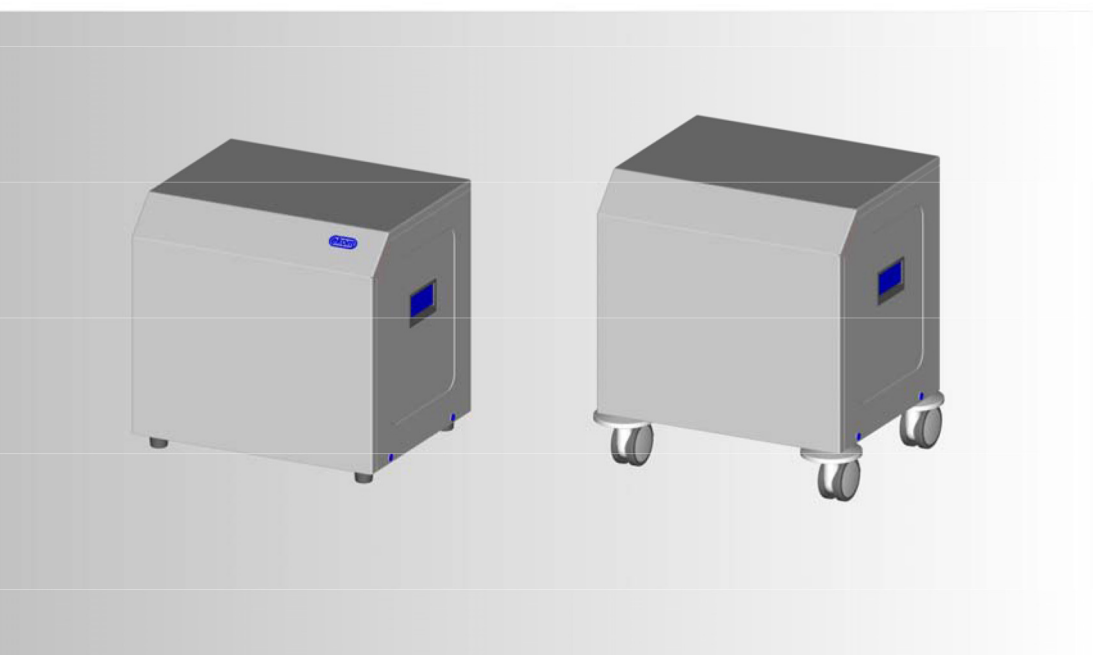


DK50



INSTALLATION, OPERATION AND MAINTENANCE MANUAL

EN

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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 the appliance and its packaging, the following labels or symbols are used for important information:

	Information, instructions and cautions for the prevention of damage to health or materials
	Caution! Dangerous electric voltage
	Read the user manual!
	CE mark of compliance
	Caution! Hot surface
	Compressor is remote-controlled and may start without warning
	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
	Condensate drain

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

TYPE	DK50-0215
MODEL	standard
Output flow	50 L.min ⁻¹ (1.8 Cft. min ⁻¹)
Voltage / Frequency / Nominal current V/Hz/A	230/50 / 2.8
Air filtration μm	-
Outlet connection	hose coupling ø6
Sound level dB(A)	≤ 53
Mode of operation	Continuous - S1
Separation of condensed water	Manual
Air tank capacity	4,7 L (1gall UK)
Pressure range	4,5 bar (65 psig) – 6 bar (87 psig)
Operating pressure of safety valve	7 bar (101.5 psig)
Adjustment of output air pressure	-
Dimensions of compressor w x d x h	440 x 360 x 430 mm (17 x 14 x 17 in)
Dimensions of compressor with weels š x h x v	480 x 390 x 505 mm (19 x 15.5 x 19.5 in)
Net weight	30 kg (66 lbs)
Net weight of compressor with weels	31 kg (68.5 lbs)
Implementation according to EN 60601-1, EN 12021	Type B class I.

