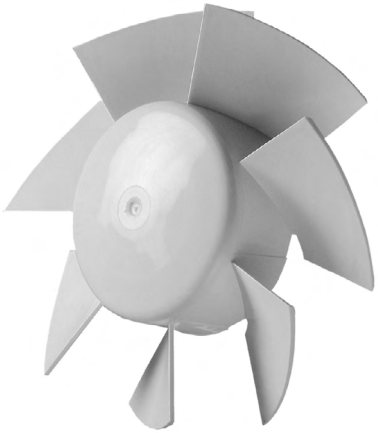
- VKO
- VKO1
- M
- MA
- M1
- M3
- MAO1
- MAO2
- M1OK
- R
- R1
- K
- K1
- PF
- PF1
- F
- F1
- D
- D1
- LD
- LD1
- S
- S1
- X
- X1
- Xstar
- Silenta-M
- Silenta-S



EN

AXIAL FAN
User's manual

VENTS

www.ventilation-system.com

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

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 Vents VKO, VKO1, M, MA, M1, M3, MAO1, MAO2, M1OK2, R, R1, K, K1, PF, PF1, F, F1, D, D1, LD, LD1, S, S1, X, X1, Xstar, Silenta-M, Silenta-S 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.



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



PLEASE READ THE USER'S MANUAL CAREFULLY PRIOR TO INSTALLING, CONNECTION TO POWER MAINS AND OPERATING THE UNIT.
THE MANUFACTURING COMPANY SHALL NOT BE RESPONSIBLE FOR DAMAGE TO HEALTH AND PROPERTY OF THE CUSTOMER CAUSED BY THE CUSTOMER'S VIOLATING THE USER'S MANUAL.
FOLLOW THE USER'S MANUAL REQUIREMENTS TO ENSURE DURABLE OPERATION OF THE UNIT, ITS MECHANICAL AND ELECTRICAL RELIABILITY.
KEEP THIS USER'S MANUAL.

This unit is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the unit by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the unit.
This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
Cleaning and user maintenance shall not be done by children without supervision.
Children shall not play with the appliance.

Connection to the mains must be made through a disconnecting device, which is integrated into the fixed wiring system in accordance with the wiring rules for design of electrical units, and has a contact separation in all poles that allows for full disconnection under overvoltage category III conditions.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a safety hazard.

Ensure that the unit is switched off from the supply mains before removing the guard.

CAUTION! The unit must be installed at a distance of at least 2.3 m from the floor.

All operations described in this manual must be performed by qualified personnel only, properly trained and qualified to install, make electrical connections and maintain ventilation units.

Do not attempt to install the product, connect it to the mains, or perform maintenance yourself.

This is unsafe and impossible without special knowledge.

Disconnect the power supply prior to any operations with 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.

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

Connection of the unit to power mains is allowed by a qualified electrician with a work permit for the electric units up to 1000 V after careful reading of the present user's manual.
Check the unit for any visible damage of the impeller, the casing, and the grille 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 motor jam and excessive noise.
Misuse of the unit and any unauthorised modifications are not allowed.
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 information in this user's manual was 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.
Never touch the unit with wet or damp hands.
Never touch the unit when barefoot.
BEFORE INSTALLING ADDITIONAL EXTERNAL DEVICES, READ THE RELEVANT USER MANUALS.

DELIVERY SET

Fan	– 1 pc.
Screws and dowels	– 4 pcs. (except for VKO/VKO1/MAO1/MAO2/M1OK2 models)
Screw, bolt, nut, plastic nut	– 4 pcs. of each (for MAO1/MAO2/M1OK2 models)
Sealant	– 2 pcs. (for MAO1/MAO2/M1OK2 models)
Connecting screws	– 2 pcs. (for MAO1/MAO2/M1OK2 models)
Plastic screwdriver	– 1 pc. (only for models with a timer)
User's manual	– 1 pc.
Packing box	– 1 pc.

BRIEF DESCRIPTION

The product is an axial fan for exhaust ventilation of small and medium-sized premises.
The fans of the VKO/VKO1 series can be used for both supply and exhaust ventilation and are installed in the ventilation duct.
The fan (except for the VKO/VKO1/MAO/M1OK series) is designed for wall or ceiling mounting.
The fans of the VKO/VKO1 series are designed for installation in the ventilation duct.
The fans of the MAO/M1OK series are designed for window installation.
The fan is rated for continuous operation.

