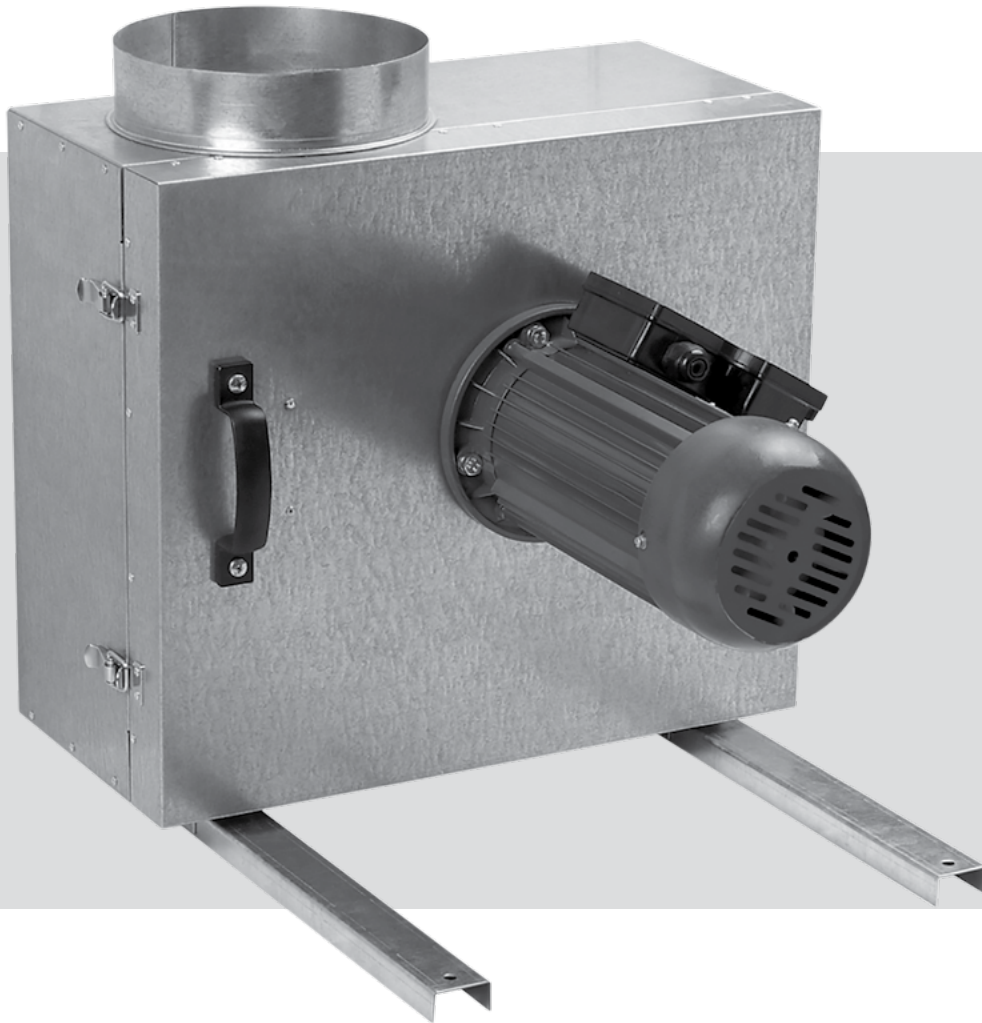


**KSK**



Centrifugal fan in sound insulated casing

## CONTENTS

Safety requirements.....	2
Purpose.....	4
Delivery set.....	4
Designation key.....	4
Technical data.....	5
Design and operating principle.....	7
Installation and set-up.....	8
Connection to power mains.....	10
Technical maintenance.....	12
Storage and transportation regulations.....	12
Manufacturer's warranty.....	13
Certificate of acceptance.....	14
Seller information.....	14
Installation certificate.....	14
Warranty card.....	14

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 KSK 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.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means in any information search system or translated into any language in any form without the prior written permission of the Company.

## 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!



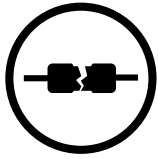
- While installing the unit, follow the safety regulations specific to the use of electric tools.



- 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.



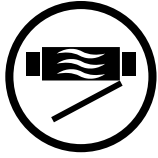
- Disconnect the unit from power mains prior to any technical maintenance.



- 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.



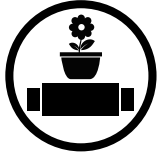
- Do not direct the air flow produced by the unit towards open flame or ignition sources.



