VZDUCHOTECHNIK CHRASTAVA

Clean air is good VzduchoTechnik.com

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POC 14/20/30 – Industrial Air Filtration System

Industrial air filtering units POC 14/20/30 are designed for industrial heavy around-the-clock use with very simple and economical maintains.

Industrial Air Filtering Systems for:

Welding operations, surface grinding and metal cutting, dust generating processes, mist and vapor collection, industrial grinding operations, fiberglass sanding & deburring, CNC milling, EDM milling, powder mixing and much more.

The Ultimate Filtration for Dust!

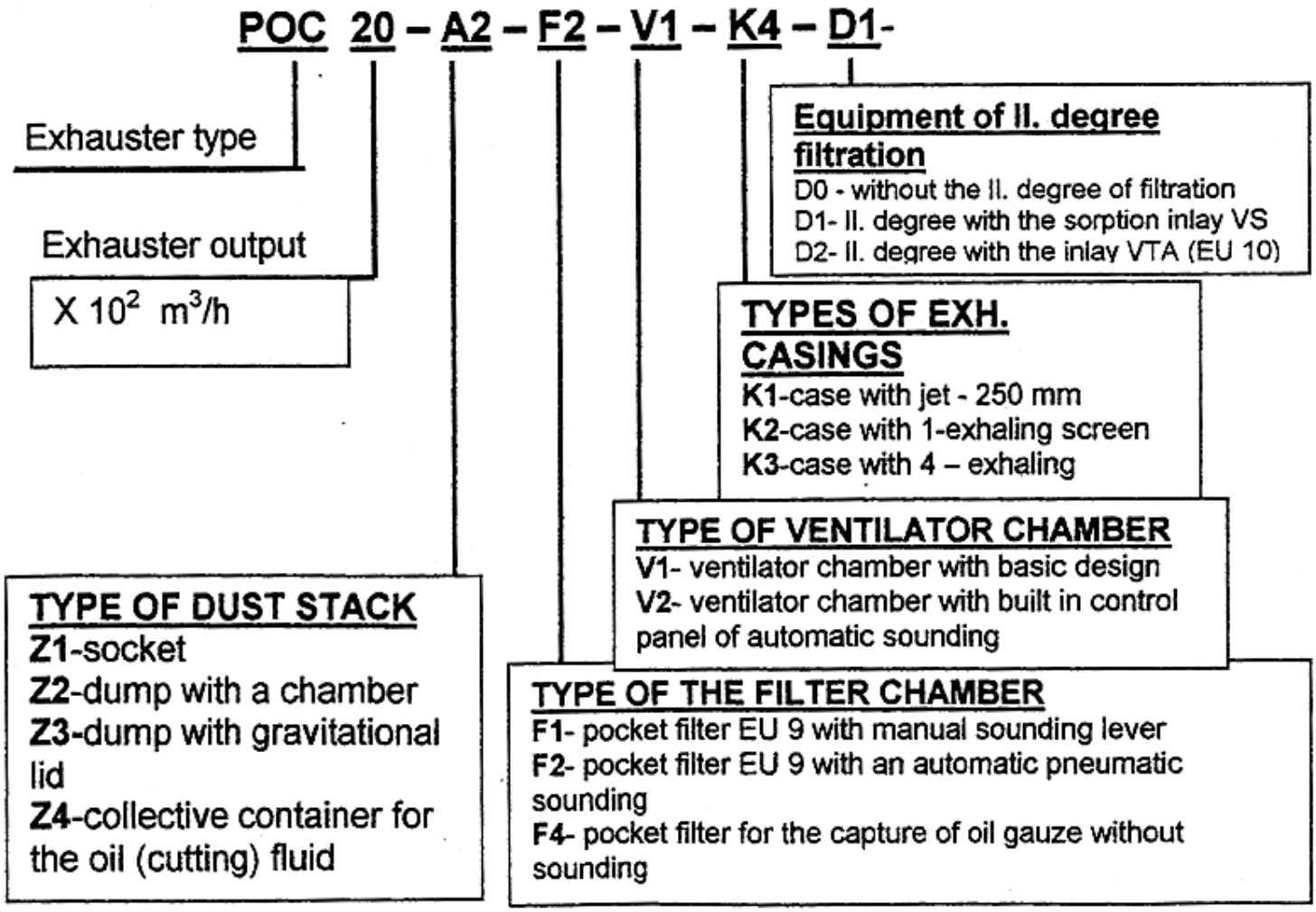
Air is fully recovered back into the original room of the workshop. This provides also very economical solution for the air filtration.

The POC series from 14 to 30 systems are variable and ready to customize solution with suction capacity ranging from 1400m3/h to 3000m3/h within a pressure of 1000 to 2500 Pa.