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

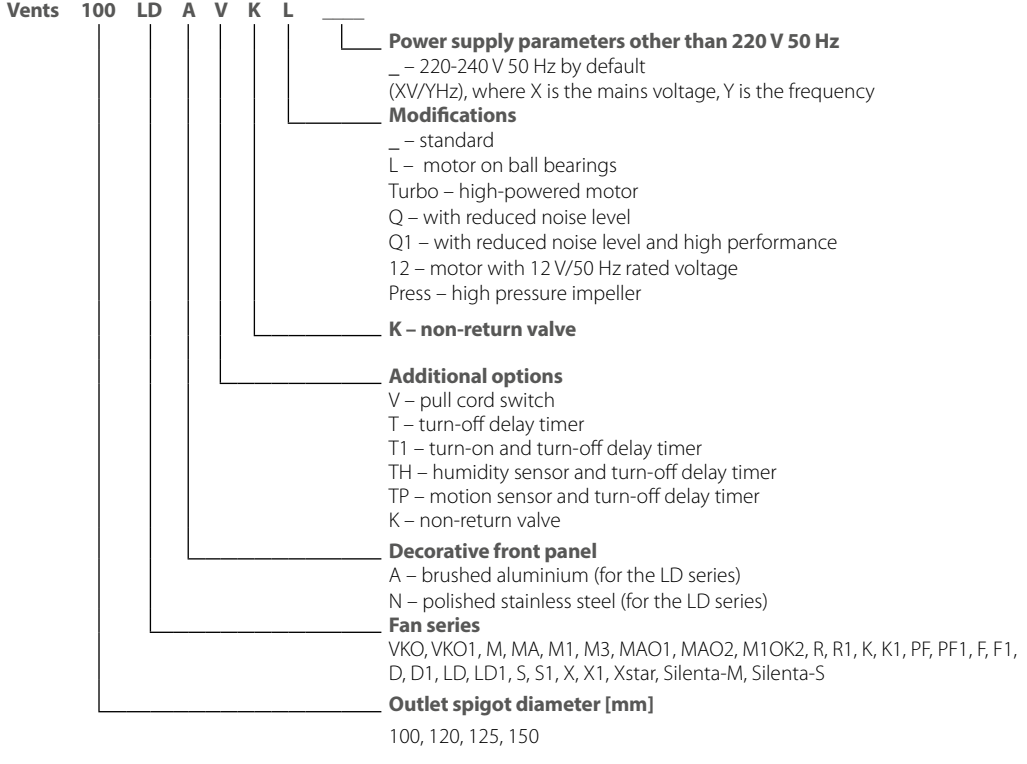
OPERATION GUIDELINES

The fan is connected to 220...240 V, 50 Hz or 220 V, 60 Hz, or 127 / 220 V, 60 Hz, or 120 V, 60 Hz, or 12 V, 50 Hz single-phase AC mains depending on the model and is designed for continuous operation without disconnection from power mains.
Hazardous parts access and water ingress protection rating: VKO, VKO1 series – IPX4; MA, Xstar, R, R1, MAO1, MAO2, M1OK2, X, X1 series – IP24; K, K1, D, D1, M, PF, PF1, M1, M3, S, S1, F, LD, LD1, F1, Silenta-M, Silenta-S series – IP34.
The fan is rated for operation at ambient temperatures ranging from +1 °C to +40 °C.
The unit is rated as a Class II 220...240 V, 50 Hz or 220 V, 60 Hz, or 127 / 220 V, 60 Hz, or 120 V, 60 Hz, or Class III 12 V, 50 Hz electrical appliance.

PRODUCT SALES

The product is sold in specialized and retail trade organizations.

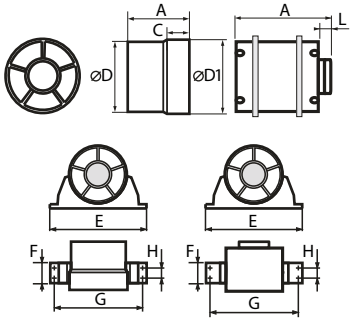
DESIGNATION KEY



MOUNTING AND SET-UP

The designation of the fan, schematic representation of its appearance, overall and mounting dimensions, as well as design features are given below.

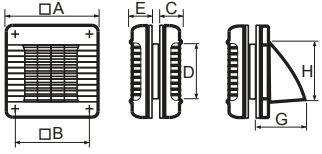
VKO, VKO1



Model	A	D1	D	C	L	E	G	H	F
100 VKO/VKO1	91/113	104	100	31	28	160	144	29	45
125 VKO/VKO1	93/118	129	125	31	28	185	169	29	45
150 VKO/VKO1	108/128	154	150	46	28	200	184	29	45

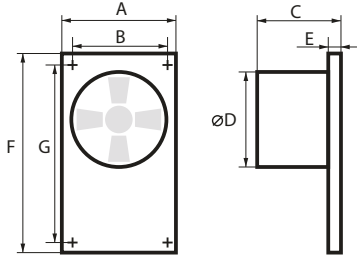
The VKOk and VKO1k models are equipped with a mounting bracket for mounting on a flat surface.

