

Tower A(L)

User's manual



BLAUBERG
Ventilatoren

PURPOSE

A roof axial fan Tower A(L) enclosed into a metal casing, having impeller diameter 200 to 350 mm (hereinafter referred to as "the fan") is intended for use in ventilation systems of housing, public and industrial premises heated during winter.

The air coming out of the fan should not contain dust, other solid admixtures, sticky substances, and fibrous materials.

The ambient temperature should not exceed the limits indicated in Table 1.

The fan should be installed vertically on the output air duct shaft

And may be used only for exhaust ventilation.

The fan is designed for long-term operation without disconnecting off the mains.

By the type of protection against electrical shock the fans belong to Class I.

The degree of protection against access to the hazardous parts and water penetration is IP24 (IPX4).

THE BASIC TECHNICAL DATA

The fans' designations, their parameters, connective and mounting dimensions are provided in tab.1, 2 and on fig.1.

NOTES

Design of the fans is being constantly perfected, so some models could differ from the ones, described in this manual.

DELIVERY SET

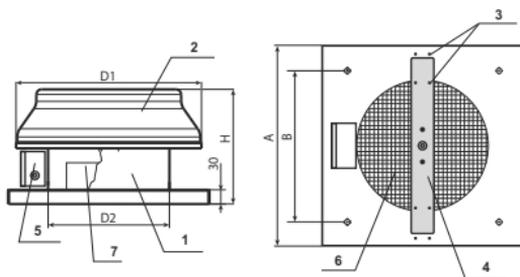
The delivery set includes:

- fan - 1 piece;
- user's manual;
- packaging.

table 1

	Tower A 200 2E		Tower A 250 2E		Tower A 250 4E		Tower A 300 2E		Tower A 300 4E		Tower A 350 4E		Tower AL 200		Tower AL 250		Tower AL 315	
V	1~230																	
Hz	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60
W	55	61	80	91	50	56	145	178	75	92	140	147	43	33	68	76	110	104
A	0.26	0.28	0.4	0.42	0.22	0.24	0.66	0.79	0.35	0.4	0.65	0.66	0.28	0.21	0.48	0.51	0.75	0.7
m ³ /h	860	875	1050	1150	800	865	2230	2280	1340	1475	2500	2650	405	470	1070	1050	1700	1650
min ⁻¹	2300	2550	2400	2990	1380	1730	2300	2410	1350	1405	1380	1700	1300	1615	1300	1450	1300	1365
dBA, 3m	50	51	60	61	55	56	60	61	58	59	62	63	32	31	48	48	54	54
°C, max.	+60	+50	+60	+50	+60	+50	+60	+50	+60	+50	+60	+50	+40	+40	+40	+40	+40	+40

figure 1



Cover 2 is not shown

- 1 - casing;**
- 2 - cover;**
- 3 - self-cutting screws;**
- 4 - bracket;**
- 5 - junction box;**
- 6 - grating;**
- 7 - electric motor
with an axial impeller.**

table 2

Model	Dimensions [mm]					Weight [kg]
	A	H	B	D2	D1	
Tower A 200 2E	425	280	330	208	345	5.0
Tower A 250 2E	425	280	330	262	405	7.0
Tower A 250 4E	425	280	330	262	405	7.0
Tower A 300 2E	585	340	450	314	555	10.5
Tower A 300 4E	585	340	450	314	555	10.5
Tower A 350 4E	655	350	535	364	555	12.0
Tower AL 200	425	280	330	208	345	6.1
Tower AL 250	425	300	330	262	405	7.2
Tower AL 315	585	380	450	314	555	11.5

SAFETY REQUIREMENTS

It is necessary to take measures to prevent penetration of black gases into premises through open smoke ducts or other fire-prevention facilities.

Fan installation and connection should be performed by qualified electrician according to effective regulations.

Disconnect fan from the mains prior to maintenance and repair.

Before connection of the fan to power mains it is necessary to ensure that there are no visible damages of impeller, casing, grating, as well as foreign objects in the blowing part of the casing, which can damage impeller vanes.

ATTENTION: Do not use the fan in the explosive or fire-hazardous environment.

INSTALLATION AND CONNECTION TO POWER MAINS

The fan (fig. 1) consists of a casing 1 with an electric motor and an impeller 7 fixed therein. The cover 2 and the protective grille 6 are fastened to the bracket 4 by self-cutting screws. The terminal box 5 is fixed at the outer side of the casing for connecting the fan to power mains.

The fan must be connected to power mains using durable, insulated and heat-resistant electric conductors (cables, wires).

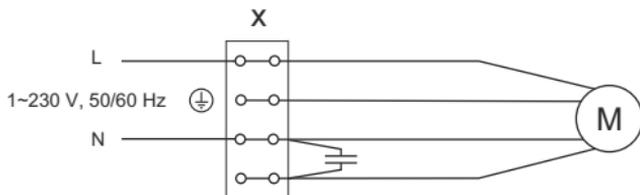
Connect the unit to power mains through the external automatic circuit breaker with a magnetic trip integrated into the fixed wiring system to disconnect all the mains phases. The gap between contacts of the circuit breaker should be not less than 3 mm at all poles. A fan should be mounted vertically. Air moving direction should coincide with the direction of the arrow on the fan casing.