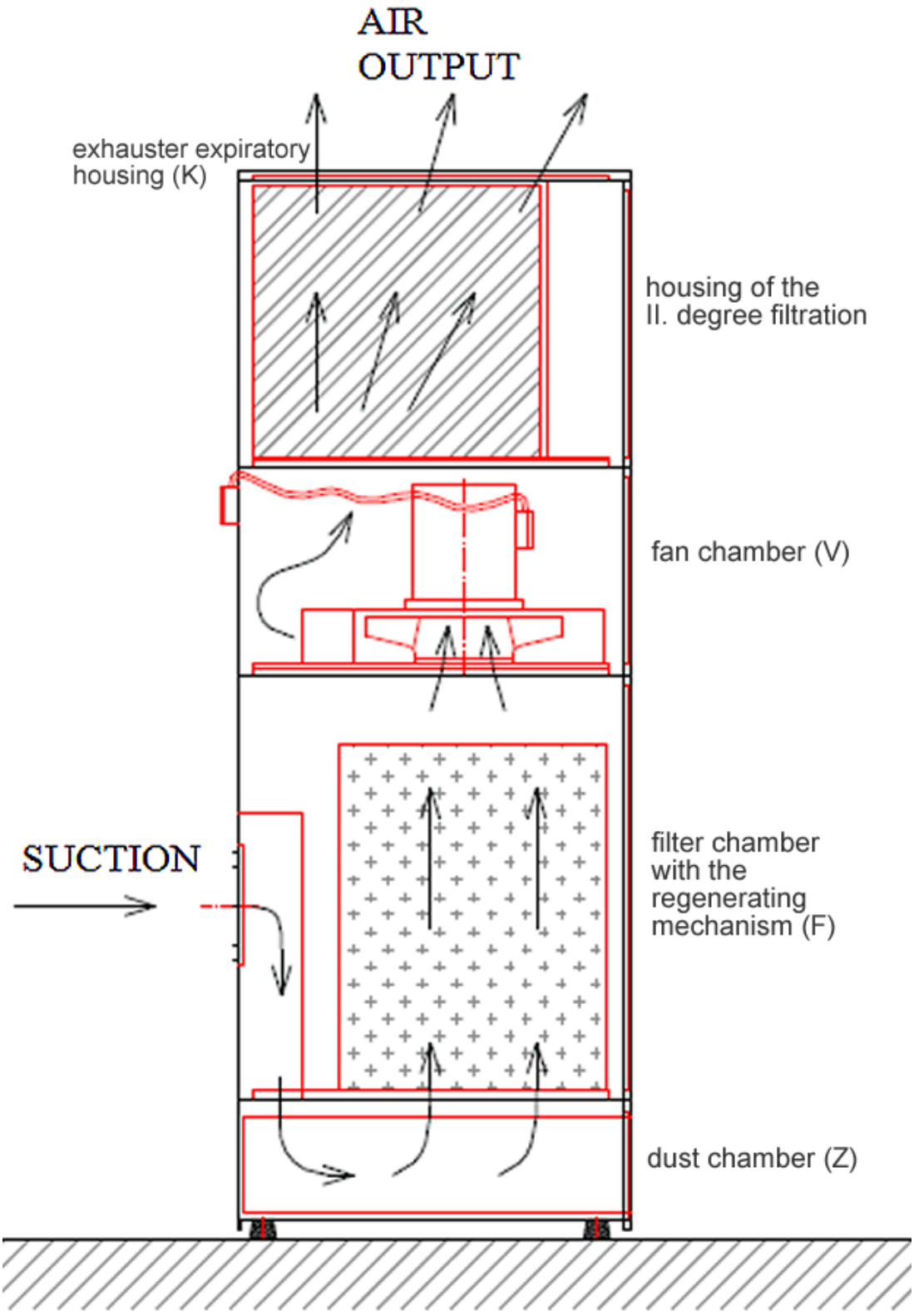
POC 14/20/30 air filtration units are assembled from parts:

- dust chamber (Z)
- filter chamber with the regenerating mechanism (F)
- fan chamber (V)
- exhauster expiratory housing (K)
- housing of the II. degree filtration (D) (additional filter not included in standard unit set)

According to the type of pollution dusts, their amount, demands and dimensions, placement and difficultness of the service, the costumer can choose himself the correct and convenient arrangement of the exhauster. Exhauster categories are recognized as:

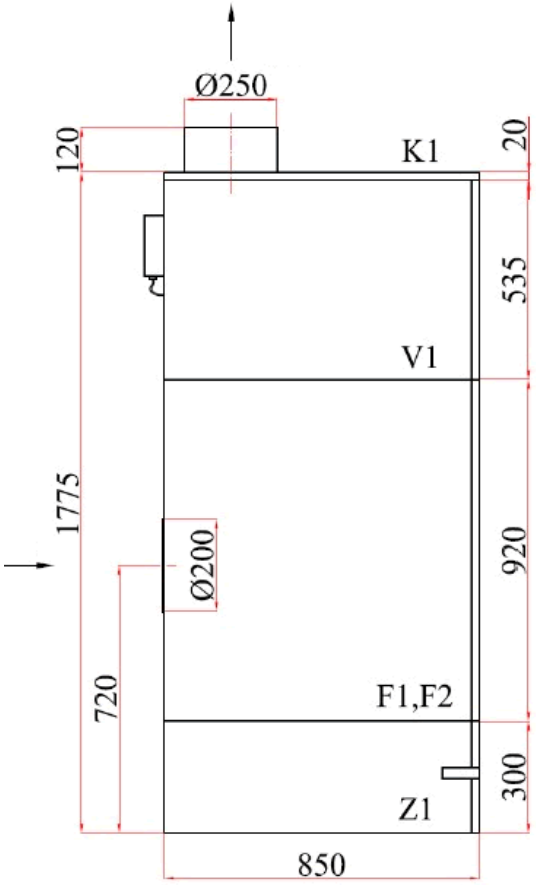


Our air filtration units can be designed and solved as "made to measure for every company or client according to the specific type of entrapped malignancy, exhausted quantity of air and dirt, piping conduit, power consumption or minimum noisiness. The over-all designs of our exhausters are modified to provide and enable filters to regenerate. This extends and provides the durability of the entire mechanism.