MAO1, MAO2, M1OK2



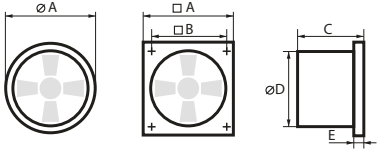
Model	A	B	C	D	E	G	H
125 MAO1	190	173	58	125	30	–	–
125 MAO2	190	173	–	125	30	123	159
150 MAO1	210	195	66	150	30	–	–
150 M1OK2	190	173	–	150	13	123	159

M3, F, F1



Model	A	B	C	D	E	F	G
100 M3	185	155	86	100	30	256	226
125 M3	185	155	89	125	30	256	226
150 M3	185	155	114	150	30	256	226
100 F/F1	182	152	104/128	100	13	252	226
125 F/F1	182	152	110/134	125	15	252	226

K, K1, D, D1, M, MA, M1, LD, LD1, S, S1, PF, PF1, X, X1, Xstar, R, R1, Silenta-M, Silenta-S



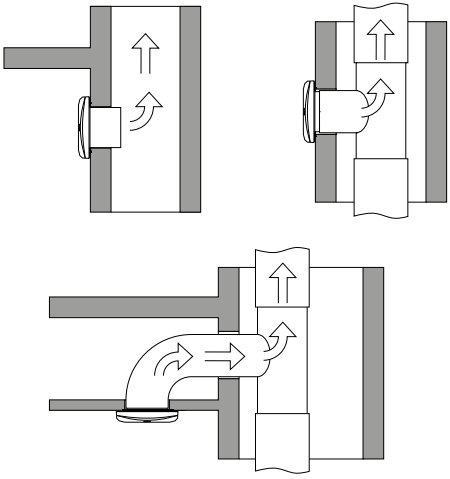
Model	A	B	C	D	E
100 K/K1	154	110	105/109	100	15/19
125 K/K1	187	142	112/116	125	15/19
150 K	250	214	127	150	15
100 D/D1	150	120	108/93	100	12,5
120 D	176	140	106	120	12
125 D/D1	176	140	114/96	125	12,5
150 D	205	165	132	150	13
100 M	159	135	88,5	100	23
125 M	180	150	94	125	25
150 M	206	182	106	150	25,5
100 MA/M1	165	150	92	100	30
125 MA/M1	190	173	98	125	30
150 MA/M1	212	195	114	150	30
100 LD/LD1	152	120	126/111	100	30
120 LD	177	140	135	120	34
125 LD/LD1	177	140	135/116	125	34
150 LD	206	165	154	150	36
100 S/S1	150	120	108/93	100	12
120 S	176	140	107	120	12
125 S/S1	176	140	114/96	125	13
150 S	205	165	132	150	14
100 PF/PF1	141	–	104/128	100	13
125 PF/PF1	166	–	110/134	125	15
150 PF/PF1	186	–	125/146	150	15

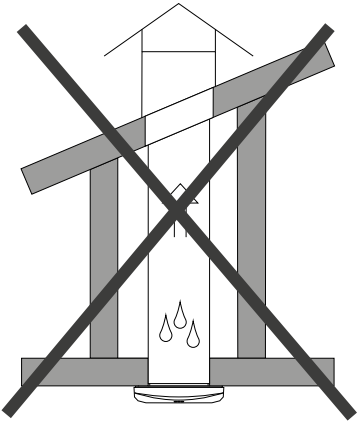
100 X	152	120	125	100	30
125 X	177	140	143	125	42
150 X	205	165	160	150	42
100 X1	152	120	108	100	11,5
120 X1	177	140	114	120	12,5
125 X1	177	140	114	125	12,5
150 X1	205	165	132	150	13
100 Xstar	152	120	132	100	36
125 Xstar	177	140	143	125	42
150 Xstar	205	165	160	150	42
100 R	150	122	125	100	36
100 R1	150	122	114	100	25
100 Silenta-M	159	135	88,5	100	23
125 Silenta-M	180	150	94	125	25
150 Silenta-M	206	182	106	150	25,5
100 Silenta-S	150	120	108	100	12
120 Silenta-S	170	140	114	120	13
125 Silenta-S	170	140	114	125	13
150 Silenta-S	205	165	132	150	14

For fans with a K option, the overall length of the outlet pipe increases by 14 mm.

The fan shown in the figures may slightly differ from your model, while the installation sequence is maintained.

