

INLINE CENTRIFUGAL FAN



Box
Box-R

EN **USER'S MANUAL**

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This user's manual is a main operating document intended for technical, maintenance, and operating staff.

The manual contains information about purpose, technical details, operating principle, design, and installation of the Box, Box-R unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

The information in this user's manual is correct at the time of the document's preparation.

The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

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SAFETY REQUIREMENTS

- Please read the user's manual carefully prior to installing and operating the unit.
- All user's manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit.
- The warnings contained in the user's manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the rules and safety precautions noted in this user's manual may result in an injury or unit damage.
- After a careful reading of the manual, keep it for the entire service life of the unit.
- While transferring the unit control, the user's manual must be turned over to the receiving operator.

UNIT INSTALLATION AND OPERATION SAFETY PRECAUTIONS



- Disconnect the unit from power mains prior to any installation operations.



- Unpack the unit with care.



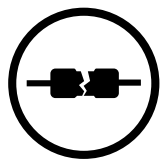
- The unit must be grounded!



- While installing the unit, follow the safety regulations specific to the use of electric tools.



- Do not change the power cable length at your own discretion. Do not bend the power cable. Avoid damaging the power cable. Do not put any foreign objects on the power cable.



- Do not use damaged equipment or cables when connecting the unit to power mains.



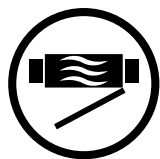
- Do not touch the unit controls with wet hands. Do not carry out the installation and maintenance operations with wet hands.



- Do not allow children to operate the unit.



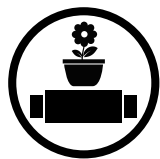
- Do not store any explosive or highly flammable substances in close proximity to the unit.



- Do not open the unit during operation.



- Do not block the air duct when the unit is switched on.



- Do not sit on the unit and avoid placing foreign objects on it.



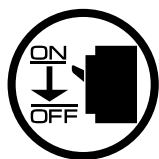
- Do not lay the power cable of the unit in close proximity to heating equipment.



- Do not operate the unit outside the temperature range stated in the user's manual. Do not operate the unit in aggressive or explosive environments.



- Do not wash the unit with water. Protect the electric parts of the unit against ingress of water.



- Disconnect the unit from power mains prior to any technical maintenance.



- When the unit generates unusual sounds, odour, or emits smoke, disconnect it from power supply and contact the Seller.



- Do not direct the air flow produced by the unit towards open flame or ignition sources.



- In case of continuous operation of the unit, periodically check the security of mounting.



- Use the unit only for its intended purpose.



**THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.
DO NOT DISPOSE THE UNIT AS UNSORTED MUNICIPAL WASTE.**

PURPOSE



THE UNIT SHOULD NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL, OR SENSORY CAPACITIES, OR THOSE WITHOUT THE APPROPRIATE TRAINING.

THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.

THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.

The centrifugal fan in a sound insulated casing is designed for supply and exhaust ventilation of domestic, public and industrial premises with high requirements to the noise level and with limited space for mounting.

The unit is rated for continuous operation.

The unit is a component part and is not designed for stand-alone operation.

Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

DELIVERY SET

NAME	NUMBER
Fan	1 pc.
Mounting bracket	1 pc.
User's manual	1 pc.
Packing box	1 pc.

DESIGNATION KEY

Designation example: **Box-R 150/100x4 max V3**

Series	Box, Box-R — inline centrifugal fan
Outlet spigot diameter [mm]	80; 100; 125; 150; 160; 200
Inlet spigot diameter [mm]	_ — 80; 100 125; 150; 160; 200
Number of inlet spigots	_ — 1 2; 4; 5; 6
Motor modification	max — high-powered motor
Motor type	_ — one speed V2 — two-speed V3 — three-speed DC — direct current

TECHNICAL DATA

The unit is designed for indoor application with the ambient temperature ranging from 0 °C up +45 °C and relative humidity up to 80 %.

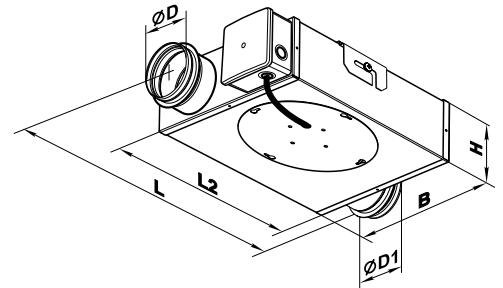
The unit is rated as a Class I electrical appliance. Hazardous parts access and water ingress protection rating: IP22 for the assembled unit connected to the air ducts and IP44 for the unit motors.