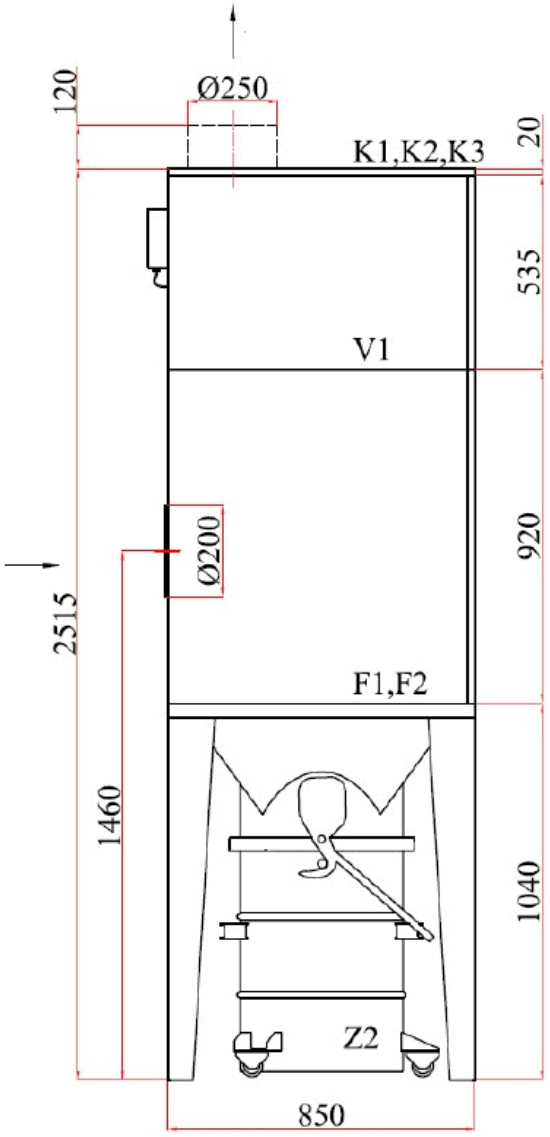


Each of the above -mentioned parts are supplied in several modifications to fit various purposes of usage. Units can be supplied with a broad assortment accessory according to the requirements of the consumer, for example exhaust shoulders, cyclone separators, housing of II. degree filtration, pre-filtration box, welding tables or tables for grinding, tubular parts, adapting pieces, automatic filter restoration system, etc.

Examples of most used sets:

