

# USER'S MANUAL

## KITCHEN FAN IN SOUND INSULATED CASING

**KSK SERIES**



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**PURPOSE**

KSK is a centrifugal fan in a sound insulated casing with a swing-out motor-impeller block and the motor positioned outside the air stream.

KSK fans are intended for exhaust ventilation of premises with the temperatures up to 100° C and are used for household and restaurant exhaust systems; venting gases generated while welding; and ventilation of industrial bakeries.

The units meet the requirements of IP54 hazardous parts access and water ingress protection standard.

The motor insulation is F rated.

**DELIVERY SET**

The delivery set includes:

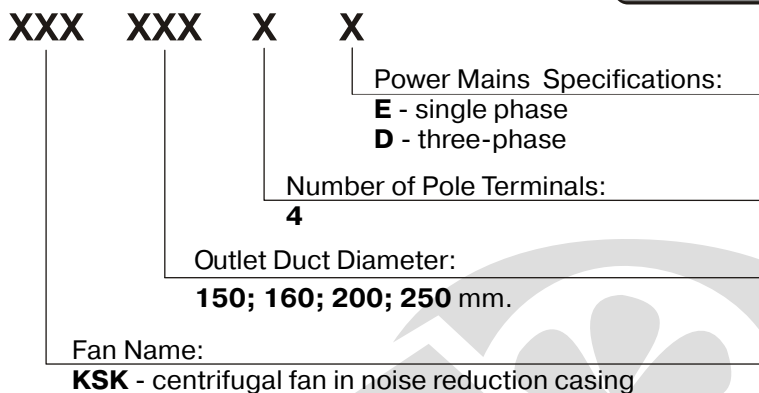
Fan - 1 piece;

User's manual;

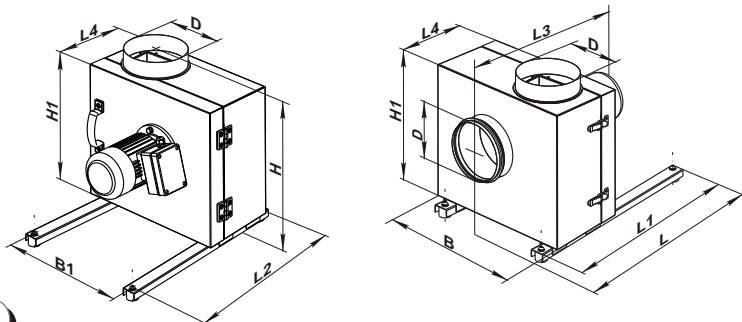
Packing.

**MAIN TECHNICAL SPECIFICATIONS**

The fan designations, their parameters and connecting dimensions are given in Tables 1 and 2 as well as on Fig. 1.

**DESIGNATION KEY****Designation Example**

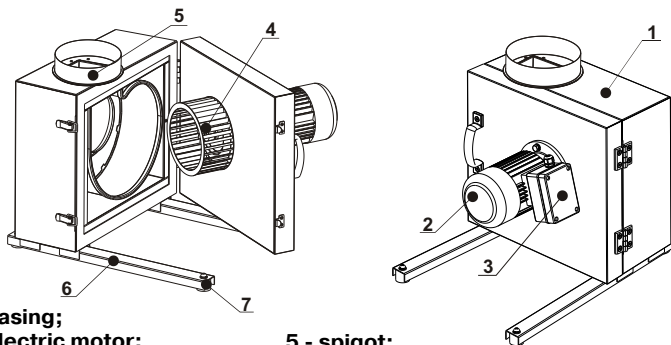
**KSK 160 4E** - centrifugal fan in a sound-insulated casing with 160 mm spigot and a single-phase four-pole motor.

**Fig. 1**

Fan Type	Dimensions, mm									
	D	B	B1	H	H1	L	L1	L2	L3	L4
KSK 150 4E / KSK 150 4D	150	410	330	540	365	525	500	470	475	205
KSK 160 4E / KSK 160 4D	160	410	330	540	365	525	500	470	475	205
KSK 200 4E / KSK 200 4D	200	485	365	600	425	625	600	570	515	235
KSK 250 4E / KSK 250 4D	250	575	435	665	505	700	675	645	620	285