The unit design is constantly being improved, thus some models may be slightly different from those described in this manual.

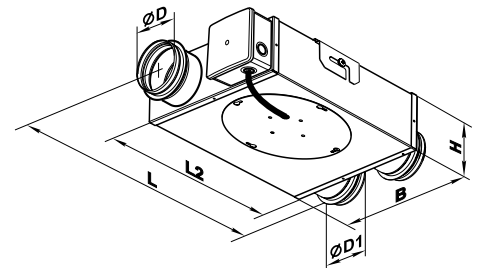
Model	Speed	Voltage [V/50 Hz]	Power [W]	Current [A]	Maximum air flow [m ³ /h]	Rotation per minute [RPM]	Noise level at 3 m distance [dBA]	Maximum transported air temperature [°C]
Box-R 80 V3	1	230	20	0.32	88	1400	32	50
	2		26	0.34	130	1800	35	
	3		45	0.4	162	2600	43	
Box-R 80x2 V3	1	230	20	0.32	88	1400	32	
	2		26	0.34	130	1800	35	
	3		45	0.4	162	2600	43	
Box-R 80x4 V3	1	230	20	0.32	88	1400	32	
	2		26	0.34	130	1800	35	
	3		45	0.4	162	2600	43	
Box-R 80x5 V3	1	230	20	0.32	88	1400	32	
	2		26	0.34	130	1800	35	
	3		45	0.4	162	2600	43	
Box-R 80x6 V3	1	230	20	0.32	88	1400	32	
	2		26	0.34	130	1800	35	
	3		45	0.4	162	2600	43	
Box-R 100 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box-R 100/80x2 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box-R 100/80x4 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box-R 100/80x5 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box-R 100/80x6 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	

Model	Speed	Voltage [V/50 Hz]	Power [W]	Current [A]	Maximum air flow [m ³ /h]	Rotation per minute [RPM]	Noise level at 3 m distance [dBA]	Maximum transported air temperature [°C]
Box-R 100x2 V3	1	230	20	0.32	97	1400	33	50
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box-R 100x4 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box-R 100x5 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box-R 100x6 V3	1	230	20	0.32	97	1400	33	
	2		26	0.34	138	1800	36	
	3		45	0.4	176	2600	44	
Box 100	1	230	58	0.26	240	2500	47	-25..+50
Box 125	1	230	58	0.26	340	2500	48	
Box 125/100x2	1	230	58	0.26	340	2500	48	
Box 125/100x4	1	230	58	0.26	340	2500	48	
Box 150	1	230	85	0.38	553	2600	50	-25..+40
Box 150/125x2	1	230	85	0.38	553	2600	50	
Box 160	1	230	85	0.38	553	2600	50	
Box-R 125	1	230	48	0.22	242	1430	37	+50
Box-R 125 max	1	230	127	0.55	414	2800	47	+50
Box-R 125 V2	1	230	42	0.18	220	1960	39	+50
	2	230	48	0.22	300	2610	45	+50
Box-R 150	1	230	113	0.52	536	1050	46	+50
Box-R 150 V2	1	230	98	0.43	356	750	45	+50
	2	230	122	0.56	533	870	46	+50
Box-R 200	1	230	139	0.61	783	950	47	+50
Box-R 200 V2	1	230	103	0.45	460	770	46	+50
	2	230	142	0.63	752	1200	48	+50

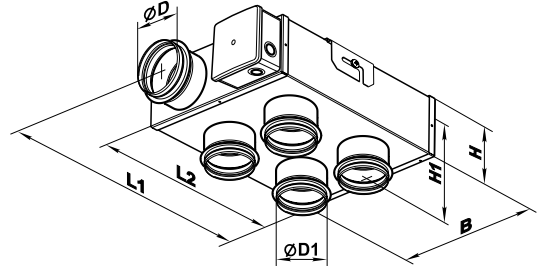
Model	Dimensions [mm]								Weight [kg]
	Ø D	Ø D1	B	H	H1	L	L1	L2	
Box-R 80 V3	79	79	252	90	-	351	-	253	3.2
Box-R 100 V3	99	99	252	110	-	351	-	253	3.2
Box-R 125	124	124	270	141	-	397	-	299	5.2
Box-R 125 max	124	124	270	141	-	397	-	299	5.8
Box-R 125 V2	124	124	303	152	-	430	-	330	6.0
Box-R 150	149	149	340	207	-	447	-	350	7.1
Box-R 150 V2	149	149	340	207	-	447	-	350	7.7
Box-R 200	198	198	362	222	-	494	-	397	8.8
Box-R 200 V2	198	198	362	222	-	494	-	397	8.8
Box 100	99	99	252	133	-	420	-	321	4.5
Box 125	124	124	252	133	-	420	-	321	4.5
Box 150	149	149	300	170	-	480	-	382	5.4
Box 160	159	159	300	170	-	480	-	382	5.5



