



Centrifugal inline fan in sound insulated casing

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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 KSB EC 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 perform works 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!



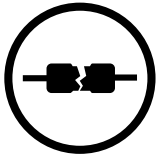
- While installing the unit, follow the safety regulations specific to the use of electric tools.



- 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 lay the power cable of the unit in close proximity to heating equipment.



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



- 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.



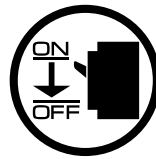
- Do not touch the unit controls with wet hands. Do not carry out the installation and maintenance operations with wet hands.



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



- Do not allow children to operate the unit.



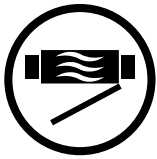
- Disconnect the unit from power mains prior to any technical maintenance.



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



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



- Do not open the unit during operation.



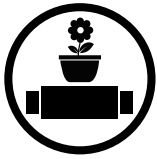
- Do not direct the air flow produced by the unit towards open flame or ignition sources.



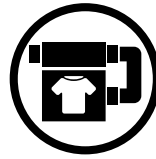
- Do not block the air duct when the unit is switched on.



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



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



- 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.

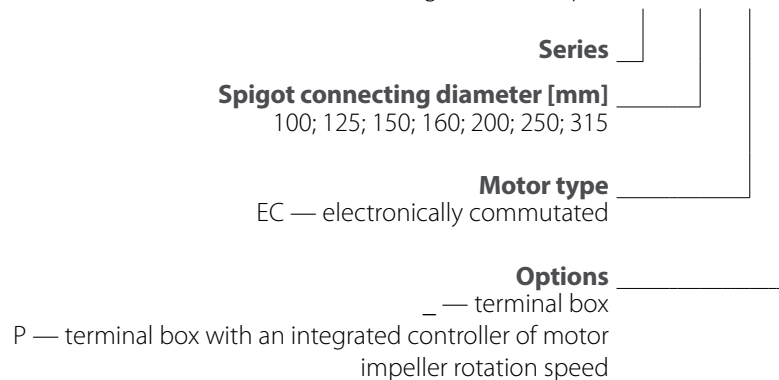
Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

DELIVERY SET

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

DESIGNATION KEY

Designation example: **KSB 100 EC P**



TECHNICAL DATA

The fan is designed for operation in an enclosed area at ambient temperatures from -25 °C up to +60 °C.

The heater is rated as a class I electric appliance.

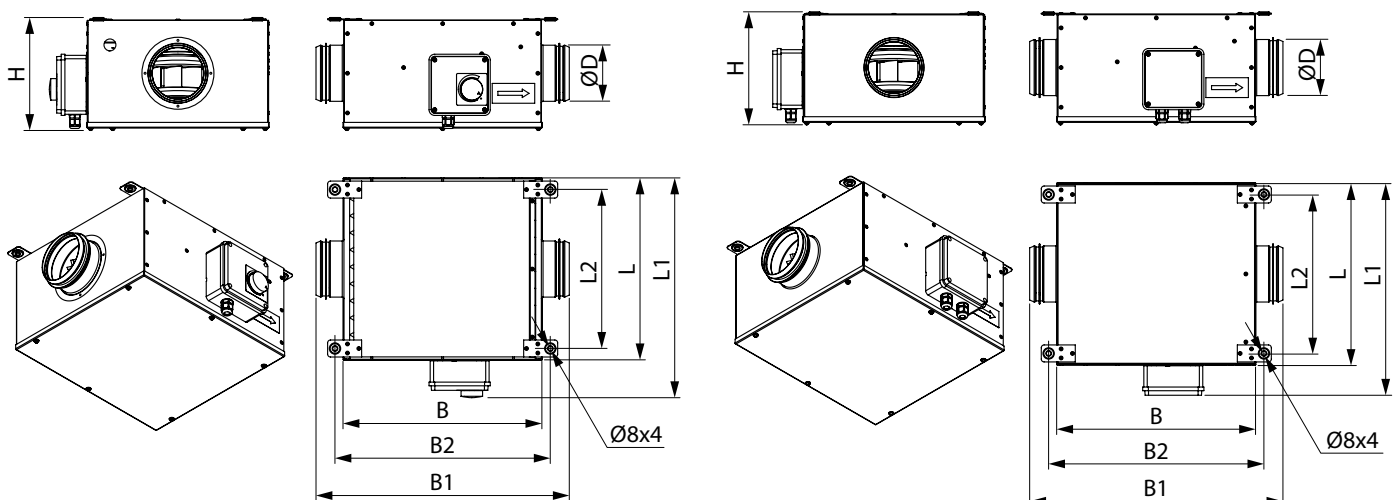
The fan design is regularly improved, so some models may slightly differ from those ones described herein.

