

**JOINT-STOCK COMPANY
KRONT-M**

**ULTRAVIOLET BACTERICIDE
IRRADIATORS-AIR RECIRCULATORS
DEZAR 2, 3, 4, 5, 7**

OPERATION MANUAL

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Caution! Operational properties of recirculator provided in this operation manual are calculated in condition of operation of one device. If necessary to disinfect larger volumes (areas), respective number of recirculators should be used, placing them on route of main air flows.

Recirculator design is calculated at optimum proportion of productivity, dimensions and sound characteristics and is protected by patents.

Appearance of ultraviolet bactericide irradiators-air recirculators DEZAR



DEZAR 2
(wall device)



DEZAR 4
DEZAR 7
(mobile device)



DEZAR 3
DEZAR 5
(wall device)

1. PURPOSE OF THE PRODUCT

- 1.1. Ultraviolet bactericide irradiator-air recirculator DEZAR is developed in accordance with the manual *Use of ultraviolet bactericide radiation for disinfecting air in premises*.
- 1.2. DEZAR – closed-type irradiator (hereinafter referred to as Recirculator), **is intended for use in medioprofilacting institutions:**
- in absence of people:**
when preparing premises for operation (as final stage in complex of sanitary and hygienic measures), in order to lower air bacterial semination level in Category III premises (DEZAR 2), Category II to V premises (DEZAR 3, 4), or Category I to V premises (DEZAR 5, 7).
- in presence of people:**
in order to prevent rise of air bacterial semination level (especially in cases of high risk of infectious respiratory disease spread) in Category III to V premises up to 50 qu. m (DEZAR 2), or in premises of up to 100 qu. m, regardless of Category (DEZAR 3, 4, 5, 7) (see Table 1).

Table 1

Category	Type of premises
I	Operating theatres, presurgical, maternity, sterile zones of central sterilization departments, children's wards in maternity homes, wards for premature and traumatized infants.
II	Dressing wards, breast milk sterilization and pasteurization wards, resuscitation department wards, premises of non-sterile zones of central sterilization departments, bacteriological and virological laboratories, hemotransfusion stations.
III	Wards, offices and other premises of medioprofilactic institutions (not included in Category I or II).
IV	Children's playrooms, school classrooms, orphan homes, nursing homes, amenity rooms of industrial and public buildings crowded by people for a long time.
V	Smoking rooms, public toilets and staircases of premises of medioprofilactic institutions.

- 1.3. Ultraviolet bactericide irradiator-air recirculator DEZAR has two versions:
- Wall ultraviolet bactericide irradiator-air recirculator – models DEZAR 2, 3 and 5;
 - Mobile ultraviolet bactericide irradiator-air recirculator – models DEZAR 4 and 7.

Manufacturer retains the right to replace component units with analogues, installation of which does not change recirculator's technical characteristics.

2. TECHNICAL CHARACTERISTICS

Recirculators DEZAR 3 and 4 and DEZAR 5 and 7 are produced in the same bodies, have the same technical and biomedical characteristics.

2.1. Productivity at nominal supply voltage:

DEZAR 2 – 60 ± 10 qu. m/h;

DEZAR 3, 4, 5, 7 – 100 ± 10 qu. m/h.

2.2. Air flow disinfection efficiency by *Staphylococcus aureus*:

DEZAR 2 – 95.0 %;

DEZAR 3, 4 – 99.0 %;

DEZAR 5, 7 – 99.9 %.

2.3. Radiation source:

DEZAR 2 – two ultraviolet lamps with total bactericide flow of 6.4 W;

DEZAR 3, 4 – three ultraviolet lamps with total bactericide flow of 14.1 W;

DEZAR 5, 7 – five ultraviolet lamps with total bactericide flow of 23.5 W. PHILIPS TUV 16 W or LightTech LTC 16W T5 (DEZAR 2) or PHILIPS TUV 15 W or LightTech G15T8 or Osram HNS 15W OFR (DEZAR 3, 4, 5, 7) bactericide mercury ozone-free ultraviolet lamps are used.

* Special glass having high bactericide ultraviolet ray transmission factor and absorbing radiation under 200 nm forming ozone from the air is used in production of bactericide lamps. Therefore, a very small amount of ozone lying within maximum permissible concentration is registered during operation of lamps and practically disappears after 100 hours of operation of the lamp (data from technical recommendations for use of bactericide lamps).

2.4. Fans installed in fan panel made of vibration-damping material: 3 pcs.

2.5. Fixation of the lamp operation time is performed by a digital four-digit meter allowing registering total operation time since connection of the new lamps in hours.

2.6. Average life-time of the lamp in case of observing operation rules and maintenance: at least 9000 hours.

2.7. Recirculator is intended for operation in the following conditions:

- ambient air temperature: $+10 \dots +35$ °C
- relative humidity: max 80 % at $+25$ °C
- pressure: 630-800 mm Hg

2.8. Recirculator power supply: 230 V, 50 Hz alternating current mains with permissible voltage deviation ± 10 % of nominal value.

2.9. Total recirculator power consumption at 230 V nominal voltage:

DEZAR 2 – 35 W;

DEZAR 3, 4 – 60 W;

DEZAR 5, 7 – 100 W.

- 2.10. Recirculator body is made of impact-resistant, chemically resistant plastic. Outer surfaces of recirculator are resistant to disinfection by wiping with all permitted disinfectants.
- 2.11. Climatic version: for cold-temperate climate in case of location in enclosed spaces with artificial ventilation.
- 2.12. By electrical safety recirculator conforms to Class II (highest safety class). Electrocutation protection in this product is provided for by double insulation consisting of main insulation and additional insulation formed by insulating dielectric plastic body. Connection of the product to protective ground wire of permanent installation is not required. Recirculator may be connected to any household socket (including sockets without grounding).
- 2.13. Dimensions:
DEZAR 2 – 605 × 365 × 145 mm;
DEZAR 3 and 5 – 890 × 370 × 140 mm;
DEZAR 4 and 7 – 1200 × 370 × 580 mm.
- 2.14. Weight:
DEZAR 2 – 3.5 kg;
DEZAR 3 – 5.0 kg; DEZAR 5 – 5.2 kg;
DEZAR 4 – 8.5 kg; DEZAR 7 – 9.0 kg.
- 2.15. In presence of people, recirculator may be operated **continuously** during the whole time necessary for maintaining air bacterial semination level at normative level, depending on functional requirements to the premises and number of people located therein. **Intervals between switching-ons are not regulated.**
- 2.16. Adjusted acoustic power level: 40 dB.
- 2.17. Recirculator components contain precious metals:
 - gold – 0.0019144 g;
 - silver – 0.0142314 g.
- 2.18. Service life: 5 years.