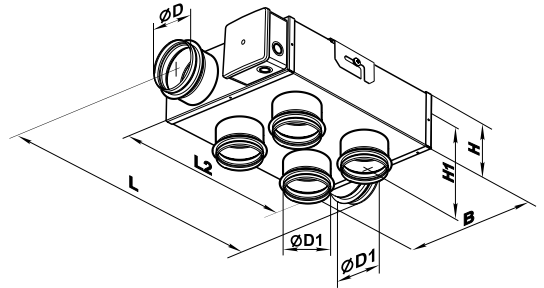
Box-R 80x2 V3	79	79	252	90	-	351	-	253	3.1
Box-R 100/80x2 V3	99	79	252	110	-	351	-	253	3.1
Box-R 100x2 V3	99	99	252	110	-	351	-	253	3.1
Box 125/100x2	124	99	252	133	-	420	-	321	4.5
Box 150/125x2	149	124	300	170	-	480	-	382	5.5



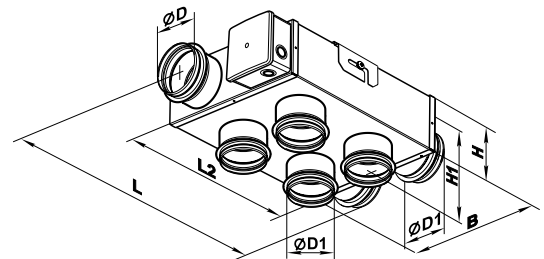
Model	Dimensions [mm]								Weight [kg]
	ØD	ØD1	B	H	H1	L	L1	L2	
Box-R 80x4 V3	79	79	252	90	136	-	297	253	3.4
Box-R 100/80x4 V3	99	79	252	110	166	-	297	253	3.4
Box-R 100x4 V3	99	99	252	110	166	-	297	253	3.4
Box 125/100x4	124	99	252	133	191	-	370	321	5.0



Box-R 80x5 V3	79	79	252	90	136	351	-	253	3.5
Box-R 100/80x5 V3	99	79	252	110	166	351	-	253	3.7
Box-R 100x5 V3	99	99	252	110	166	351	-	253	3.5

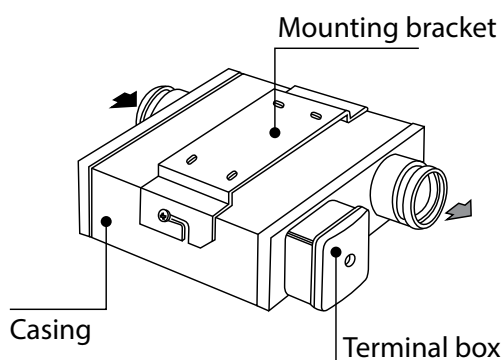


Box-R 80x6 V3	79	79	252	90	136	351	-	253	3.6
Box-R 100/80x6 V3	99	79	252	110	166	351	-	253	3.6
Box-R 100x6 V3	99	99	252	110	166	351	-	253	3.6