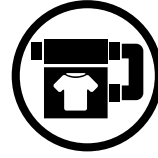
- Do not block the air duct when the unit is switched on.



- 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 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 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 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: **KSK 160 4 E**

<b>Fan name</b>	KSK – centrifugal fan in sound insulated casing
<b>Outlet duct diameter [mm]</b>	160
<b>Pole number</b>	4
<b>Power mains specifications:</b>	E – single phase D – three-phase

**TECHNICAL DATA**

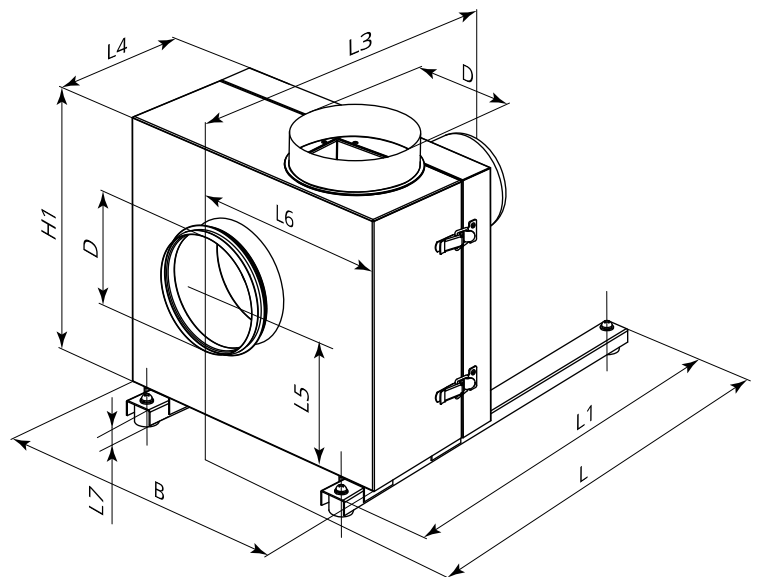
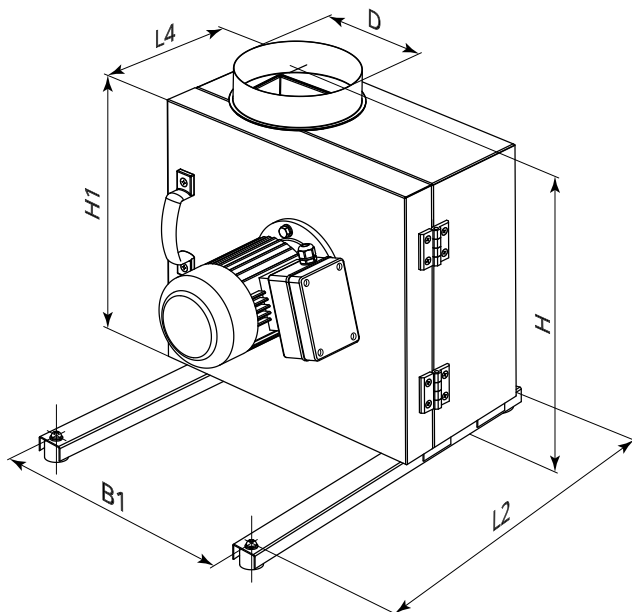
The fan is intended for exhaust ventilation of premises with the temperatures from -20 °C up to +110 °C (+120 °C within 60 minutes). The unit is rated as a Class I electrical appliance.

- Hazardous parts access and water ingress protection rating is IP54.
- The motor insulation is class F.

