EN

CENTRIFUGAL EXTRACT FAN
User's manual

VN E 80

VENTS

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CONTENTS

This user's manual is a main operating document intended for technical, maintenance, and operating staff.
The manual contains information about the purpose, technical details, operating principle, design, and installation of the VN E unit (-s) and all of its (their) 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.

READ THE USER'S MANUAL CAREFULLY BEFORE PROCEEDING WITH INSTALLATION WORKS.

COMPLIANCE WITH THE MANUAL REQUIREMENTS ENSURES RELIABLE OPERATION AND LONG SERVICE LIFE OF THE UNIT.

KEEP THE USER'S MANUAL AVAILABLE AS LONG AS YOU USE THE UNIT. YOU MAY NEED TO RE-READ THE INFORMATION ON THE PRODUCT SERVICING.

FOLLOW THE USER'S MANUAL REQUIREMENTS TO ENSURE DURABLE AND TROUBLE-FREE OPERATION OF THE UNIT.

Disconnect the unit from power supply prior to any connection, servicing, maintenance, and repair operations.

Only qualified electricians with a work permit for electrical units up to 1000 V are allowed for installation and maintenance. The present user's manual should be carefully read before beginning works.

- Single-phase power mains must comply with the acting local electrical norms and standards.
- Fixed electrical wiring must be equipped with an automatic circuit breaker.
- The unit must be connected to power mains through a QF automatic circuit breaker integrated into the fixed wiring system. The gap between the circuit breaker contacts on all poles must be not less than 3 mm. Check the unit for any visible damages of the impeller and the casing before starting installation. The casing internals must be free of any foreign objects that can damage the impeller blades.
- While mounting the unit, avoid compression of the casing! Deformation of the casing may result in the motor jam and noisy operation. Misuse of the unit and any unauthorised modifications are not allowed.
- Take steps to prevent ingress of smoke, carbon monoxide, and other combustion products into the room through open chimney flues or other fire-protection devices. Sufficient air supply must be provided for proper combustion and exhaust of gases through the chimney of fuel burning

equipment to prevent back drafting. Transported air must not contain any dust or other solid impurities, sticky substances, or fibrous materials.

- Do not use the unit in a hazardous or explosive environment containing spirits, gasoline, insecticides, etc.
- Do not close or block the intake or extract vents in order to ensure the efficient air flow.
- Do not sit on the unit and do not put objects on it.
- The unit is allowed to be used by children aged from 8 years old and above and persons with reduced physical, sensory, or mental capabilities or no experience and knowledge provided that they have been given supervision or instruction regarding safe use of the unit and understand the risks involved.
- Do not allow children to play with the unit.

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

DELIVERY SET

	VN E 80(K) VN-1 E 80 K	VNV-1 E 80 KV VNV-1 E 80 KP VNV-1 E 80 KVK	VNV-1 E 80 E	KV 80 KP 80 KVK 80
Fan assembly, pcs	1	1	-	-
Ventilation unit, pcs	-	-	1	-
Casing, pcs	-	-		1
Fastener set, pcs	1	1	1	1
Mounting bracket, pcs	-	2	-	-
Cardboard spacer, pcs	-	-	-	1
Plastic screwdriver (models with timer only), pcs	1	1	1	-
Noise-absorbing insert set, pcs	1	1	-	-
Operation manual, pcs	1	1	1	1
Packing box, pcs	1	1	1	1

BRIEF DESCRIPTION

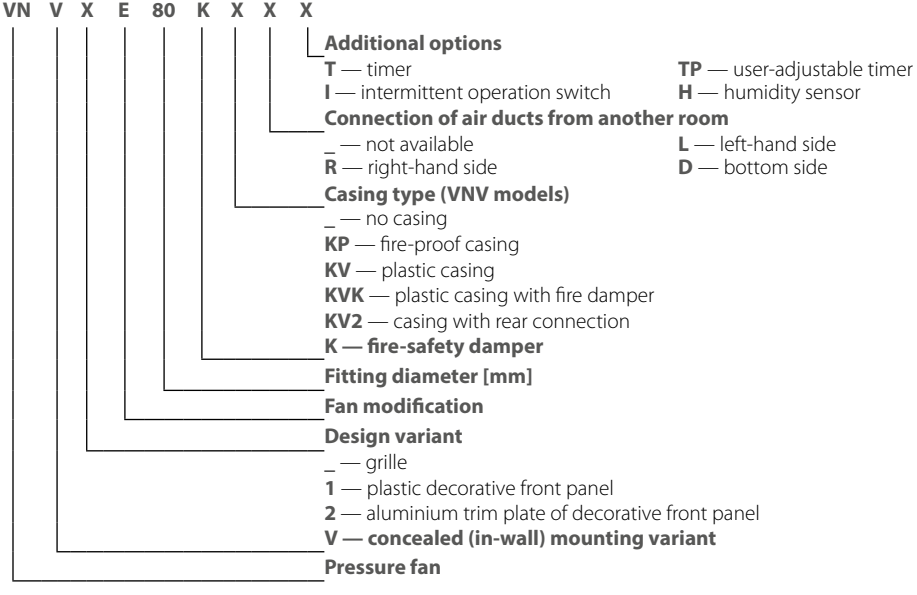
The product is a double-speed pressure fan for exhaust ventilation of small and medium-sized domestic spaces heated during the cold season. In the base models the fan speed is manually set by means of an external switch.
The fan can be mounted to the ceiling or onto a wall with air extraction into a ventilation shaft or a matching diameter round air duct. Each specific fan model differs by mounting type:

- **VN E 80 (K) / VN-1 E 80 (K)** — wall mounting
- **VNV-1 E 80 E KV / KP / KVK** — concealed (through-the-wall) installation
- **VNV-1 E 80** — fan assembly designed for installation into a pre-installed **KV E 80, KP E 80** or **KVK E 80** casing.

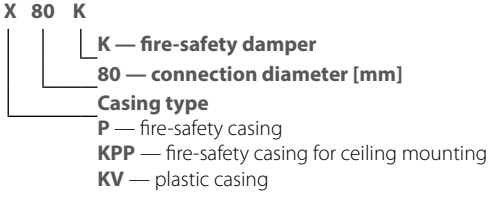
The **VNV-1 E 80 KP, VNV-1 E 80 KVK, VN-1 E 80 K** and **VN E 80 K** meet special fire safety requirements and are designed for preventing smoke fume penetration into the serviced spaces through air ducts in the event of a fire.