Climatic conditions for storage and transport

Temperature -25°C to +55°C (-13°F to +131°F), 24 hrs +70°C (+158°F)

Relative air humidity 10% to 90 % (no condensation)

Climatic conditions for operation

Temperature +5°C to +40°C (+41°F to +104°F)

Relative air humidity up to +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%

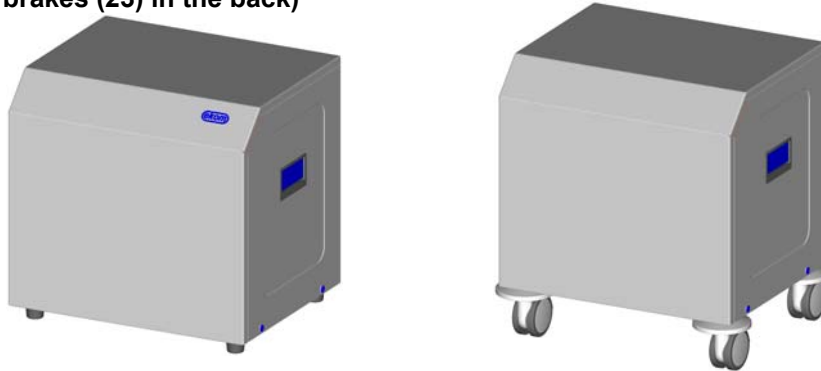
6. PRODUCT DESCRIPTION

6.1. Model variations and their uses

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

Dental compressor DK50 – oil-free compressor embedded on a base covered with a compact housing with an efficient noise suppression.

Upon customer request the compressor is provided with rubber feet or casters (2 with brakes (22) in front and 2 without brakes (23) in the back)



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



The compressor is not equipped with an emergency power supply.

7. FUNCTION

(Fig.1)

The compressor (1) draws in air through a filter 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. Safety valve (5) prevents the pressure in air chamber from rising above the maximal allowed value. The drain valve (8) releases the condensate from the air nozzle.

The soundproof box is compact yet allows sufficient exchange of cooling air. Fan (6) provides for the compressor cooling. After a prolonged operation of a compressor, temperature in the casing can rise above 40°C, at that time the ventilator shall be in operation also after the compressor is switched off after the space within the casing is cooled down under ca 32°C. Fastener (14) ensures the power cord and its possible release from the connector (10).

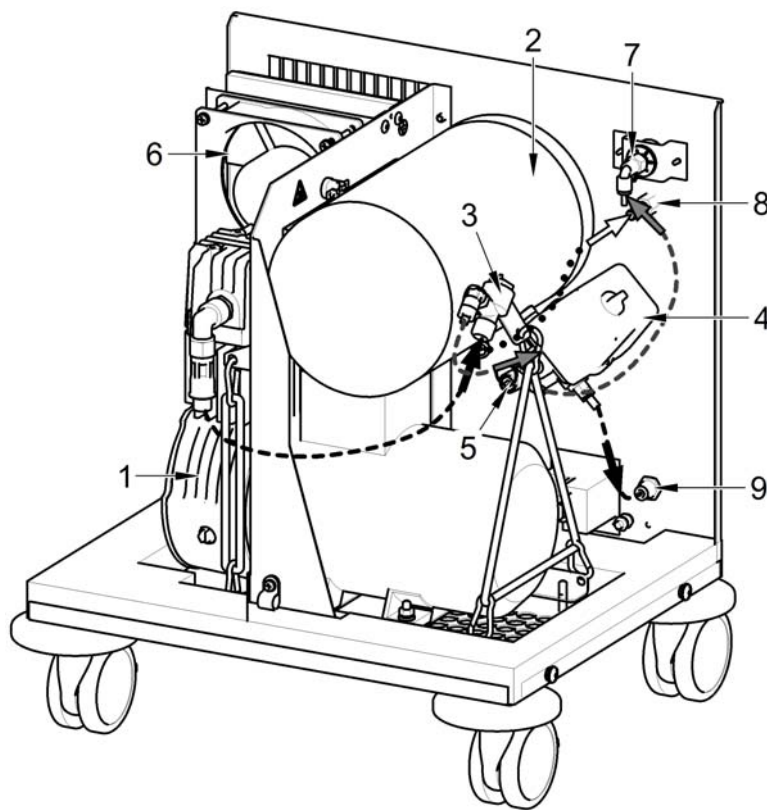


Make sure that nothing impedes the free flow of air under and around the compressor. Never cover the hot air outlet on the top back side of the case.