**Table 1**

Fan Type	Capacity, m <sup>3</sup> /h	Voltage, V/Hz	Current, A	Power, W	Rotation speed, min <sup>-1</sup>	Maximum Temperature, °C
KSK 150 4E	630	230/50	1,7	180	1450	100
KSK 150 4D	670	380/50	0,6	180	1455	100
KSK 160 4E	700	230/50	1,7	180	1450	100
KSK 160 4D	730	380/50	0,6	180	1455	100
KSK 200 4E	1600	230/50	3,0	550	1475	100
KSK 200 4D	1650	380/50	2,0	750	1465	100
KSK 250 4E	3400	230/50	11,0	1500	1500	100
KSK 250 4D	3500	380/50	3,4	1500	1470	100

**Table 2**

1 - casing;  
2 - electric motor;  
3 - terminal box;  
4 - impeller;

5 - spigot;  
6 - load bearing frame RN-KSK;  
7 - vibration damper.

**Fig. 2**

## SAFETY REQUIREMENTS

Disconnect the product from the power mains prior to all operations specific to connection, setup, maintenance and repair. Fan maintenance and installation shall only be performed by professional electricians qualified for unassisted operations with electrical installations up to 1000 V after careful study of the present manual.

All the fans are not designed for out-of-the-box operation and require connection to the air ducts.

The ducts are connected to the fan on both sides. If the fan is mounted outdoors it should be protected against the elements and moisture (e.g. by means of a top hood above the fan). Prior to connecting the fan to the power mains check for visible damage of the casing and any foreign objects in the fan casing which may damage the impeller blades.

The fan may only be used as intended. No modifications or alterations are allowed. The fan is not intended for operation in areas with an explosive and/or chemically aggressive environment.

Take all the reasonable steps to prevent back draft of gas from any units which utilize gas or direct flame.

The fan is rated for connection to single-phase ac 230 V / 50 Hz and three-phase 380/50 Hz power mains.

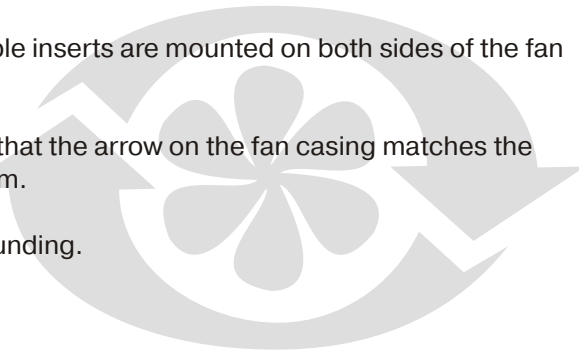
## INSTALLATION AND OPERATION INSTRUCTIONS

Prior to the fan installation check the integrity of the power supply wires and for any obstructions to the impeller wheel.

It is recommended that flexible inserts are mounted on both sides of the fan upstream and downstream.

Mount the fan in such a way that the arrow on the fan casing matches the air flow direction in the system.

The fan requires reliable grounding.



## FAN DESIGN

The fan casing is made of galvanized steel soundproofed on the inside with 50 mm thick mineral wool.

The pivot design of the swing-out motor-impeller unit ensures easy access to the fan internals for quick and efficient cleaning.

The inlet and outlet fitting diameters match the standard duct sizes. The fittings have rubber seals.

The fan is mounted on RN-KSK load-bearing frames with integral vibration dampers and mounting brackets KM-KSK (ordered separately).

The fan benefits from a steel high-performance centrifugal impeller with forward-curved vanes.

The impeller is mounted on the electric motor shaft and is jointly balanced statically and dynamically.

The high-performance single-phase or three-phase electric motor with a squirrel-cage rotor is completely maintenance-free.

The power is adjusted by means of transformer control units.

The fan is connected to the power mains via the terminal box mounted on the electrical motor.

Provide an additional electric cable length to ensure unobstructed opening of the swing-out motor-impeller unit.

## FAN INSTALLATION

Check the unpacked fan casing (no dents or deformations are allowed) and make sure that the impeller has smooth rotation and does not touch the flange and the casing.

Follow the safety regulations during the make-ready procedures and operation.

Fig. 3 shows the fan wall mounting option using KM-KSK mounting brackets.

KM-KSK mounting brackets are not included in the delivery package. Ensure a direct air duct section of at least one air duct diameter long on the inlet side and at least three air duct diameters long on the outlet side.

The fans undergo continuous design improvement - therefore, some models may slightly differ from those described in the manual.