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

**Overall and connecting dimensions**

Model	Dimensions [mm]													Weigh [kg]
	Ø D	B	B1	H	H1	L	L1	L2	L3	L4	L5	L6	L7	
<b>KSK 150 4E</b>	150	410	330	540	365	525	500	470	475	205	203	233	33	17.0
<b>KSK 150 4D</b>	150	410	330	540	365	525	500	470	475	205	203	233	33	17.0
<b>KSK 160 4E</b>	160	410	330	540	365	525	500	470	475	205	203	233	33	17.0
<b>KSK 160 4D</b>	160	410	330	540	365	525	500	470	475	205	203	233	33	17.0
<b>KSK 200 4E</b>	200	485	365	600	425	625	600	570	515	235	236.5	276.5	33	25.0
<b>KSK 200 4D</b>	200	485	365	600	425	625	600	570	515	235	236.5	276.5	33	25.0
<b>KSK 250 4E</b>	250	575	435	665	505	700	675	645	620	285	282.5	330.5	33	40.0
<b>KSK 250 4D</b>	250	575	435	665	505	700	675	645	620	285	282.5	330.5	33	40.0
<b>KSK 315 4E</b>	315	690	550	708	600	715	700	650	612	327	329	390	59	53.0
<b>KSK 315 4D</b>	315	690	550	708	600	715	700	650	612	327	329	390	59	52.0
<b>KSK 315 2E</b>	315	690	550	708	600	715	700	650	672	327	329	390	59	61.0
<b>KSK 315 2D</b>	315	690	550	708	600	715	700	650	672	327	329	390	59	60.0
<b>KSK 355 4E</b>	355	740	600	764	655	727	700	650	637	352	361.5	421	59	60.0
<b>KSK 355 4D</b>	355	740	600	764	655	727	700	650	637	352	361.5	421	59	59.0
<b>KSK 355 2E</b>	355	740	600	764	655	727	700	650	737	352	361.5	421	59	68.0
<b>KSK 355 2D</b>	355	740	600	764	655	727	700	650	737	352	361.5	421	59	65.0



### Main technical parameters

	<b>KSK 150 4E</b> <b>KSK 160 4E</b>	<b>KSK 1504D</b> <b>KSK 1604D</b>	<b>KSK 200 4E</b>	<b>KSK 200 4D</b>	<b>KSK 250 4E</b>	<b>KSK 250 4D</b>
Voltage [V/Hz]	230/50	400/50	230/50	400/50	230/50	400/50
Power [W]	180	180	550	750	1500	1500
Current [A]	1.7	0.6	3	2	11	3.4
Max. air flow [m <sup>3</sup> /h]	700	730	1600	1650	3400	3500
RPM [min <sup>-1</sup> ]	1450	1455	1475	1465	1500	1470
Sound pressure level at a distance of 3 m [dBA]	41	41	45	45	51	51
Transported air temperature [°C]	-20 ... +110 (120 within 60 min)					
Ingress protection rating	IP54					

	<b>KSK 315 4D</b>		<b>KSK 315 4E</b>		<b>KSK 315 2D</b>		<b>KSK 315 2E</b>	
Voltage [V/Hz]	400/50	400/60	230/50	230/60	400/50	400/60	230/50	230/60
Power [W]	184	206	304	383	1225	2011	1531	2816
Current [A]	0.70	0.70	1.84	1.72	2.80	3.40	7.35	11.92
Max. air flow [m <sup>3</sup> /h]	2040	2355	1970	2310	4710	5290	4695	5345
RPM [min <sup>-1</sup> ]	1488	1776	1475	1750	3025	3328	3125	3384
Sound pressure level at a distance of 3 m [dBA]	46	48	46	47	52	54	53	55
Transported air temperature [°C]	-20 ... +110 (120 within 60 min)							
Ingress protection rating	IP54							

	<b>KSK 355 4D</b>		<b>KSK 355 4E</b>		<b>KSK 355 2D</b>	<b>KSK 355 2E</b>
Voltage [V/Hz]	400/50	400/60	230/50	230/60	400/50	230/50
Power [W]	405	580	393	525	3145	2621
Current [A]	0.87	1.25	2.11	2.34	6.12	12.66
Max. air flow [m <sup>3</sup> /h]	3155	3270	3545	3860	6185	6570
RPM [min <sup>-1</sup> ]	1379	1578	1517	1705	2652	2890
Sound pressure level at a distance of 3 m [dBA]	49	50	50	52	54	54
Transported air temperature [°C]	-20 ... +110 (120 within 60 min)					
Ingress protection rating	IP54					

## DESIGN AND OPERATING PRINCIPLE

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

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

The inlet and outlet spigot diameters match standard duct sizes.

The spigots have rubber seals.

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

The fan benefits from a steel high-performance centrifugal impeller.

