

# Bag house filters of type BHF

**Bag house filters of type BHF** are used for highly efficient clean of dusty air (gas) from dust in exhaust aspiration systems of various branches of industry: metallurgic, chemical, woodworking, building, etc.

Filters BHF of various modifications are manufactured:

- for catching non-toxic, non-flammable and non-explosive dusts with temperature of purified air up to 130°C;
- for catching explosive dust;
- for catching dusts at cleaning of hot gases up to 260°C.

Filter consists of body divided into the chambers of non cleaned and cleaned gas, filtering elements (framework type), valve section with control electromagnets and control of regeneration of bags.

Dusty air through upstream fairing gets into chamber where filtering bags are located. The dust is retained on a filtering surface of a material, and the cleared gases leave through the top open parts of bags for cleaning air chamber.

Filtering bags are made on the specialized sewing equipment (see the catalogue of "NPP "Folter") from highly efficient nonwoven filtering fabric. Bags can also be made from conductive materials for removal of a static charge.

Regeneration of filtering bags is carried out periodically on the set cycle without switching-off of filter by a one-way pulse purge with compressed air getting into bags from above through apertures in blowing-through collectors. The filter has gauge of pressure resistance, which signalized then filter reaches certain resistance automatically. Pulse duration and frequency of regeneration cycles is set with regeneration controlling device included in the filter delivery package.

System of regeneration is designed for use of compressed air at pressure 0.3 – 0.6 MPa (3-6 kgs/cm<sup>2</sup>).

The compressed air incoming to filters, should be dried and cleaned.

Filters for catching explosive dusts are equipped with safety valves with a destructible membrane. Filter starters should be mounted in not explosive room.

To provide normal operation of the filter, unloading of the caught dust from the bunker should be carried out periodically or constantly (depending on initial dust content). If dust unloading is done when filter is in operation, hermetic sealing of discharge aperture should be provided. It is performed by penstocks. Installation of other sealing arrangements is possible. For operation of filters with 2 or 3 bunkers, conveyer screws (by special request) that empty bunkers and unload dust at the same place are used. To seal conveyer screw it is necessary to install penstock or other sealing/unloading device at the unloading outcome.

By request filter(s) can be equipped with system which will turn on:

- signaling system and protection of filter against high temperature of cleared gases;
- control over dust unloading devices of one or several filters.

Automatic system is capable of sending information to the top level for control of system of air clean with technology which it serves.



By request filters can be made with a stock. The distance from flange(s) of unloading outcome of bunker(s) to the basis of a stock should be specified in the order.

## CHARACTERISTICS

Table1

Parameter	BHF - 5	BHF- 10	BHF- 15	BHF- 30	BHF - 60	BHF - 90	BHF - 180	BHF - 360	BHF - 540
Volume air flow, m <sup>3</sup> /h	540	1080	1620	3240	6500	9700	19400	38400	57600
Area of filtration surface, m <sup>2</sup>	5	10	15	30	60	90	180	360	540
Quantity of sections	1	1	1	1	2	3	1	2	3
Mass concentration of dust in cleaning air at inlet, g/m <sup>3</sup> , not more	50	50	50	50	50	50	50	50	50
Pressure drop, kPa (kgs/m <sup>2</sup> ), not greater	1,2-2 (120-200)	1,2-2 (120-200)	1,2-2 (120-200)	1,2-2 (120-200)	1,2-2 (120-200)	1,2-2 (120-200)	1,2-2 (120-200)	1,2-2 (120-200)	1,2-2 (120-200)
Pressure of blowing air, MPa (kgs/cm <sup>2</sup> )	0,3-0,6 (3-6)	0,3-0,6 (3-6)	0,3-0,6 (3-6)	0,3-0,6 (3-6)	0,3-0,6 (3-6)	0,3-0,6 (3-6)	0,3-0,6 (3-6)	0,3-0,6 (3-6)	0,3-0,6 (3-6)
Max consumption of blowing air, m <sup>3</sup> /h	1,7	3,5	5	10	20	30	60	120	170
Allowable pressure (underpressure) inside the unit, kPa (kgs/m <sup>2</sup> )	5 (500)	5 (500)	5 (500)	5 (500)	5 (500)	5 (500)	5 (500)	5 (500)	5 (500)
Dimensions, mm:									
Length, L	820	990	1240	1240	2270	3300	2565	4935	7240
Width, B	110	1440	1540	1540	1540	1540	2650	2670	2670
Height, H	2320	2316	2480	3489	3489	3480	6090	6090	6090
Weight, kg	320	410	600	800	1300	1900	3900	7000	9800

The efficiency of filters depends on the caught dust concentration and dispersion, on the type of filter medium, used for filtering bags making. The efficiency of filters is not less than 99,9% and the remaining quantity of dust is not greater than 10 mg/m<sup>3</sup> while filter base version with polyester filter medium.