Fan options:
T — timer
TP — user-adjustable timer
I — intermittent operation switch
N — humidity sensor

DESIGNATION KEY



Conventional designation of casings for **VN** fans



OPERATION GUIDELINES

The fan is rated for connection to single-phase AC 220...240 V/50 Hz power mains. Ingress protection rating against access to hazardous parts and water ingress is IP55. The fan is rated for operation at ambient temperatures ranging from +1 °C to +45 °C. The unit is rated as a Class II electrical appliance.

TECHNICAL DATA

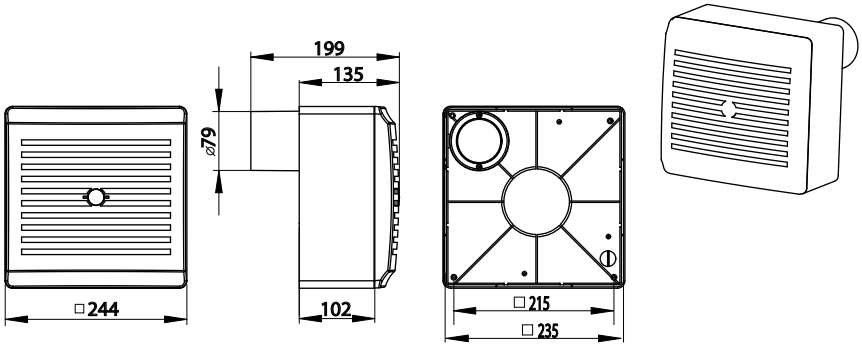
The fan is rated for connection to single-phase AC 220-240 V/50 (60) Hz power mains.
Ingress protection rating against access to hazardous parts and water ingress is IP55.
The fan is rated for operation at ambient temperatures ranging from +1°C to +45°C.
The unit is rated as a Class II electrical appliance.

The main technical specifications are given on the fan casing.

The outside and connecting dimensions as well as the appearance of the units are given on Fig. 1 through 11.

VN E 80

1



VN-1 E 80

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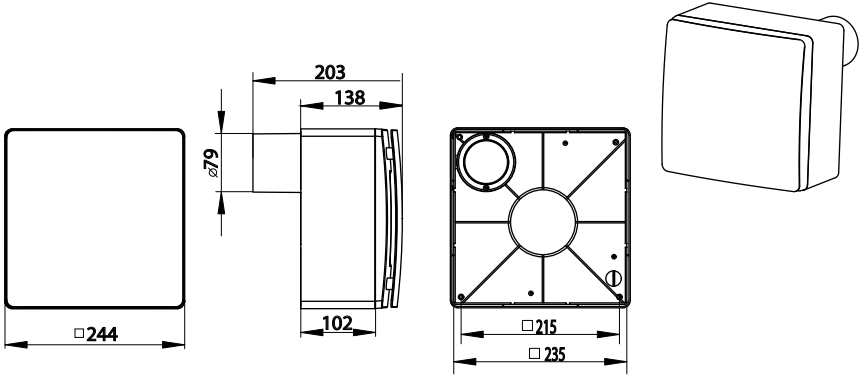

VN E 80 K

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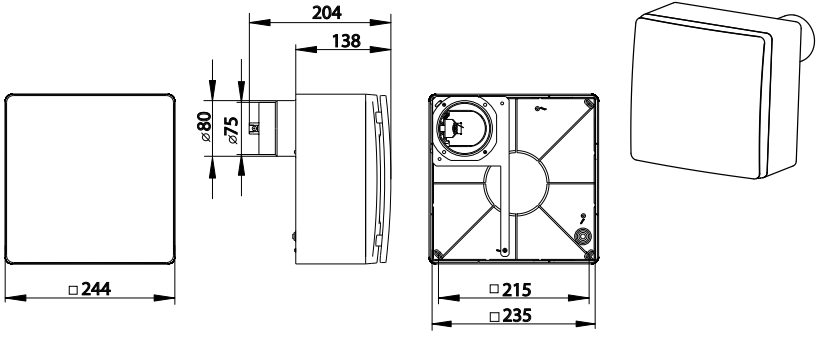

VN-1 E 80 K

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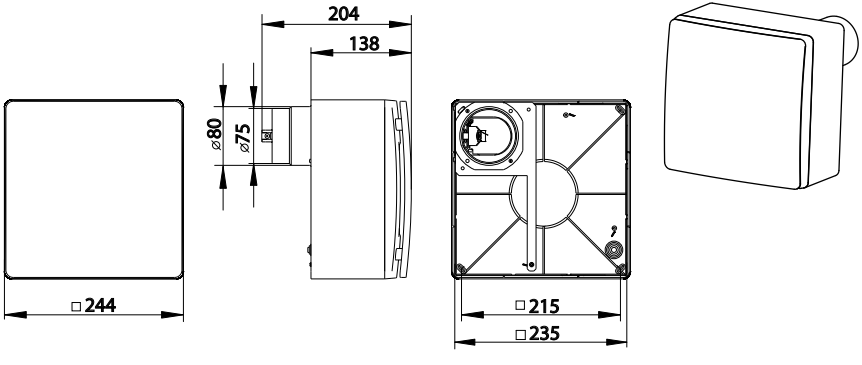

VNV-1 E 80 KV

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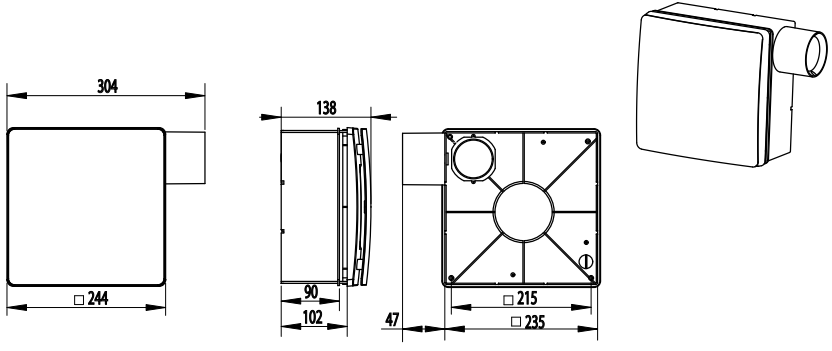