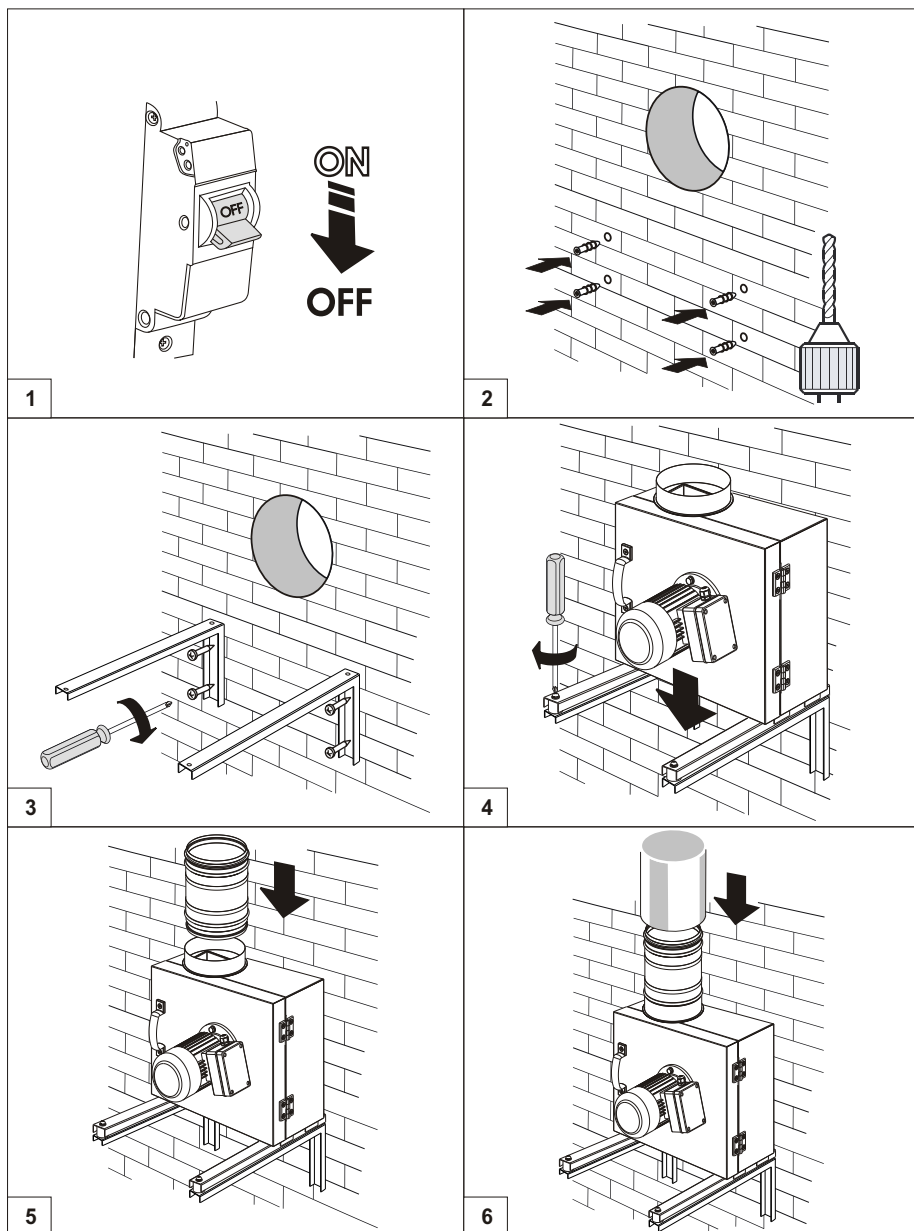


Fig. 3

## ELECTRICAL MAINS CONNECTION

**Disconnect the fan from the power supply prior to any work on the unit.**

**All the electrical connections of the fan must be made by a qualified electrician.**

**The nominal values of electrical parameters are given on the fan manufacturer's label.**

**Any tampering with the internal connections is prohibited and will void the warranty.**

The power supply depends on the fan type: 230V/50 Hz single-phase or 380V/50Hz three-phase AC voltage.

The fan connections (cables and wires) must be durable, insulated and heat-resistant.

The external lead-in (230V/50Hz or 380V/50Hz) must be equipped with an automatic circuit breaker integrated into the stationary wiring. The position of QF external switch must ensure free access for quick power-off of the fan.

