

# INLINE MIXED-FLOW FANS IN SOUND-INSULATED CASING

USER  
MANUAL



2013



## WARNING

Disconnect the fan from power mains prior to any connection, servicing and repair operations. Mounting and maintenance are allowed for duly qualified electricians with valid electrical work permit for electric operations at the units up to 1000 V after careful study of the present user's manual.

The single-phase power mains must comply with the acting local electrical norms and standards.

The fixed electrical wiring must be equipped with an automatic circuit breaker.

The fan must be connected to power mains through an automatic circuit breaker QF integrated into the fixed wiring system with the gap between the breaker contacts on all poles not less than 3 mm.

Check the fan for any visible damages of the impeller and the casing before starting installation.

The casing internals must be free of any foreign objects which can damage the impeller blades.

Misuse of the device or any unauthorized modification is not allowed.

The fan is not to be used by children and persons with reduced physical, mental or sensory capacities, without proper practical experience or expertise, unless they are controlled or instructed on the product operation by the person(s) responsible for their safety.

Do not leave children unattended and do not let them play with the product.

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 medium must not contain any dust or other solid impurities, sticky substances or fibrous materials.

Do not use the fan in the environment containing hazardous or explosive materials and vapours, i.e. spirits, gasoline, insecticides, etc.

Do not close or block the fan intake or extract vents in order to ensure the most effective air passage.

Do not sit on the fan and do not put objects on the fan.

Fulfil the requirements stated in this user's manual to ensure long service life of the product.



***Recycle at the end of the service life.***

***Do not dispose the product with unsorted municipal trash.***

**Read the present user's manual carefully before proceeding with installation works.**  
**Compliance with the manual requirements ensures reliable operation and long service life of the product.**  
**Keep the user's manual available as long as you use the product.**  
**You may need to re-read the information on the product servicing.**



### **DELIVERY SET**

The delivery set includes:

1. Fan - 1 item;
2. Screws and dowels - 4 items;
3. Plastic screwdriver (only for modifications with timer) - 1 items;
4. User's manual;
5. Packing box.

### **SHORT DESCRIPTION**

The product described herein is a mixed-flow inline fan for supply or extract ventilation of premises heated during winter time.

The fan is rated for connection to 100, 125, 150, 160, 200, 250 and 315 mm.

The fan is equipped with a two-speed motor.

MF XXX - basic model;

MF XXX V - model with a built-in speed switch;

MF XXX RV - model with a built-in speed switch, power cable and plug, fig. 40;

MF XXX T - model with a turn-off delay timer adjusted from 2 to 30 minutes, fig. 39;

MF XXX U(U1) - model with a speed controller with an electronic thermostat, a built-in temperature sensor and a power cable with a plug, fig. 41;

MF XXX Un (U1n) - model with a speed controller with an electronic thermostat, an external temperature sensor fixed on 4 m cable and a power cable with a plug, fig. 41;

MF XXX P - model with a speed controller and a power cable with a plug, fig. 42.

XXX - fan size (100, 125, 150, 160, 200, 250 or 315 mm).

Due to constant improvements the design of some models may slightly differ from those ones described in this manual.

### **OPERATION RULES**

The fan is designed for connection to AC 220 to 240 V, 50/60 Hz power mains.

The fan is designed for continuous operation always connected to power mains.

Air motion direction in the system must match the pointer on the fan casing.

Ingress protection rating against access to hazardous parts and water ingress IPX4.

The fan is rated for operation at the ambient temperature ranging from +1°C up to +45°C.

The transported air temperature must not exceed +60 °C.

The fan is rated class II electrical appliance.

## ELECTRONICS CONTROL LOGIC

The fan MF T is turned into operation after control voltage is supplied by the external switch (e.g., by the light switch) to the input terminal LT.

After the control voltage is off the fan continues to operate within the timer period set by the timer from 2 to 30 minutes.

To adjust the turn-off delay time rotate the potentiometer control knob T clockwise to increase and counter-clockwise to decrease the off-delay time respectively (fig. 39).

### WARNING!

The timer circuit is under mains voltage. Cut power supply to the fan off prior to any adjustments with the timer.

The fan delivery set includes a specially designed plastic screwdriver for fan settings adjustments.

Use the screwdriver to change the turn-off delay time.