VNV-1 E 80 KP

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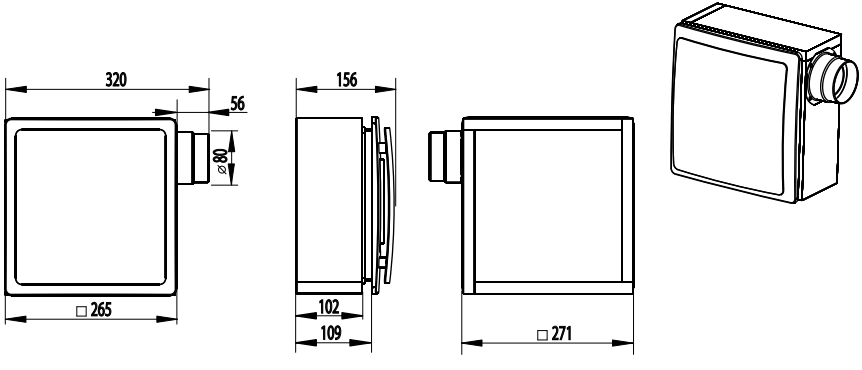

VNV-1 E 80 KVK

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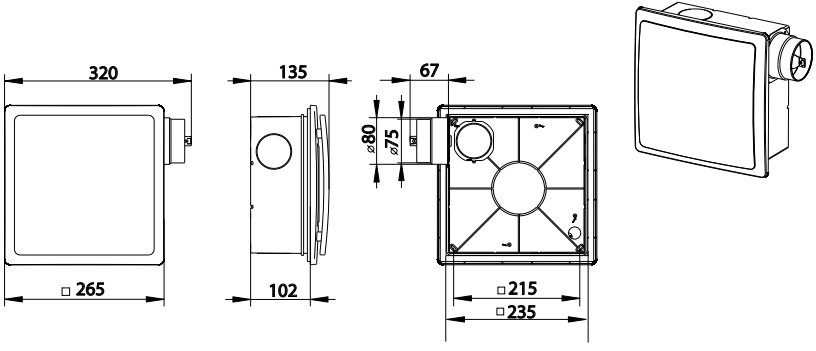

VNV-1 E 80

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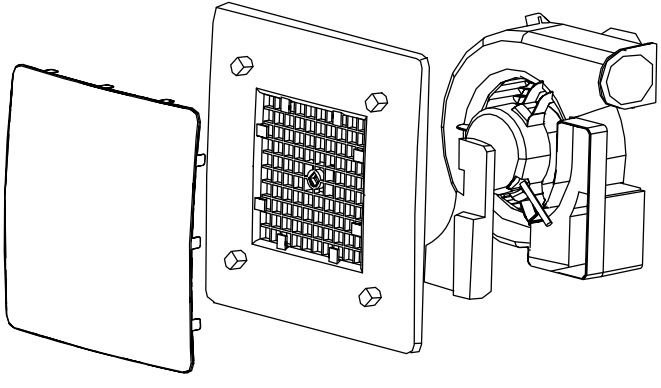

KP 80

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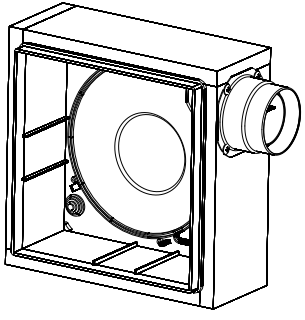

KV 80

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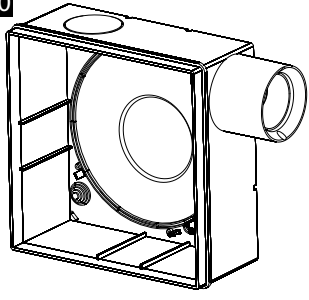

KVK 80

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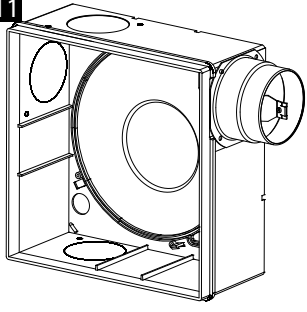


INSTALLATION

The fan is designed for wall or ceiling mounting with direct air exhaust to the ventilation shaft or into the round air duct of matching diameter.
The fan mounting example is shown in Fig. 12-22.
Through-the-wall installation of fans with an additional inlet pipe is shown on Fig. 23 and 24.

VN-1 E 80 fan installation steps:
1.1. Mark and drill a hole for the fan outlet connection according to one of the 4 possible placement variants (Fig. 25 to 28).
1.2. Take off the front panel (Fig. 29).
1.3. Remove the filter (Fig. 30).
1.4. Undo the screw and take off the grille (Fig. 31). Remove the noise-absorbing inserts (Fig. 32).
1.5. Position the fan casing properly (Fig. 25 to 28) and mark the mounting holes for self-tapping screws (Fig. 33).
1.6. Drill the dowel holes and insert the dowels.
1.7. Mount the fan casing complete with the scroll and secure it to the mounting surface with self-tapping screws (Fig. 34).
1.8. Complete steps 1.2 to 1.4. in the reverse order.

VN E 80 fan installation steps:
2.1. Mark and drill a hole for the fan outlet connection according to one of the 4 possible placement variants (Fig. 25 to 28).
2.2. Remove the decorative plug (Fig. 35).
2.3. Undo the grille mounting screw (Fig. 36).
2.4. Take off the grille (Fig. 37). Remove the noise-absorbing inserts (Fig. 32).
2.5. Complete steps 1.6. and 1.7.
2.6. Complete steps 2.2. to 2.5. in the reverse order.

VN-1 E 80 K fan installation steps:
3.1. Mark and drill a hole for the fan outlet connection according to one of the 3 possible placement variants (Fig. 25 to 27).
3.2. Complete steps 1.2. and 1.4.

3.3. Set the fire-safety swing damper to the mounting position (Fig. 38).
3.4. Mark the dowel holes (Fig. 39).
3.5. Drill the dowel holes and insert the dowels (Fig. 40).
3.6. Secure the fire-safety swing damper with self-tapping screws (Fig. 41).
3.7. Rotate the fan to match the mounting hole of the casing with that of the swing damper, and mark the dowel holes (Fig. 42).
3.8. Rotate the fan to access the markings, drill the dowel holes and insert the dowels (Fig. 43).
3.9. Rotate the fan and align the mounting holes of the casing and those of the swing damper, and secure the fan with self-tapping screws (Fig. 44).
3.10. Complete steps 1.2 to 1.4. in the reverse order.