The recommended automatic breaker nominal current and conductor sections are given in Table 3.

The power conductor section is  $1.5 \text{ mm}^2$ .

However, the conductor section selection shall account for the maximum permissible wire heating which depends on the wire type, its insulation, length and installation method (i.e. overhead, duct layout or inside the walls).

The trip current shall be consistent with the current consumption of the unit as given in Table 2.

The fan connections shall be made on the terminal block mounted inside the terminal box on the fan casing in strict accordance with the electrical connection diagram and terminal designations.

The label with terminal designations is inside the terminal box.

The QF automatic switch is not included in the delivery package and is installed by the user.

The fan wiring diagrams are given on Fig.4 and 5.

Connect the fan to the power mains as shown on Fig.6.



## Automatic switch rated current (recommended) and conductor section

Fan Type	Automatic switch rated current, A	Recommended cable, $n \times S$ , where $n$ is the number of wires and $S$ is the section in $\text{mm}^2$ .
KSK 150 4E	2	$2 \times 1,5$
KSK 150 4D	1	$3 \times 1,5$
KSK 160 4E	2	$2 \times 1,5$
KSK 160 4D	1	$3 \times 1,5$
KSK 200 4E	8	$2 \times 1,5$
KSK 200 4D	3,15	$3 \times 1,5$
KSK 250 4E	12,5	$2 \times 1,5$
KSK 250 4D	4	$3 \times 1,5$

Table 3

Connection Diagram for fans KSK 150 4E, KSK 160 4E, KSK 200 4E, KSK 250 4E with Single-Phase Motor to AC Mains

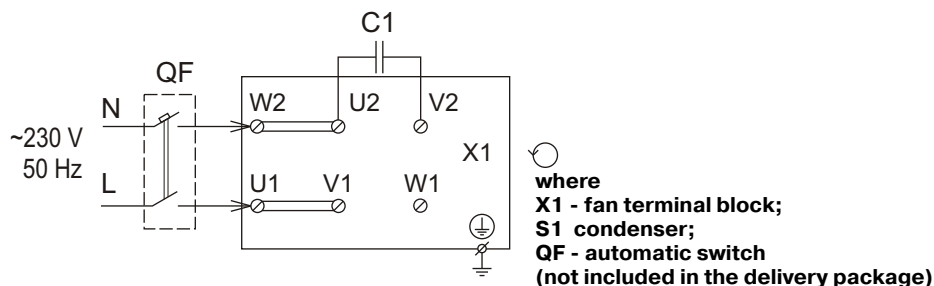


Fig. 4

Wiring Diagram for fans KSK 150 4D, KSK 160 4D, KSK 200 4D, KSK 250 4D with Three-Phase Motor to AC Mains