Do not use a metal screwdriver, knife, etc. for adjustment operations not to damage the circuit board.

The fan model MF XXX U(U1) is equipped with electronic TSC module (speed controller with electronic thermostat) for automatic fan speed (air flow) control depending on air temperature (fig. 41).

2 control knobs on the electrical compartment cover are used:

for setting the motor speed;

for setting the thermostat set point.

The LED light of the thermostat is placed on the fan cover.

The fan has a temperature- and timer-dependent operating logic:

temperature-dependent control logic (MF XXX U):

to maintain air temperature with accuracy to within 2 °C. The fan changes its speed rarely. As air temperature rises up to the set point, the fan switches to high speed. As air temperature drops down 2 °C below the set point or if the initial temperature is below the set temperature point, the fan operates at low set speed from the start.

timer-dependent control logic (MF XXX U1):

to maintain air temperature with high accuracy. The fan changes its speed more often as compared to the previous control logic, but the minimum operating time at one speed is not less than 5 minutes. As air temperature rises up to the set point, the fan switches to maximum speed. Synchronously, the speed switch delay timer is activated for 5 minutes.

As air temperature drops down below the set point, but only after 5 minutes countdown after switching to high speed, the fan switches to lower set speed. If the initial temperature is below the set temperature point, the fan operates at low set speed from the start.

The fan **MF XXX P** (fig. 42) is equipped with a speed controller that enables switching the fan on/off, smooth speed (air flow) control from minimum to maximum value.

## MOUNTING

The fan is suitable for top and vertical installation on the floor, on the wall or on the ceiling (fig. 2).

While mounting the fan provide extra protection against water ingress, such as:

1. For the top mounting: install an outer protecting hood above (fig. 3).
2. For any mounting position: connect an air duct on both sides of the fan (fig. 3).

Mounting sequence for various fan models are shown in fig. 4-8 and 21-38.

Wiring diagrams for various fan models are shown in fig. 9-20.

Terminal designations:

- L1 - low speed terminal;
- L2 - high speed terminal;
- QF - automatic circuit breaker;
- S - external speed switch;
- S1 - external switch (e.g., light switch);
- X - input terminal.

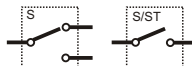
Designation of the automatic circuit breaker on wiring diagram



Designation of the external switch on wiring diagram



Automatic circuit breaker



External on/off switch/speed switch



## MAINTENANCE

Clean the product surfaces regularly (once in 6 months) from dust and dirt (fig. 43-46).

Disconnect the fan from power mains prior to any maintenance operations.

To clean the fan use a soft cloth and a brush wetted in a mild detergent solution.

Avoid water dripping on the electric components (fig. 60). Wipe the surfaces dry after cleaning.

## STORAGE AND TRANSPORTATION RULES

Transportation is allowed with any vehicle provided that the product is protected against mechanical and weather damage.

Store the delivered product in the manufacturer's original packing box in a dry ventilated premise with the temperature range from +5 °C up to +40 °C and relative humidity less than 80%.

The storage environment must not contain dust, acid or alkali vapours that may cause corrosion of the product parts.

## WARRANTY

By purchasing this product the customer confirms to have read and agreed to the terms, rules and requirements related to operation, storage, transportation, mounting, adjustment, connection, maintenance and repair as well as warranty obligations with respect to this product as set forth in the manufacturer's accompanying documentation to the product.

The manufacturing company sets forth the warranty period (service life) of the product as 24 months following the sale date via retail network subject to the customer's ensuring compliance with the rules of transportation, storage, mounting and operation of the product. In case of any malfunction of the product through the fault of the Manufacturing company within the warranty period (service life), the customer shall have the right to elimination of the manufacturing defects by means of warranty servicing performed free of charge. The warranty servicing implies performance of activities related to elimination of defects in the product aimed to provide intended use of the product by the customer. The defects are eliminated either by replacing or repairing such a product or a part (component) thereof.

### ATTENTION!

With the purpose of performing warranty servicing you please produce User Manual or other relevant substituting document and the payment document as an evidence of the purchase with indication of the sale date. The product model shall comply with that one specified in the User Manual or other relevant substituting document.

