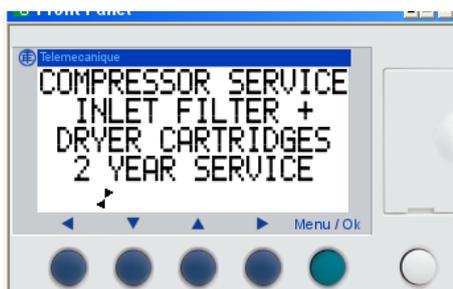
- a) From compressor start-up until pressure reaches 5.5 bar
- b) During operation if pressure drops below 5.1 bar

- 24-hour regeneration mode



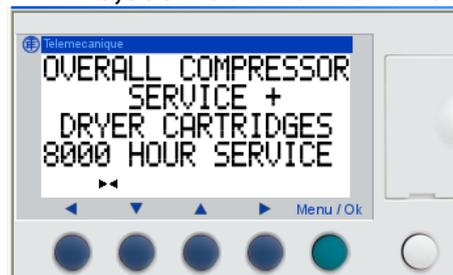
Dryer regeneration for 10 minutes is automatically switched on after 24 hours of compressor operation.

- 2 year maintenance



Calculated when equipment is switched on

- 8,000 hour maintenance

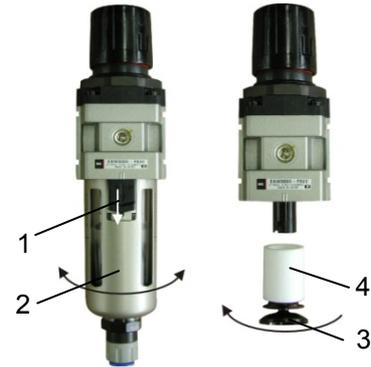


Calculated using the number of operating hours

MAINTENANCE

Replacement of filter of filter-regulator

Loosen a safety-catch (1) on a filter regulator by pulling it down.
 Turn the container slightly (2) and pull out.
 Unbolt the filter holder (3).
 Change the filter bed (4), bolt the filter holder.
 Put the filter container on and secure it by turning it until the safety-catch is fixed.



Filter	Order number	Filter insert	Order number
AW20-F02CH-A-PU	025200221-000	AF 20P-060S 5 µm	025200113-000

Dryer servicing

(Fig. C,D)

Product servicing should only be carried out by authorised, competent and suitably trained personnel.

A dryer service should take place every 2 years or 8,000 hours of operation (whichever occurs first). Service kits are available which include: replacement desiccant cartridges, seals and valves, depending on service interval.

See User Guide - Heatless Desiccant Air Dryer!

Maintenance schedule

Maintenance that must be performed	Time interval	Performed by
Replacement of filter and micro-filter	1 x year	operating staff
Replace 2 x desiccant cartridges and gasket seals	8, 000 hours (or 2 years)	service
Replace 2 x desiccant cartridges and gasket seals.	16, 000 hours (or 4 years)	service
Replace 2 x desiccant cartridges, gasket seals and all valves.	24, 000 hours (or 6 years)	service

PARTS LIST

DK50 2V/50	.....	406201005-002	<input type="checkbox"/>	1x
Installation, Operation and Maintenance Manual	NP-DK50 2V/50		<input type="checkbox"/>	1x
Fuse	T0,8A/35	038100006-000	<input type="checkbox"/>	2x
Input filter of filter-regulator	AF20-060S	025200113-000	<input type="checkbox"/>	1x
DK50 2V/50/M	.....	4062010B5-002	<input type="checkbox"/>	1x
Installation, Operation and Maintenance Manual	NP-DK50 2V/50		<input type="checkbox"/>	1x
Fuse	T0,8A/35	038100006-000	<input type="checkbox"/>	2x
DK50 2V/50S	.....	4062020000-001	<input type="checkbox"/>	1x
Installation, Operation and Maintenance Manual	NP-DK50 2V/50		<input type="checkbox"/>	1x
Fuse	T0,8A/35	038100006-000	<input type="checkbox"/>	2x
Wall stopper		023000276-000	<input type="checkbox"/>	2x
Transport mechanism		603021540-000	<input type="checkbox"/>	1x
Set for discharge of condensate		604011122-000	<input type="checkbox"/>	1x
Push-in jumper		033190119-000	<input type="checkbox"/>	1x
Lockout-cap		062000759-000	<input type="checkbox"/>	1x
DK50 2V/50 S/M	.....	4062020B5-001	<input type="checkbox"/>	1x
Installation, Operation and Maintenance Manual	NP-DK50 2V/50		<input type="checkbox"/>	1x
Fuse	T0,8A/35	038100006-000	<input type="checkbox"/>	2x
Wall stopper		023000276-000	<input type="checkbox"/>	2x
Transport mechanism		603021540-000	<input type="checkbox"/>	1x
Bottle with magnetic holder		604031448-000	<input type="checkbox"/>	1x
Silencer		604012097-000	<input type="checkbox"/>	1x
Hose	1500	062000719-000	<input type="checkbox"/>	2x
Push-in jumper		033190119-000	<input type="checkbox"/>	1x
Lockout-cap		062000759-000	<input type="checkbox"/>	1x
DK50 2V/50	.....	406201005-003	<input type="checkbox"/>	1x
Installation, Operation and Maintenance Manual	NP-DK50 2V/50		<input type="checkbox"/>	1x
Fuse	T0,8A/35	038100006-000	<input type="checkbox"/>	2x
DK50 2V/50/M	.....	4062010B5-003	<input type="checkbox"/>	1x
Installation, Operation and Maintenance Manual	NP-DK50 2V/50		<input type="checkbox"/>	1x
Fuse	T0,8A/35	038100006-000	<input type="checkbox"/>	2x
Set for discharge of condensate		604031533-000	<input type="checkbox"/>	1x

Packing of basic equipment checked by

Date of production

Signature



DK50 2V/50



PRODUCENT:
HERSTELLER:
ПРОИЗВОДИТЕЛЬ:
VÝROBCA:
VÝROBCE:

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