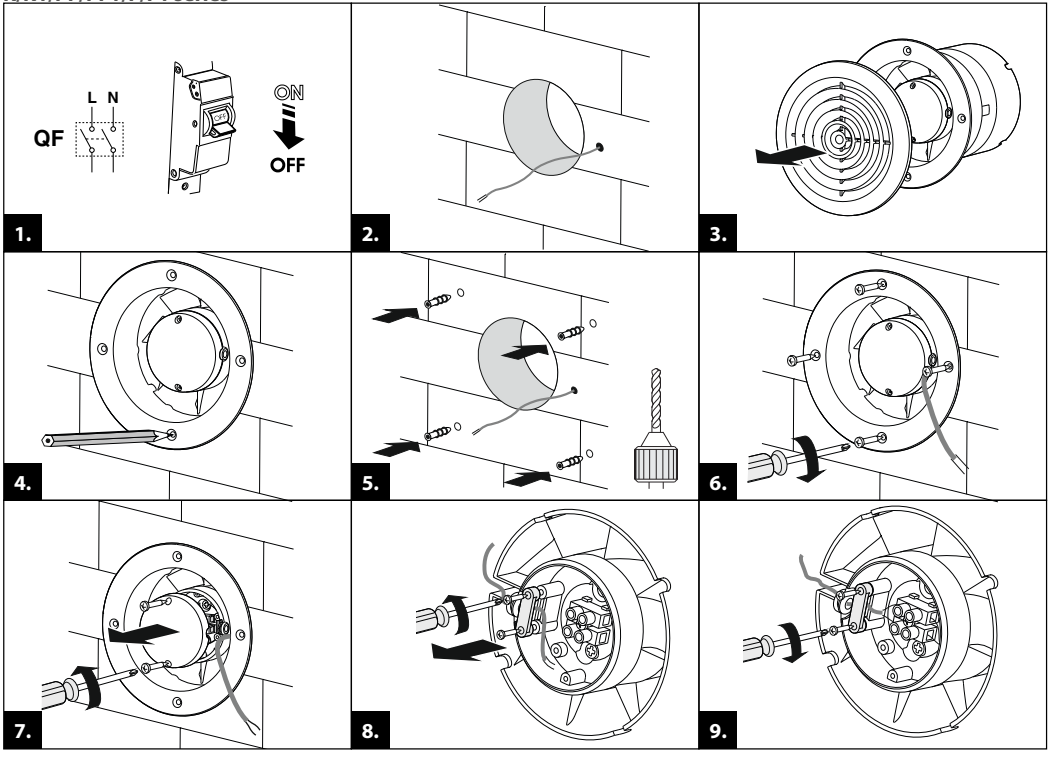
The fan is designed for wall or ceiling mounting with direct air exhaust to the ventilation shaft or into the round air duct of matching diameter.

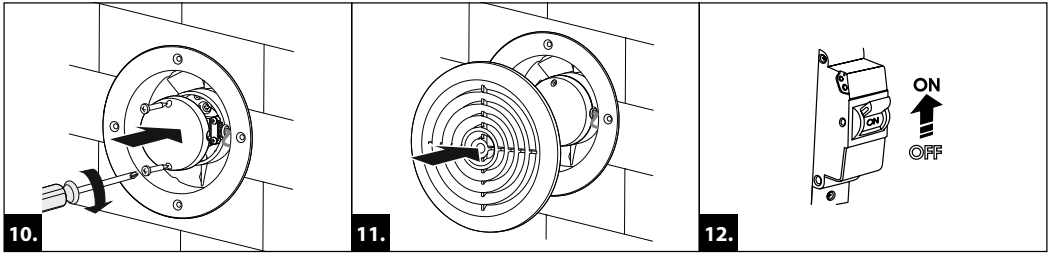




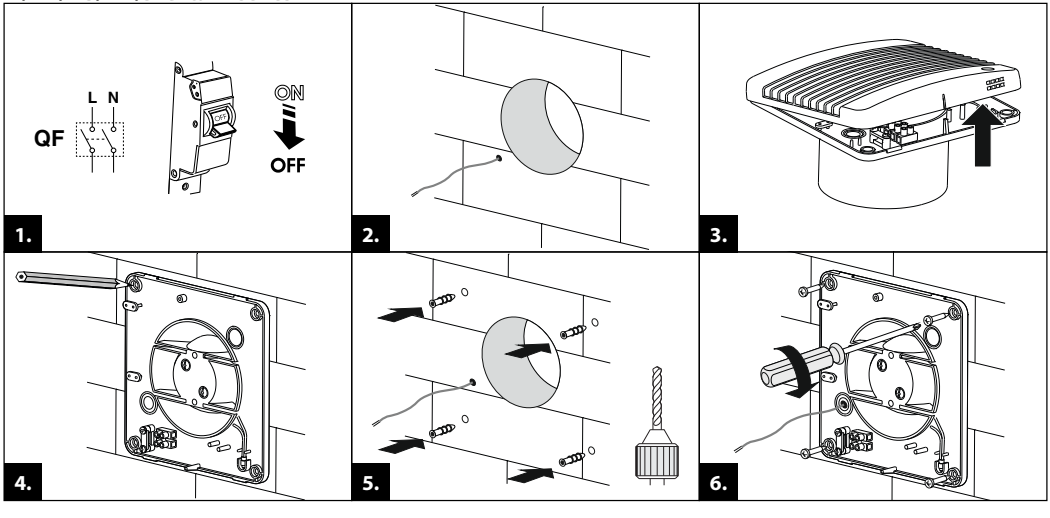
The fan mounting sequence is shown in figures.

