

AXIAL FAN

Bravo

EN

USER'S MANUAL

BLAUBERG

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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 Bravo 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.

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.

Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.

The appliance may adversely affect the safe operation of appliances burning gas or other fuels (including those in other rooms) due to back flow of combustion gases. These gases can potentially result in carbon monoxide poisoning. After installation of the unit the operation of flued gas appliances should be tested by a competent person to ensure that back flow of combustion gases does not occur.

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.

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

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.
Do not install or use the product until all construction and finishing work has been completed in the room where it is to be installed.
BEFORE INSTALLING ADDITIONAL EXTERNAL DEVICES, READ THE RELEVANT USER MANUALS.



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

DELIVERY SET

Fan	- 1 pc.
Protective screen	- 1 pc.
Screws with dowels	- 4 pcs.
Plastic screwdriver (only for the models with a timer T, TR, H, IR)	- 1 pc.
User's manual	- 1 pc.
Packing box	- 1 pc.

BRIEF DESCRIPTION

The unit described herein is an axial fan for exhaust ventilation of small to medium-sized premises heated during winter. It is designed for wall or ceiling mounting. The fan is designed for connection to ø 100, 125 and 150 mm air ducts.

OPERATION GUIDELINES

The fan is designed to be connected to a single-phase AC power supply in accordance with the specifications indicated on the housing and/or on the product label, and is intended for continuous operation without being disconnected from the power supply.
Air motion direction in the system must match the pointer on the fan casing.
Hazardous parts access and water ingress protection rating is IP34.
The fan is rated for operation at the ambient temperature ranging from +1 °C up to +40 °C.
The unit is rated as a Class II electrical appliance.

DESIGNATION KEY

Bravo Max Gold 100 S e 12

Voltage:
12: motor with 12 V/50 Hz rated voltage

Variations of the base model:
_: ball bearing and backdraft damper KO by default
e: sliding bearing without a backdraft damper
e1: sliding bearing and a backdraft damper with a membrane of light polymer
e2: ball bearing without a backdraft damper
K1: ball bearing and a plastic petal backdraft damper
e K1: sliding bearing and a plastic petal backdraft damper

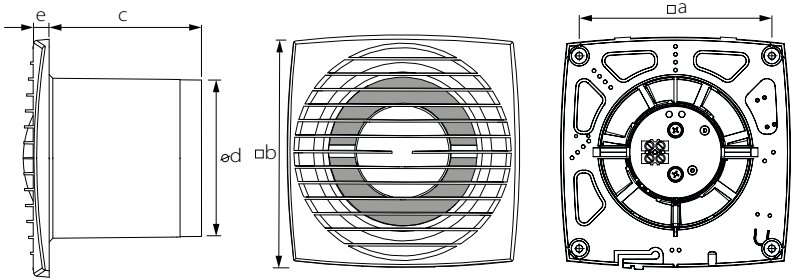
Additional options:
S: pull cord switch
T: turn-off delay timer
TR turn-on and turn-off delay timer
H: humidity sensor and turn-off delay timer
IR: motion sensor