3. ADDITIONAL FUNCTIONS OF THE PRODUCT

Recirculator is equipped with a special filtering block with replaceable filter. Filtering block consists of recirculator guard, replaceable filter and self-fixing filter holder. Filtering block has special sockets, by which it is securely installed on recirculator body with clamps.

Use of replaceable air filters: air filter FVS-KRONT and charcoal air filter FUS-KRONT, provides for reduction of dust content of ultraviolet bactericide lamps and irradiation chamber inner surface.

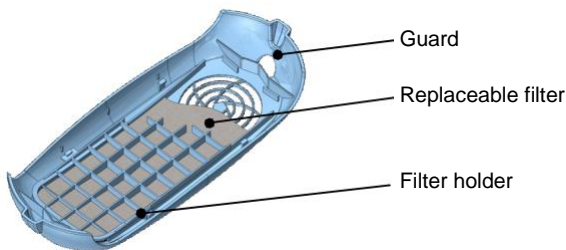


Fig. 1. Filtering block with replaceable filter

3.1. Replaceable air filter FVS-KRONT – Class G2.

FVS-KRONT filter is made of high-quality nonwoven, environmentally-friendly white filtering material (100 % polyester) made of synthetic unbreakable fibres.

Input air flow filtering from dust (pollen, plant spores, mould, dry disinfectants, aerosols).

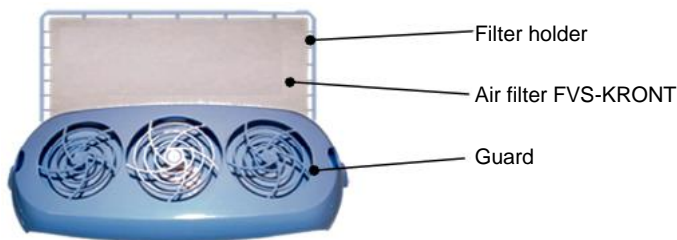
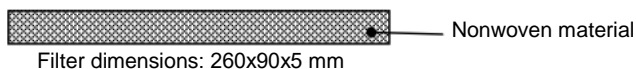


Fig. 2



Filter dimensions: 260x90x5 mm

Fig. 3

3.2. Replaceable charcoal air filter FUS-KRONT – Class G2.

FUS-KRONT filter is made of carbon-bearing fibrous combined material consisting of two layers of polyester fibres with one layer of carbon fibre between them.

Activated carbon has highly developed porous structure, very large absorption area (up to 1500 sq. m/g), therefore has high sorptive properties.

Removal of harmful substances takes place in “automatic mode”. If there are toxic substances – absorption takes place, otherwise filter is in “standby mode”. After saturation of activated carbon surface, filter ceases absorption.

Input air purification of dust (settling dust, pollen, plant spores, mould, dry disinfectants, pairs of disinfectants and sterilizing agents, pairs of acids

and alkali, nitrogen oxides, etc.) and additional absorption of organic substances of base or acid nature from air (aerosols, anaesthetic gases, antibiotics, etc.) for the purpose of protecting respiratory organs.

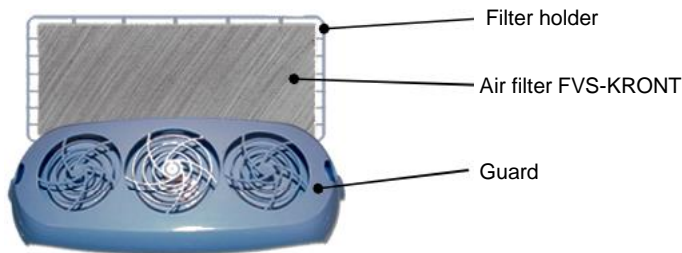


Fig. 4

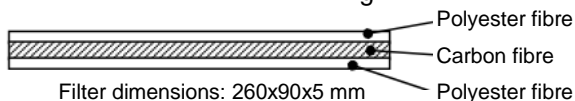


Fig. 5

Replaceable charcoal air filter FUS-KRONT is installed instead of air filter in case of necessity, when harmful substances are in the air of medical institution premises.

4. SET OF THE PRODUCT

4.1. DEZAR 2, 3 and 5 recirculator supply sets include:

4.1.1. recirculator – 1 pcs.

4.1.2. auxiliary accessories and spare parts:

fixture components for installation of recirculator on the wall:

- dowels – 2 pcs.;

- screws – 2 pcs.

replaceable air filters FVS-KRONT – 12 pcs.

replaceable charcoal air filters FUS-KRONT – 3 pcs. (filters are not included in DEZAR 2 product set).

4.1.3. operation documentation:

operation manual– 1 pcs.

4.2. DEZAR 4 and 7 recirculator supply sets include:

4.2.1. recirculator – 1 pcs.

4.2.2. mobile support (cart) – 1 pcs.

Mobile support set if supplied disassembled:

- support (No 020) – 2 pcs.;

- lower frame (No 404) – 1 pcs.;

- wheel set – 1 pcs.;

- fixture set No 1;

- fixture set No 2.

For installation on mobile support, the following fixture components are included in package set (installed on recirculator base during transportation):

- washer Ø4 – 4 pcs.;
- lock washer Ø4 – 4 pcs.;
- M4 capnut – 4 pcs.