Parameter	KSB 100 EC	KSB 125 EC	KSB 150 EC	KSB 160 EC	KSB 200 EC	KSB 250 EC	KSB 315 EC
	KSB 100 EC P	KSB 125 EC P	KSB 150 EC P	KSB 160 EC P	KSB 200 EC P	KSB 250 EC P	KSB 315 EC P
Unit voltage [V/50 (60) Hz]	1~ 230						
Power [W]	92.7	92.6	94.8	94.8	101.6	163.7	164.3
Current [A]	0.75	0.75	0.77	0.77	0.83	1.34	1.35
Maximum air flow [m ³ /h]	278	357	425	425	700	1145	1260
RPM [min ⁻¹]	3200	3200	3200	3200	2580	2510	2620
Sound pressure level at 3 m distance [dBA]	32	34	35	35	37	40	42
Transported air temperature [°C]	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Ingress protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4

Model	Dimensions [mm]							
	D	L	B	H	L1	B1	L2	B2
KSB 100 EC P KSB 100 EC	99	325	355	200	388 375	447	280	380
KSB 125 EC P KSB 125 EC	124	325	355	200	388 375	447	280	380
KSB 150 EC P KSB 150 EC	149	355	385	220	418 405	477	310	410
KSB 160 EC P KSB 160 EC	159	355	385	220	418 405	477	310	410
KSB 200 EC P KSB 200 EC	199	435	485	295	503 490	590	368	506
KSB 250 EC P KSB 250 EC	249	435	485	295	503 490	590	368	506
KSB 315 EC P KSB 315 EC	314	505	545	405	663 560	650	438	566