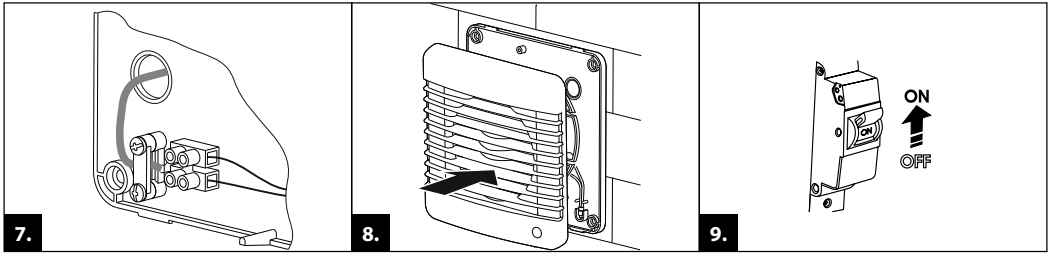
K/K1/PF/PF1/F/F1 series



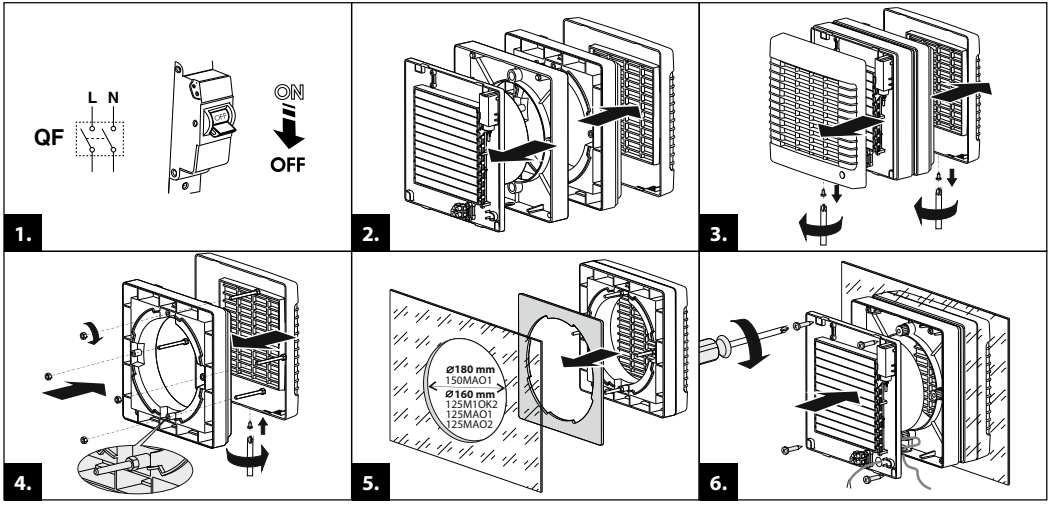


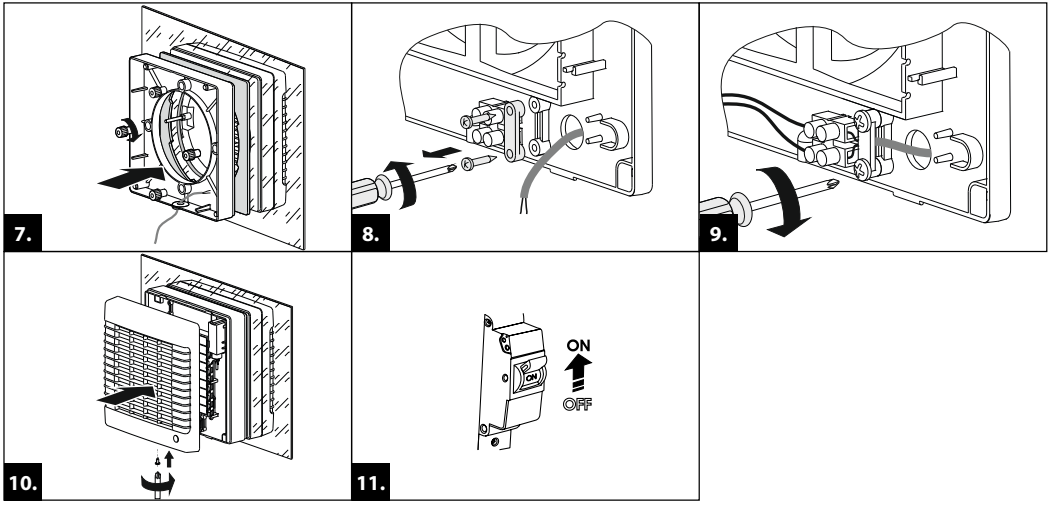
M/M1/M3/MA/Silenta-M series



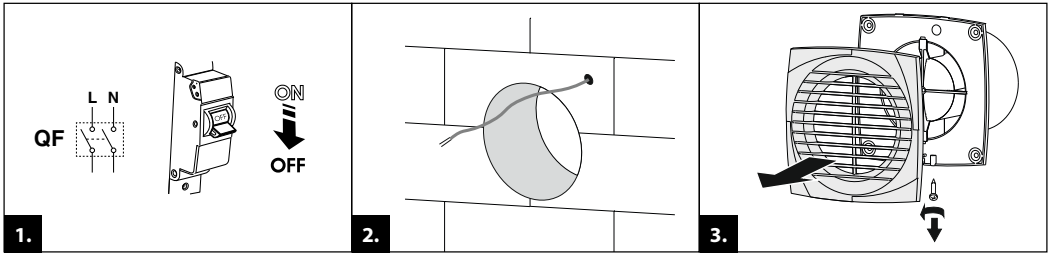


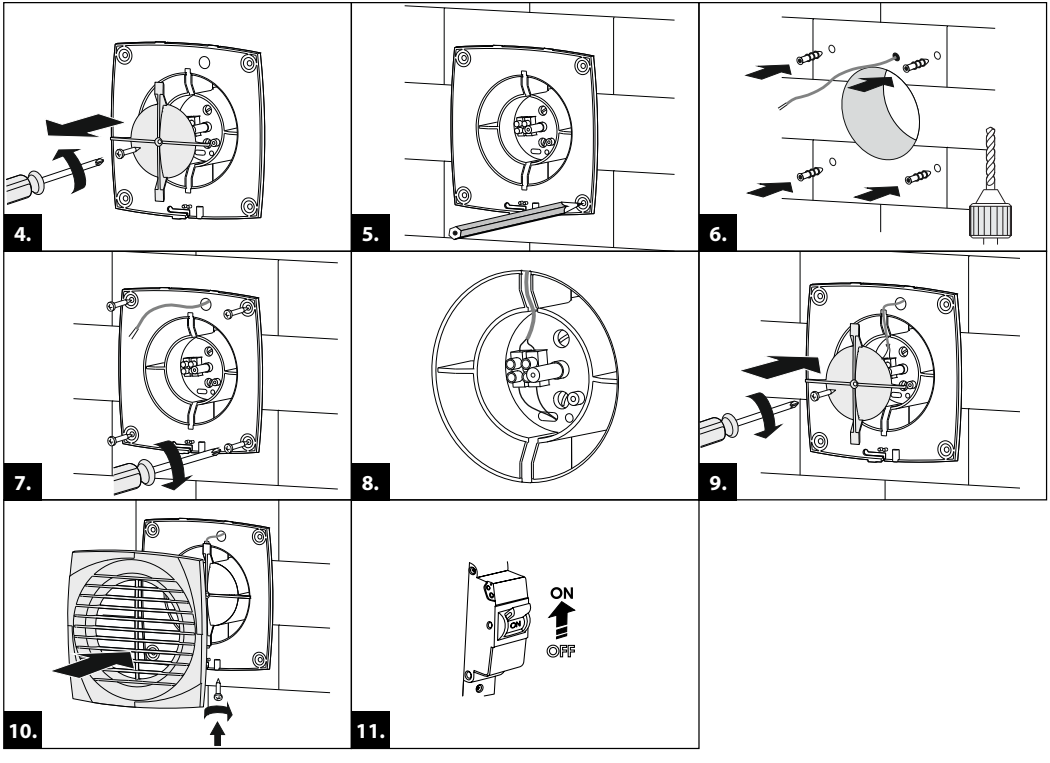
MAO/M1OK series



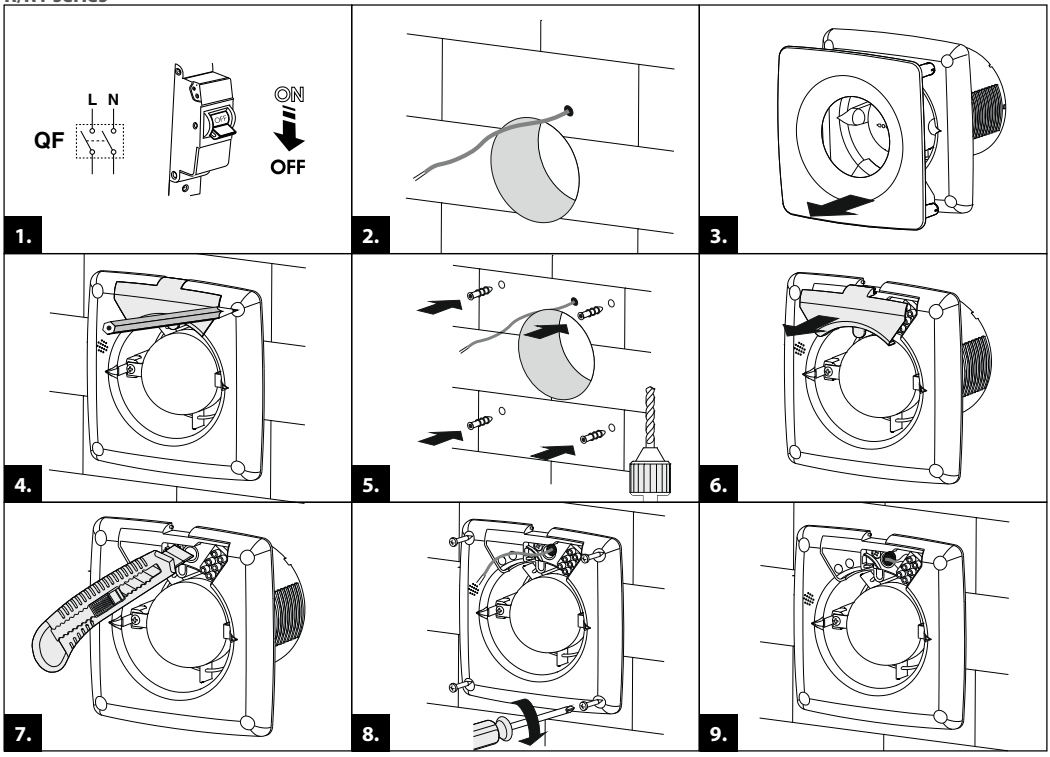


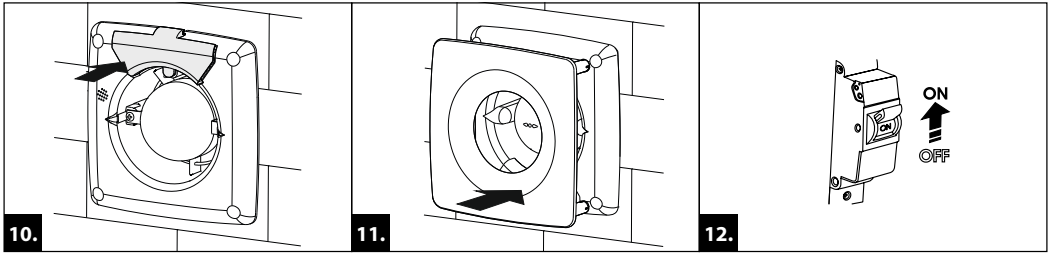
D/D1/LD/LD1/S/S1/X/X1/Xstar/Silenta-S series




4.
5.
6.
7.
8.
9.
10.
11.
ON
OFF

R/R1 series





ELECTRONICS OPERATION ALGORITHM

The fan with the T timer activates upon control voltage application to input LT (ST, SL) by an external switch (e.g. indoor light switch). After the control voltage is off, the fan continues to operate within the set time period adjustable from 2 to 30 minutes by the timer.