Outlet duct diameter [mm]
100/120/150

Colour:
_: white
Vintage
Platinum
Chrome
Gold

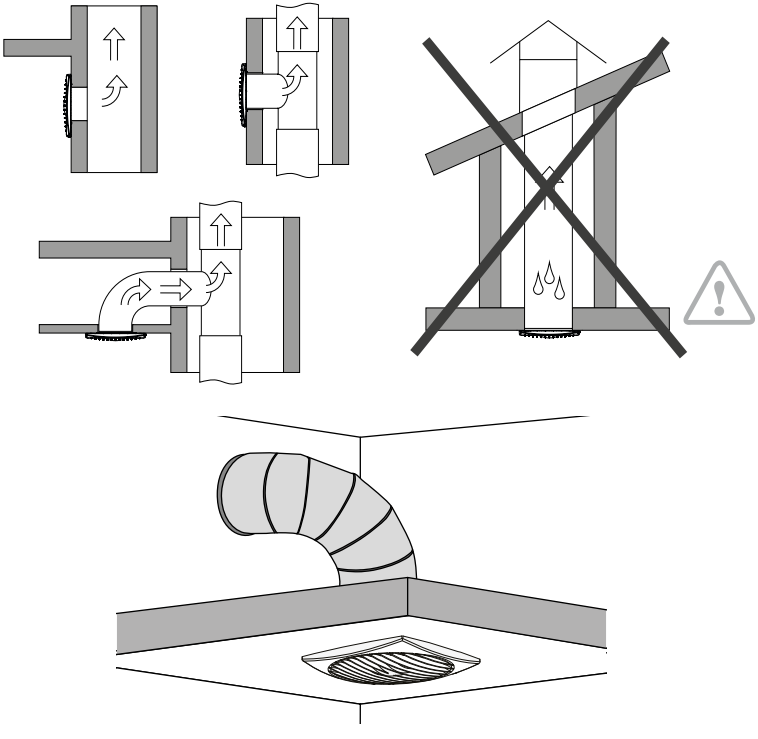
Motor modification:
Max: high-powered motor
Still: low-noise motor

Fan series
Bravo; Bravo-Lux (with LED operation indicator)



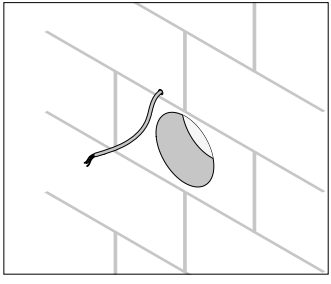
Model	Dimensions [mm]					Weight [kg]
	a	b	c	d	e	
Bravo 100	150	122	102	100	17	0.56
Bravo 125	176	144	104	125	17	0.73
Bravo 150	205	174	124	150	19	0.9

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.

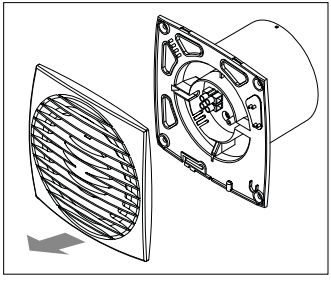


MOUNTING AND SET-UP

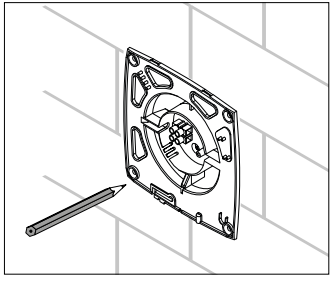
Cut off power supply and make sure electricity has been turned off



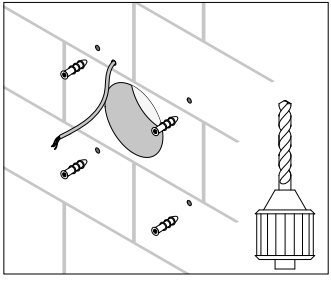
1. Run the power cable to the vent hole.



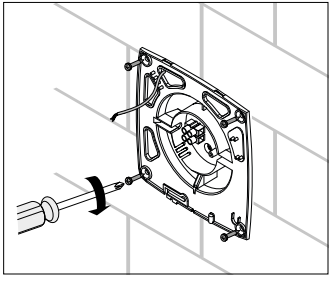
2. Remove the front panel from the fan (in models with the IR option, hold the motion sensor).



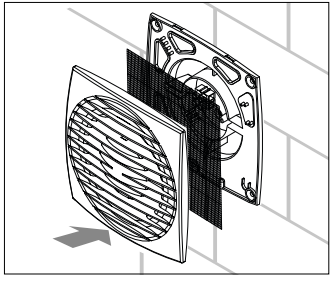
3. Mark holes for mounting the fan.