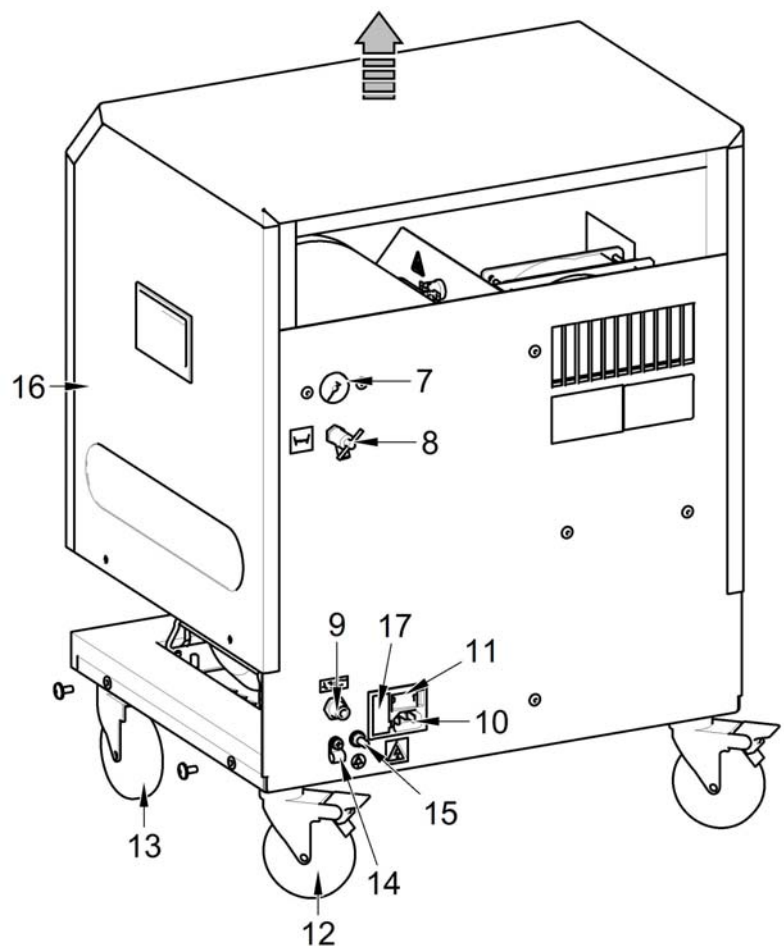


If placing the compressor on a soft floor such as carpet, create space for ventilation between the base and floor or the box and floor, e.g. underpin the feet with hard pads in order to ensure proper cooling of the compressor.

Fig.1 - Compressor



1. Compressor motor
2. Air tank
3. Check valve
4. Pressure switch
5. Safety valve
6. Fan
7. Manometer
8. Drain valve
9. Pressurized air output
10. Connector
11. Switch
12. Caster
13. Baraked caster
14. Fastener of power cord
15. Equipotential (ground) pin
16. Compressor cover
17. Fuse housing with fuses



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 - see paragraph 5 (Technical data). The compressor must be installed so that it is accessible at all times for operating and maintenance. Please ensure that the appliance label is accessible as well.
- 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 first putting into operation four screws serving for fixation of the device during transport must be removed. Upon the start-up of the compressor without removing the fixation elements, there is a risk of permanent damage of 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

Removal of transpor stabilizers

(Fig.2)

Unscrew four screws M6 from the bottom part of the appliance marked with red warning washer.



Keep the fixation screws for possible later transport of the compressor.

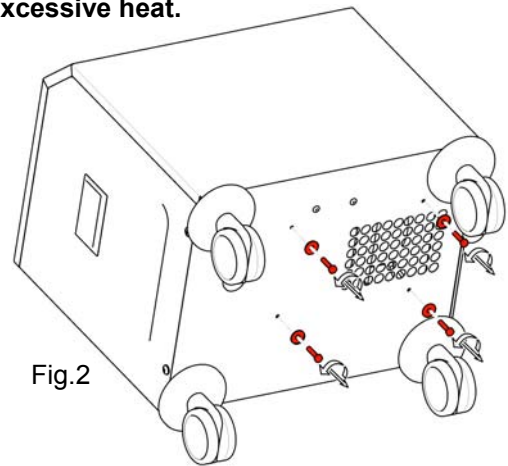


Fig.2

Securing the casters (Fig. 3)

A compressor equipped with casters must first be secured to prevent it from moving before starting the compressor. **Lock the casters!**

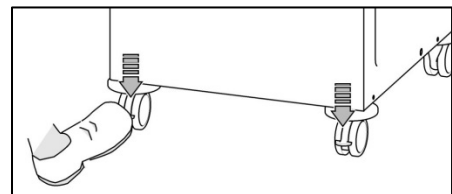


Fig. 3

Installing feet (Fig. 4)

Compressor models equipped with feet must have the feet installed following the provided illustration.