The fan with the T1 timer – when the control voltage is applied to the LT terminal by an external switch (for example, switching on the room light), the turn-on delay timer is activated, and the fan does not start.

After the turn-on delay time runs out, the fan starts to run. Turn-on delay time value Tz is adjustable in two ranges – from 10 seconds to 90 seconds and from 2 minutes to 30 minutes.

Select the adjustment range using the jumper on the timer board.

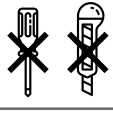
After the control voltage is off, the fan continues to operate within the set time period adjustable from 2 to 30 minutes by the timer.

The fan with the timer and the humidity sensor TH – the fan starts after the control voltage is supplied to the input LT (ST, SL) or if indoor humidity level H exceeds the set point adjustable from ~60 % to ~90 %.

After the control voltage is off or the humidity level has decreased, the fan will keep running within the time set by the timer ranging from 2 to 30 minutes.

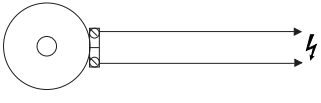
THE TIMER BOARD IS UNDER MAINS VOLTAGE.
MAKE SURE THE FAN IS COMPLETELY DISCONNECTED FROM THE POWER MAINS BEFORE ADJUSTING

The fan with the timer and the TP motion sensor – the fan starts when a person moves at a distance of 1 to 4 meters with a horizontal viewing angle of the sensor of 100°.
After the movement stops, the fan continues to operate within the set time period adjustable from 2 to 30 minutes by the timer.
WARNING! The fans rated for 12 V power voltage (stated on the packing box and on the fan casing) connect to 12 V power mains only!
The fans rated for 220 V, 60 Hz or 127 / 220 V, 60 Hz, or 120 V, 60 Hz power mains depending on the model (stated on the packing box and on the fan casing) connect to 220 V, 60 Hz, or 127 / 220 V, 60 Hz, or 120 V, 60 Hz (depending on the model) power mains only!