4. Drill holes for mounting the fan.

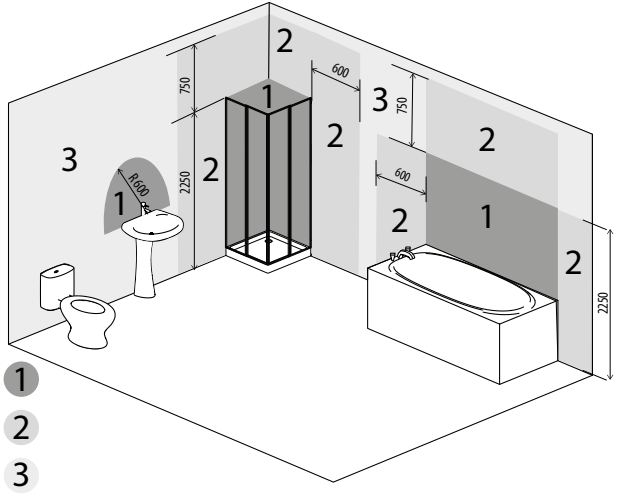


5. Install the fan and connect it to the maine power supply according to the wiring diagram.



6. Install the front panel and the protective screen on the fan casing.

The unit with a protection rating against access to hazardous parts and water ingress IP34 is allowed to be installed in zone 2, according to IEC 60364-7-701:2019.



CONNECTION TO POWER MAINS

Terminal designations on wiring diagrams

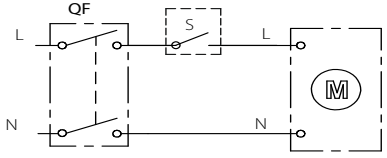
L — phase (220-240 V only)
N — neutral (220-240 V only)
LT — timer control line
S — external switch
QF — automatic circuit breaker

WARNING! Fans rated for 12 V (as specified on the fan packing and casing) must be connected to ~12 V electric mains only!

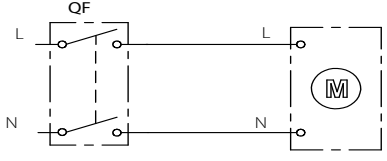
WARNING! The power cable may only be laid through the hole in the casing provided by the manufacturer. Laying the power cable through a manually drilled hole will not be the liability of the manufacturer and will void the warranty. The wire must be stripped of insulation by a maximum of 8 mm.

After installation, pass this user's manual to the end user for reading.

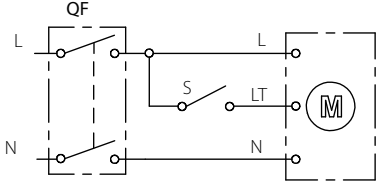
Bravo 100/125/150



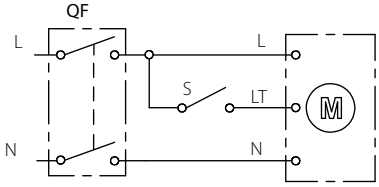
Bravo 100/125/150 S



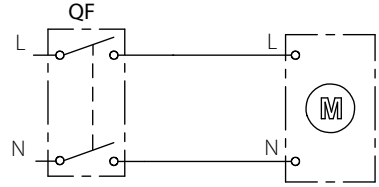
Bravo 100/125/150 T



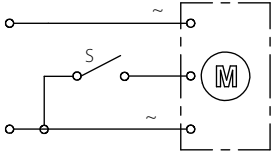
Bravo 100/125/150 H



Bravo 100/125/150 IR



Bravo 100/125/150 T/H/TR 12



ELECTRONICS OPERATION ALGORITHM

The fan with the T timer activates upon control voltage application to the **LT** input terminal by the 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 a TR timer. When control voltage is applied to input terminal **S** by the external switch (e.g. indoor light switch), the turn-on delay timer is activated. The fan blades do not rotate. The turn-on delay time is in the range from 0 to 2 minutes. The adjustment range can be selected by means of the potentiometer on the timer circuit board. Upon control voltage removal the fan continues to operate for the period of time set by the turn-off delay timer within the range from 2 to 30 minutes.