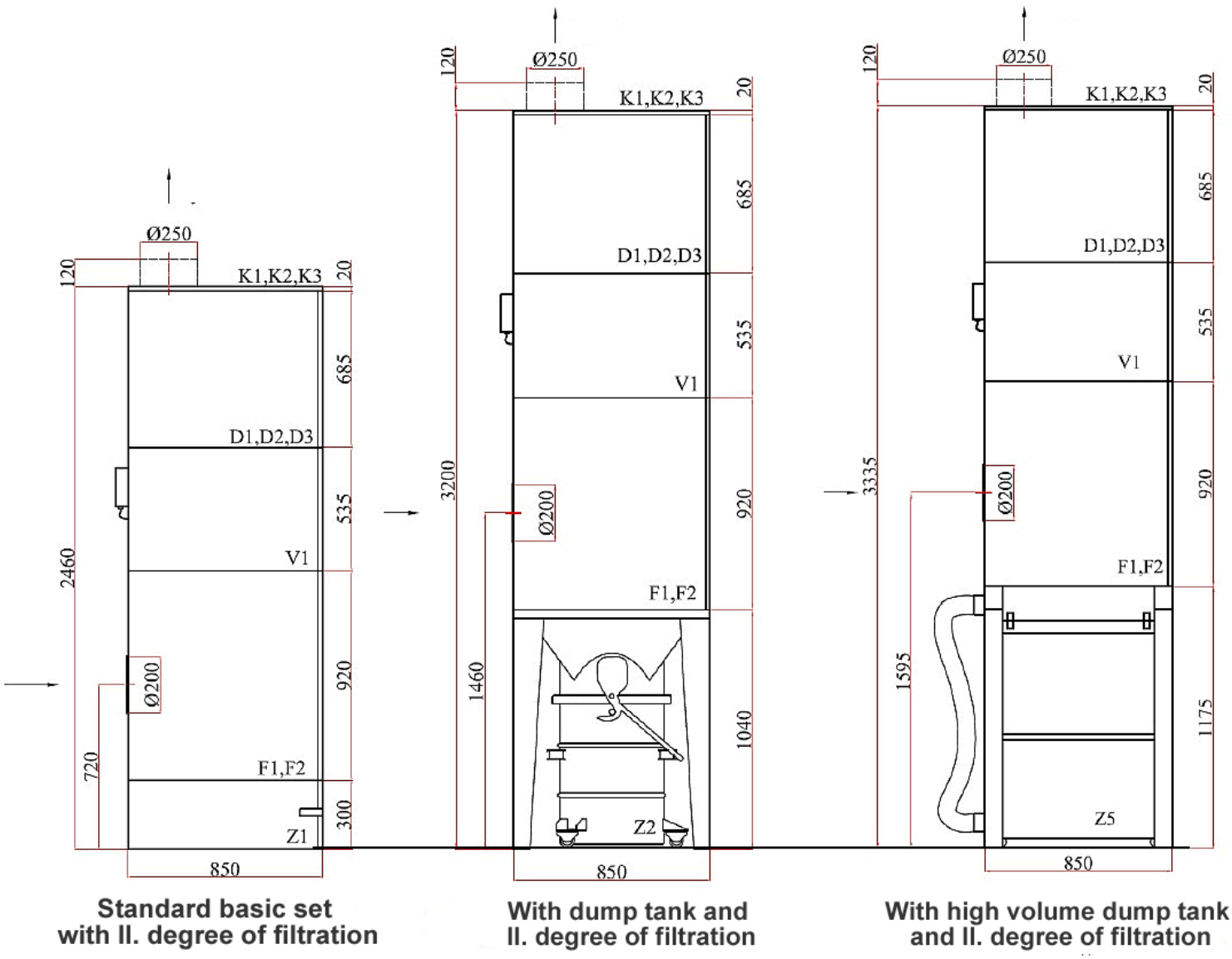


Standard basic set with dust drawer



Set with dust dump tank

Examples of most used sets with II. degree filtration:

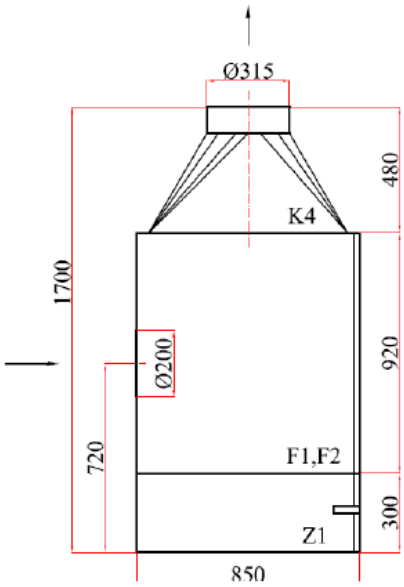


Standard basic set with II. degree of filtration

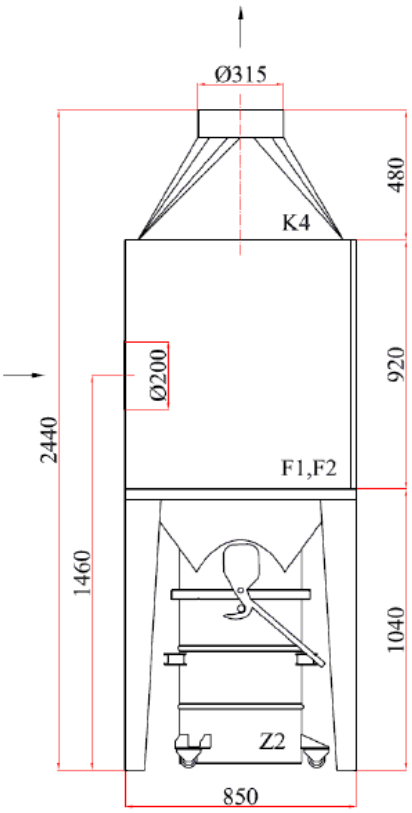
With dump tank and II. degree of filtration

With high volume dump tank and II. degree of filtration

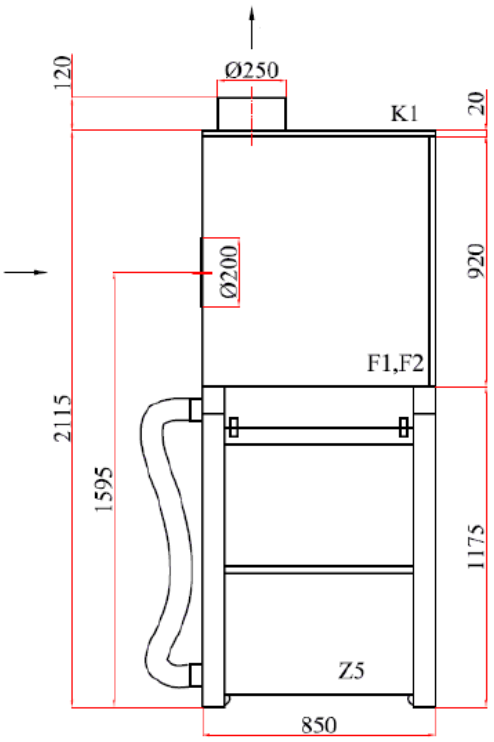
Examples of sets used without ventilator chamber to be connected to external ventilator or suction pipe system:



Transitional cover
+ filter chamber
+ dust drawer collector
(without ventilator)



Transitional cover
+ filter chamber
+ dust dump collector
(without ventilator)

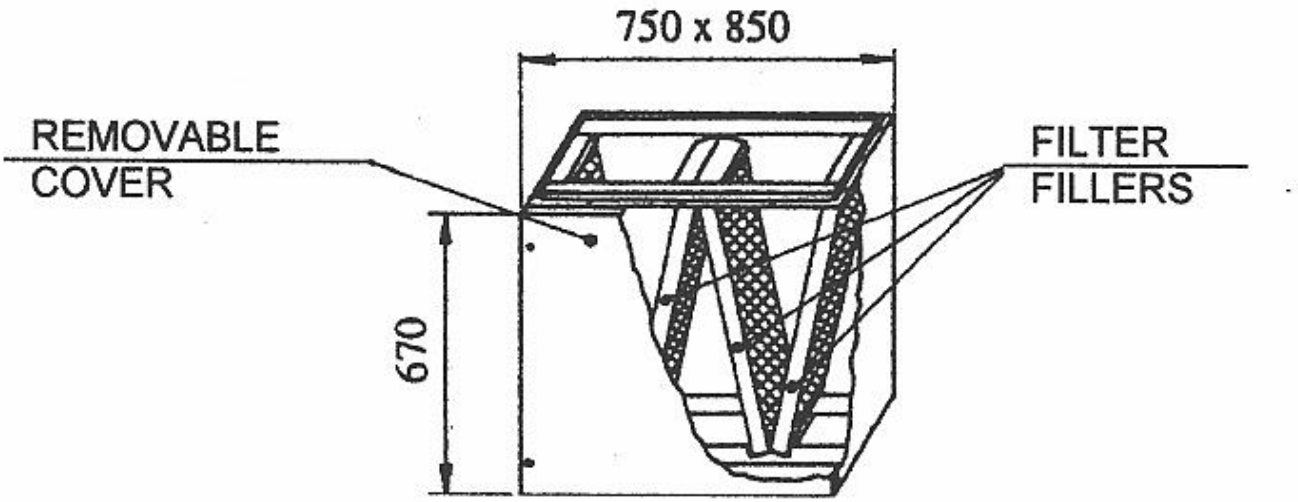


Mouthpiece cover
+ filter chamber
+ high volume dump tank
(without ventilator)

HOUSING OF II. DEGREE FILTRATION

If capturing of very fine dust articles or gas impurity from exhausted breathing tube is required, it is convenient to include the II. degree filtration housing (D) as a part of the exhauster. The II. degree of filtration is placed in front of or behind the chamber.

The II. degree filtration housing is supplied by a circuit with four pieces of filter fillers with dimensions of 610 x 610 x 50 mm. Removable front cover of the housing allows easy exchanging of filter fillers. The cover is mounted by four screws M8 with a cup head and internal hexagon of 5 mm. Seal is mounted under the cover. Standard dimensions of housing with II. degree of filtration is shown on picture



Picture 5.: Housing of II. degree of filtration and its dimensions.

Housing with II. degree of filtration is provided in three different modifications, each has its own use of filter fillers.

D1 - with sorption fillers VS (for capturing gas pollutants)

D2 - with fillers VTA on basis of synthetic micro -fibers (filtration class EU 10)

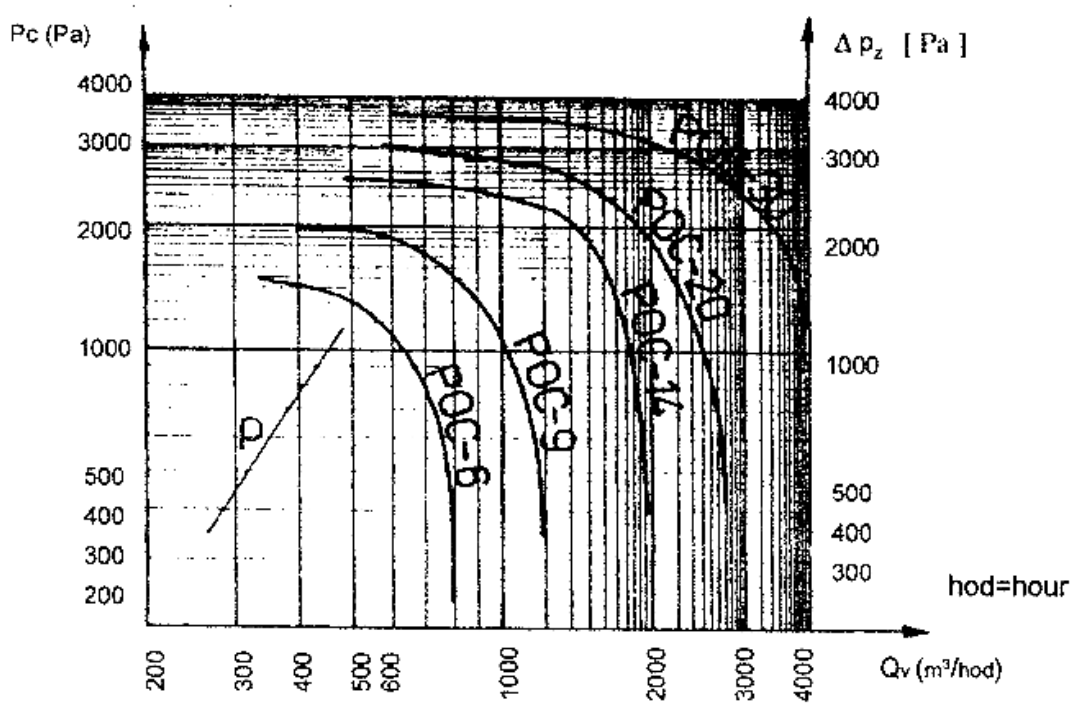
D3 - with fillers VUA on basis of glass micro-fibers (filtration class EU 11)