VN E 80 K fan installation steps:
4.1. Complete step 3.1.
4.2. Complete steps 2.2. and 2.4.
4.3. Complete steps 3.3. and 3.9.
4.4. Complete steps 2.2. to 2.4. in the reverse order.

VNV-1 E 80 KV, VNV-1 E 80 KVK and **VNV-1 E 80 KP** fans consist of **VNV-1 E 80** fan assembly and **KV 80, KVK 80** and **KP 80** fan casings correspondingly.
These fans are installed in two phases: first the casing installation and then the final installation:
- the casing is installed during the shell and core phase;
- the final installation, which is performed after the fit-out works, includes the installation of **VNV-1 E 80** fan assembly into **KV 80, KVK 80** or **KP 80** casing.

The **KV 80** and **KVK 80** installation steps are as follows:
5.1. Complete steps 1.2. and 1.4.
5.2. Remove the fan assembly from the casing (Fig. 45 and 46).
5.3. Bend the mounting bracket to the necessary length according to the actual wall measurements and secure it to the fan casing with M4 screws supplied with the unit (Fig. 47-50);

5.4. Route the power cable into the fan casing.
5.5. Fill the gaps between the fan casing and the wall opening with mortar, sealing foam etc.
5.6. Once the installation has been completed, cover the casing with the cardboard spacer to prevent damage or contamination during the fit-out works in the space (Fig. 51).

To install **KP 80** casing:
6.1. Complete steps 5.1. and 5.2.
6.2. Make a recess in the shaft wall for the fan casing (Fig. 21).
6.3. Connect an air duct to the fan outlet.
6.4. Prior to installing the casing make sure that the fire-stop spring-loaded backdraft damper of **KP 80** casing to be installed in the recess is properly closed by the spring in the absence of air flow.
6.5. Install **KP 80** casing into the recess and fix it with mortar. Route the power cable through the gland in the rear side of the casing. Allow at least 250 mm of cable from the casing. The casing can also be integrated into a wall or the ceiling using mounting brackets (Fig. 22).
6.6. Once the installation has been completed, cover the casing with the cardboard spacer to prevent damage or contamination during the fit-out works in the space (Fig. 51).

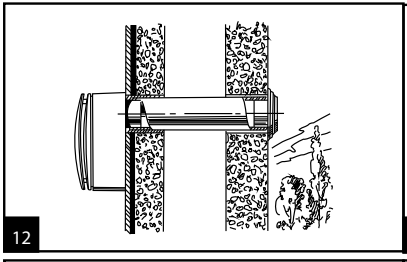
The final installation of **VNV-1 E 80 KV, VNV-1 E 80 KVK** and **VNV-1 E 80 KP** fans includes the following steps:
7.1 On completing the fit-out works in the space remove the cardboard spacer and install VNV-1 E 80 fan assembly (Fig. 53 and 54). The mountings allow fine adjustments of the grille angle relative to the fan casing for a level fit even if the casing is misaligned (Fig. 55).
If **KV 80, KVK 80** or **KP 80** casing and **VNV-1 E 80** fan assembly are supplied separately the installation does not require disassembling the fan.
The rest of the installation steps remain unchanged.

Before proceeding with the fan installation check the position of backdraft damper 2 which must close under its own weight in the absence of air flow (Fig. 56). By default the position of backdraft damper corresponds to the outlet connection to the right or upwards. If the outlet connection is pointed to the left after the installation remove the backdraft damper from outlet pipe 1, turn the damper 180° and insert it into the pipe.

For sectional air vents use rectangular-section steel ducts or SPIROVENT spirally wound air vents.
For air duct connections use ALUVENT or THERMOVENT flexible air ducts.
The nominal diameter of air duct connections is 80 mm.

If the connection air duct is concealed within a brick wall it should be wrapped with self-adhesive PVC tape to prevent mortar-induced corrosion

VN E 80, VN-1 E 80, VN E 80 K, VN-1 E 80 K installation options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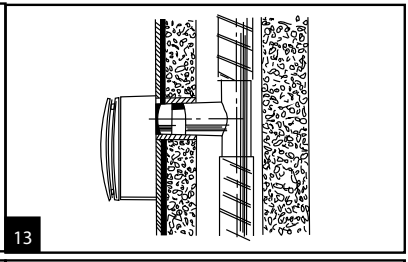
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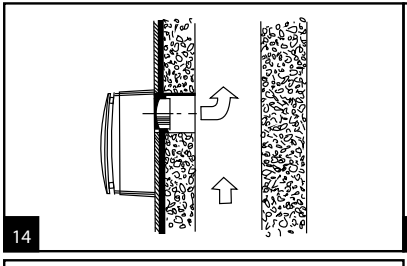
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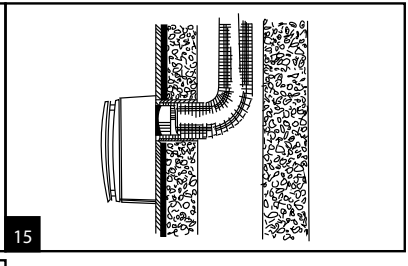
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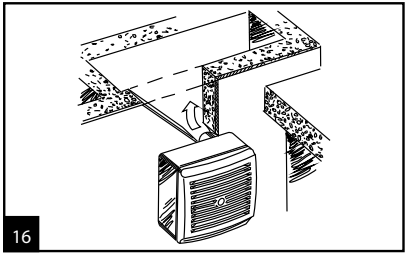
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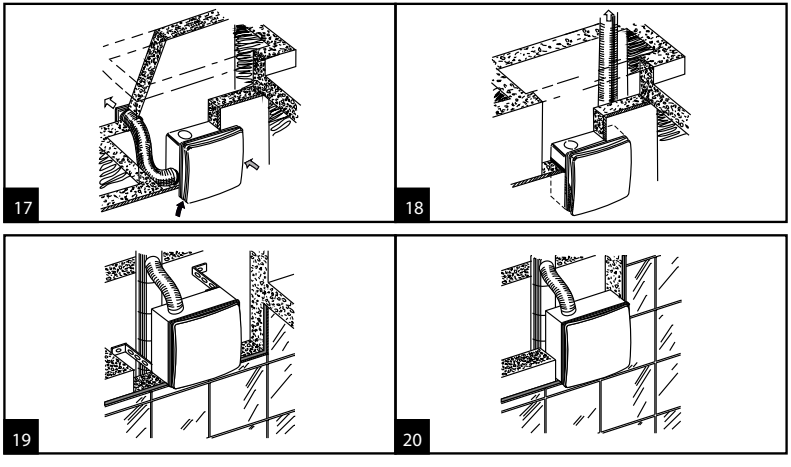
VNV-1 E 80 KV and VNV-1 E 80 KVK installation options