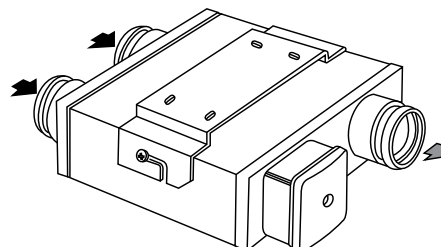
UNIT DESIGN AND OPERATING PRINCIPLE

a) **Box-R 80...200**
Box 100...160



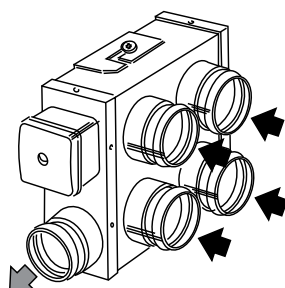
1 inlet – 1 outlet

c) **Box-R 80..100/80..100x2**
Box 125..150/100..125x2



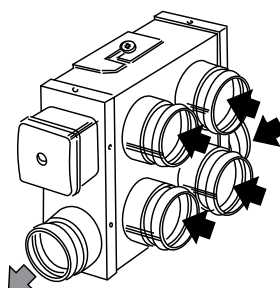
2 inlets – 1 outlet

d) **Box-R 80..100/80..100x4**
Box 125/100x4



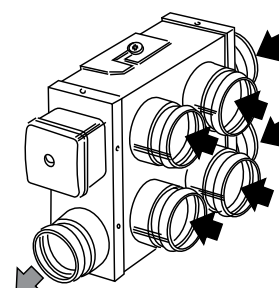
4 inlets – 1 outlet

e) **Box-R 80..100/80..100x5**



5 inlets – 1 outlet

f) **Box-R 80..100/80..100x6**



6 inlets – 1 outlet

The Box-R V3 fan consists of a metal casing with a turbine fixed on a casing flange. The impeller with forward curved blades is located inside of the scroll casing that ends up with the exhaust spigot. The terminal box incorporates an operating capacitor and a terminal block inside, and is attached to the casing end face. The flange with the turbine and the fixing bracket with mounting slots are screwed to the back or front panel of the fan casing depending on its model.

The Box-R fan consists of a metal casing with a turbine with backward curved blades fixed to a flange. The terminal box with an operating capacitor and a terminal block inside is attached to the casing end face. The flange with the turbine and the fixing bracket with mounting slots is screwed to the back or front panel of the fan casing depending on its model.

The **Box-R 80 V3** and **Box-R 100 V3** fans and all their modifications have 3 operating speeds.

The **Box-R V2** fans have 2 operating speeds.

The **Box** and **Box-R** fans have 1 operating speed.

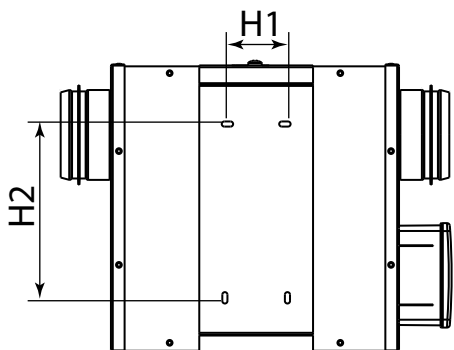
The **Box-R max** fans incorporate a high-powered motor.

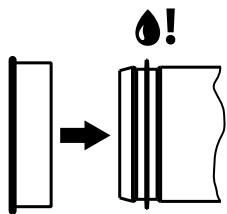
INSTALLATION AND SET-UP

 **BEFORE MOUNTING MAKE SURE THE CASING DOES NOT CONTAIN ANY FOREIGN OBJECTS (E.G. FOIL, PAPER).**

 **WHILE INSTALLING THE UNIT ENSURE CONVENIENT ACCESS FOR SUBSEQUENT MAINTENANCE AND REPAIR.**

The fan is suitable both for horizontal and vertical installation. To get the best performance of the unit and to minimize turbulence-induced air pressure losses, connect the straight air duct section to the spigots on both sides of the unit while installing. Minimum straight air duct length: equal to 1 air duct diameter on intake side and to 3 air duct diameters on outlet side. No filters or any other similar devices are allowed to be installed in these sections.

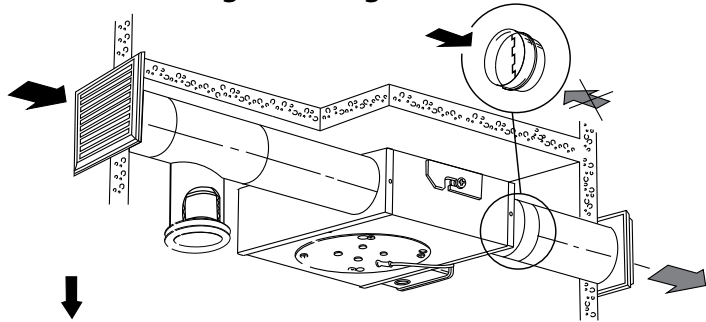
Model	Dimensions, mm		Model	Dimensions, mm							
	H1	H2		H1	H2						
Box-R 80 V3	60	200	Box-R 100x4 V3	60	200						
Box-R 80x2 V3			Box-R 100x5 V3								
Box-R 80x4 V3			Box-R 100x6 V3								
Box-R 80x5 V3			Box 100								
Box-R 80x6 V3			Box 125								
Box-R 100 V3			Box 125/100x4								
Box-R 100/80x2 V3			Box 150								
Box-R 100/80x4 V3			Box 150/125x2								
Box-R 100/80x5 V3			Box 160								
Box-R 100/80x6 V3			Box-R 125 (V2) (max)								
Box-R 100x2 V3			Box-R 150 (V2)								
			Box-Rx200 (V2)								



CAUTION!