4.2.3. auxiliary accessories and spare parts:

replaceable air filters FVS-KRONT – 12 pcs.

replaceable charcoal air filters FUS-KRONT – 3 pcs.

4.2.4. operation documentation:

operation manual– 1 pcs.

5. SAFETY ENGINEERING

5.1. Recirculator may be operated by personnel instructed in safety engineering and acquainted with this operation manual.

5.2. Place recirculator during installation and connection so that power plug is easily accessible.

5.3. **Caution! Be careful!**

All works related to functional test of the lamps or works requiring switching recirculator on with open lid must be performed in clothes protecting the skin from UV radiation. In order to prevent inflammation that can be caused by ultraviolet rays in case of getting in eyes, it is forbidden to switch recirculator on with lid off without safety goggles.

5.4. Spent or out-of-service bactericide lamps must be stored packed in a separate room.

Bactericide lamps must be recycled in accordance with requirements and regulations in force in the territory of the country, where device is used.

5.5. In case of disintegrity of bactericide lamp bulbs, thorough demercurization of the room must be performed in accordance with requirements and regulations in force in the territory of the country, where device is used.

5.6. In case of not using recirculator in accordance with this operation manual, safety of recirculator may be compromised.

6. DEVICE AND OPERATION PRINCIPLE

6.1. Recirculator is a closed type UV irradiator, where bactericide flow of ozone-free lamps is distributed in a small closed space, and air is disinfected in process of its circulation through ultraviolet radiation lamp chamber by fans. Air flow is filtered at the recirculator input.

- 6.2. Irradiation chamber is coated with aluminium by method of vacuum deposition having high reflective properties (reflection factor at least 86 %), providing for efficient bactericide treatment of air flow.
- 6.3. Body and light-screen membranes at recirculator input and output reliably protect personnel and patients from exposure to ultraviolet radiation.
- 6.4. Electronic power supply with power factor adjustment pre-heats ultraviolet lamp electrodes for 2 seconds, which provides for their “soft” start and extends the service life.
- 6.5. Electric insulation of metal fixture components used for recirculator installation on the wall or on the mobile support, that are going outside of the body and may be under voltage in conditions of insulation failure, is performed by special plastic caps.
- 6.6. Special means are used to protect electric components of recirculator from exposure to ultraviolet radiation:
 - electronic power supply is protected by a plastic screen;
 - connecting wires are protected by a PVC tube.
- 6.7. Connection to 230 V mains is performed by twin wire power cable with wire section 2×0,75 sq. mm.
- 6.8. ON/OFF switch is on the control panel located on the face of recirculator lid.
- 6.9. Light indicators on the control panel (Fig. 6) control supply voltage to the lamps and fans. If no voltage, indicator goes out. Kamp and fan icons are depicted next to respective light indicators.

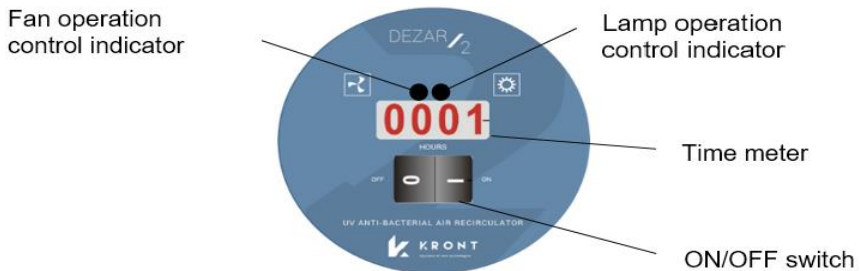


Fig. 6. Control panel

- 6.10. Fixation of the lamp operation time is performed by a digital four-digit meter allowing fixing total operation in hours and storing existing information in switched-off recirculator for 1 year.

7. PREPARATION AND OPERATION PROCEDURE

- 7.1. Unpack recirculator: remove it from the box, remove the polyethylene packaging.
- 7.2. After storing recirculator in a cold room or after transportation in winter conditions, it may only be connected to mains after 2 hours of being at room temperature.
- 7.3. Recirculator must be placed in the room, so that air intake and discharge takes place freely. Avoid installing in corners of the room, where dead zones may form.
- 7.4. Recirculators DEZAR 2, 3 and 5 are installed on the wall, 1-1.5 m (lower body part) from the floor.
- 7.5. Install recirculator DEZAR 2, 3 and 5 in selected place on the wall. Use supplied dowels and screws for installation of recirculator. In case of vertical recirculator placement, distance between dowel installation points is 230 mm, in case of horizontal placement (DEZAR 3, 5, by request) – 428 mm.
- 7.6. Install and fasten recirculators DEZAR 4 and 7 on pre-assembled mobile support with washers and nuts located on the base of recirculator. Mobile support assembly procedure is provided in Annex 2.
- 7.7. Insert power cable plug in 230 V socket. Switch device ON. Light indicators controlling supply voltage to lamps and fans and time meter light up.
- 7.8. Having finished operation, switch device OFF and disconnect power cable plug from 230 V socket.
- 7.9. It is necessary to take account of operation time of bactericide lamps. Operation time fixation and timely replacement of bactericide lamps may be performed by readings of digital meters.

8. MAINTENANCE

Names of recirculator design components provided in this section match assembly scheme and block diagram (Annex 1, Fig. 12 and Fig. 13).

- 8.1. Maintenance of medical equipment must be performed by service or technical specialists according to valid regulations and recommendations.
- 8.2. **Caution! All activities performed within the framework of maintenance: removal and installation of recirculator lid, replacement of lamps, removal and installation of electric holders must be performed with device switched OFF and disconnected recirculator. In order to disconnect recirculator from mains, it is necessary to remove power cable plug from the socket.**
- 8.3. **Caution! In order to remind user about performance of preventive works (cleaning lamps and irradiation chamber inner surface)**

every 200 hours (200, 400, 600, 800...9000), readings of the digital time meter on the control panel flash for 1 hour and then return to normal mode. Periodicity of performance of preventive works is set by user depending on device operation conditions, but at least quarterly.

