

# ACTIVATED CARBON FILTER COMBY

## DESCRIPTION

The filters with activated carbon, model Comby, used for air purification and extraction systems are a kind of adsorbent filters, ideal for the detention of effluents with high concentrations of Volatile Organic Compounds- VOCs.

The active carbon is a highly porous material, whose activity is directly proportional to its surface porosity. The solvent contained in the air to be filtered is then condensed and retained by capillarity in the active coal itself. The adsorption capacity is proportional to the surface and strongly influenced by numerous factors such as the concentration of the solvent to be filtered, the humidity, the temperature, the crossing speed, the contact time and the activated carbon particle size employed.

Thanks to the size and cubic construction form the filter, in addition to ensuring a high filtration efficiency, it ensures a significant duration of the charge of active coal provided.

### Operating Principle

The activated carbon filter has been designed to get a crossing speed of 0,3 seconds and contact time of 1 second. This kind of operating principle is obtained by inserting two beds of activated carbon vertically into the cubic structure.

Air with volatile organic compounds enters the central part of the filter and expands into the quiet

chamber. Air is forced by depression of the fan to pass through the two activated carbon beds, which are well filled, and it goes out from the lateral connecting socket. It is possible to build smaller versions with one activated carbon bed only, whose operating principle and characteristics such as speed and contact time remain the same. Air will be expelled from the outside through the chimney. The filter is not equipped with pre-filtering, solid compounds in the air must be retained by means of other filtering systems.

### Construction Details

The filter is made entirely of a very thick carbon steel sheet, opportunely worked and treated to make it long lasting. The filter is equipped with inlet and outlet air flow, support legs, inspection doors, carbon exhaust valves.

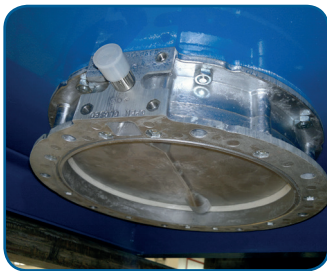
## OPTIONALS

Hoist with support system, Execution in Stainless steel, treated carbon, ATEX discharge valve, ATEX Conformity.

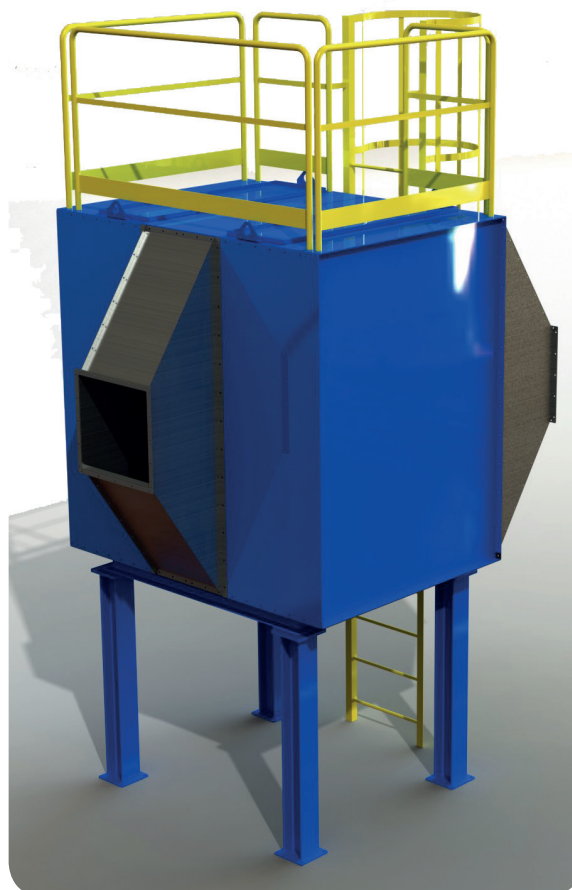
## APPLICATION FIELDS

Industries: painting, coating, resin, adhesive, solvents, paint production, glue.