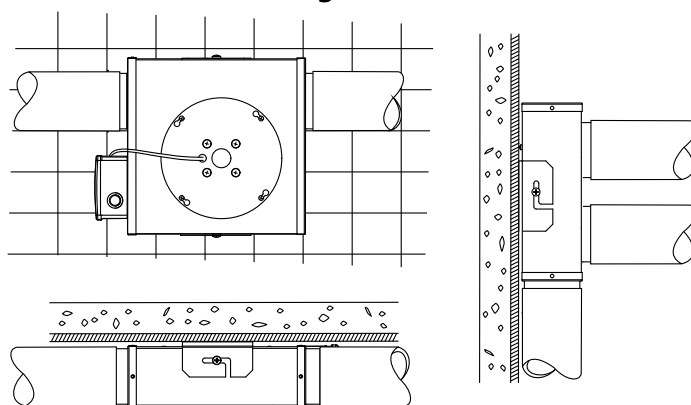
If necessary, close the fan spigot with a plug, lubricate the rubber seal of the spigot with silicone grease. Silicone grease for rubber seals is purchased separately, plugs are available on request.

a) Unit ceiling mounting



Install a backdraft damper to prevent air back drafting (optionally).

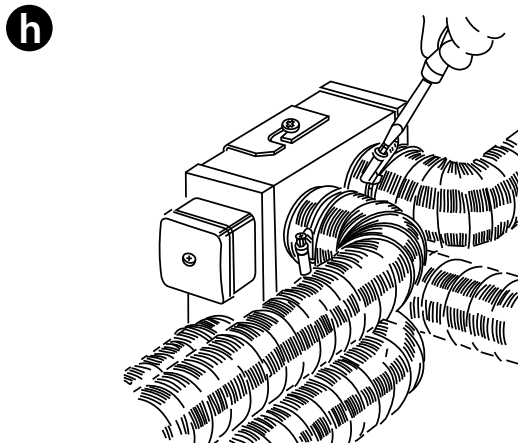
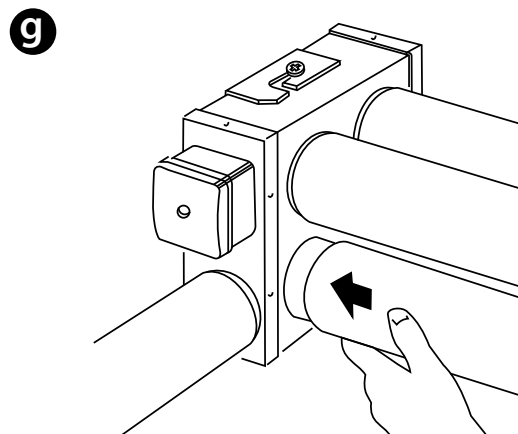
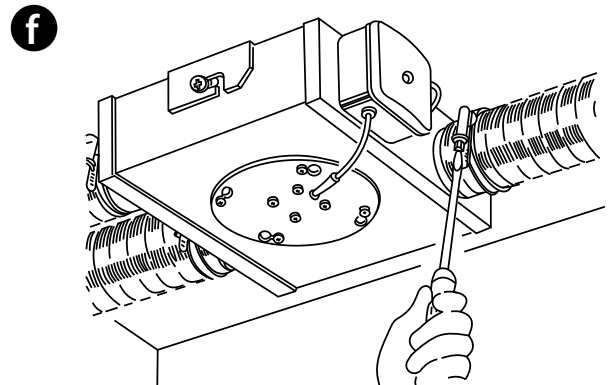
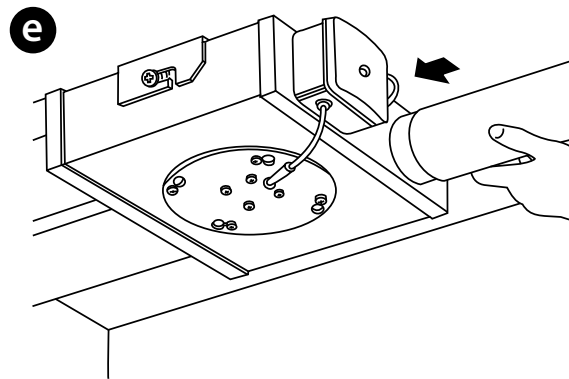
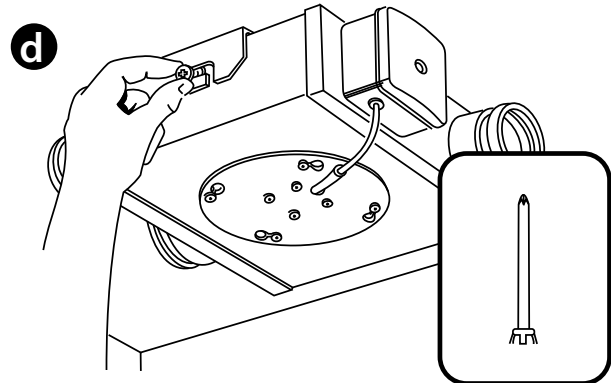
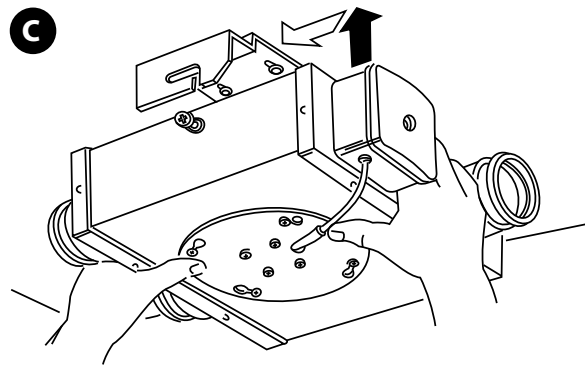
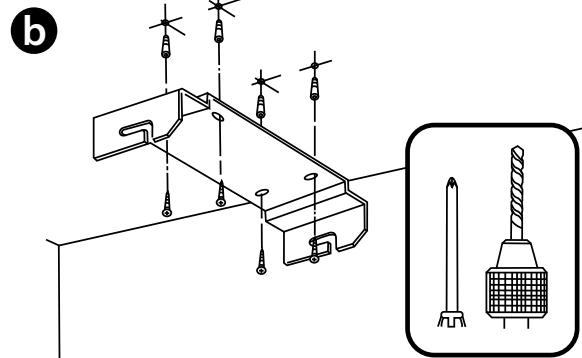
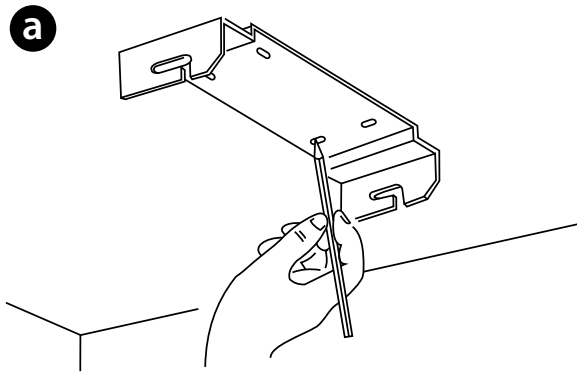
b) Unit wall mounting



Fan mounting sequence:

- Make sure that the fan is disconnected from power mains.
- Mark the positions for mounting the fixing brackets on the load-bearing surface.
- Drill the holes and fix the bracket with matching fasteners (e.g. dowels), see Fig. b.
- Install the fan on the fixing bracket (Fig. c).
- Tighten the fixing screws (Fig. d).
- Connect the air ducts to the fan spigots (Fig. e).
- Tighten the quick-detachable clamps at the points where the air ducts are connected to the spigots (see Fig. e).

Connection options of the air duct to the **Box-R ... /...x4** fans are shown in Fig. g, h.



CONNECTION TO POWER MAINS



DISCONNECT THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.
CONNECTION OF THE UNIT TO POWER MAINS IS ALLOWED BY A QUALIFIED ELECTRICIAN WITH A WORK PERMIT FOR THE ELECTRIC UNITS UP TO 1000 V AFTER CAREFUL READING OF THE PRESENT USER'S MANUAL. THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE MANUFACTURER'S LABEL.
ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND WILL VOID THE WARRANTY.