- 8.4. In case of performing preventive (wiping lamps from dust) and repair works requiring opening the recirculator body, perform the following activities before and after works:

Disconnecting lid and base of recirculator body:

- Remove upper and lower guards (without using tools), by pressing clamps simultaneously (Fig. 7).



Fig. 7

- Unscrew 2 screws connecting the lid and the base of recirculator body (only for DEZAR 2, see Annex 1).
- Slide and remove connecting bars at recirculator sides (Fig. 8).



Fig. 8

- Remove recirculator lid. Place it nearby, parallel to recirculator base. **Caution!** Between electric components of lid and base there is a connecting electric cable.

Assembling recirculator body:

- Align recirculator lid with the base and fix connection by connecting bars (Fig. 9).



Fig. 9

- Install two screws connecting the lid and the base of the body (only for DEZAR 2, see Annex 1).
 - Install upper and lower (with filter) recirculator guards by pressing until click is heard.
- 8.5. **In order to clean lamp bulbs and irradiation chamber inner surfaces**, perform the following:
- Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (disconnection of the lid and the base of the body).
 - Wipe lamp bulbs and irradiation chamber inner surfaces with napless cloth.
 - Switch recirculator ON, observing safety engineering regulations in clause 5.3 of this manual, and visually verify lamp operation.

- Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (body assembly).
- 8.6. **In order to replace the lamp**, perform the following:
- Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (disconnection of the lid and the base of the body).
 - Switch recirculator ON, visually detect faulty lamp L1+LX (see block diagram, Fig. 13), observing safety engineering regulations in clause 5.3 of this manual.
 - Switch device OFF and disconnect it from mains.
 - Remove electric holders E1+EX from electrodes of the lamp to be replaced. Remove faulty lamp from holders.
 - Replace faulty lamp with a new one, install electric holders E1+EX.
 - Connect recirculator to mains, switch it ON. Visually verify lamp operation, observing safety engineering regulations in clause 5.3 of this manual.
 - Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (body assembly).
 - Recycle faulty lamp.
- 8.7. **In order to reset the meter**, perform the following:
- Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (disconnection of the lid and the base).
 - **Caution!** Resetting of meter readings is performed with device switched off, observe safety engineering regulations in clause 5.3 of this manual.
 - Connect recirculator to mains, switch it ON.
 - In order to reset the meter, push RESET button (Fig. 10) on control panel indication board installed on recirculator lid.

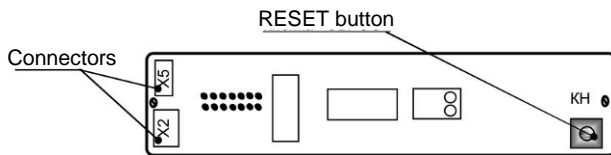


Fig. 10. Indication board

- RES9 appears on the device screen (with pushed button) and reverse counting to |0|0|0|0| takes place. When resetting the meter, release RESET button.
 - Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (body assembly).
- 8.8. **In order to replace control panel indication board**, perform the following:
- Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (disconnection of the lid and the base).

- Disengage three-pin connector X2 and two-pin connector X5 on indication board (see Fig. 10).
 - Unscrew 2 screws fastening indication board to the control panel.
 - Replace indication board with a new one, fasten with 2 screws.
 - Engage three-pin connector X2 and two-pin connector X5 on indication board.
 - Perform activities of clause 8.4 (body assembly). Make sure time meter is operating by connecting recirculator to mains and switching it ON.
- 8.9. **In order to replace the fan**, perform the following:
- Switch device OFF and disconnect it from mains.
 - Remove upper guard by simultaneously pressing on clamps (Fig. 7).
 - Connect recirculator to mains, turn recirculator ON.
 - Visually detect faulty fan.
 - Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (disconnection of the lid and the base).
 - Disengage fan connectors (R1–XS11; R2–XS12; R3–XS13).
 - Remove fan panel.
 - Remove faulty fan from the panel.
 - Replace faulty fan.
 - Install fan panel.
 - Engage fan connectors (R1–XS11; R2–XS12; R3–XS13).
 - Perform activities of clause 8.4 (body assembly).
- 8.10. **In order to replace electronic power supply**, perform the following:
- Switch device OFF and disconnect it from mains.
 - Perform activities of clause 8.4 (disconnection of the lid and the base).
 - Remove power supply protective screen by unscrewing 4 screws.
 - Disengage connectors XS2, XS8, XS9 and XS10.
 - Disconnect wires to ultraviolet lamps from terminal blocks XS3-XS4 (DEZAR 2), XS5-XS7 (DEZAR 3, 4) or XS3-XS7 (DEZAR 5, 7) and power cable wires from terminal block XS1.
 - Unscrew 4 screws fixing the power supply.
 - Replace faulty power supply with a new one, fix with 4 screws.
 - Engage connectors XS2, XS8, XS9 and XS10, install wires to ultraviolet lamps into terminal blocks XS3-XS4 (DEZAR 2), XS5-XS7 (DEZAR 3, 4) or XS3-XS7 (DEZAR 5, 7) and power cable wires into terminal block XS1.
 - Install power supply protective screen by fixing it with 4 screws.
 - Perform activities of clause 8.4 (body assembly).

9. PRODUCT MAINTENANCE BY MEDICAL PERSONNEL

Recirculator bactericidal efficiency and filtration and purification of air flow depend on timely replacement of filters (air filter and charcoal air

filter). Monthly replacement of filters is recommended. At certainly **increased concentrations of organic substances of base and acid nature**, it is necessary to replace **charcoal** air filter more frequently.

Simultaneously with filter replacement, it is recommended to perform disinfecting treatment of guard and filter holder.

Filter replacement (procedure of replacement of air filter and charcoal air filter are identical) is performed by medical personnel, since this procedure is simple and safe. Recirculator body design allows replacing filters **without tools**.

In order to replace the filter, perform the following:

- Remove filtering block (without using tools) by simultaneously pressing clamps (Fig. 7).
- Remove filter holder by simultaneously pressing clamps (Fig. 11) and remove old filter, observing the procedure for treating infected materials.