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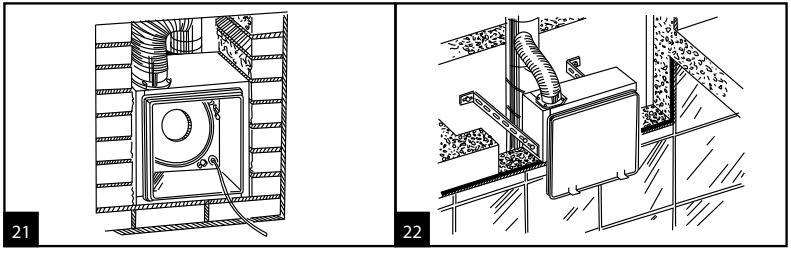
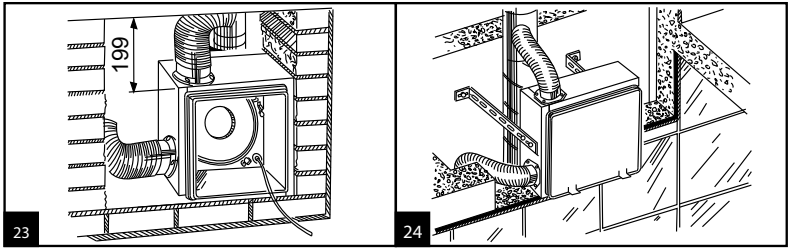
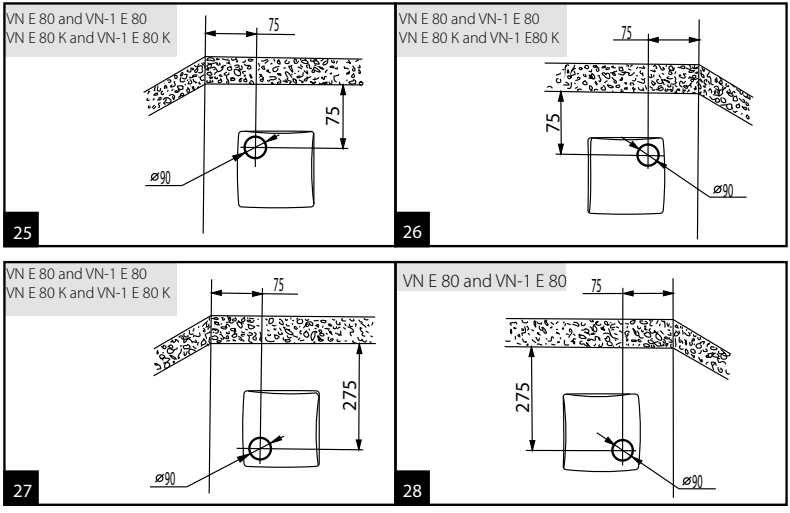


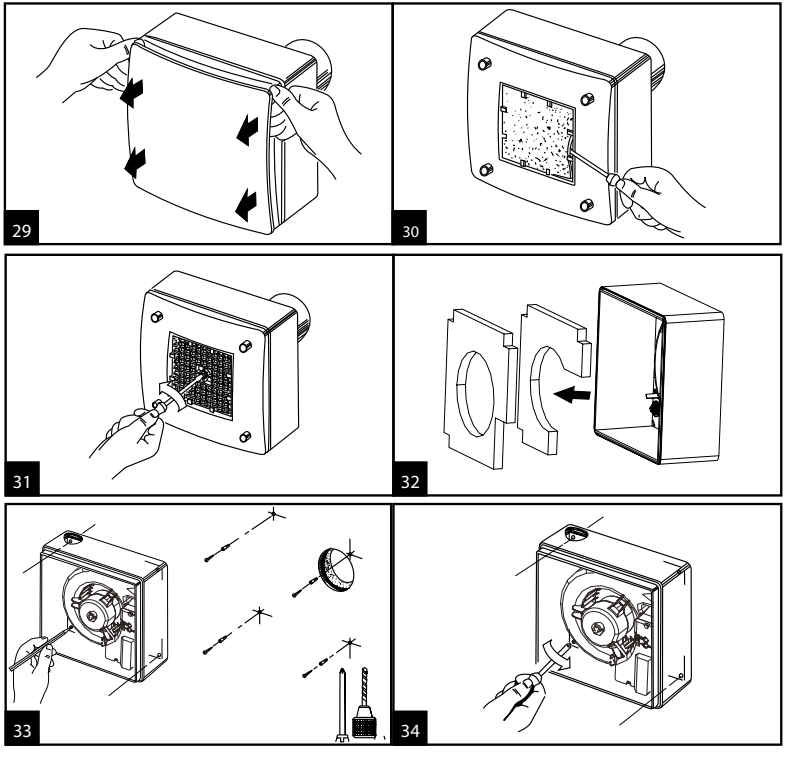
Installation options for fans with an additional inlet connection



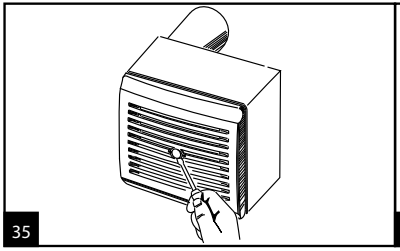
Fan placement options relative to walls and ceiling