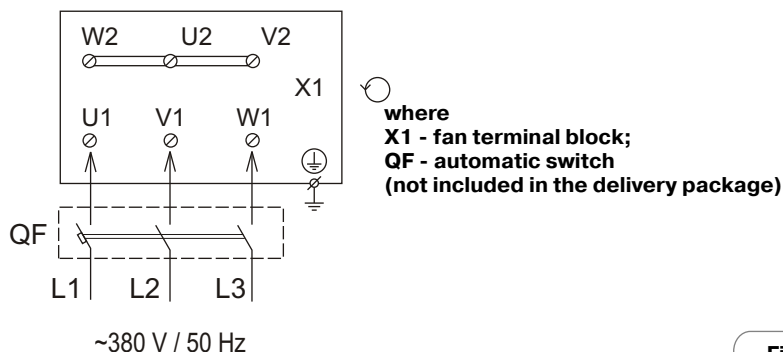


Fig. 5

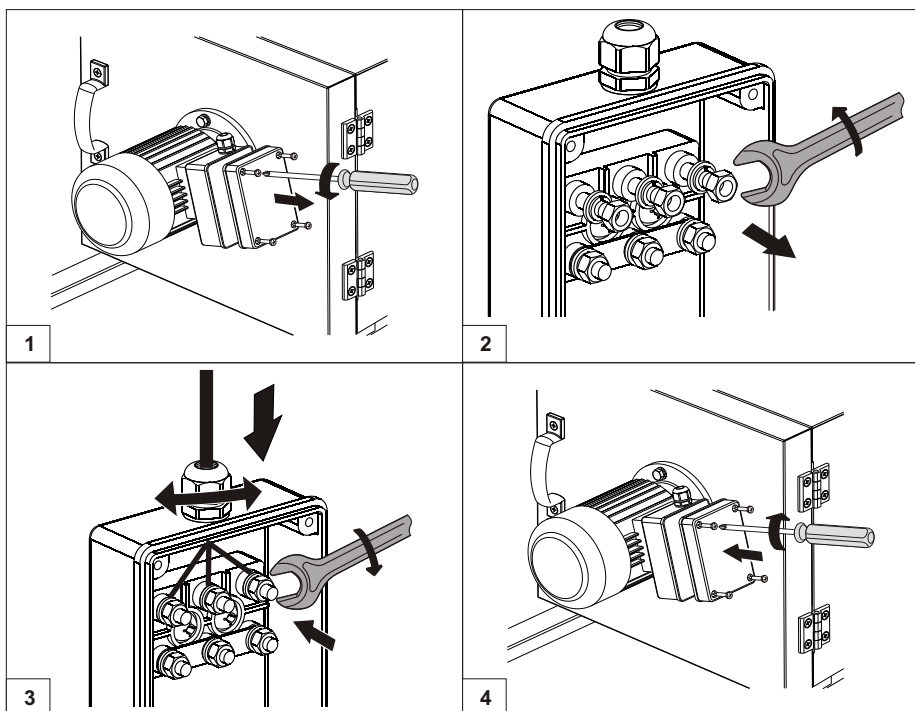


Fig. 6

## TROUBLESHOOTING

MALFUNCTION	PROBABLE REASON	ELIMINATION METHOD
Fan doesn't work	No power	Check the power switch. Check electrical connections against the wiring diagram.
Noisy operation	Fan impeller out of balance	Clean the impeller.

## STORAGE REGULATIONS

The fan should be stored in the original packing in a ventilated area at temperatures from +5°C to +40°C and relative air humidity not more than 80% (at T=20°C).

**MANUFACTURER'S WARRANTY**

We hereby declare that the following product complies with the essential protection requirements of Electromagnetic Council Directive 2004/108/EC, 89/336/EEC and Low Voltage Directive 2006/95/EC, 73/23/EEC and CE-marking Directive 93/68/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. This certificate is issued following test carried out on samples of the product referred to above.

While purchasing the product the customer accepts the following warranty terms:

Manufacturer hereby guarantees normal operation of the fan for 24 months from the date of resale, subject to the compliance with transport, storage, mounting and operation rules.

In case of no confirmation of sales date the warranty period is calculated from the production date.

All the units and components belonging to the faulty unit and replaced within the warranty period shall be covered by the previous warranty period and general warranty conditions.

Thus the warranty period is neither extended nor renewed for the replaced components or the fan.

In case of any failures due to faulty manufacturing during warranty period, the Customer has the right to have the goods replaced at the manufacturing facility.

Replacements are offered at Seller.

The accessories operated together with the unit, both included and not included into the delivery list as well as other equipment operating jointly with the unit shall not be covered by the warranty.

No warranty for compatibility of the fans with other producers' goods.

Only manufacturing defects are covered by the warranty terms.

All the defects and faults resulting from mechanical effect during operation process or natural wear-and-tear shall not be covered by the warranty conditions.

The malfunctions caused by violence of operation, servicing and maintenance guidelines either by Customer or third parties or caused by unauthorized design modifications shall not be covered by warranty.

**NO LIABILITY FOR THE RELATED DAMAGES:**

The manufacturer is not responsible for any mechanical or physical damages resulting from the manual requirements violence, the unit misuse or gross mechanical effect.

The indirect damages such as re-installation or re-connection of the unit, direct or indirect losses etc. related to the unit replacement shall not be indemnified.

Mounting/dismantling, connection/disconnection and setup of the unit shall not be covered by the warranty. The contractor in charge for quality of mounting, electric mounting and adjustment works shall be responsible for the warranty thereof.

In any case the indemnity amount shall not exceed the actually paid value for the defective unit price.

**ACCEPTANCE CERTIFICATE**

The fan is recognized as serviceable.

Model

VENTS KSK \_\_\_\_\_

*(tick the proper model)*

Date of production

Stamp of the acceptance inspector

Sold by

**name of the vendor, stamp of the shop**

Date of sale

**WARRANTY CARD**

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