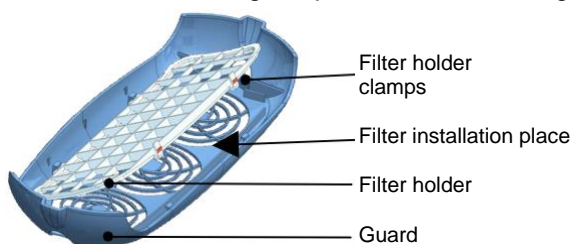


Fig. 11

- Old filter must be recycled in accordance with requirements and regulations in force in the territory of the country, where device is used.
- Treat filter holder and guard with disinfectants by submersing or wiping. After treating by submersing, grills must be dried.
- Install new filter by fixing it by filter holder on recirculator guard (Fig. 11).
- Install filtering block by slightly pressing it until you hear a click (Fig. 7).

10. TRANSPORTATION AND STORAGE

10.1. Recirculator in manufacturer's package must be stored in the following conditions:

- ambient temperature: $-50...+40$ °C;
- relative air humidity: max 90 % at $+25$ °C. In case of higher temperature, humidity must be lower.

10.2. Recirculator must be transported in manufacturer's package in accordance with package labelling (Up, Caution! Fragile!, Do not take with hooks, Protect from moisture).

Transportation by all types of transport is allowed in ambient temperature $-50...+40$ °C and relative humidity 90 % at $+25$ °C.

11. POSSIBLE FAULTS AND METHODS OF ELIMINATION

Table 2

Name of fault, external evidence	Possible cause	Method of elimination
1. Irradiator is not operating	1.1. Faulty mains socket or ON/OFF switcher. 1.2. UV lamp wires disconnected from electric holders, or one or more electric holders of UV lamps removed. 1.3. Faulty electronic power supply.	1.1. Repair. 1.2. Remove recirculator lid (see clause 8.4), connect wires to electric holders or install electric holders on lamp electrodes. 1.3. Replace electronic power supply (see clause 8.10).
2. Lamp operation control indicator S1 does not light up	2.1. Faulty lamp or electronic power supply.	2.1. Replace faulty lamp (see clause 8.6) or electronic power supply (see clause 8.10).
3. Fan operation control indicator S2 does not light up	3.1. Faulty fan or electronic power supply.	3.1. Replace fan (see clause 8.9) or electronic power supply (see clause 8.10).
4. Time meter on control panel is not operating	4.1. Faulty digital time meter. 4.2. Burnt fuse FU3.	4.1. Replace control panel indication board (see clause 8.8). 4.2. Replace electronic power supply (see clause 8.10).
<p>Caution!</p> <p>In order to remind user about performance of preventive works (cleaning lamps and irradiation chamber inner surface) every 200 hours (200, 400, 600, 800...9000), readings of the digital time meter on the control panel flash for 1 hour and then return to normal mode.</p>		

* After warranty period, **SIA KRONT** performs repairs of and supply of all components for ultraviolet bactericide irradiators-air recirculators DEZAR on a contractual basis.

12. RECYCLING

- 12.1. Bactericide lamps must be recycled in accordance with requirements and regulations valid in the territory of country, where device is operated.
- 12.2. Filters must be recycled in accordance with requirements and regulations valid in the territory of country, where device is operated.
- 12.3. Recirculator and its components after its service life must be recycled in accordance with requirements and regulations valid in the territory of country, where device is operated, by medical electric device recycling services.

13. TEST CERTIFICATE

Ultraviolet bactericide irradiator-air recirculator DEZAR, factory number _____, conforms to manufacturer's technical conditions and is acknowledged valid for operation.

Production date: _____

Signature (QC department stamp): _____

Factory stamp:

14. MANUFACTURER'S WARRANTY

- 14.1. Manufacturer guarantees conformity of ultraviolet bactericide irradiator-air recirculator DESAR to requirements of manufacturer's technical conditions.
- 14.2. Warranty period: 2 years from recirculator production date.
- 14.3. During warranty period, manufacturer repairs the device or replaces its components free of charge (provided that consumer observes transportation, storage and operation regulations).
- 14.4. During warranty period, manufacturer may at his own account provide consumer with spare parts to be replaced, provided that replacement can be performed by qualified specialists in accordance with requirements of operation documentation.
- 14.5. If repair on-site is impossible during warranty period, consumer sends faulty product or spare parts to manufacturer at manufacturer's account.
- 14.6. Manufacturer only accepts products with warranty certificate for warranty repair. Warranty certificate must be fully completed.
- 14.7. Fault elimination term – max 30 days after manufacturer receives product.
- 14.8. Warranty does not include flaws (faults) of the product caused by:
 - mechanical damage of the product by impact or excessive force;
 - damage of the product by hot objects or liquids;
 - any tampering with the product design;
 - force majeure (incident, fire, flood).

Manufacturer's address: KRONT-M JSC:

Russia, 141400, Moscow Region, Khimki,
ul. Spartakovskaya 9-1
phone (495) 572-84-10, fax (495) 572-84-15

HOTLINE PHONE: (495) 500-48-84

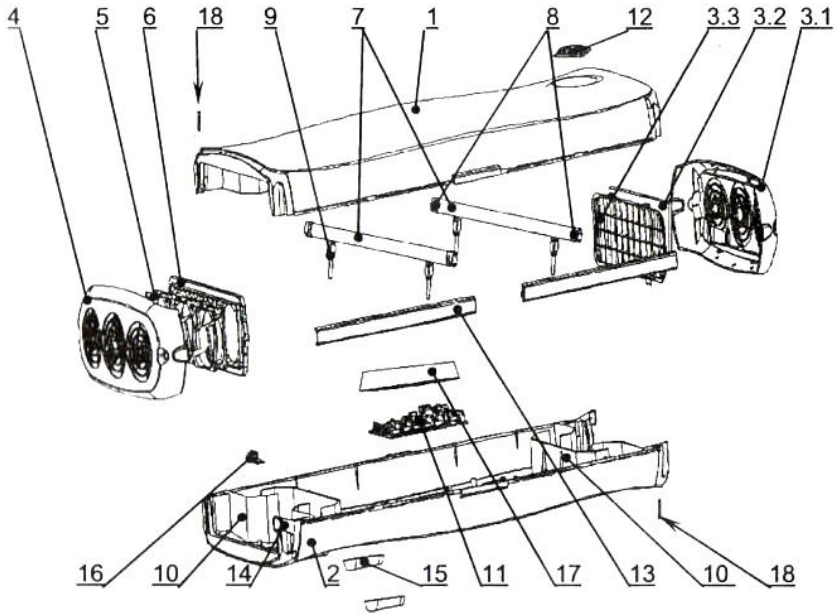
E-mail: info@kront.com; Internet: www.kront.com