With the purpose of performing warranty servicing please contact the trade company where you purchased the product. If warranty servicing on the spot proves impossible, you will be provided with the necessary information regarding rendering of this service.

### Manufacturer's warranty shall not be applied in the following cases:

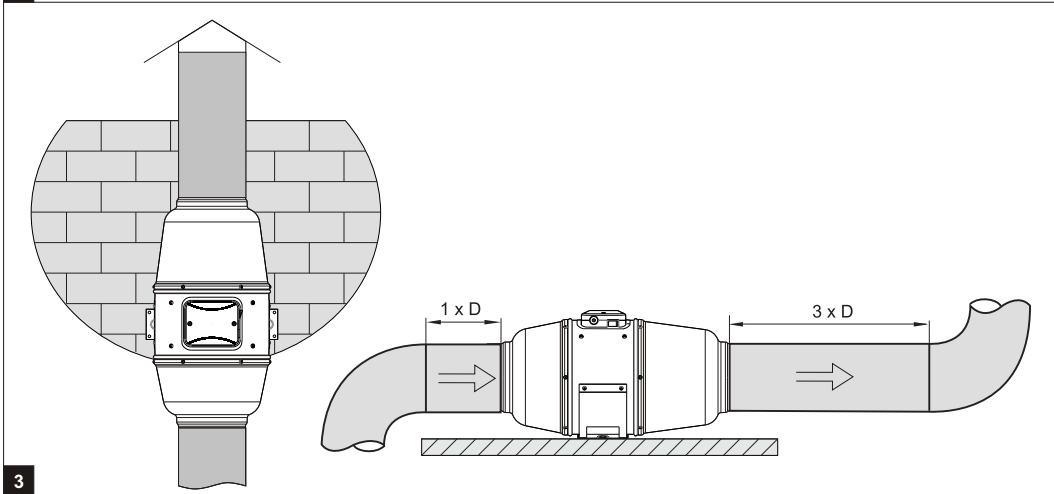
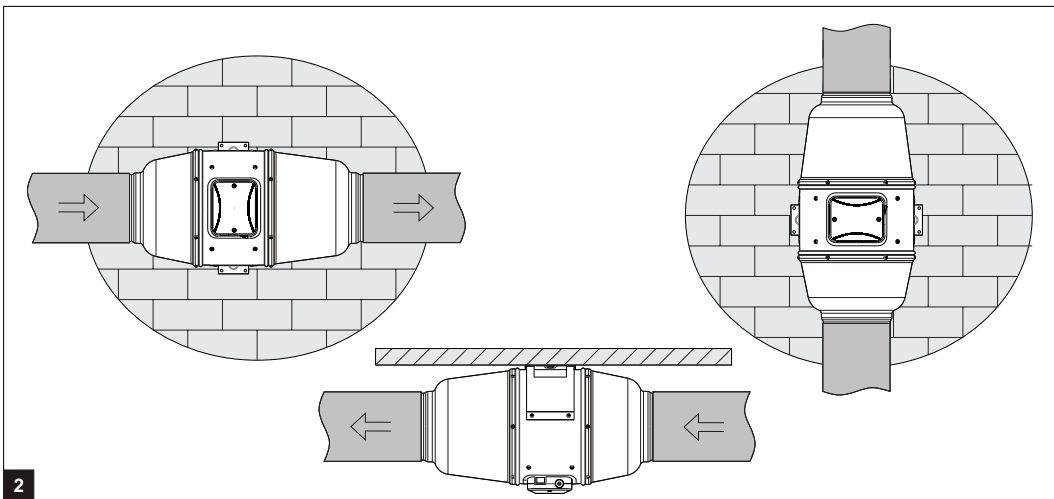
- in case the customer fails to provide the product in complete according to the package contents specified in the User Manual or other relevant substituting document, including any components disassembled by the customer;
- in case of incompliance of the model or marking of the product with data specified on the product packaging and in the User Manual or other relevant substituting document;
- in case of non-timely technical maintenance of the product by the customer (dust, mud, oil condensate, foreign particles);
- in case of causing external damage to the product by the customer ('damage' shall not apply to external changes of the product required for the product mounting);
- in case of altering the product design or further reworking of the product;
- in case of replacing and using parts, units and components of the product not prescribed by the manufacturing company;
- in case of the product misuse;
- in case of the customer's violating product operation rules;
- in case of connecting the product to electric mains of voltage exceeding voltage value specified in the User Manual;
- in case of step voltage that resulted in the product failure;
- in case of the customer's performing unauthorised repair of the product;
- in case of performing repair of the product by third persons unauthorized by the manufacturing company;
- in case of warranty period (service life) expiry;