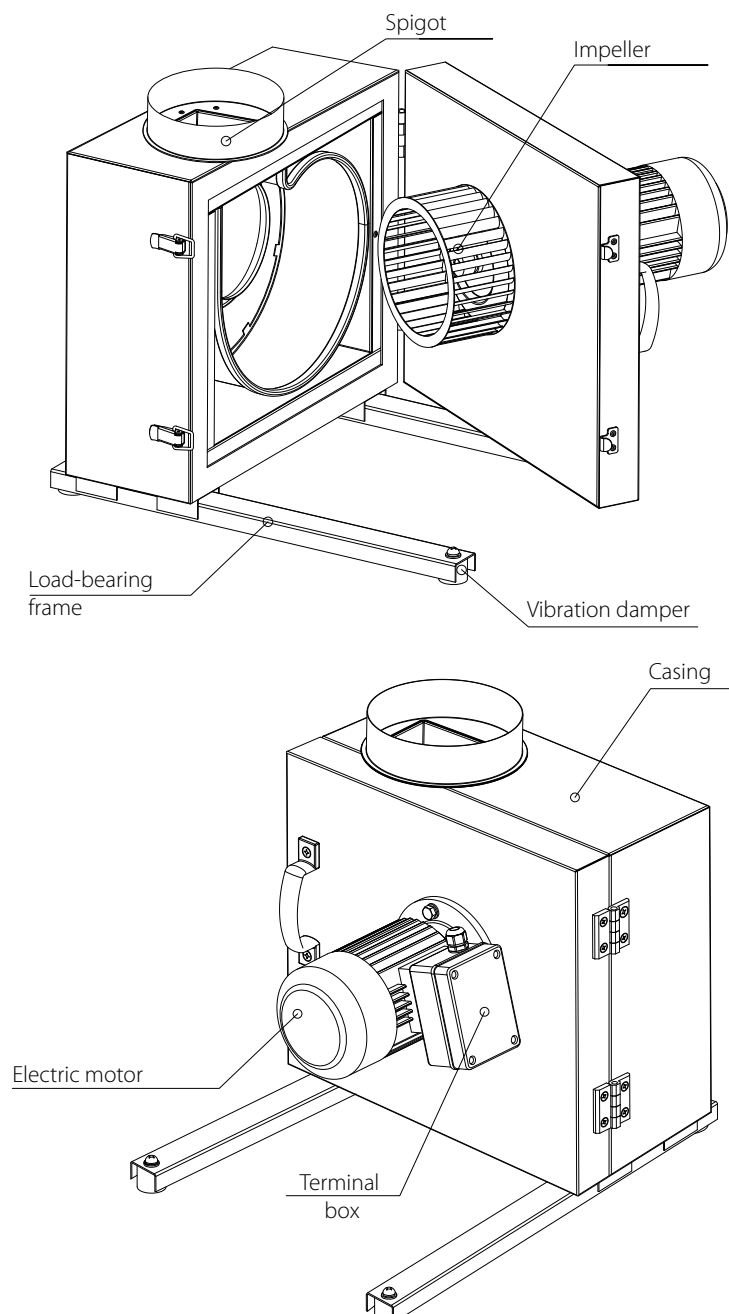
The impeller is mounted on the electric motor shaft and is jointly balanced statically and dynamically.

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 power mains via the terminal box mounted on the electric motor.

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



## INSTALLATION AND SET-UP



**READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.**



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

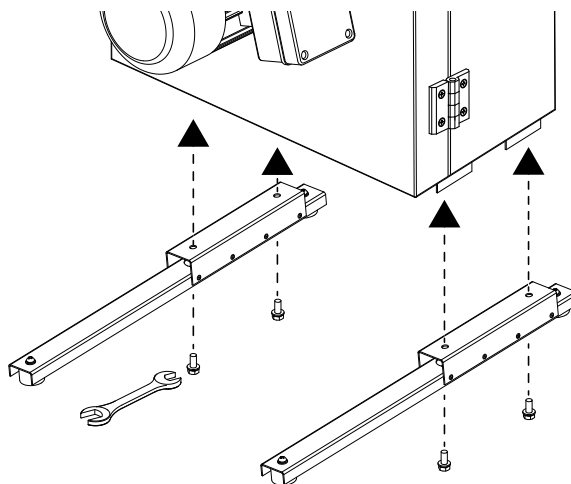


**THE UNIT MUST BE MOUNTED ON A PLANE SURFACE.  
MOUNTING OF THE UNIT TO AN UNEVEN SURFACE CAN LEAD TO THE UNIT CASING DISTORTION AND OPERATION DISTURBANCE.**

- Disconnect the unit from power supply prior to any connection, servicing and repair operations.
- Prior to installing the fan make sure the casing has no visible damages and check the integrity of power supply wires. The fan casing must not contain any foreign objects which can damage the impeller blades. 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.
- Install flexible connectors on both sides of the fan (purchased separately).
- 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 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.
- When mounting the fan outdoors, protect it against weather impact and water ingress, for example, by mounting a hood over the fan.
- Take steps to prevent back flow of gases from devices using gas and open flames.