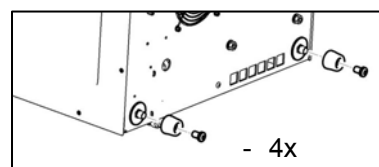


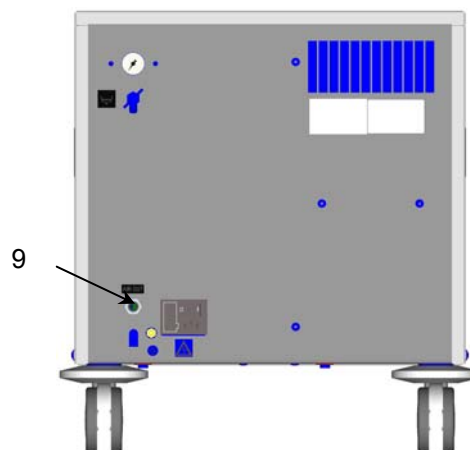
Fig.4

9.2. Compressed air connection

(Fig.5)

Dental compressor with a compressed air outlet, OUT (9), located in the front of the box. Connect pressure hose for connection to the relevant dental device to coupling (9) – pressurized air output.

Fig.5



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.1)

- 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 shall be protected with a locking element.
- Connection of the ground connection (15) to other appliances must adhere to local electrical regulations.
- Fasten down the electrical cord through the holder (14).
- The device is protected by fuses located in the fuse housing (17) beneath the cover of the main switch.

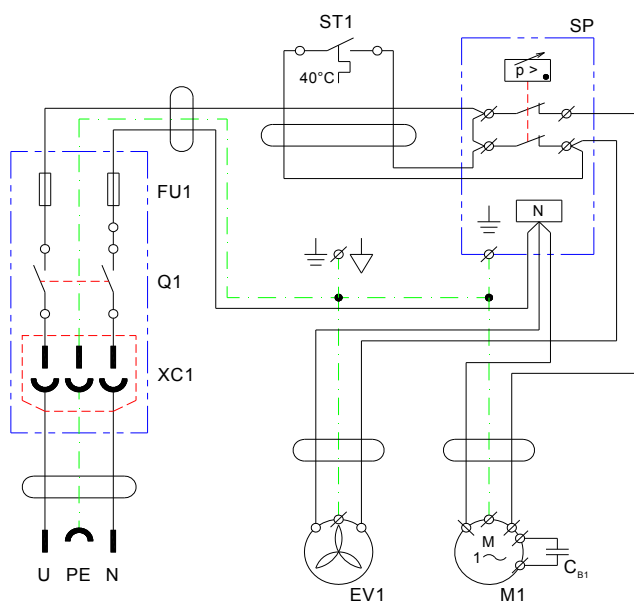


Electrical cord may not contact the hot parts of a compressor. Insulation could be damaged!