- The unit is rated for connection to 1~230 V/50 Hz power mains.
- The unit must be connected to power mains using insulated electric conductors (cables, wires). The actual wire cross section selection must be based on the maximum load current, maximum conductor temperature depending on the wire type, insulation, length and installation method.
- The external power input must be equipped with an automatic circuit breaker built into the stationary wiring to open the electric circuit in case of overload or short-circuit. The circuit breaker installation place must provide quick access for emergency shutdown of the unit. The trip current of the automatic circuit breaker **QF** must exceed the maximum current consumption of the unit (refer to the technical data table). The recommended trip current of the circuit breaker is the next current in the standard trip current row following the maximum current of the connected unit. The automatic circuit breaker is not included in the delivery set.

The recommended circuit breaker nominal current is 1.0 A.

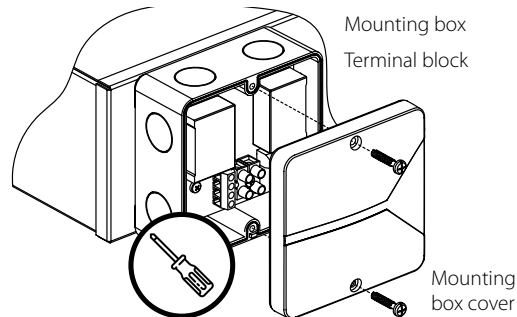
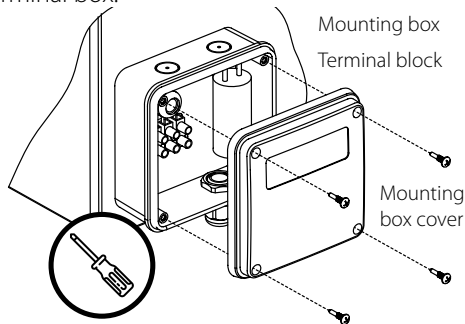
The conductor section is 0.75 mm².

Connect the fan to power mains through the terminal block incorporated inside the terminal box on the fan casing in compliance with the fan wiring diagram.

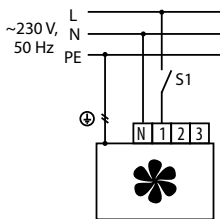
Airflow direction must be in compliance with the direction of the arrow on the fan casing.

Sequence of power supply connection:

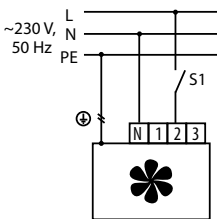
- Remove the terminal box cover. Route the power cables through the cable entry on the terminal box.
- Strip the power wires for 7-8 mm, then insert the wire ends into the respective terminals against insulation stop to the metal part, and fix these with screws.
- Cover the terminal box.