in case of the customer's violating transportation rules assuring prevention of damaging and/or destruction of the product;  
in case of the customer's violating product storage rules;  
in case of performing unlawful actions by third persons with respect to the product;  
in case of force majeure (fire, flood, earthquake, war, hostilities of any kind, blockade);  
in case of absent seals, provided such seals are prescribed by the User Manual or other relevant substituting document;  
in case of unavailable warranty card;  
in case of unavailable payment document to confirm the purchase with indication of the sale date.

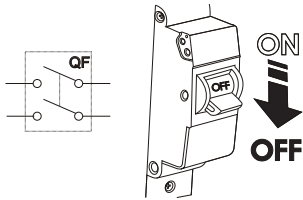
The manufacturing company shall be responsible for defects arising through its fault prior to the moment of transferring the product to the ownership of the customer.

The manufacturing company shall not be responsible for defects arising after transferring the product to the customer and caused by the customer's violating the rules of transportation, storage, assembly and operation of the product, or by actions of third persons, an accident or force majeure circumstances.

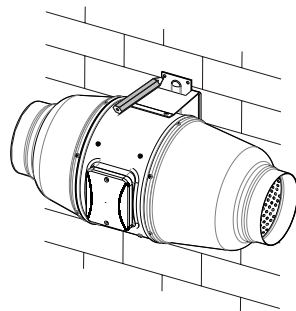
The manufacturing company shall not be responsible for damage to health and property of the customer caused by the customer's violating the User Manual or other relevant substituting document; other use of the product by the customer other than its intended use, or by failure of the customer to comply with warnings and other information on the product specified in the User Manual or other relevant substituting document, or by the customer's violating the rules of transportation, storage, mounting, maintenance and operation of the product.



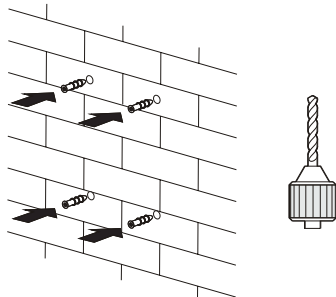




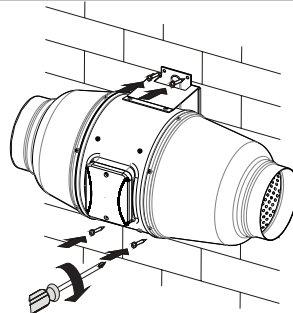
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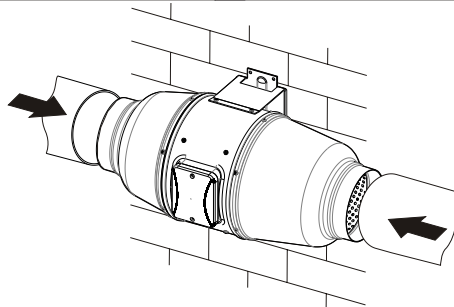
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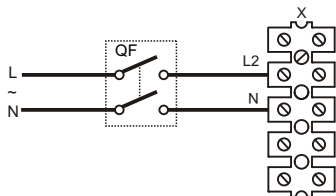
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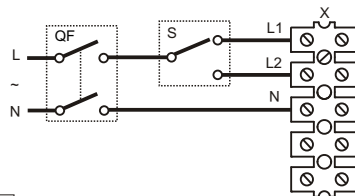
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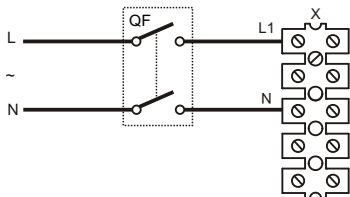
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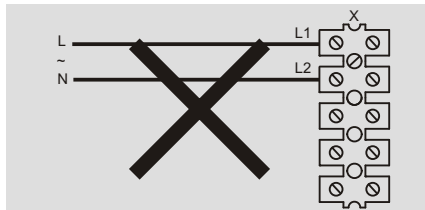
9 MAX