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

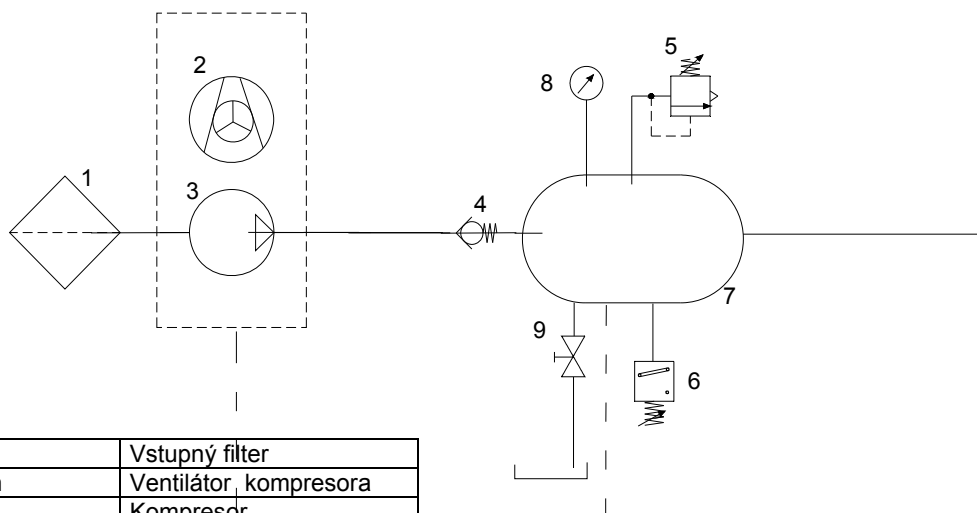
10. WIRING DIAGRAMS

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



M1	Motor of compressor
EV1	Fan of compressor
ST 1	Thermo switch
CB1	Capacitor
SP	Pressure switch
FU	Fuses
Q1	Main switch
XC1	Connector

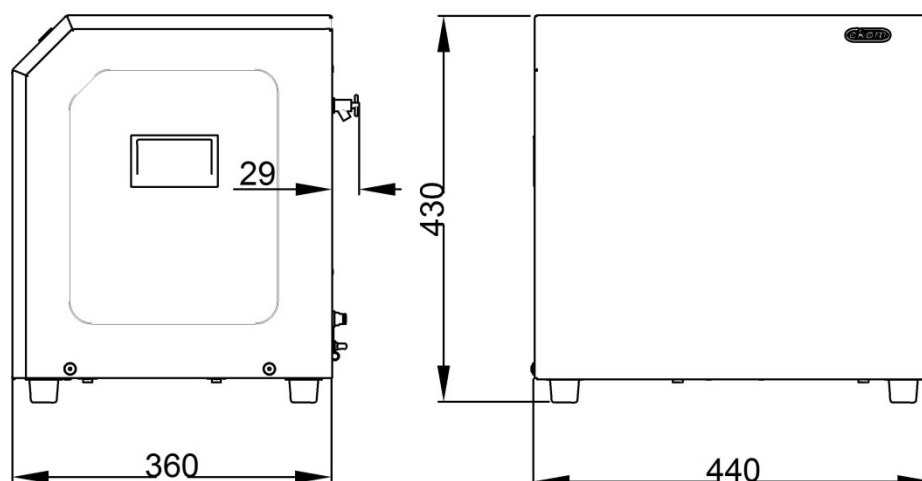
11. PNEUMATIC SCHEMATIC



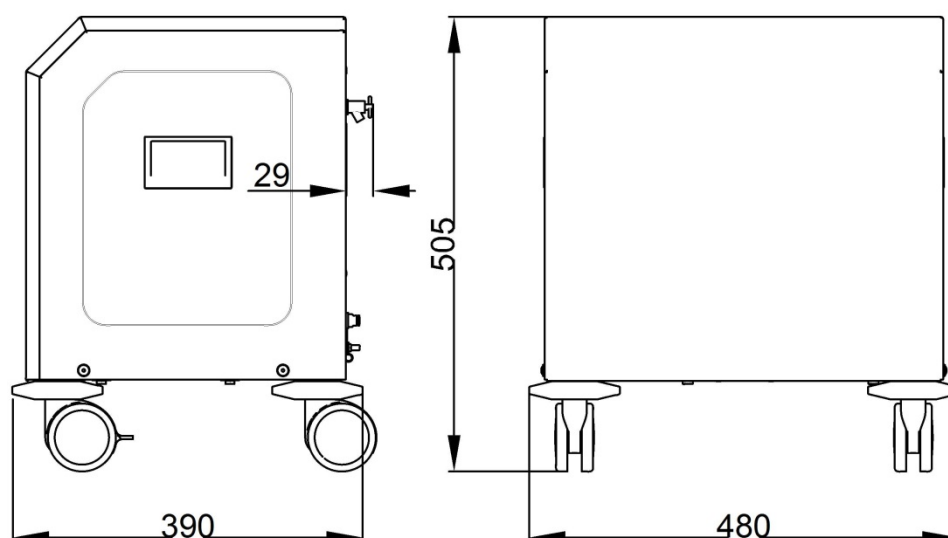
1	Inlet filter	Vstupný filter
2	Compressor fan	Ventilátor kompresora
3	Compressor	Kompresor
4	Check valve	Spätný ventil
5	Safety valve	Poistný ventil
6	Pressure switch	Tlakový spínač
7	Air tank	Vzdušník
8	Air tank pressure gauge	Manometer vzdušníka
9	Drain valve	Odkalovací ventil

12. INSTALLATION SCHEMATIC

Compressor with feet



Compressor with casters



13. FIRST OPERATION

(Fig.1)

- Make sure that all stabilizers used during transport were removed.
- Check that all pressurized air line connections are secure.
- Connect to the mains.
- Switch on the switch (11) at the back part of the box to the position "I" .