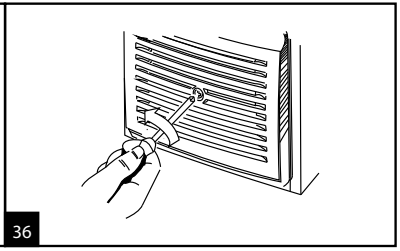


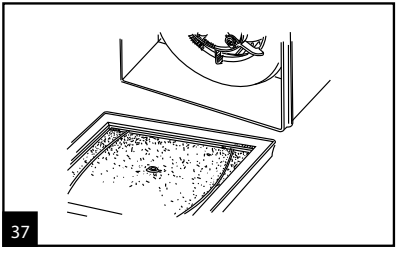
VN-1 E 80 installation steps



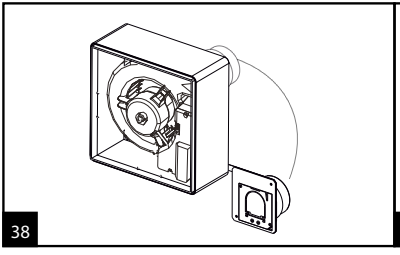
VN E 80 installation steps

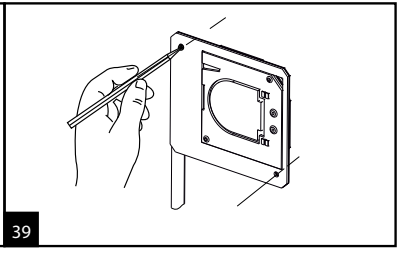


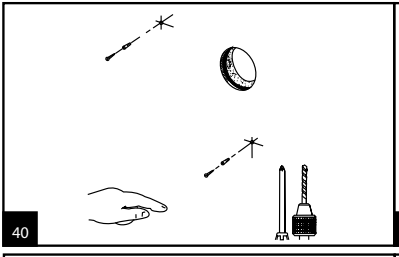




VN-1 E 80 K installation steps



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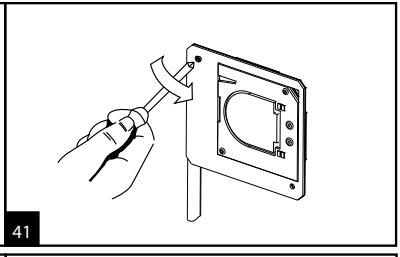
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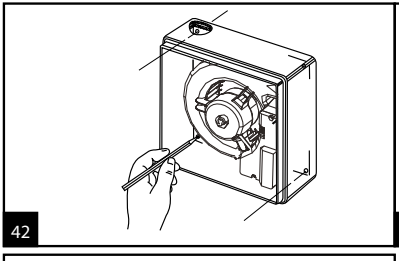
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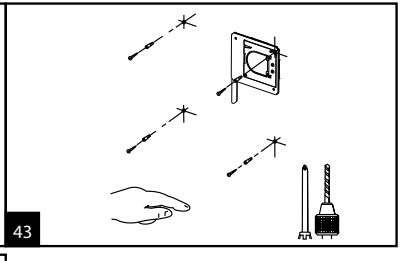
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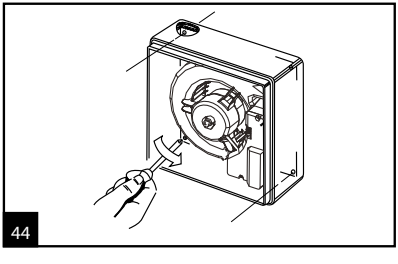
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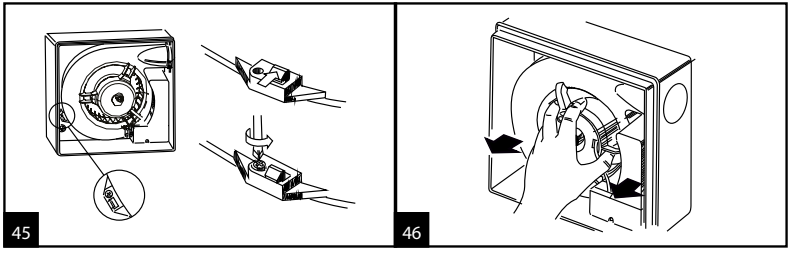
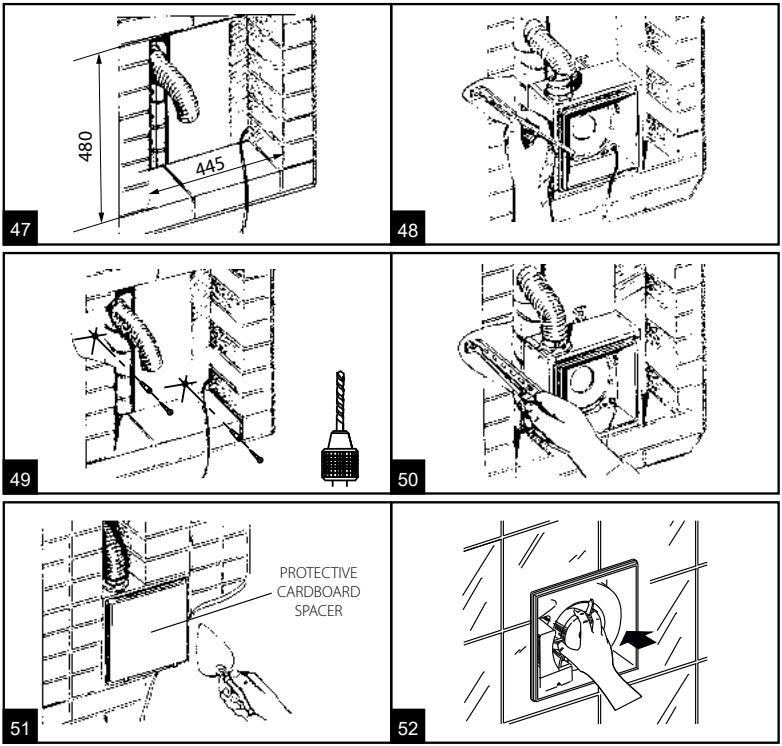
VNV-1 E 80 KV, VNV-1 E 80 KVK, VNV-1 E 80 KP installation steps