Importer/Exclusive Representative in the EU: SIA KRONT:

Blaumana Iela 32-6, Riga, LV-1011, Latvia
phone (371) 20220888

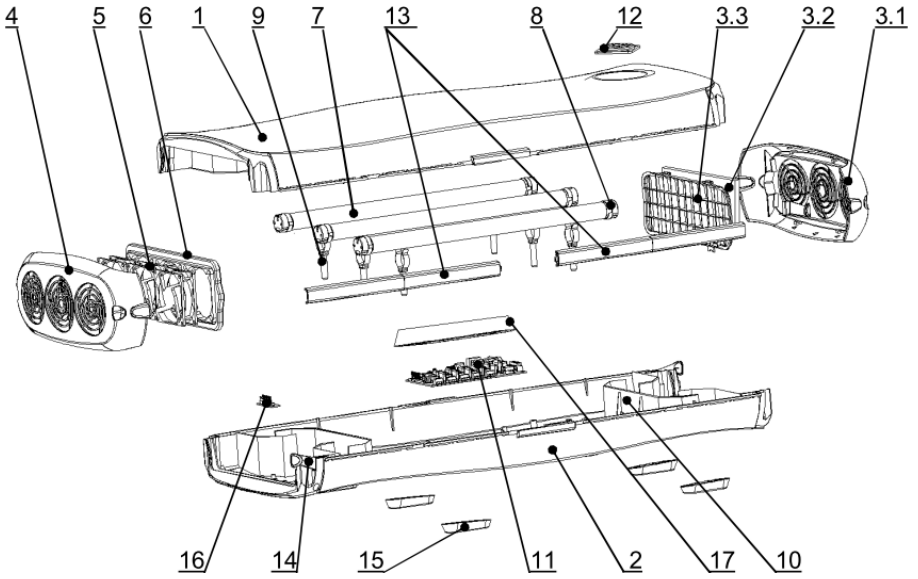
E-mail: dezar@kront.eu; Internet: www.kront.eu

Caution! After warranty period, **SIA KRONT** performs repairs of and supply of all components for ultraviolet bactericide irradiators-air recirculators DEZAR on a contractual basis.

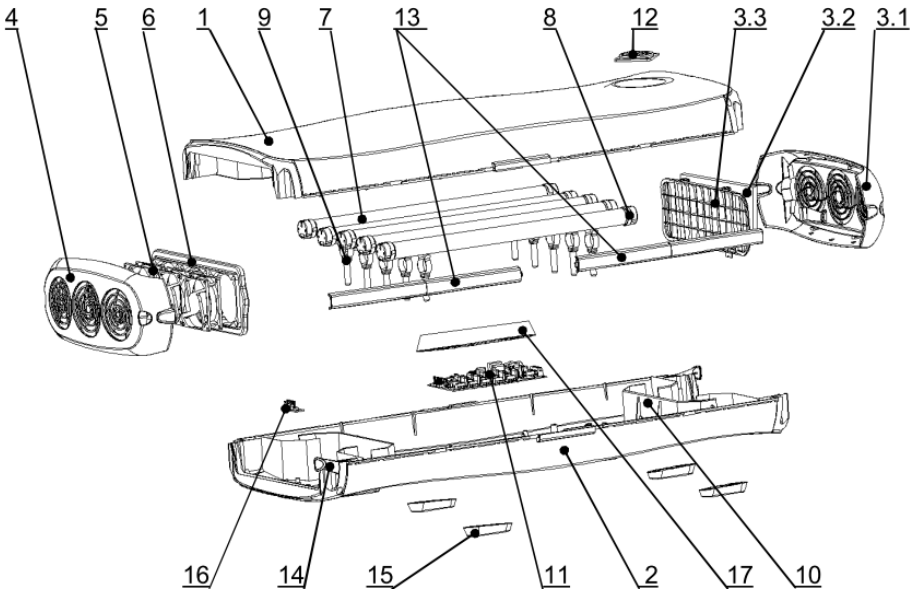
Fig. 12. Assembling
DEZAR 2

No	Name	Qty.
1	Recirculator lid	1
2	Recirculator base	1
3	Filtering block 3.1. Lower guard 3.2. Replaceable filter 3.3. Filter holder	1
4	Upper guard	1
5	Fan	3
6	Fan panel	1
7	16 W ultraviolet ozone-free bactericide lamp	2
8	Electric ultraviolet lamp holder	4
9	Lamp stand with lamp holder	4
10	Light-screen membrane	2
11	Electronic power supply	1
12	Control panel	1
13	Connecting bar	4
14	Guard clamp	4
15	Cover	2
16	Conversion board for fan connection	1
17	Power supply protective screen	1
18	Body lid and base connecting screw	2