To meet the requirements of higher efficiency or when it is necessary to trap very finely dispersed aerosols, we use special filter medium, covered with a membrane for filtering bags. In this case the remaining dust density is not less, than 1 mg/m<sup>3</sup>.

## MARKING

There is a standard marking of filters BHF of low – carbon steel for catching of nonexplosive dusts at the temperature of cleaned air not more than 130°C, that is indicated in the table.

In some cases, when filters are equipped for cleaning air of explosive dusts; while there is the increase of temperature; while the body is made of corrosion – proof steel – then the following indexes are added to the marking:

T – temperature-proof

E – explosion-proof

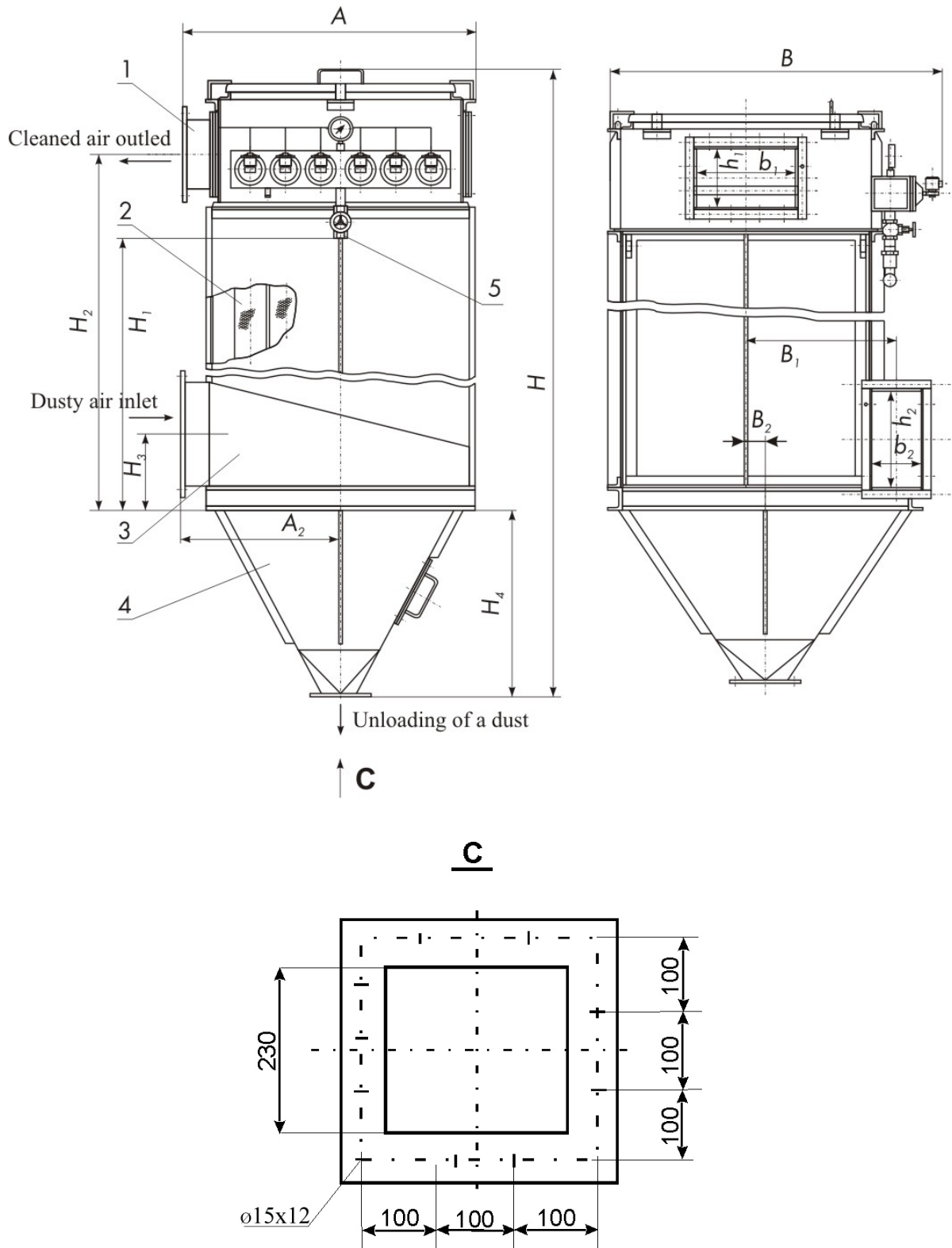
C – corrosion-proof

For example: BHF-15E; BHF-30C; BHF-60T; BHF-60BT; BHF-60EC.