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PROTECTIVE
CARDBOARD
SPACER
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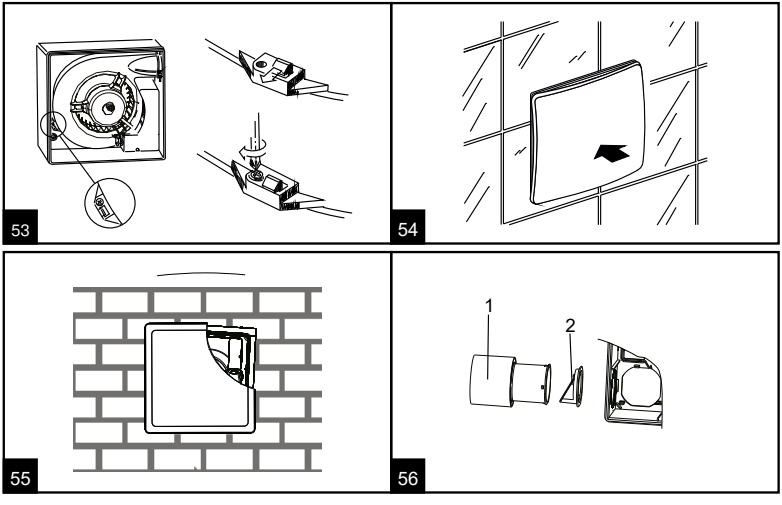
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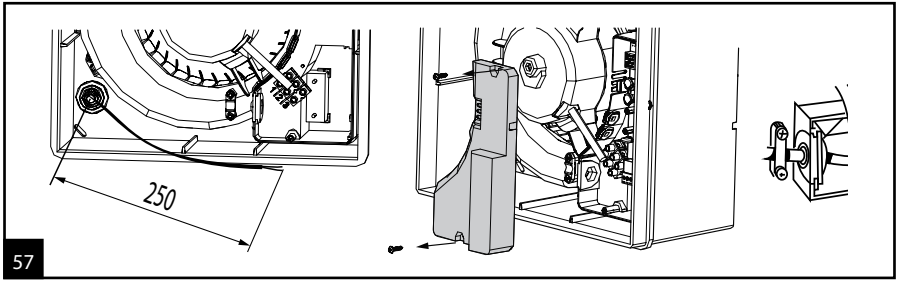
CONNECTION TO POWER MAINS

To connect the fan to the electric mains:
— Run the cable through the gland in the rear part of the casing (Fig. 57).
— Strip the insulation leaving 7–8 mm long tips.
— Undo two screws and remove the control unit lid (Fig. 57).
— Complete the electrical connections according to the external connections diagram (Fig. 58 and 59).
— Clamp the wires with the retention clip (Fig. 57).
— Assemble the fan: re-install the lid, filter etc.
— Apply supply voltage to the fan.



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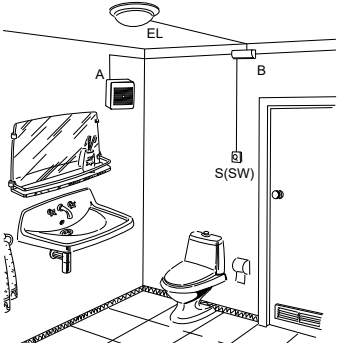
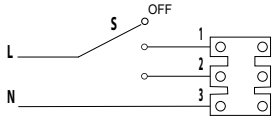
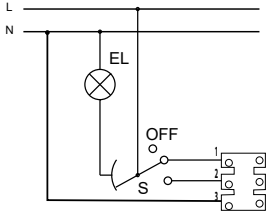
Electrical circuit diagram for connecting the base model fan



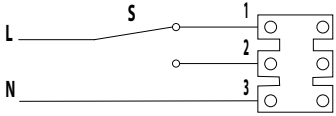
A — fan
B — distribution box
EL — light bulb
SW — double-pole switch (symbolic representation)
S — P2-1-300 external speed control switch (symbolic representation)



External switch **S** (e.g. P2-1-300) is used to set the fan to one of the two available speeds or disable it manually.



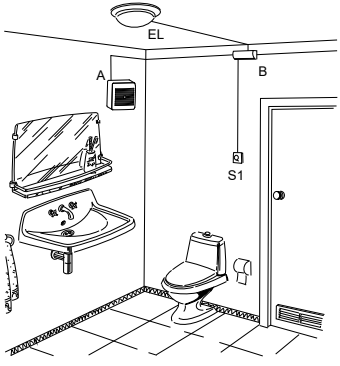
External switch **S** (e.g. P2-1-300) is used to set the fan to one of the two available speeds simultaneously with switching on the lights in the room or disable the fan when the lights are switched off. The fan is enabled/disabled simultaneously with the lights only.

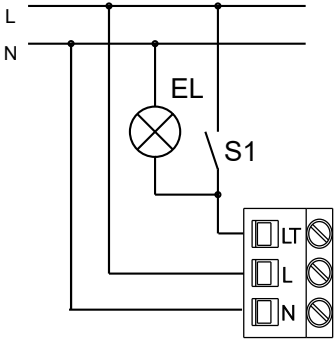


The fan constantly runs at Speed 1 or Speed 2.
The **SW** switch allows speed selection.

58

Electrical circuit diagram for connecting fans equipped with the timer, user-adjustable timer, intermittent operation mode switch or humidity sensor





A — fan, **B** — distribution box, **EL** — light bulb, **S1** — light switch (symbolic representation).

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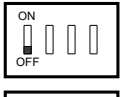
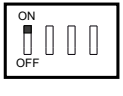
Fan control

The timer circuit board contains a DIP switch which controls the initial state of the fan.



Mode 1
In the **OFF** position the fan is initially disabled.



Mode 2
In the **ON** position the fan initially runs at low speed.

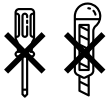
T — timer
Manual actuation of external switch S1 enables the fan and switches on the lights with a 50 second activation delay. Once external switch S1 is returned to the initial position the fan shuts down after a 6 minute timer delay.

TP — user-adjustable timer
Manual actuation of external switch S1 starts the fan at Speed 2 and switches on the lights simultaneously. The delay time is set within the 0-150 second range by means of the internal controller. The timer run-down time after S1 switch disengagement is set within the 2-30 minute range by means of the internal controller.

I — intermittent operation mode switch
While running at Speed 1 the fan intermittently switches to Speed 2. The interval between Speed 2 cycles is set by means of the internal controller within the range from 30 minutes to 15 hours. Each cycle lasts for 10 minutes. Can be activated manually with external switch S1 simultaneously with the lights (with a 50-second activation delay). When switch S1 is set to OFF, the fan reverts to the original state.

H — humidity sensor
The fan switches to Speed 2 when the relative humidity in the room reaches a certain level. The humidity threshold can be adjusted in the 60 % to 90 % range. The fan shuts down when the relative humidity level drops 10 % below the pre-set threshold. Manual actuation of external switch S1 switches the fan to Speed 2 simultaneously with the lights with a 50-second activation delay whereas the run-down time after switch S1 disengagement is set within the 2-30 minute range by means of the internal controller.