Compressor – after the first switching of the mains switch of the compressor on, air chamber shall pressurize air chamber to switching-off pressure and pressure switch shall be automatically switched off by the compressor. In the next period, the compressor shall work already in automatic mode, the compressor is switched on and off by pressure switch according to the consumption of compressed air.



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.

14. SWITCHING THE COMPRESSOR ON

(Fig.6)

Switch on the switch (1) at the back part of the box to the position "I", the compressor sends pressurized air to the air tank. After reaching the cutoff pressure the compressor turns off automatically and the cycle is repeated. 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. 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 may not exceed the allowable operating pressure, which is prevented by safety valve.

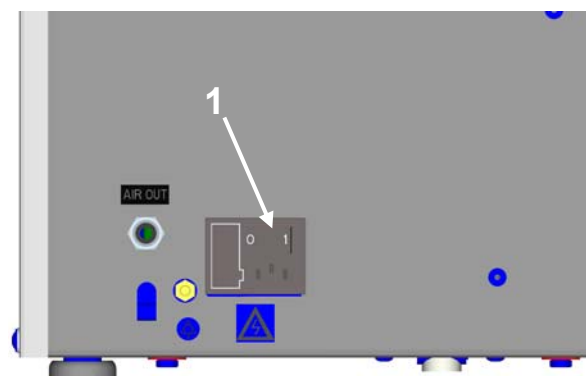


Fig.6



Never tamper with the pressure switch. Adjustments are not allowed. The pressure switch 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

15. 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
Release condensate: From air tank At high air humidity	14.1	1x week 1x day	personnel personnel
Safety valve check	14.2	1 x year	qualified expert
Inspect the appliance	14.3	after two years	qualified expert
Replacement of filters of air pump	14.5	1 x year	qualified expert
Replace piston complete	Service documentation	8000 hours	qualified expert
Perform "Repeated Test" according to EN 62353	13	1 x 2 years	qualified expert

16. MAINTENANCE



**Repair work beyond normal maintenance can be performed only by qualified personnel or the manufacturer's representative.
Use only spareparts 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).

Cover removal

- Unscrew the 4 screws from the front cover
- Disconnect the grounding wire
- Remove the front cover
- Reassemble using the opposite order

TO ENSURE THAT THE COMPRESSOR WORKS CORRECTLY, PERFORM THE FOLLOWING MAINTENANCE TASKS AT REGULAR INTERVALS (CHAPTER 13):

16.1. Condensation drain valve

(Fig.1)

From air tank

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 (8). Wait until condensation is fully drained from the pressure tank. Close drain valve (8).

16.2. Safety valve check

(Fig.7)

When the compressor is operated for the first time, make sure that the safety valve is working properly. Let the safety valve blow out for only a few seconds.



Fig.7



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.

16.3. Inspect the appliance

Test for leakage:

- Consumption of compressed air is stopped.
- Pressurize the air tank by releasing some air via a connected device.
- With the compressor off, wait at least 10 minutes before checking the pressure level.
- If the pressure has dropped, use soapy water to find the leaky joint. Start with the joints outside the case, then test the ones inside the case after removing the covers.
- Tighten or re-seal joints as necessary.

Inspect the appliance:

- Check the status of compressor aggregate – uniformity of operation, noise level, check the performance of the compressor - measure time of pressurizing of air chamber from 0 to 6bar (35 sec).
- Check the condition of the hangers above the pump.
- Checking the fan functioning.
- Examine the pump for:
 - impurities in the crankcase, free movement of the crank shaft, if necessary, replace any faulty parts

16.4. Stabilizing the compressor before shipping

(Fig.8)

Before shipping, the compressor must be stabilized to prevent movement. Prior to fixing it is necessary to disassemble housing using 4x screw M5 at side walls of the product. The air pump must be fixed to the base using four original screws M6 (see picture) and plastic cover assemble.