10 MAX / MIN

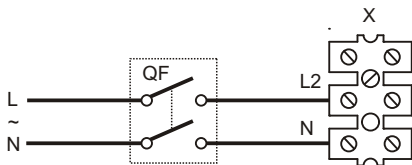


11 MIN

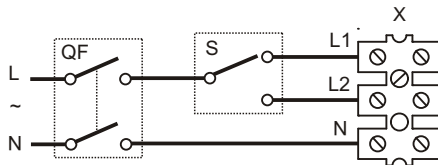


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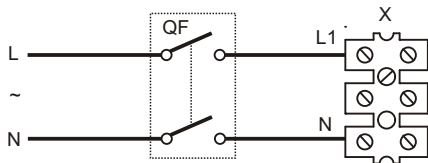
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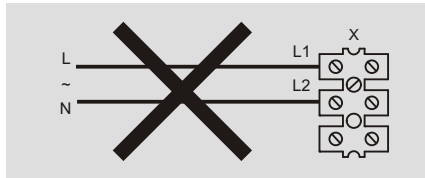
13 MAX



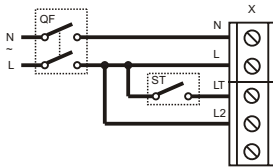
14 MAX / MIN



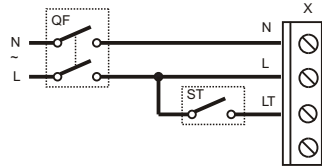
15 MIN



16

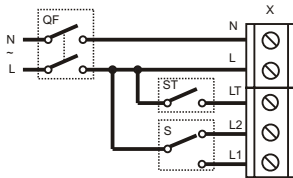


terminal block for 5 contacts

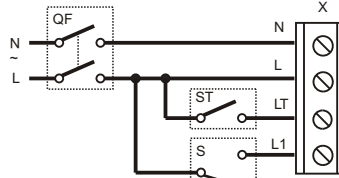


terminal block for 4 contacts

17 MAX

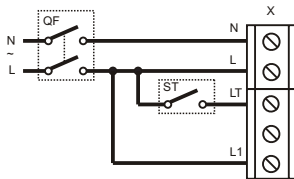


terminal block for 5 contacts

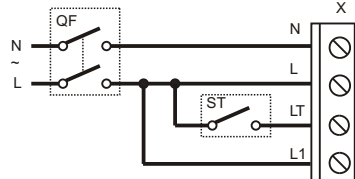


terminal block for 4 contacts

18 MAX / MIN

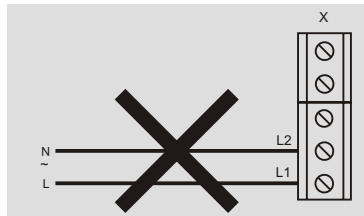


terminal block for 5 contacts

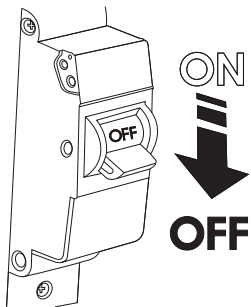


terminal block for 4 contacts

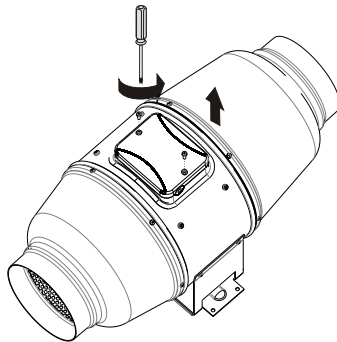
19 MIN