A fan may be equipped with protective grille at the input side.

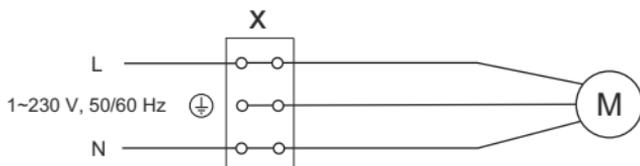
Fan connection diagram

figure 2

Tower A



Tower AL



M is motor, X is terminal block

MAINTENANCE

POWER OFF THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.

Maintenance comprises periodical cleaning of the surfaces from dust and dirt, when the fan is disconnected from power mains.

To remove the dust, use a soft dry brush or compressed air.

The blades of the impeller require careful cleaning every 6 months.

Loosen the self-cutting screws 3, detach the cover 2 and the grille 6 from the casing 1. Wipe the impeller blades with a cloth wetted in a mild detergent solution. Avoid water dripping on the electric motor!

Possible malfunctions and their elimination

Problem	Possible reasons	Elimination
The fan will not start.	No power supply. Jammed motor.	Check the mains switch. Check the electrical connections against the wiring diagram. Carefully check the fan impeller for possible seizure and eliminate it, if necessary. If the impeller is in order, replace the electric motor.
The fan fails to reach the required rotation speed due to serious overheating of the fan motor.	Fan motor overloaded. Improper fan starting method.	Eliminate the overload. Use a soft starter or frequency converter to start the motor (see "Asynchronous Electric Motor Starting Methods" in the "Connection to power mains" section).

Problem	Possible reasons	Elimination
<p>The fan motor runs at overload capacity with current consumption in excess of the rated value.</p>	<p>The fan supplies more air than expected upon motor capacity selection.</p> <p>Wrong motor phasing. The impeller rotates in the opposite direction of the arrow on the fan casing.</p> <p>Air ducts clogged.</p>	<p>Measure network resistance. Throttle down the network (add aerodynamic resistance to the air duct network).</p> <p>If necessary, change the impeller rotation direction by changing the phase sequence on the electric motor terminals.</p> <p>Clean the air duct or the impeller.</p>
<p>The fan supplies less air than expected.</p>	<p>Wrong calculation of the ventilation network and wrong selection of the fan.</p> <p>The network resistance exceeds the design calculations.</p> <p>Wrong direction of the impeller rotation direction.</p> <p>Air leak through a loose air duct connection.</p> <p>Impeller or air duct contamination with foreign objects or debris.</p>	<p>Re-calculate the network parameters and select a matching fan.</p> <p>Re-arrange the ventilation network to decrease its aerodynamic resistance.</p> <p>If necessary, change the impeller rotation direction by changing the phase sequence on the electric motor terminals (see the "Commissioning" section).</p> <p>Eliminate the air leak. Seal the air duct connection.</p> <p>Clean the impeller or the air ducts from foreign objects or debris.</p>

Problem	Possible reasons	Elimination
<p>The fan supplies more air than expected.</p>	<p>The resistance values used during the ventilation network calculations are too conservative.</p> <p>The cross section of air ducts increased and their number reduced during the installation.</p> <p>Wrong choice of the fan.</p>	<p>Check the air ducts for proper shape and cross section as well as for any dampers present.</p> <p>Throttle down the network (add aerodynamic resistance to the air duct network).</p> <p>Replace the fan with a unit of proper standard size.</p>
<p>Повышенный шум или вибрация как в самом вентиляторе, так и в сети.</p>	<p>Loose screw connections.</p> <p>No flexible joints between the fan and the ventilation network on the suction and discharge sides.</p> <p>Loose connection of valves and dampers to the air ducts.</p> <p>Impeller or air duct contamination with foreign objects or debris.</p> <p>Worn bearings.</p> <p>Unstable power supply, unstable motor operation.</p>	<p>Check the screw connections for proper tightness.</p> <p>Install flexible joints.</p> <p>Tighten up the fasteners of valves and dampers.</p> <p>Clean the impeller or the air ducts from foreign objects or debris.</p> <p>Replace the bearings.</p> <p>Check the stability of power supply parameters and electric motor operation.</p>

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.

PRODUCT SALES

The product is sold in specialized and retail trade organizations.

WARRANTY

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.

In case of absence of the entry specifying the date of sale, the warranty period is calculated from the date of manufacture.

Contact the Seller for warranty service.

ATTENTION!

The MANUFACTURER cannot be held liable for damages incurred when using the fan for other purposes than specified or caused by careless mechanical intervention. Please keep to the instructions.

ACCEPTANCE CERTIFICATE





The fan has been duly certified as serviceable.

- Tower A 200 2E
- Tower A 250 2E
- Tower A 250 4E
- Tower A 300 2E
- Tower A 300 4E
- Tower A 350 4E
- Tower AL 200
- Tower AL 250
- Tower AL 315

Purchase Date

Manufacture Date

Sold

Quality Inspector's Stamp