VENTILATOR CHAMBER

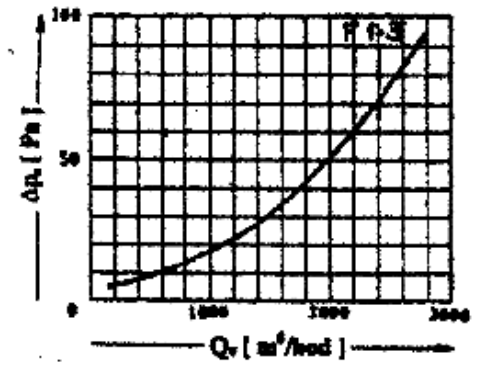
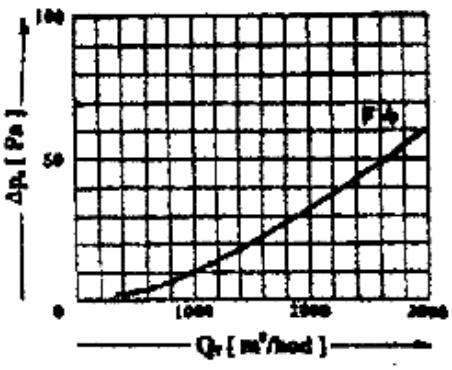
POC Type	POC 14		POC 20		POC 30	
	V1	V2	V1	V2	V1	V2
Type of the Ventilator Chamber	With a circuit breaker.	With an operating of the knocking off the APO.	With a circuit breaker.	With an operating of the knocking off the APO.	With a circuit breaker.	With an operating of the knocking off the APO.
Voltage	3x400/230 V		3x400/230 V		3x400/230 V	
Frequency	50 Hz		50 Hz		50 Hz	
Power current (at 400V)	3.3 A		4.7 A		6.1 A	
El. Motor Load	1.5 kW		2.2 kW		3 kW	
El. Motor Shielding	IP 54		IP 54		IP 54	
El. Motor Speed (rotation)	2870 rot/min		2865 rot/min		2895 rot/min	
Cubical Air Flow	1400m^3/hod		2000m^3/hod		3000m^3/hod	
Total Suction Pressure	1600 Pa		1800 Pa		2200 Pa	
Acoustic Load	64 dB		66 dB		68 dB	