DEZAR 3, 4



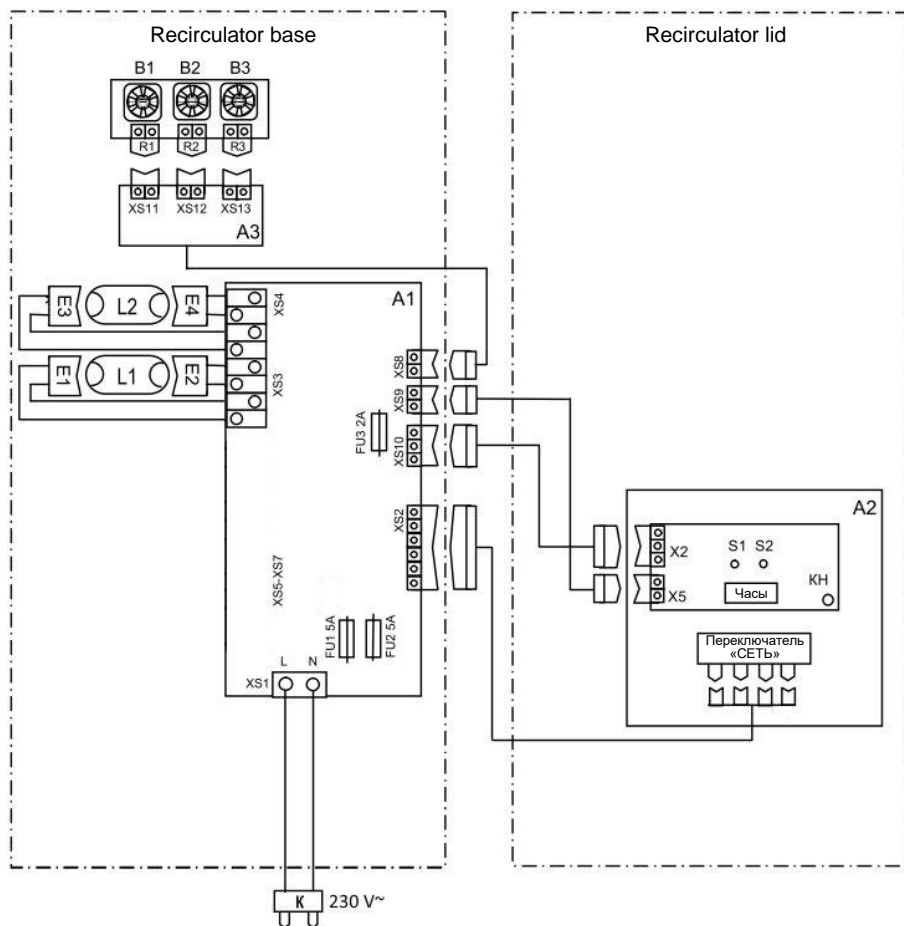
DEZAR 5, 7



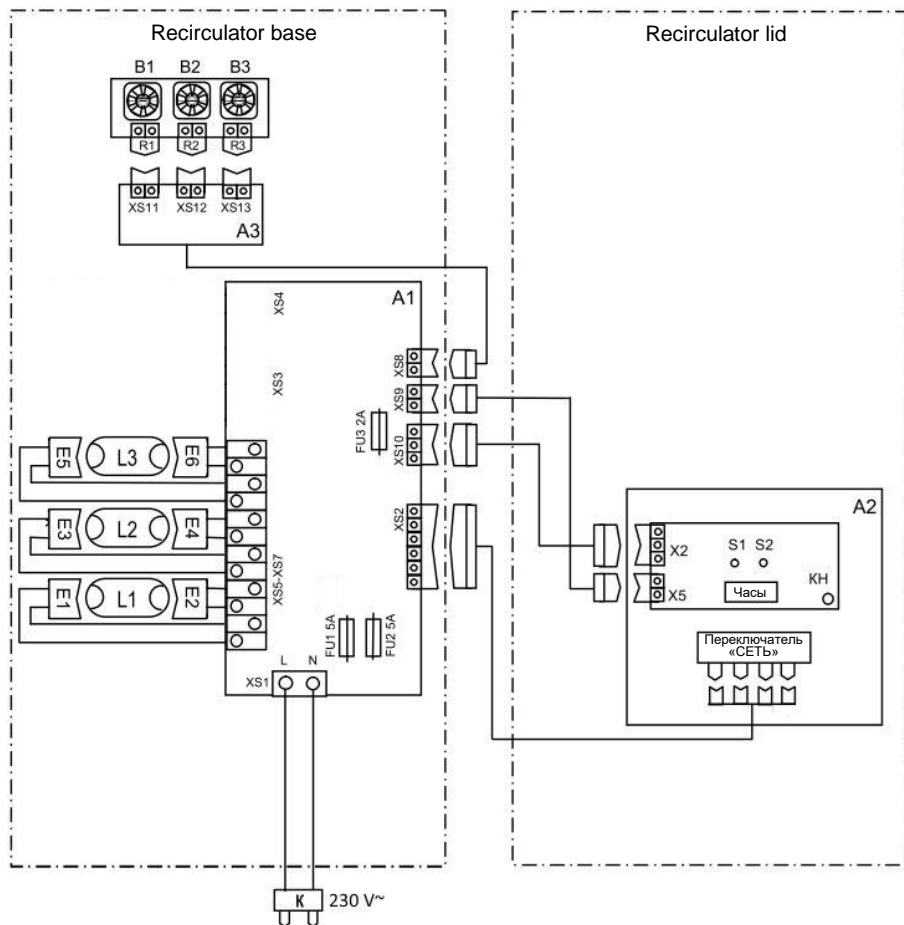
No	Name	Qty.	
		DEZAR 3, 4	DEZAR 5, 7
1	Recirculator lid	1	1
2	Recirculator base	1	1
3	Filtering block 3.1. Lower guard 3.2. Replaceable filter 3.3. Filter holder	1	1
4	Upper guard	1	1
5	Fan	3	3
6	Fan panel	1	1
7	15 W ultraviolet ozone-free bactericide lamp	3	5
8	Electric ultraviolet lamp holder	6	10
9	Lamp stand with lamp holder	6	10
10	Light-screen membrane	2	2
11	Electronic power supply	1	1
12	Control panel	1	1
13	Connecting bar	8	8
14	Guard clamp	4	4
15	Cover	2 (4)*	2 (4)*
16	Conversion board for fan connection	1	1
17	Power supply protective screen	1	1