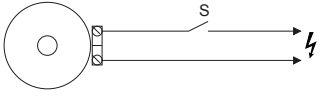


DO NOT USE A METAL SCREWDRIVER, KNIFE, ETC. FOR ADJUSTMENT OPERATIONS NOT TO DAMAGE THE CIRCUIT BOARD

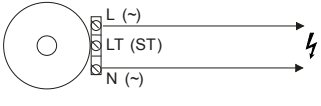
Wiring diagram for a fan with a built-in switch and a fan with a motion sensor.



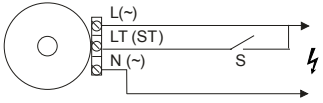
Wiring diagram for a fan without a built-in switch.



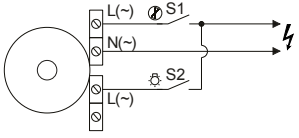
Wiring diagram for a fan equipped with a timer/timer and a humidity sensor, with a built-in switch.



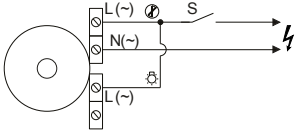
Wiring diagram for a fan equipped with a timer/timer and a humidity sensor, without a built-in switch.



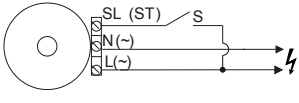
Wiring diagram of the Xstar fan with separate switching on of the fan and the built-in lamp.



Wiring diagram of the Xstar fan with the simultaneous switching on of the fan and the integrated lamp.



Wiring diagram of the P and P1 fan equipped with a timer/timer and a humidity sensor.

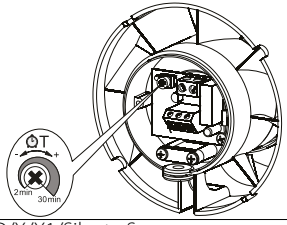


Terminal designations on wiring diagrams:

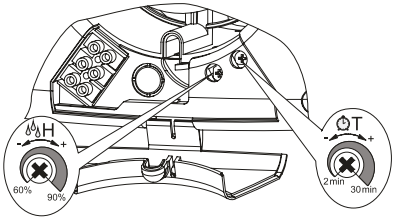
- **L** – line
- **N** – neutral
- **S** – external switch
- **S1** – external fan switch
- **S2** – external lamp switch

For T, TH and TP timers

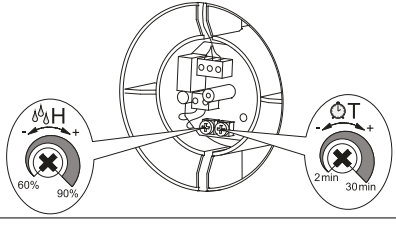
VKO1/F1/PF1



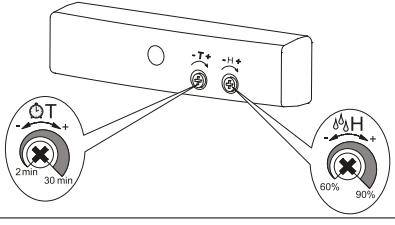
R/R1



D/D1/S/S1/LD/X/X1/Silenta-S

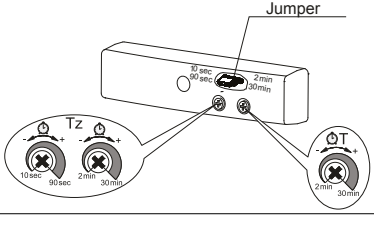


M/M1/M3/MA/MAO/M1OK2/Silenta-M

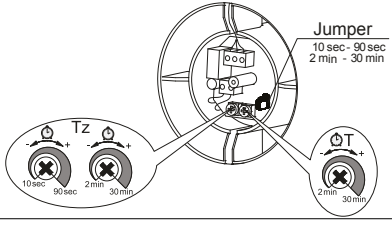


For T1 timers

M/M1/M3/MA/MAO/M1OK2/Silenta-M



D/D1/S/S1/LD/X/X1/Silenta-S



TROUBLESHOOTING

Problem	Possible reasons	Troubleshooting
When the unit is connected to power mains, the fan does not rotate and does not respond to any controls.	No power supply.	Make sure the power supply line is connected correctly, otherwise troubleshoot the connection error.
	Internal connection fault.	Contact the Seller.
Low air flow.	The ventilation system is clogged.	Clean the ventilation system.
Increased noise, vibration.	The impeller is clogged.	Clean the impeller.
	The fan is not secured well or is not mounted properly.	Troubleshoot the installation error.
	The ventilation system is clogged.	Clean the ventilation system.

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 Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council 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.
- Damage to the unit casing 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

MAINTENANCE

Disconnect the fan from power supply prior to maintenance and servicing operations. The fan surfaces must be regularly cleaned from dirt and dust. To clean the fan, use a soft cloth or a brush wetted in a mild detergent solution. Do not allow water or liquid come into contact with electric components. Wipe the surfaces dry after cleaning.

Certificate of acceptance

The fan is recognized as serviceable.

Quality Inspector's Stamp _____

Seller _____

(name and stamp of the seller)

Purchase Date _____