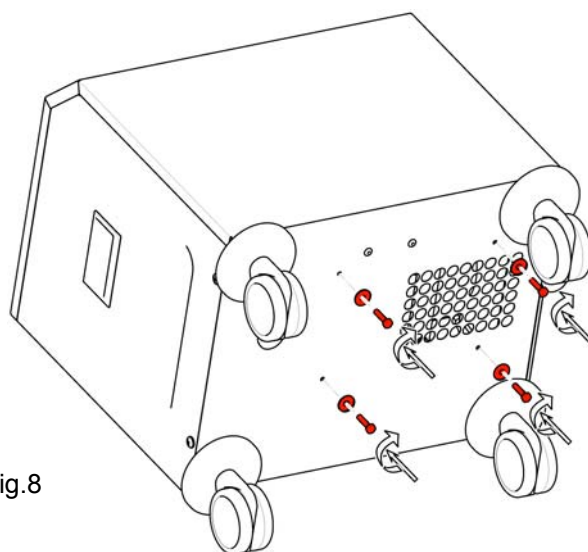


Fig.8

16.5. Replacement of filters of air pump



Caution – hot surface! About disassembly the internal back cover can be hot the internal surface.

(Fig.9)

- Disassembly the internal cover. These filter inserts are in the top cover of crank case.
-
- Using screwdriver, remove the flexible guard.
- Remove the used and contaminated filters (A), (B).
- Insert a new set of input filter (B).
- Place prefilter (A) into the flexible guard (by plain side into the crank case) and then to the opening..



Fig.9

17. 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 (8) (Fig.1). Switch off the compressor by switch (Fig.4), close the drain valve and disconnect the appliance from the mains.

18. DISPOSING OF THE APPLIANCE

- Disconnect the appliance from the mains.
- Release air pressure in the pressure tank by opening the drain valve (8) (Fig.1).
- The components of the product are non-toxic.
- Dispose of the appliance following all environmental regulations.

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

20. SOLVING PROBLEMS



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

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 is not switching on, switch switched to "0" position Burned fuse in fuse housing	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 Check fuses - replace any faulty fuses
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 filter	Check pneumatic distribution system – seal loose joint Replace worn piston ring Replace contaminated filter with the new one
Compressor is noisy (knocking, metal noises)	Damaged bearing of piston, piston rod, motor bearing Loose or cracked spring	Replace damaged bearing Replace damaged spring

PARTS LIST / ОБЪЕМ ПОСТАВКИ / LIEFERUMFANG / ROZSAH DODÁVKY

Compressor	Компрессор	Kompressor	Kompresor				
DK50				401402001-004	<input type="checkbox"/>	1x
DK50				401402001-005	<input type="checkbox"/>	1x
Installation, Operation and Maintenance Manual	Инструкция по установке, обслуживанию и уходу	Installations-, Bedienungs- und Instandhaltungsanleitung	Návod na inštaláciu, obsluhu a údržbu	NP-DK50 simple s DE	112000198-000	<input type="checkbox"/>	1x
Fuse	Предохранитель	Sicherung	Poistka	230V T6,3A	038100004-000	<input type="checkbox"/>	2x
Screw-wrench	Ключ для винтов	Schraubenschlüssel	Kľúč pre skrutky	3	192000005-000	<input type="checkbox"/>	1x
Cord	Шнур	Kabel	Šnúra		034130006-000	<input type="checkbox"/>	1x
Filtration elements	Фильтровальный вкладыш	Filtereinsatz	Filtračná vložka		025000012-000	<input type="checkbox"/>	1x
Filtration elements	Фильтровальный вкладыш	Filtereinsatz	Filtračná vložka		025000005-000	<input type="checkbox"/>	3x

Basic equipment packing checked by	Основную комплектацию проверил	Verpackung der Grundausrüstung überprüft	Balenie základného vybavenia kontroloval
Date of production	Дата выпуска	Herstelldatum	Dátum výroby
Signature	Подпись	Unterschrift	Podpis



DK50



PRODUCENT:
ПРОИЗВОДИТЕЛЬ:
HERSTELLER
PRODUCTEUR
VÝROBCA:

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fax: +421 33 7967223
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