KSB...EC P

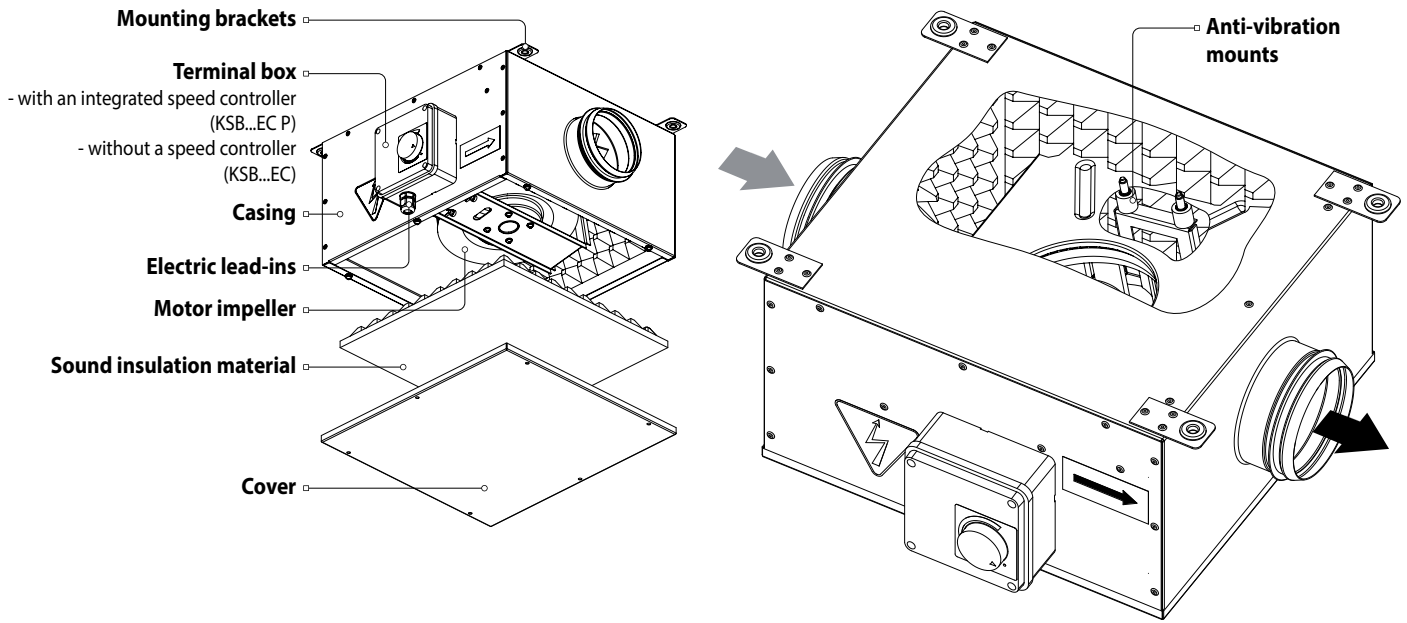
KSB...EC



UNIT DESIGN AND OPERATING PRINCIPLE

The fan casing is made of galvanized steel sheets internally lined with heat- and sound-insulation layer. The fan is equipped with a maintenance-free EC motor with an external rotor and built-in overheat protection. The motor is installed on rubber anti-vibration mounts for extra absorption of fan vibration. The diameter of inlet and outlet spigots with gaskets matches standard sizes of air ducts with round cross section. The fan benefits from a steel high-performance centrifugal impeller with backward curved blades. The impeller is mounted on the electric motor shaft and is jointly balanced statically and dynamically.

The fan is connected to power mains via the terminal box mounted on the fan casing. The KSB EC...P models incorporate a speed controller located on the terminal box and designed for controlling motor impeller rotation speed.



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.

Prior to installing the fan make sure the casing has no visible damages and check the integrity of power supply wires. Make sure the impeller rotates freely without touching the flange and the casing.

The fan shall be installed in the air duct with the same diameter. Mount the fan in such a way that the arrow on the fan casing matches the air flow direction in the system.

The casing is equipped with fixing brackets for easier installation of the fan. Install flexible connectors on both sides of the fan.

In case of mounting the fan on flexible joints, attach the fan to a structural unit by means of supports, suspension links or brackets.

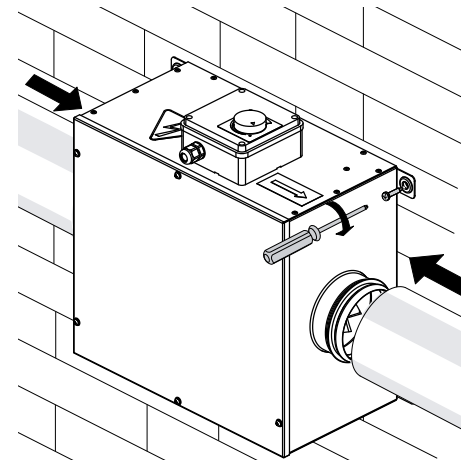
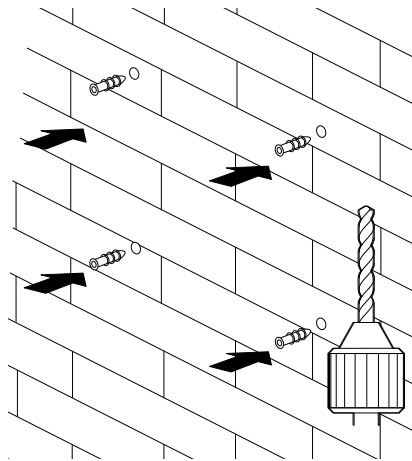
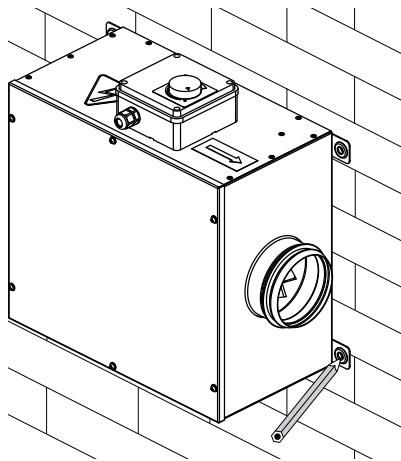
The fan may be installed in any position in consideration of the air flow direction (as indicated by the arrow on the fan casing).