* Quantity of parts for mobile model is specified in brackets

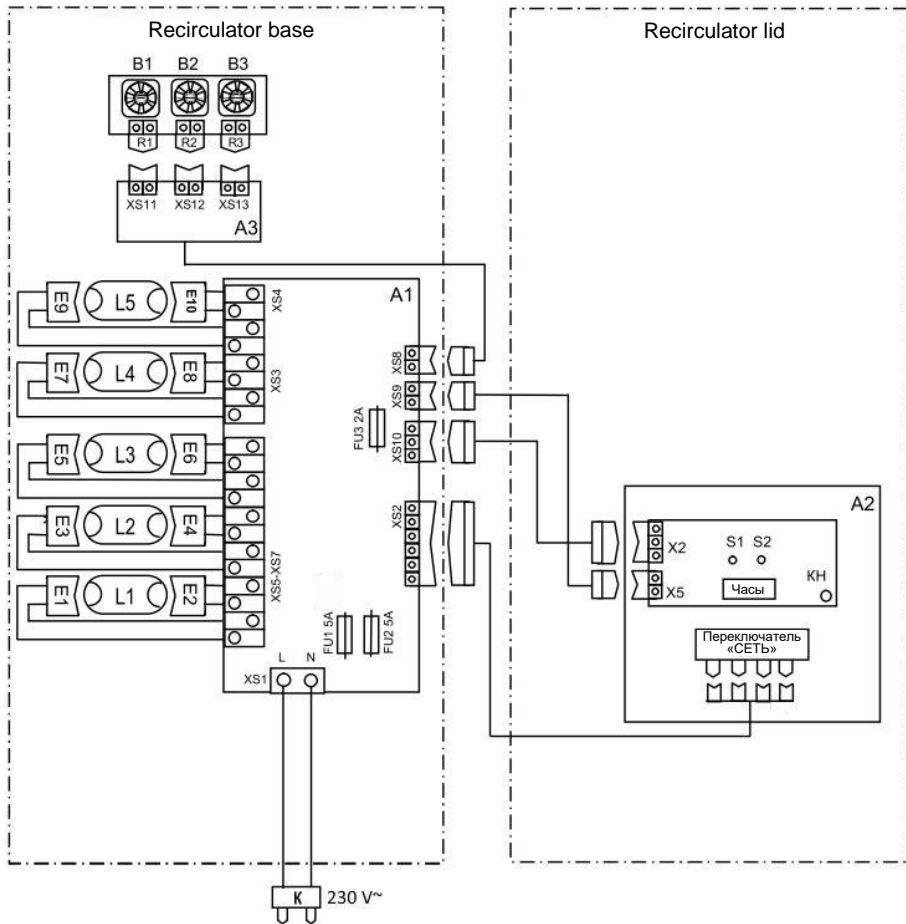
Fig. 13. Recirculator block diagrams
DEZAR 2



DEZAR 3, 4



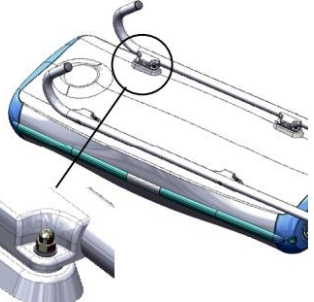
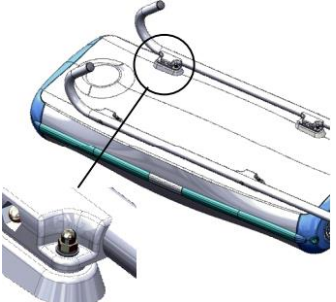


DEZAR 5, 7



Position designation			Name
DEZAR 2	DEZAR 3, 4	DEZAR 5, 7	
A1	A1	A1	Electronic power supply
A2	A2	A2	Control panel
A3	A3	A3	Conversion board for fan connection
K	K	K	Power cable with plug PVS-VP 2×0.75
B1+B3	B1+B3	B1+B3	Fan
R1+R3	R1+R3	R1+R3	Fan connector
	L1+L3	L1+L5	15 W ultraviolet ozone-free bactericide lamp
L1+L2			16 W ultraviolet ozone-free bactericide lamp
E1+E4	E1+E6	E1+E10	Electric ultraviolet lamp holder
FU1, FU2	FU1, FU2	FU1, FU2	5 A fuse (230 V)
FU3	FU3	FU3	2 A fuse (12 V)
X2	X2	X2	Three-pin power connector of indication board on control panel A2
X5	X5	X5	Three-pin power connector of indication board on control panel A2
S1	S1	S1	Lamp voltage indicator
S2	S2	S2	Fan voltage indicator
CLOCK	CLOCK	CLOCK	Digital four-digit lamp operation time meter
KH	KH	KH	RESET button on indication board of control panel
XS1	XS1	XS1	Terminal block for connecting power cable with plug
XS2	XS2	XS2	Six-pin connector for connecting ON/OFF switch on control panel A2
XS3+XS4	XS5+XS7	XS3+XS7	Terminal block for connecting ultraviolet lamp
XS5+XS7	XS3+XS4		Not used
XS8	XS8	XS8	Two-pin connector for connecting conversion board A3
XS9	XS9	XS9	Two-pin connector for connecting indication board on control panel A2
XS10	XS10	XS10	Three-pin connector for connecting indication board on control panel A2
XS11+XS13	XS11+XS13	XS11+XS13	Fan power two-pin connector on conversion board A3

Mobile support assembly procedure

<p>1. Install wheels on the lower frame, fix using M10×30 screws through lock washers Ø10.</p>	
<p>2. Install holders on stands, fix using M6×35 screws and M6 nuts (supplied in fixture set No 1).</p>	
<p>3. Place recirculator on the table.</p>	
<p>4. Install stands on recirculator by aligning covers on recirculator body with holders on stands, fix using M4×32 screws and M4 nuts through washers Ø4 (during transportation fixture components are in covers installed on the recirculator body).</p>	
<p>5. Connect lower frame to stands, using lodgements as spacers, fix using M6×55 screws and M6 nuts through washers Ø6 (supplied in fixture set No 2)</p>	