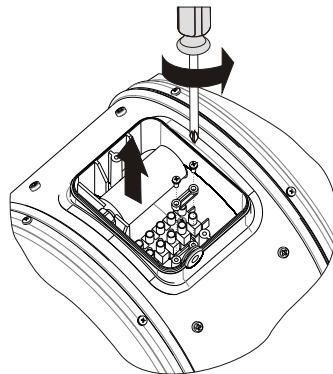
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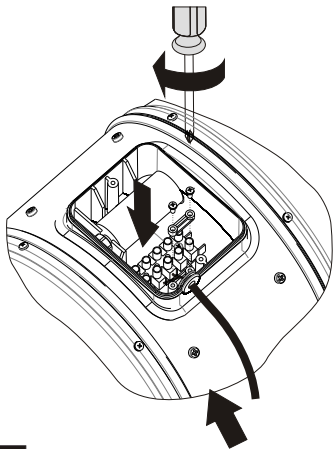
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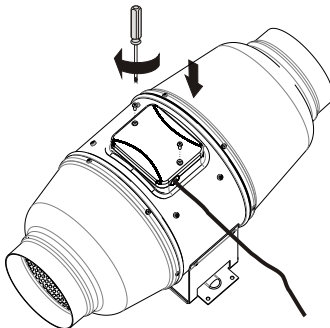
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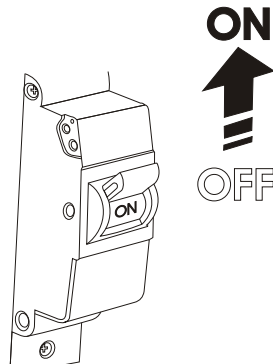
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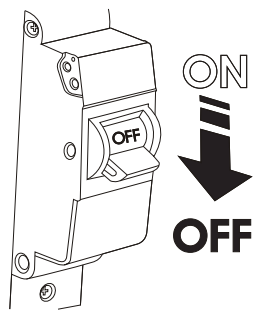
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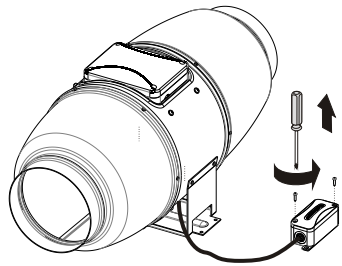
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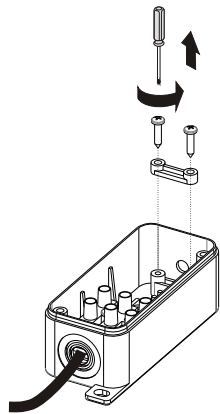
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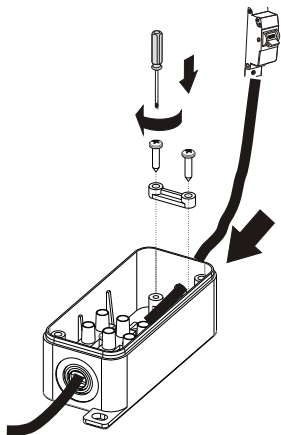
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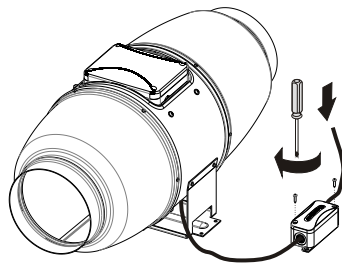
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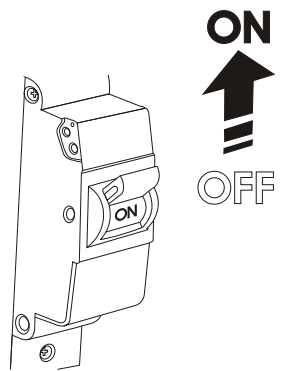
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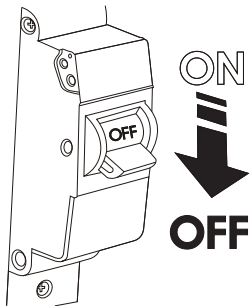