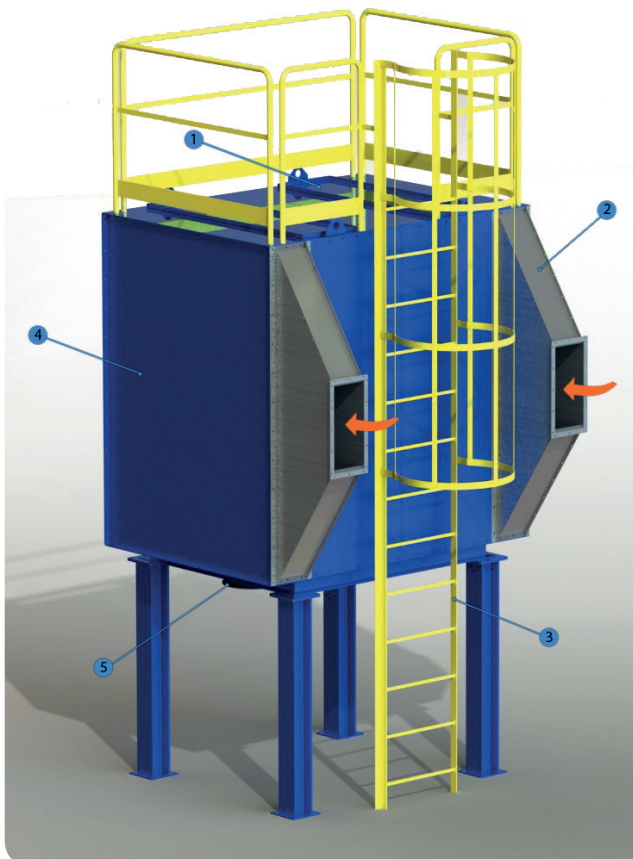
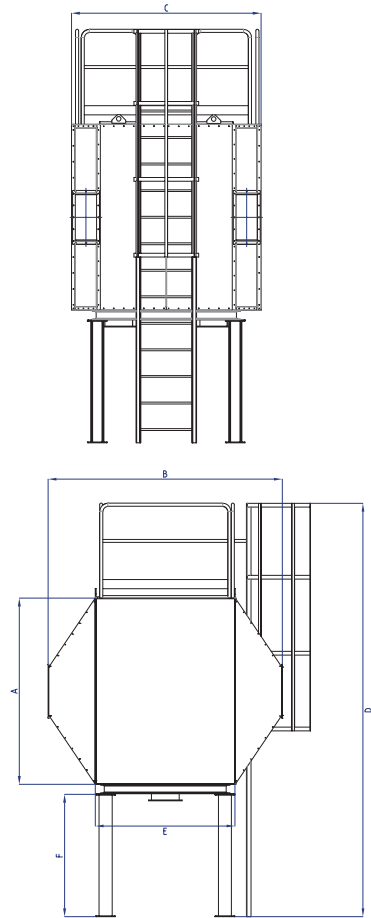
DISCHARGE VALVE



LOADING INPUT



MOD. CCB	UNITS	CCB110	CCB140	CCB200	CCB390
Air flow rate max	m <sup>3</sup> /h	8000	10000	12000	12000
Quantity activated carbon	kg	1100	1400 (1700)	1820 (2000)	1820 (2000)
Max fume temperature	°C	37.8	37.8	37.8	37.8
Carbon layer thickness	mm	400	400	410	410
Absorbent surface	m <sup>2</sup>	6	6.9	8	8
Can velocity	m/s	0.37	0.4	0.41	0.41
Contact time	s	1	1	1	1
Volume activated carbon	m <sup>3</sup>	2.5	2.72	3.2	3.2
Density	g/cm <sup>3</sup>	0.55	0.55	0.55	0.55
Antiexplosion panels	N°	OPTIONAL			
Air input flangia	mm	n°2 Ø 300	n°2 Ø 300	n°2 Ø 300	n°2 Ø 400
Air outlet flange	mm	Ø 400	Ø 500	Ø 500	Ø 650
Non-return valve (OPTIONALS)	n°	1	1	1	4
Drop loss	mmH <sub>2</sub> O	70			
Structure	Material	Painted carbon stainless steel			
Weight	kg	2080	2480	3150	6800
A	mm	2000	2300	2000	2000
B	mm	2500	2500	3000	5700
C	mm	2040	2040	2040	2410
D	mm	4450	4450	4450	4850
E	mm	1500	1500	2000	4700
F	mm	1250	1250	1250	1750



- 1 Load panels
- 2 Air input/output
- 3 Ladder
- 4 Filter chamber
- 5 Manual discharge valve