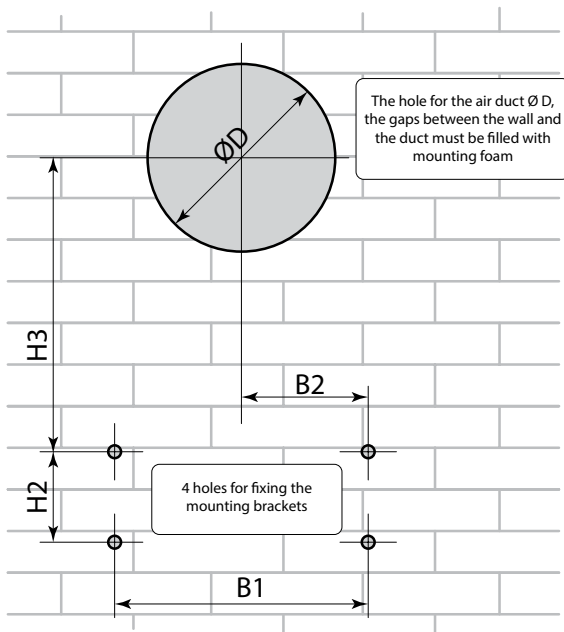
### Mounting sequence:

1. Install the fan on the load-bearing frame (for models delivered unassembled).



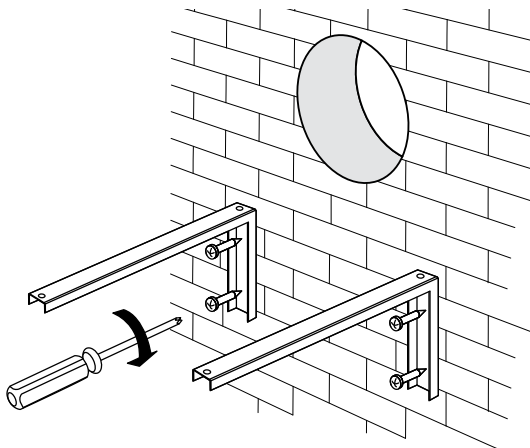


2. Make the markings (distances are shown in the table) and drill holes in the wall for the duct and for mounting the brackets.

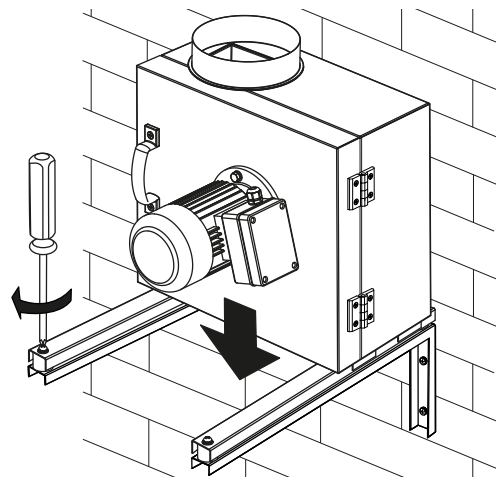


Model	Distances for marking [mm]			
	H2	B1	B2	H3
<b>KSK 150...</b>	170	330	193	276
<b>KSK 160...</b>	170	330	193	276
<b>KSK 200...</b>	220	365	216.5	309.5
<b>KSK 250...</b>	270	435	260.5	355.5
<b>KSK 315...</b>	300	550	320	448
<b>KSK 355...</b>	300	600	350.5	481

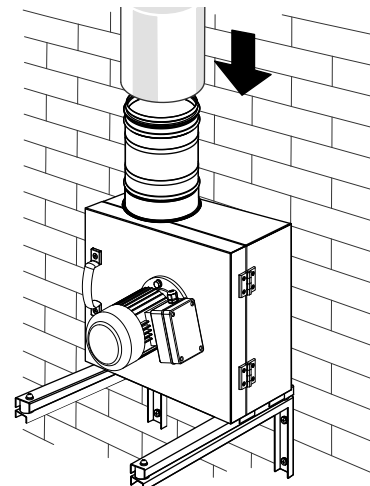
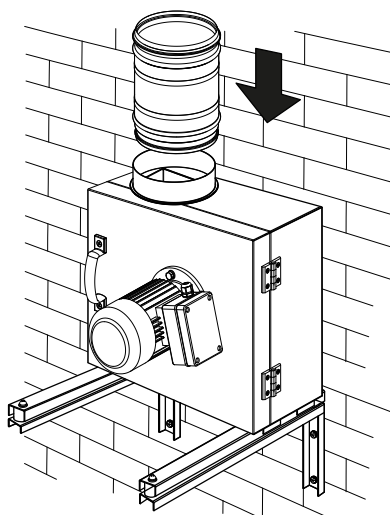
3. Install the mounting brackets (purchased separately).