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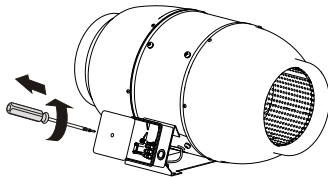
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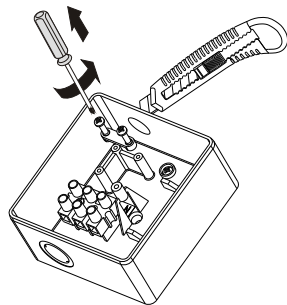
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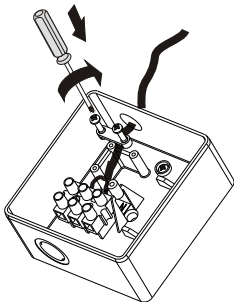
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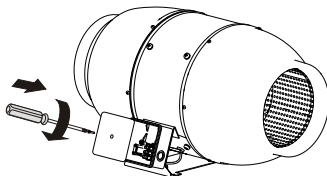
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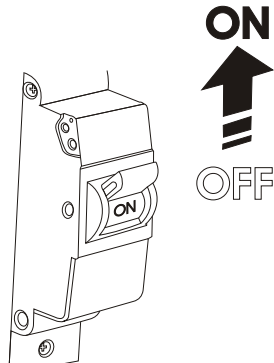
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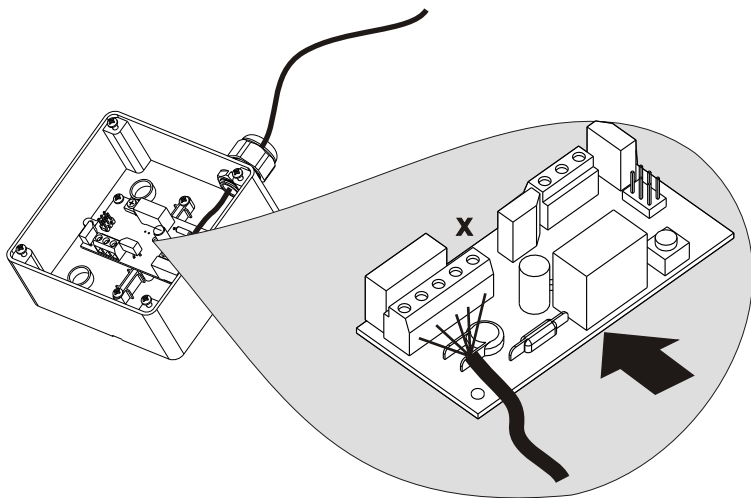
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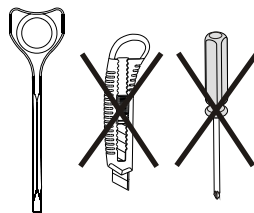
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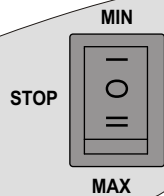
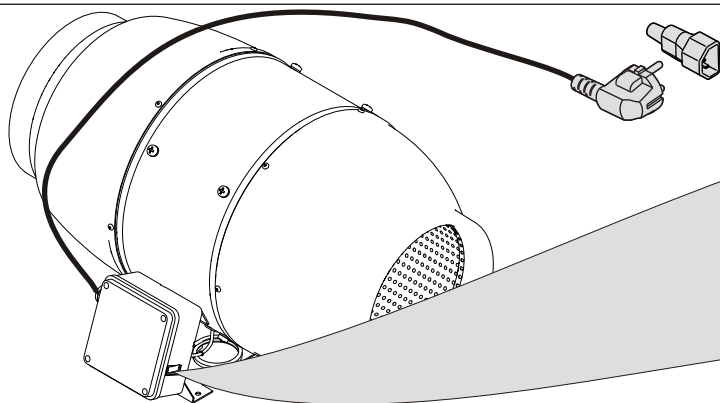
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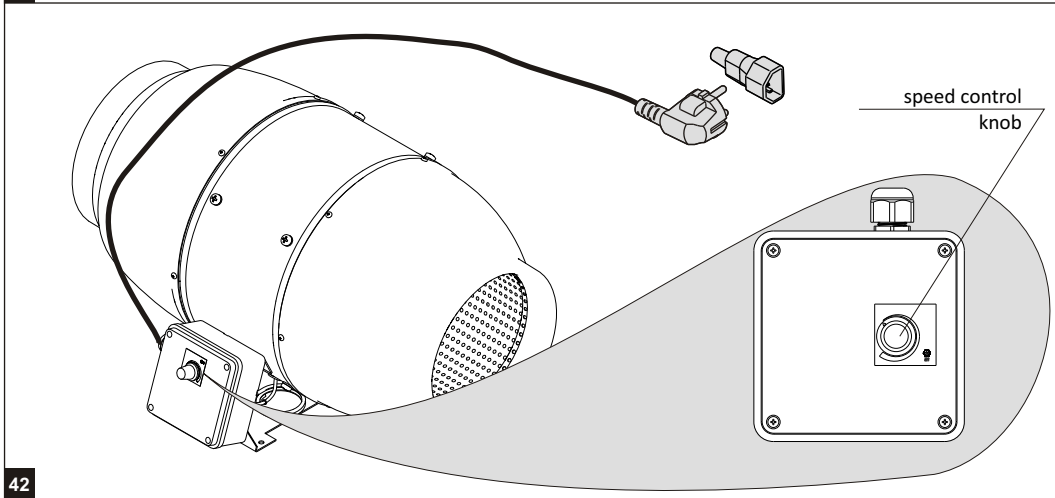
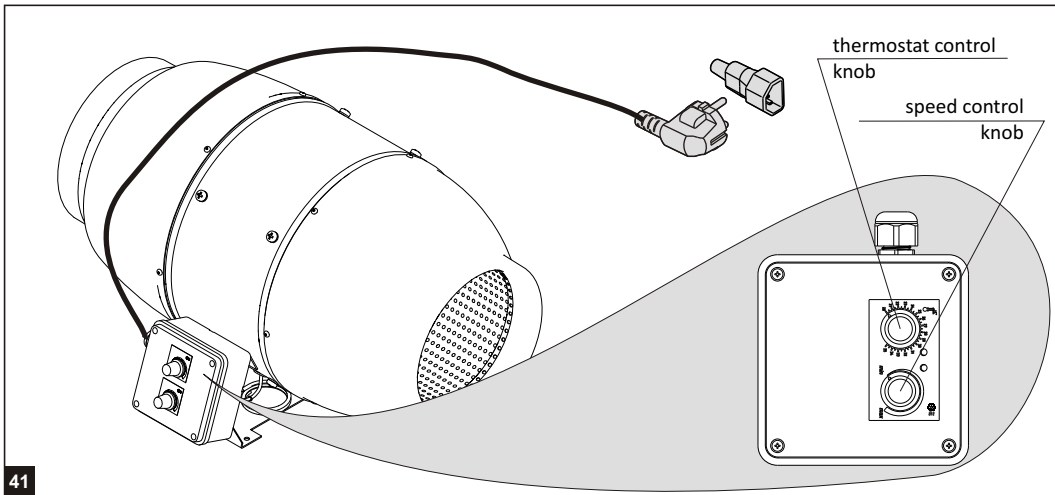
2 min 30 min