The fan with the timer and the humidity sensor H starts after the control voltage is supplied to the **LT** input terminal or if the 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. To set the maximum humidity setpoint, set the potentiometer to $\mathbf{H_{max}}$ position (90 %).

CAUTION! Connect the fans rated for 12 V power voltage (stated on the packing box and on the fan casing) to 12 V power mains only!



THE TIMER CIRCUIT IS LIVE.
MAKE SURE THE FAN IS DISCONNECTED FROM POWER SUPPLY.

FAN SETUP

T_{on} — To adjust the fan activation delay time, turn the **T_{on}** potentiometer knob clockwise (+) or counter-clockwise (-) which sets the activation delay time within the range from 0 to 2 minutes.

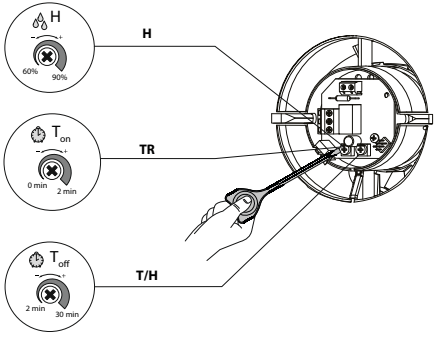
T_{off} — to adjust the fan turn-off delay time, turn the control knob **T_{off}** clockwise to increase and counter-clockwise to decrease the turn-off delay time respectively, adjustable from 2 up to 30 minutes.

H — to adjust the humidity set point, turn the control knob **H** clockwise to increase and counter-clockwise to decrease the humidity sensor set point, adjustable from 60 % up to 90 %.



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

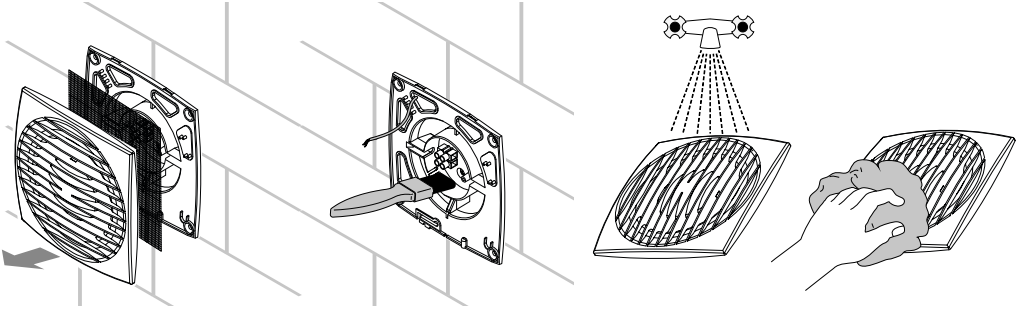
The fan delivery set includes a specially designed plastic screwdriver for fan settings adjustments. Use it to change the turn-on and turn-off delay time and the humidity set point.



TECHNICAL MAINTENANCE

The fan maintenance periodicity is at least once per 6 months.
Maintenance steps:

- Disconnect the fan from power mains and make sure electricity has been turned off.
- Remove the front panel and the protective screen, wipe the fan with a dry cloth or a brush.
- Clean the front panel under running water.
- Wipe the fan surfaces dry.
- Cover the fan with the front panel.
- Connect power supply to the fan.



CAUTION! Do not allow water or liquid come into contact with electric components!

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 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously 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

Bravo _____

Quality Inspector's Stamp _____

Seller _____
(name and stamp of the seller)

_____

Purchase Date _____

Manufacturer: Ventilation Systems LLC,
Ukraine, Kyiv, 1 M. Kotsyubynskoho Street
Address of production facilities:
Ukraine, Kyiv Region, Fastiv District, Boyarka, 36 Sobornosti Street

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