4. Mount the fan on the mounting brackets.



5. Connect the nipple or flexible anti-vibration connector (purchased separately) to the fan spigot.



## CONNECTION TO POWER MAINS



**DISCONNECT THE UNIT FROM POWER MAINS PRIOR TO ANY OPERATIONS.  
THE UNIT MUST BE CONNECTED TO POWER MAINS BY A QUALIFIED ELECTRICIAN.  
THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE SHOWN ON THE RATING  
PLATE.**

- The unit is rated for connection to 1~230 V/50 (60) Hz or 3~400 V/50 Hz power mains depending on the model.
- The connection must be made using durable, insulated and heat-resistant conductors (cables, wires).
- The actual conductor cross-section selection must be based on its type, the maximum permissible heating, insulation, length and installation method.
- The external power input must be equipped with a circuit breaker built into the stationary wiring to open the circuit in the event of overload or short-circuit.
- The position of the external circuit breaker must ensure free access for quick unit power-off.
- The circuit breaker nominal current must exceed the ventilator current consumption, refer to the Technical data section.
- It is recommended to select the nominal current of the circuit breaker from the standard series, following the maximum current of the connected unit.
- The circuit breaker is not included in the delivery set.

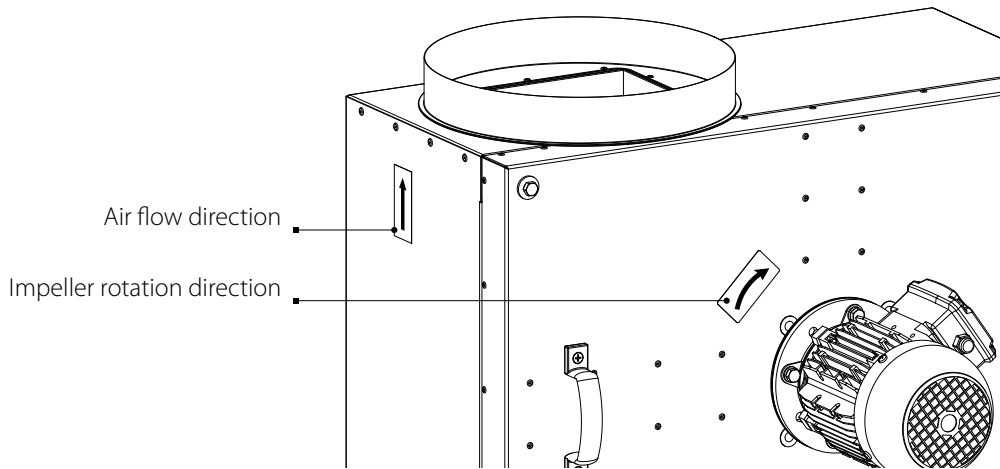
### The recommended circuit breaker nominal current and conductor cross section

Model	Rated current of the circuit breaker [A]	Recommended cable, n x S, where n is the number of wires, and S is the cross section in mm <sup>2</sup>
<b>KSK 150 4E</b>	2	2x1.5
<b>KSK 150 4D</b>	1	3x1.5
<b>KSK 160 4E</b>	2	2x1.5
<b>KSK 160 4D</b>	1	3x1.5
<b>KSK 200 4E</b>	8	2x1.5
<b>KSK 200 4D</b>	3.15	3x1.5
<b>KSK 250 4E</b>	12.5	2x1.5
<b>KSK 250 4D</b>	4	3x1.5
<b>KSK 315 4E</b>	3	2x1.5
<b>KSK 315 4D</b>	1	3x1.5
<b>KSK 315 2E</b>	16	2x2.5
<b>KSK 315 2D</b>	5	3x1.5
<b>KSK 355 4E</b>	4	2x1.5
<b>KSK 355 4D</b>	2	3x1.5
<b>KSK 355 2E</b>	16	2x2.5
<b>KSK 355 2D</b>	8	3x1.5