TIMER AND HUMIDITY SENSOR ADJUSTMENT



DO NOT USE A METAL SCREWDRIVER, KNIFE, ETC. FOR ADJUSTMENT OPERATIONS NOT TO DAMAGE THE CIRCUIT BOARD.

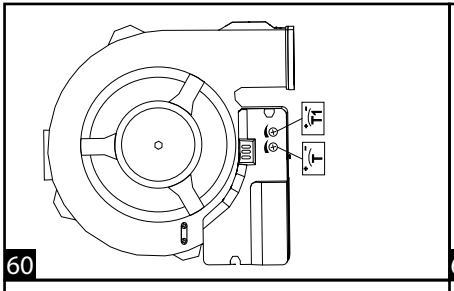
WARNING! The control board circuit is live!
Disconnect the fan from power supply prior to any adjustment operations. The fan is supplied with a special plastic screwdriver for adjusting the settings. Used to change the timer setting or the relative humidity sensor threshold.

To adjust the timer delay turn the knob of potentiometer **T(T1)** clockwise to increase or counterclockwise to decrease (Fig. 60 to 62).To adjust the humidity threshold turn the knob of potentiometer H counterclockwise to increase or clockwise to decrease (Fig. 62).

TP variant (Fig. 60):
T1 — turn-on delay time adjustment (from 0 to 150 seconds).
T — adjustment of turn-off delay time after deactivation (from 2 to 30 minutes).

I variant (Fig. 61):
T — interval timer adjustment (from 30 minutes to 15 hours).

H variant (Fig. 62):
T — adjustment of turn-off delay time after deactivation (from 2 to 30 minutes)
H — humidity sensor threshold adjustment (from 60 % to 90 %).



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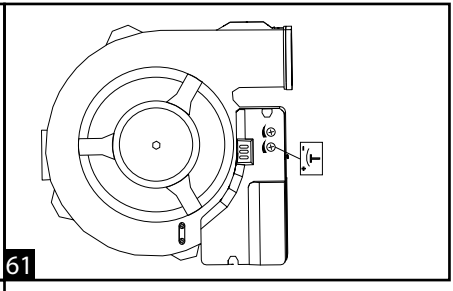

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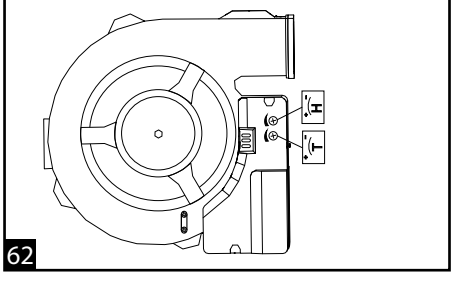

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TECHNICAL MAINTENANCE

Technical maintenance includes periodic filter replacement and cleaning the fan surfaces from dust and dirt. The impeller blades require thorough cleaning every 6 months. The filter must be replaced on a need-to-do basis, but at least every 6 months.

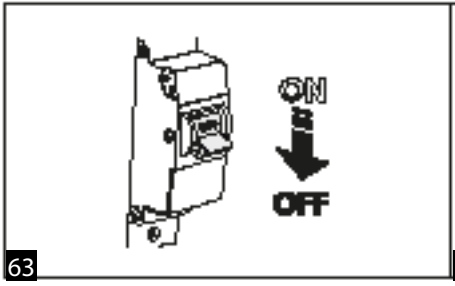
To replace the filter:

- Disconnect the fan from the electric mains (Fig. 63).
- Remove the filter by completing steps 1.2 and 1.3 or 2.2. to 2.4 in the "Installation" section.
- Replace the filter and re-assemble the fan in the reverse order.
- Re-connect the fan to the electric mains (Fig. 66).

To clean the fan surface from dust and dirt:

- Disconnect the fan from the electric mains (Fig. 63).
- Remove the lid by completing steps 1.2. and 1.3 or 2.2. to 2.4 in the "Installation" section.
- Undo the self-tapping screws securing the scroll, press to disengage the tabs and remove the scroll (Fig. 64).
- Turn the scroll 180° to access the turbine and remove the dirt deposits using a soft brush or compressed air (Fig. 65).
- Re-assemble the fan in the reverse order and re-connect it to the electric mains (Fig. 66).

WARNING! Avoid spilling liquid on the electrical components!



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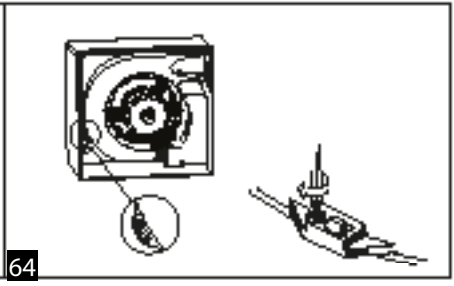
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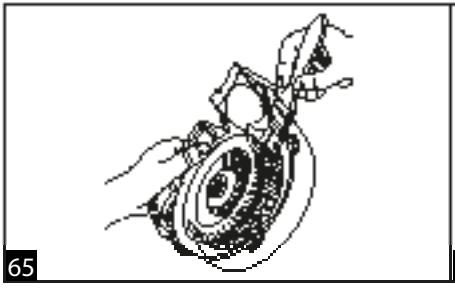
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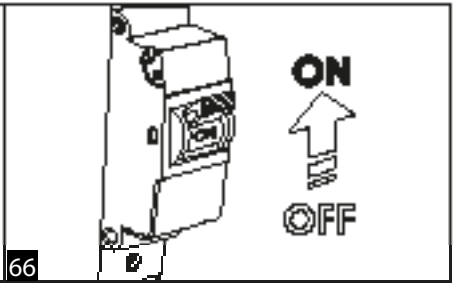

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STORAGE AND TRANSPORTATION REGULATIONS

- 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 operating 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 60 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.

Quality Inspector's Stamp

Sold by
(name and stamp of the seller)

Manufacture Date

Purchase Date

Certificate of acceptance

VN V ◯ 1 ◯ E 80 K ◯ KP ◯ L ◯ T ◯
2 ◯ KV ◯ P ◯ TP ◯
KVK ◯ D ◯ I ◯
KV2 ◯ H ◯

KV 80 plastic casing ◯

KP 80 fire-proof casing ◯

KVK 80 plastic casing with fire damper ◯

The fan is recognized as serviceable.