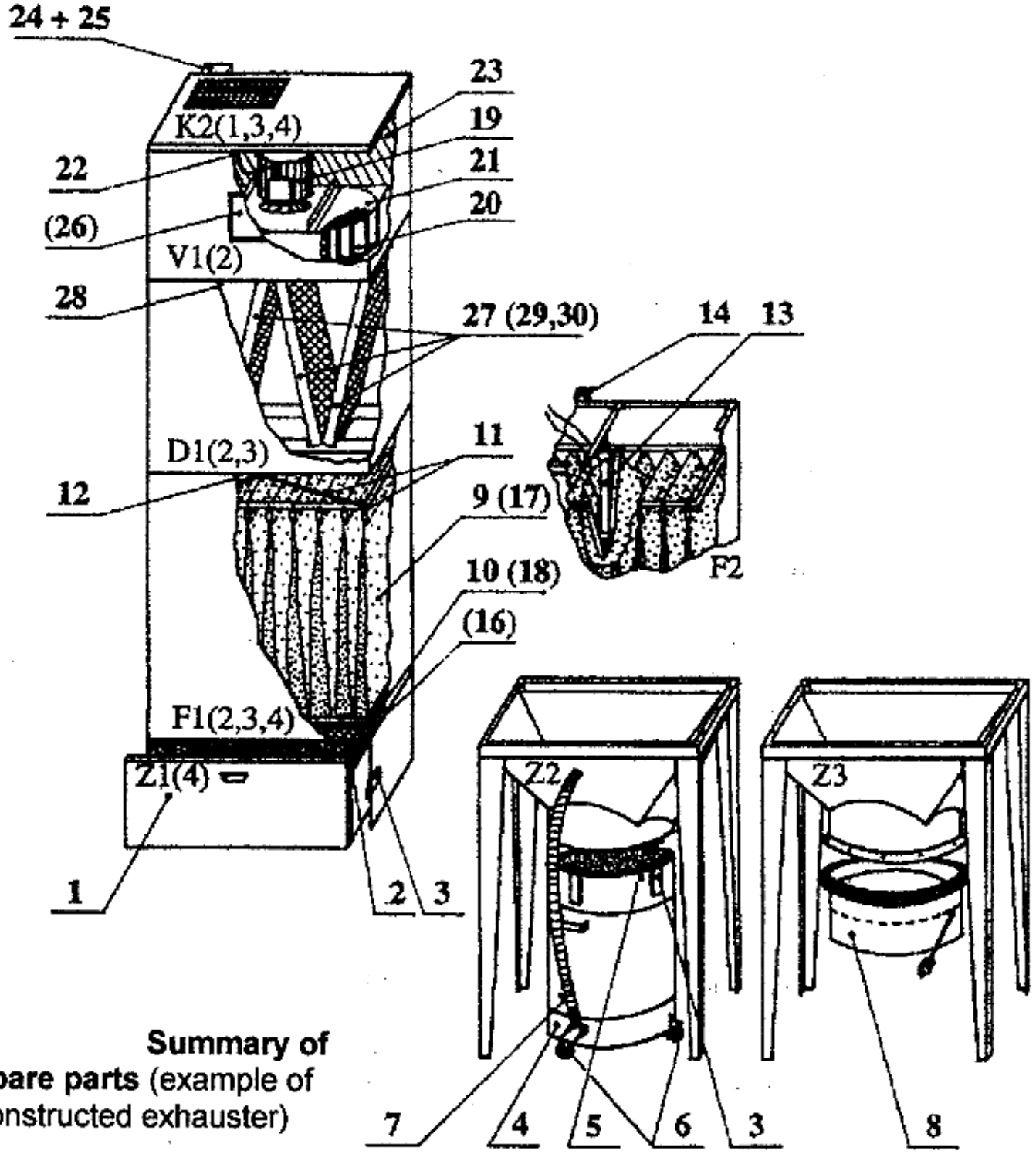
PARAMETERS

This picture shows the parameters of exhausters POC 14,20 and 30. These parameters are good for the exhausters with filters (F1-F4) in the clean conditions without any connected air channels, with a density of 1.2 kg/m^3. **Qv** - Cubical air-flow **Pz** – pressure loss of the connected air-flow, **Pc** – total pressure on the suction of the exhausters, **P** – directive line of the pressure loss course



TECHNICAL DATA – FILTER CHAMBER

Filter Chamber Type	F1 With manual sounding	F2 With pneumatic sounding	F4 With filter for capturing oil haze (without sounding)
Filtration Class acc. ČSN EN 779	F9		F7
Filtration Class acc. DIN 24 185	EU 9		EU 7
Separability for testing dust SPONGELIT	99.985 %		80 – 90%
Size of testing dust particles SPONGELIT	90% less than 10 micro m		90% less than 10 micro m
Filtration surface	10 m		6.2 m
Heat resistance of filter material	Long-term to 90°C Short-term to 150°C		Long-term to 70°C Short-term to 90°C
Flow of pressure loss of filter chambers			



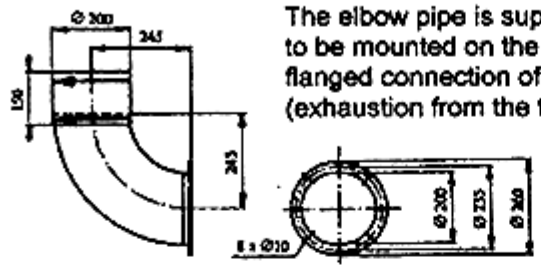
Summary of spare parts (example of constructed exhauster)

/1/ socket
/2/ rubber seal under the socket
/3/ high-speed fixture
/4/ cylindrical chamber
/5/ rubber seal of the chamber
/6/ rotary rolling wheels of the chamber
/7/ flexible hose of 40 mm diameter
/8/ gravitational shutter with a seal
/9/ pocket filter
/10/ rubber seal under the filter
/11/ rubber fixture of the filter
/12/ rubber seal under the lid of filter box
/13/ pneumatic cylinder
/17/ pocket filter for oil haze
/18/ silicon seal under the filter
/19/ electro-motor
/20/ rotating wheel of ventilator
/21/ spiral box of ventilator
/22/ rubber seal under lid of vent. box
/23/ inhibitory filling of vent. box
/24/ circuit breaker
/25/ cover of the circuit breaker
/26/ automatic sounding control panel
/27/ spare filter fillers VS
/28/ rubber seal under the lid of the II. degree housing

5. ACCESSORIES

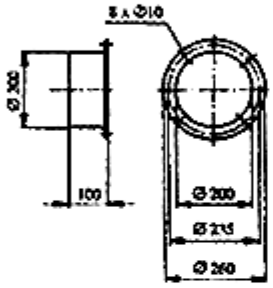
The following accessories are supplied with POC 14/20 according to clients requirements.

5.1. ELBOW PIPE diameter of 200 mm



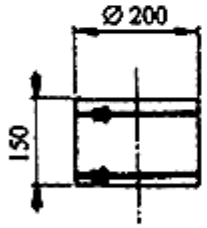
The elbow pipe is supplied with a seal and a rubber cuff. It is to be mounted on the exhaustion part of POC, for a non-flanged connection of exhausting piping or a flexible hose (exhaustion from the top, or from the bottom).