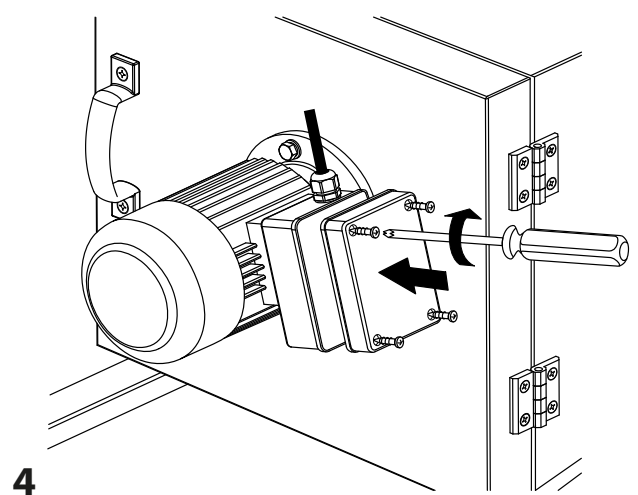
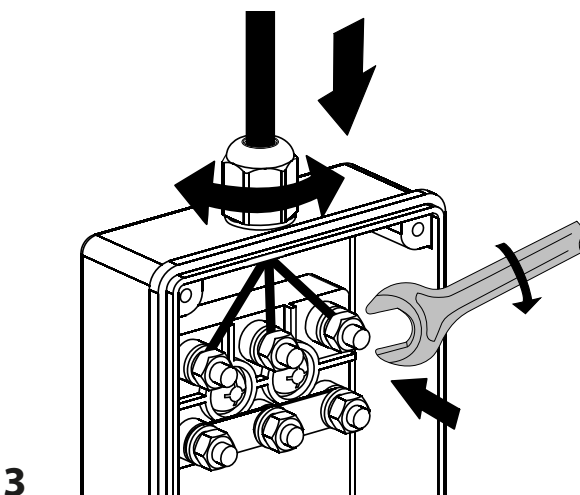
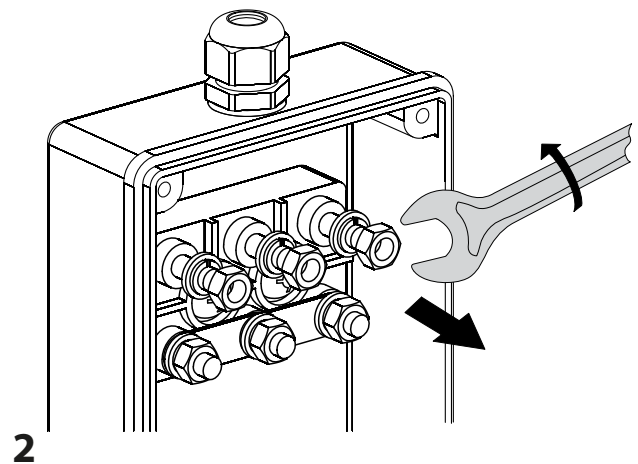
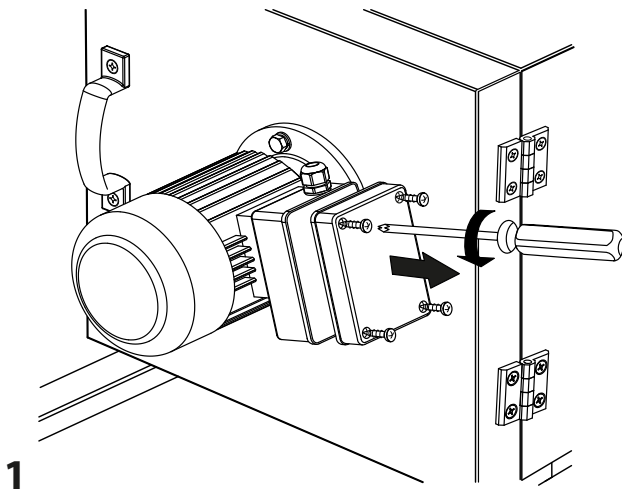
The fan connections shall be made in the terminal box mounted on the fan casing as shown in the wiring diagram. The wiring diagram sticker is located inside the motor terminal box.