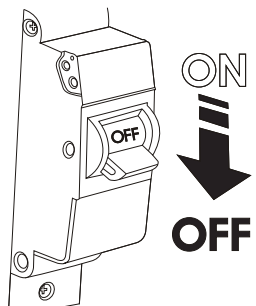
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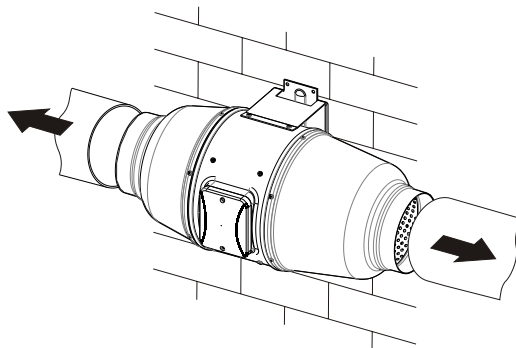
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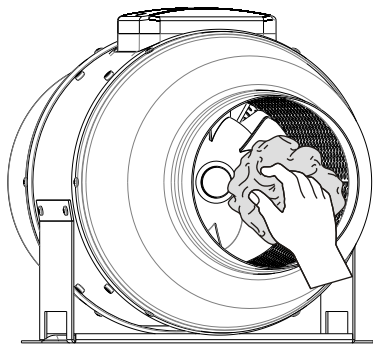




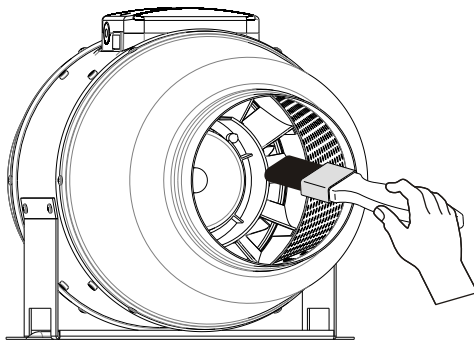
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