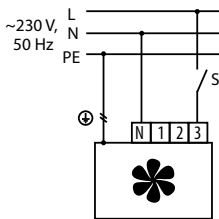
Box-RV3 — low speed



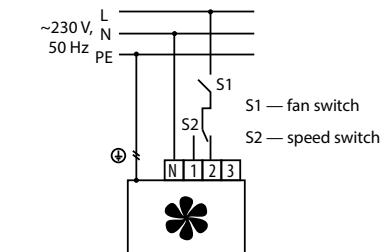
Box-RV3 — medium speed



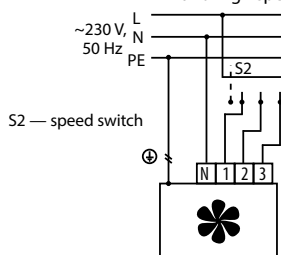
Box-RV3 — high speed



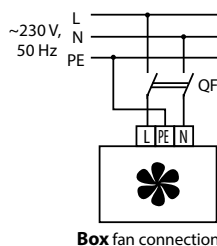
Box-RV3 — low and medium speed



Box-RV3 — low, medium and high speed

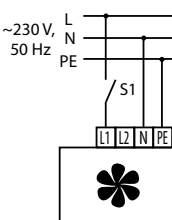


Box — fan connection

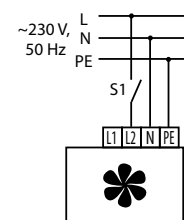


Box fan connection

Box-RV2 — low speed



Box-RV2 — medium speed



TECHNICAL MAINTENANCE



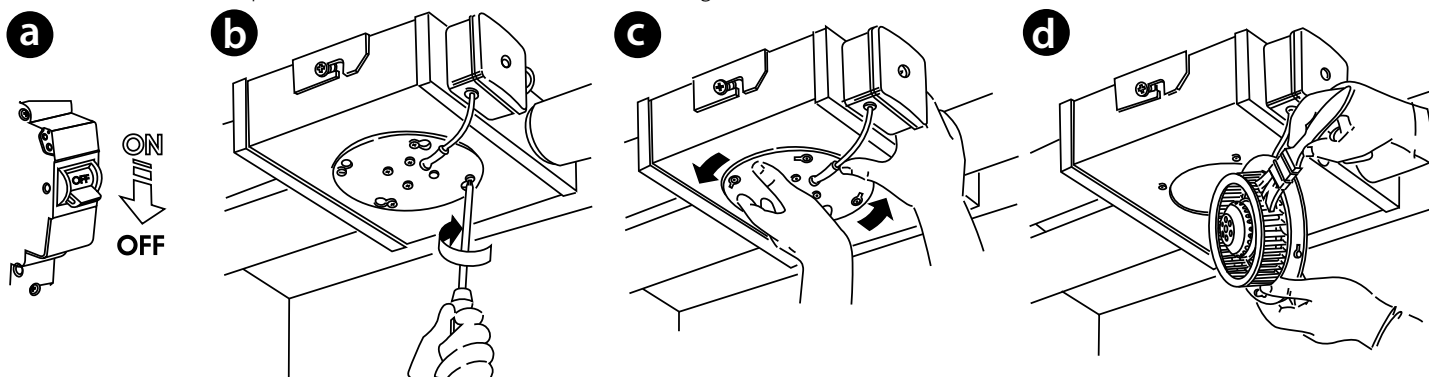
DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS!

The technical maintenance includes periodic cleaning of the surfaces from accumulated dust and dirt. The impeller blades require thorough cleaning once in 6 months.

Maintenance sequence:

- Cut off power supply to the fan (Fig. a).
- Loosen the screw (Fig. b).
- Remove the flange with the turbine from the casing (Fig. c).
- Clean the impeller blades using a dry brush or a vacuum casing (Fig. d).

Perform all the above operations in the reverse order after cleaning.



TROUBLESHOOTING

Problem	Possible reasons	Troubleshooting
The fan does not start.	No power supply.	Make sure that the unit is properly connected to the power mains and make any corrections, if necessary.
	Jammed motor.	Turn off the fan. Troubleshoot the motor jamming. Restart the fan.
Circuit breaker tripping during the fan start.	Excessive electric current consumption caused by a short circuit.	Turn off the fan. Contact the Seller.
Noise, vibration.	The fan impeller is soiled.	Clean the impellers.
	The screw connection is loose.	Check the screw connection and tighten the screws if needed.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 °C to +40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures allow the unit to warm up at room temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Council Directive 2014/30/EU, Low Voltage Directive 2014/35/EU and CE-marking Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above. The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.



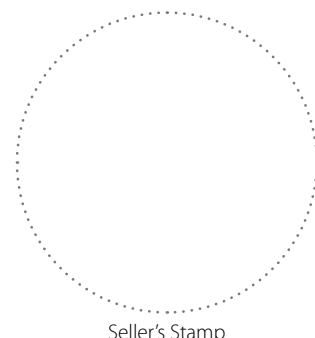
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

Unit Type	Single-room reversible energy regeneration ventilator
Model	Box _____
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

SELLER INFORMATION

Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	

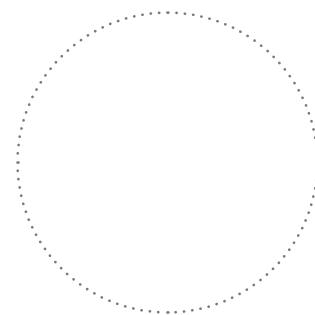


Seller's Stamp

INSTALLATION CERTIFICATE

The Box _____ unit has been connected to power mains pursuant to the requirements stated in the present user's manual.

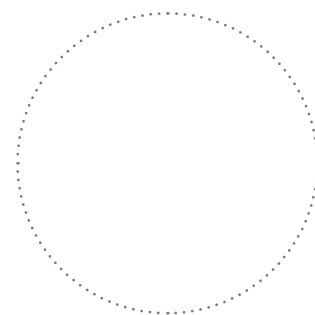
Seller	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.	
Signature:	



Installation Stamp

WARRANTY CARD

Unit Type	Single-room reversible energy regeneration ventilator
Model	Box _____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	



Seller's Stamp



BLAUBERG
Ventilatoren