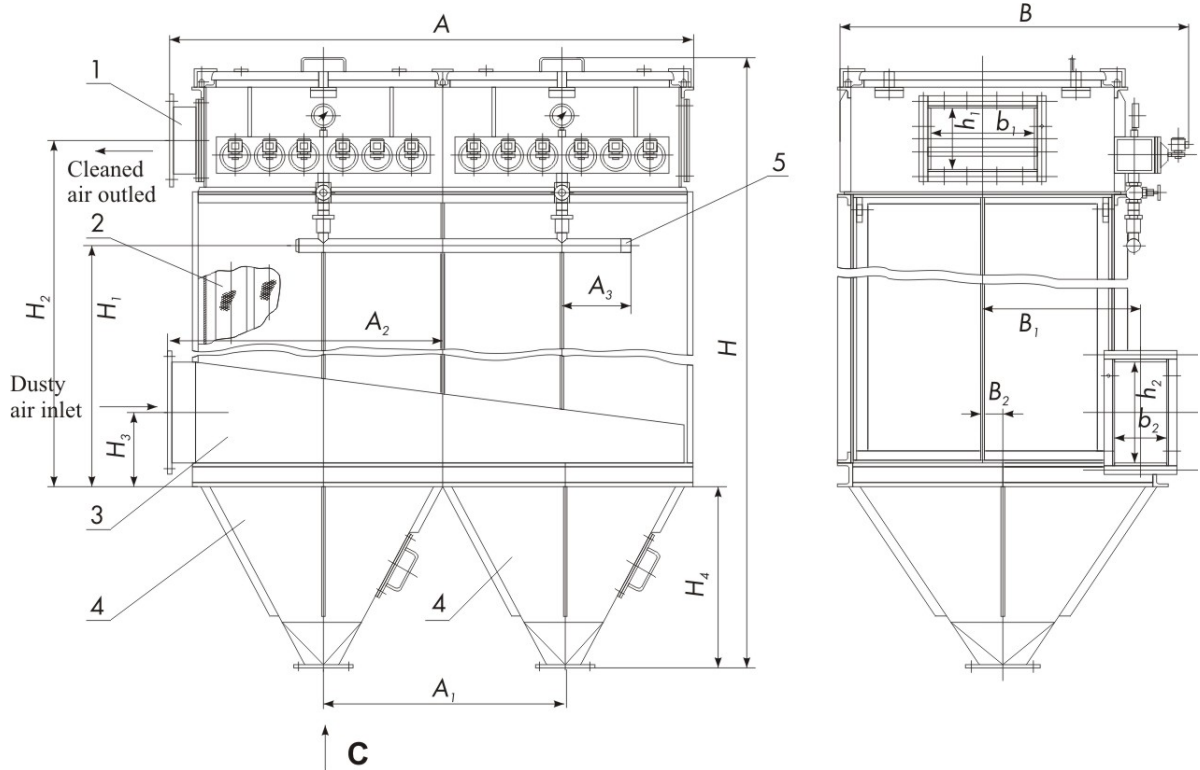
## OVERALL AND CONNECTING DIMENSIONS

Table 2

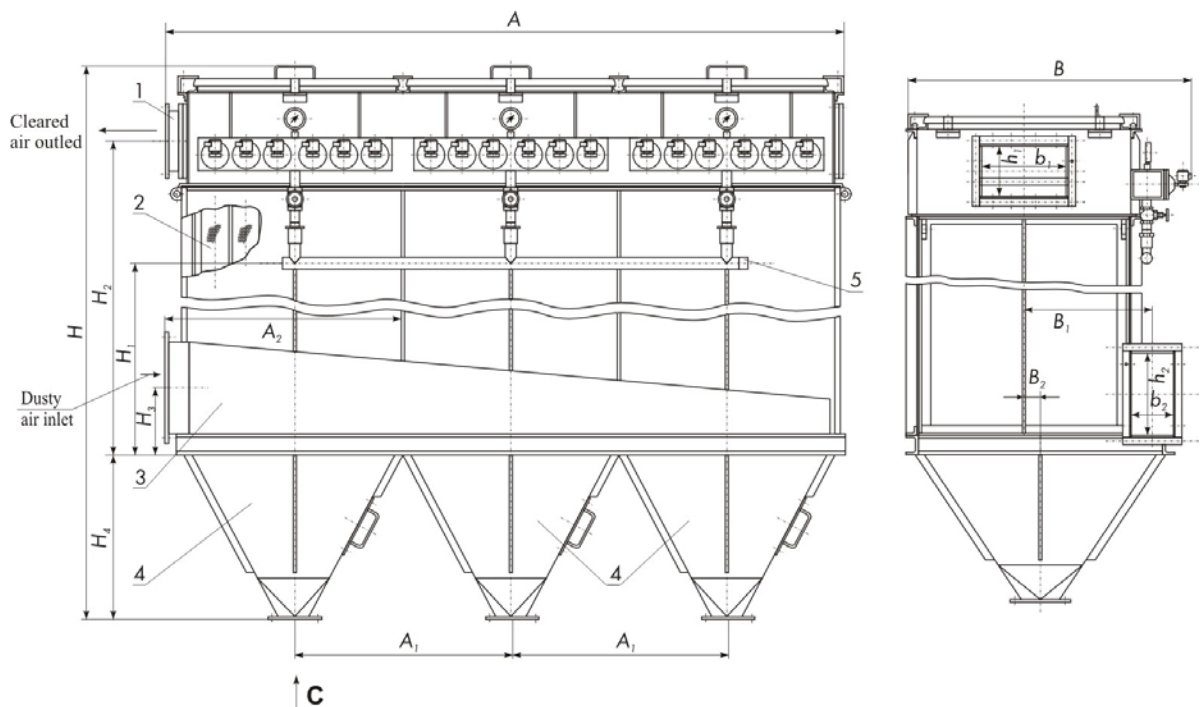
Filter type	Dimensions, mm															
	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>	B	B <sub>1</sub>	B <sub>2</sub>	b <sub>1</sub>	b <sub>2</sub>
BHF - 5	820	-	362	-	2316	820	1323	308	696	265	450	1100	505	-	280	210
BHF - 10	990	-	447	-	2316	820	1323	308	696	265	450	1440	675	-	280	210
BHF - 15	1240	-	650	-	2550	1043	1323	330	696	265	450	1540	700	-	280	210
BHF - 30	1240	-	650	-	3550	2043	2323	330	900	265	450	1540	700	-	280	210
BHF - 60	2270	1075	1160	300	3550	1840	2323	330	900	265	450	1540	700	-	500	210
BHF - 90	3300	1075	-	300	3550	1383	2323	408	900	265	610	1540	700	-	720	210
BHF - 180	2565	-	1310	-	6090	-	3900	530	1820	400	700	2650	1280	245	700	400
BHF - 360	4935	2370	2495	-	6090	-	3900	735	1820	400	1150	2670	1280	245	1150	400
BHF - 540	7238	2370	2495	-	6090	-	3900	1065	1840	400	1800	2670	1280	245	1800	400



**Fig.1. Scheme of bag house filters of type BHF-15; BHF-30; BHF-180.**  
**1-upstream fairing; 2-filtering bags; 3-downstream fairing; 4-bunker;**  
**5-pipe for compressed air supply**



**Fig.2. Scheme of bag house filters of type BHF-60; BHF-360.**  
 1-upstream fairing; 2-filtering bags; 3-dowstream fairing; 4-bunker;  
 5-pipe for compressed air supply



**Fig.3. Scheme of bag house filters of type BHF-90; BHF-540**  
 1-upstream fairing; 2-filtering bags; 3-dowstream fairing; 4-bunker;  
 5-pipe for compressed air supply