To attain the best performance of the fan and to minimize turbulence-induced air pressure losses while mounting, connect the straight air duct section to the fan spigots on both sides of the fan. The minimum straight air duct length is equal to 1 air duct diameter on the intake side and 3 air duct diameters on the exhaust side.

No filters or any other similar devices are allowed to be installed in these sections. The fan is not a ready to use unit and requires connection to the air ducts. Install the fan securely while ensuring free access for maintenance operations.

Fan installation sequence:

- Before installation, lay the wires and cables necessary to connect the fan to the mains.
- 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 fasten the fan on the brackets by using appropriate fasteners (e.g. expansion anchors).
- Connect air ducts to the fan.



CONNECTION TO POWER MAINS



DISCONNECT THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.

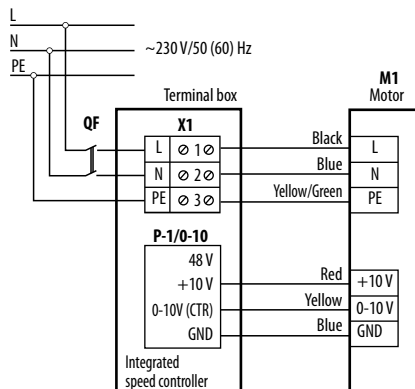
CONNECTION OF THE UNIT TO POWER MAINS IS ALLOWED BY A QUALIFIED ELECTRICIAN WITH A WORK PERMIT FOR THE ELECTRIC UNITS UP TO 1000 V AFTER CAREFUL READING OF THE PRESENT USER'S MANUAL. THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE MANUFACTURER'S LABEL.

ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND WILL VOID THE WARRANTY.

- The unit is rated for connection to 1~230 V/50 (60) 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.

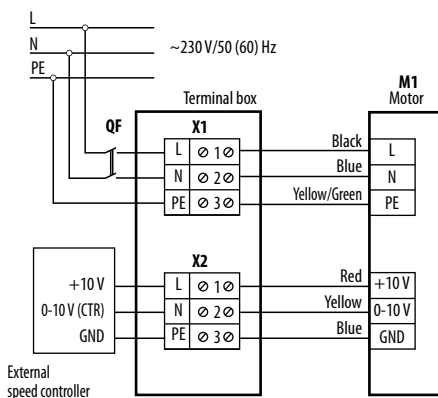
The recommended minimum conductor cross section is 0.75 mm².

KSB...EC P WIRING DIAGRAM

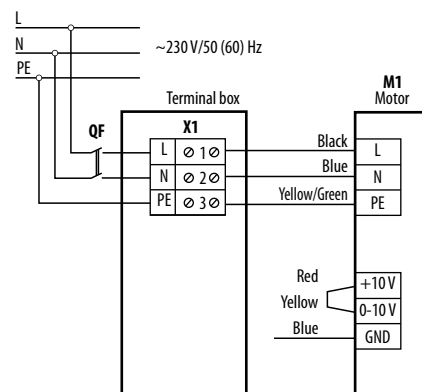


Fan with an integrated P-1/10 speed controller

KSB...EC WIRING DIAGRAM



Fan with an integrated speed controller (purchased separately).



The fan motor will operate with a maximum speed if the jumper is installed between the +10V and 0-10V contacts. The fan will not start if the jumper is not installed.

CONTROL

The KSB...EC P models provide for a smooth airflow speed change with the help of the R-1/0-10 built-in speed controller of the motor impeller. The speed control range is from zero to the maximum value.

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.