**CAUTION!**

**Make sure that the fan impeller wheel rotates in the direction of the arrow applied to the fan casing.**



Access to the terminal box



## TECHNICAL MAINTENANCE

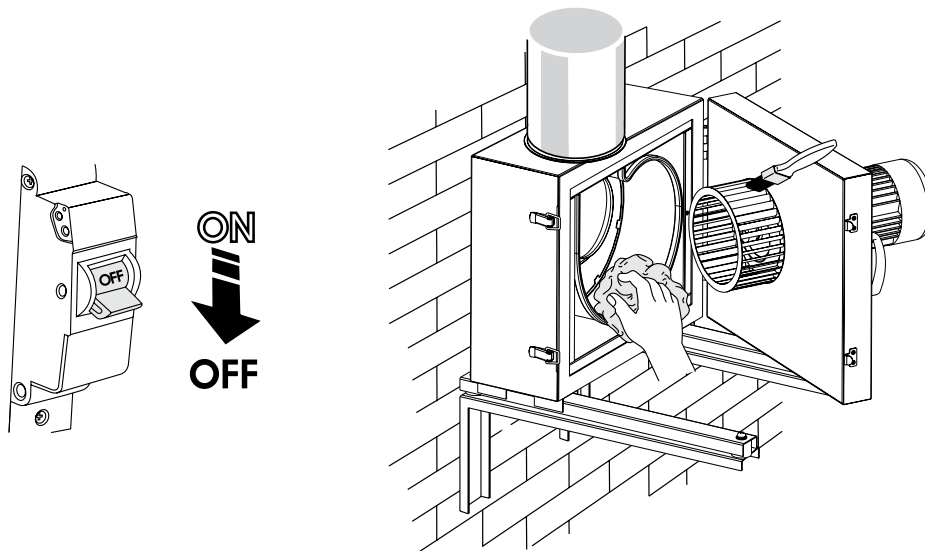


**DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS!**

Check the following conditions during the unit maintenance:

- Cut off power supply to the fan.
- Clean the fan casing from outside with a soft cloth dampened with water.
- Open the fold out motor-impeller unit.
- Wash the impeller blades carefully with a soft cloth or a brush dampened with water and mild detergent solution. Remove dust from soundproof surface using 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 and the motor.  
Wipe the unit surfaces dry after cleaning.**



## 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 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 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.**



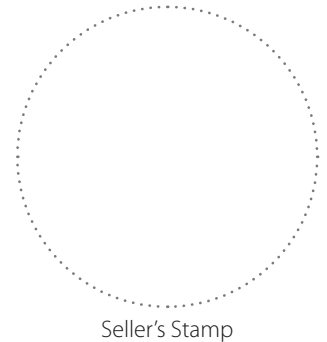
**USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.**

### CERTIFICATE OF ACCEPTANCE

<b>Unit Type</b>	Centrifugal fan in sound insulated casing
<b>Model</b>	KSK
<b>Serial Number</b>	
<b>Manufacture Date</b>	
<b>Quality Inspector's Stamp</b>	

### SELLER INFORMATION

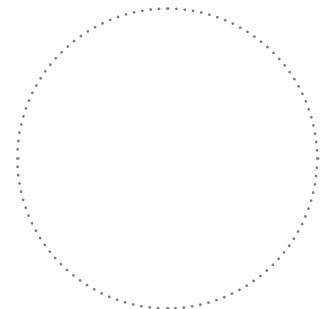
<b>Seller</b>	
<b>Address</b>	
<b>Phone Number</b>	
<b>E-mail</b>	
<b>Purchase Date</b>	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
<b>Customer's Signature</b>	



Seller's Stamp

### INSTALLATION CERTIFICATE

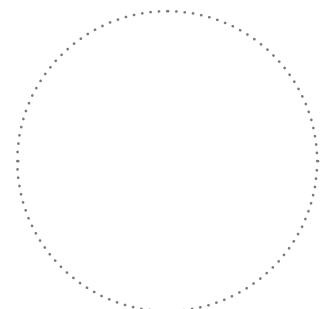
The KSK unit has been connected to power mains pursuant to the requirements stated in the present user's manual.	
<b>Seller</b>	
<b>Address</b>	
<b>Phone Number</b>	
<b>Installation Technician's Full Name</b>	
<b>Installation Date:</b>	<b>Signature:</b>
The unit has been installed in accordance with 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.	
<b>Signature:</b>	



Installation Company Stamp

### WARRANTY CARD

<b>Unit Type</b>	Centrifugal fan in sound insulated casing
<b>Model</b>	KSK
<b>Serial Number</b>	
<b>Manufacture Date</b>	
<b>Purchase Date</b>	
<b>Warranty Period</b>	
<b>Seller</b>	



Seller's Stamp





*Air-Conditioning & Ventilation Components & Systems*

Μιχαήλ Καραολή 19, τκ 143 43, Ν. Χαλκηδόνα, Αθήνα  
Τηλ: 211 - 70.55.500 & 210 - 21.30.051, Fax: 210 - 22.23.283