5.2. EXTENDER diameter of 200 mm



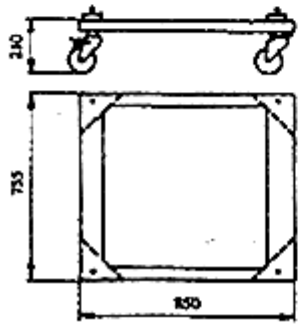
The extender is supplied with a flange with a seal for the connection to the exhaustion part of POC. It is to be connected (non-flanged) to the exhausting piping or to the flexible hose.

5.3. RUBBER CUFF diameter of 200 mm – with tightening bands



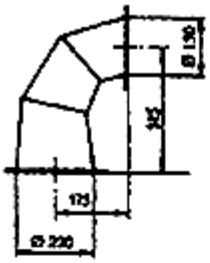
It is possible to order a rubber cuff for connecting or interconnecting air-conditioning piping or flexible hoses, diameter of 200 mm. It is supplied with 2 pieces of tightening bands

5.4. UNDERCART AND HANDRAILS



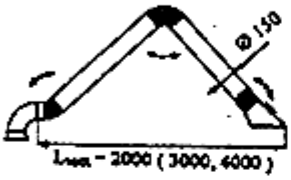
POC exhausters with a chamber Z1 can be supplied with a portable undercart and plastic handrails to increase the mobility.
The undercart is mounted under the socket chamber by means of four screws, released after demounting the rubber pedestals. The Handrails are screwed to the filter box of POC.

5.5. TRANSITIONAL ELBOW



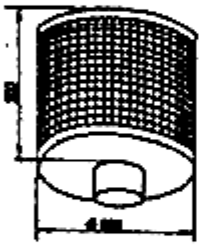
Transitional elbow is used for mounting to the exhausting part of POC for connecting the exhausting elbow, 150 mm of diameter. It is a segmental welded elbow provided with two flanges
- diameter of 200 mm – for connection to POC
- diameter of 150 mm – for connection to exhausting elbow

5.6. EXHAUSTING ELBOW



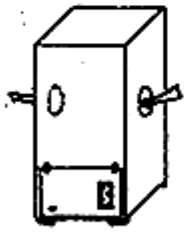
For local exhausting directly from the pollution source, it is possible to connect an exhausting elbow, d. of 150 mm to the POC. Elbows are 2, 3 or 4 meters long and can be equipped with a shutter and one of the elbows.

5.7. LARGE SURFACE OPENING



For the regulation of air-flow coming out of POC, a large surface opening can be put on the cover with a mouthpiece (K1). The mouthpiece also absorbs noise.

5.8. WATER SEPARATOR



If exhaustion of gluey, filamentary or abrasive dusts is required, it is convenient to use POC in combination with water separators. The water separator directly connects to the exhaustion of POC. The housing platform of the water separator is 750y600 mm, 1240 mm high.

5.9. PNEUMATIC SOUNDING

Further to POC with a filter chamber F1, it is possible to order pneumatic sounding. This sounding is secured by a pneumatic cylinder, mounted between separating desk and the frame of pocket filter in the filter box of POC. A pneumatic vent with a noise inhibitor is mounted to the ventilator housing. An electronic control unit is placed on or out of the mantle of POC. A regulating filter, mounted to outside part of the mantle of ventilator housing (form the side of exhaustion) provides cleaning of incoming pressure air (0.5 – 0.6 MPa).

USAGE AND SUPPLY

Usage of Air Filtration System POC

Air filtering units POC in standard design are used for working in environment without explosion danger in temperatures of —20°C to +40°C. The temperature of exhausted air cannot exceed 90°C. The exhausters are placed inside the buildings or at least under some shelter that protects them from wind and other indispose influences.

Exhausters POC are designated to exhaust metal and non-metal dusts and small particles, aerosols, with II. degree filtration are usable for exhausting welding dust as well.

For fiber or glair dust exhaustions, there is POC in combination with a water separator that is supplied as an accessory.

For special requirements it is possible to supply the POC (exhausters) with special design for explosion dusts and for environments of ZONE 2 according to CSN 33 2320.

POC are designed to be laid on horizontal surface with a minimal distance from a dust source.

The polluted air is captured by the exhausting shoulder which is a supplement of POC accessories.

When exhausting small amounts of pollution (for example from manually working sites) or just occasionally, it is possible to connect one POC to more than just one working areas. The inter - connection of POC and working sites is provided by an air-conditioning piping or flexible tubes.

POC should be placed as close to the exhausted area as possible. If connecting POC to piping trace longer than 15 m is necessary, we recommend installment of second auxiliary ventilator.

POC construction is design to flow the filtered air back to the room or out of the room by air-conditioning piping. For improvement of air -flow, a large surface outfall can be mounted on the POC exhalation outlet, supplied as POC accessory.

DELIVERY, TRANSPORTATION, STOCKING

POC are delivered in non -returnable wrappings, assembled and arranged as required by a customer. For special requirements, separate modulus can be delivered. POC are stocked and transported in vertical or horizontal position on transportation pallet. POC are delivered in covered transport vehicles and need to be stocked in dry enclosed places, secured from wind

More detailed information can be obtained at:

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