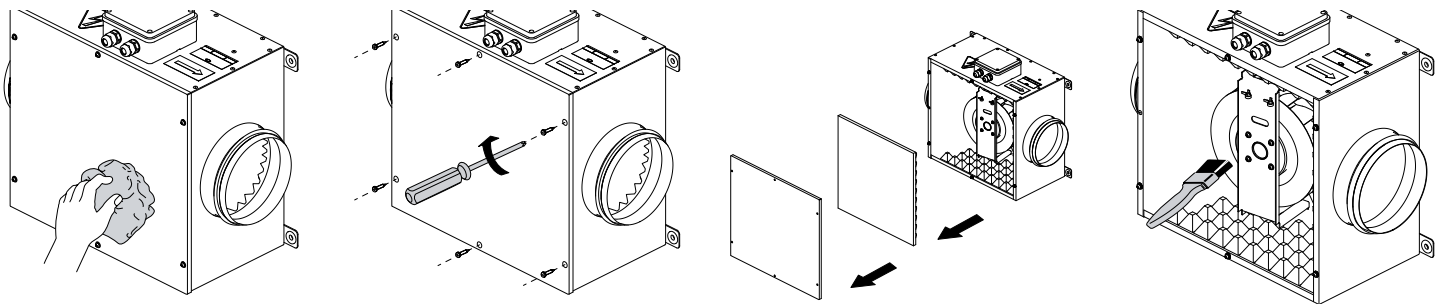
WHILE CLEANING THE FAN BE CAREFUL NOT TO DISPLACE THE IMPELLER COUNTER WEIGHTS.

The impeller blades require thorough cleaning once in 6 months.

Connection sequence:

- Cut off power supply to the fan.
- Wipe the exterior surfaces of the fan casing.
- Undo the screws and remove the front panel.
- Clean the impeller blades with a soft, dry brush or cloth.
- Clean the soundinsulating surface with a vacuum cleaner.
- Check screw connections as well as rivet and welded joints.
- Check tightness of ground screw clamps and electric connections.
- Check wire terminal connections. Avoid penetration of water onto the electric parts.

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



TROUBLESHOOTING

PROBLEM	POSSIBLE REASONS	TROUBLESHOOTING
The fan(s) does not start.	No power supply.	Make sure that the unit is properly connected to the power mains and make any corrections, if necessary.
Low air flow.	The ventilation system is soiled or damaged.	Make sure the air ducts are clean and intact. Clean them if necessary.
Noise, vibration.	The impellers are soiled.	Clean the impellers.
	The screw connection is loose.	Tighten the fastening screws.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range up +5 °C to +40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapours 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 dismounted 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.



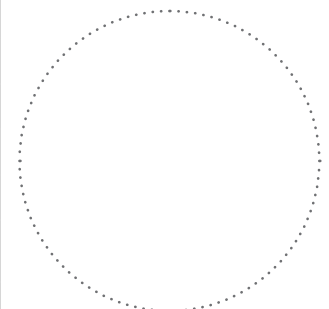
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

Unit Type	Centrifugal inline fan in sound insulated casing
Model	KSB_____ EC ____
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

SELLER INFORMATION

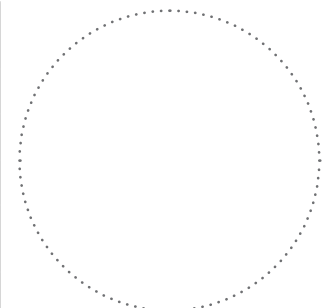
Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	



Seller's Stamp

INSTALLATION CERTIFICATE

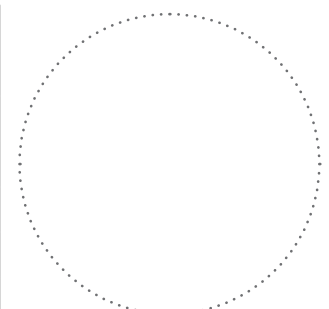
The KSB_____ EC ____ unit has been connected to power mains pursuant to the requirements stated in the present user's manual.	
Seller	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable 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	Centrifugal inline fan in sound insulated casing
Model	KSB_____ EC ____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	



Seller's Stamp

