

# General Ventilation System Equipment General Information



CVM Manufacturing Works produces 7 lines of ducted fans: 5 lines of fans with embedded industrial induction motor, and 2 lines of fans with remote motor; 3 lines of radial and axial roof fans; 4 lines of radial fans, and 3 lines of axial fans.

Besides CVM Manufacturing Works produces 3 types of warm air curtain, complex AHUs (in a case or without case), as well as Pod-mount heating and ventilation units.

All fans are certified by the TR and GOST-R Certification Systems.

No.	Item Name	Model	Climatic Version and Installation Category	Location
1	Roof radial fan	ВРКО (VRKO)	У1	Outdoor pursuant to GOST 15150-69
2	Roof radial fan	ВРКШ (VRKSh)	У1	
3	Roof axial fan	ВОКШ (VOKSh)	У1	
4	Radial fan	ВР-80-75 (VR-80-75)	У2	Outdoor under hood and indoor pursuant to GOST 15150-69
5	Radial fan	ВР-280-46 (VR-280-46)	У2	
6	Radial fan	ВР-140-40 (VR-140-40)	У2	
7	Radial fan	ВР-120-28 (VR-120-28)	У2	
8	Axial fan	ВО-12-300 (VO-12-300)	У2	
9	Axial fan	ВО-25-188 (VO-25-188)	У2	
10	Axial fan	ВО-30-160 (VO-30-160)	У2	
11	Ducted fan	ВРПН-НВК (VRPN-NVK)	У3	Indoor pursuant to GOST 15150-69
12	Ducted fan	ВРПП (ВИП(м)) (VRPP (VIP(m)))	У3	
13	Ducted fan	ВРКК (VRKK)	У3	
14	Ducted fan	ВРПВ-Н (VRPV-N)	У3	
15	Ducted fan	ВРПН-Н (VRPN-N)	У3	
16	Air curtain	ЗВВ (ZVV)	У3	
17	Air curtain	ЗИС (ZIS)	У3	
18	Air curtain	ЗВШ (ZVSh)	У3	
19	AHU	АВС (AVS)	У3	
20	AHU	СВАН (SVAN)	У3	
21	Pod-mount heating and ventilation unit	НОВА (NOVA)	У3	

CVM Manufacturing Works reserves the right to change the design of ventilation equipment as a part of continuous improvement process.

**CVM Manufacturing Works optionally releases explosion-proof products.**

(See more on page 158)

Explosion-proof feature is denoted by the character "B" ("V").

Aerodynamic performance and noise characteristics of explosion-proof fans comply with characteristics of corresponding models with regular enclosure but may have different size and electric characteristics (power).

All explosion-proof fans are certified by the GOST-R and TR Certification Systems and have permission by the Federal Service for Environmental, Technological and Nuclear Supervision.

## Aerodynamic Performance

Fans aerodynamic performance is defined in accordance with GOST 31353.3-2007 on an aerodynamic stand with inlet chamber and fan free outlet. Characteristics are represented by the total fan pressure versus air flow rate curves. Dynamic pressure corresponds to flange cross-section at the fan outlet. All fan characteristics correspond to standard atmospheric pressure and air temperature of 20 °C with atmospheric density of 1.2 kg/m<sup>3</sup>.

## Noise Performance

Noise characteristics are defined in accordance with GOST 31353.3-2007 and represented by the dBA values of adjusted sound-power levels on delivery side, suction side and through the housing walls (the last value applies only for the fans with embedded motor) in motor maximum efficiency mode. Sound power levels are 2-3dBA higher on the mode close to the fan maximum performance.

Sound power level  $L_{pi}$  in octave bands with geometric mean frequencies, when rotation speed is constant, is defined as follows:  $L_{pi} = L_{pA} + \Delta L_{pi}$

$\Delta L_{pi}$  values for ВРПП (VRPP) and ВРКК (VRKK) fans are presented in the table below:

$\Delta L_{pi}$ values	Octave bandwidth [Hz]							
	63	125	250	500	1000	2000	4000	8000
$\Delta L_{pi}$ [dB], (at the inlet)	- 10	- 7	- 13	0	- 7	- 8	- 10	- 15
$\Delta L_{pi}$ [dB], (at the outlet)	- 8	- 6	- 11	- 4	- 6	- 5	- 10	- 16
$\Delta L_{pi}$ [dB] (through the walls)	6	8	- 3	- 4	- 8	- 7	- 11	- 14
$\Delta L_{pi}$ [dB] (through the walls) for VIP	5	0	- 5	- 5	- 7	- 7	- 8	- 12

## Applied electric motors

Degree of protection for the applied electric motors shall not be lower than IP54.