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SILOTOP® zero

SILO VENTING
DUST COLLECTORS

1

TECHNICAL CATALOGUE

Manual No. FIL.253.--.T.EN Issue: A
Latest Update: January 2017

ORIGINAL INSTRUCTIONS IN ENGLISH

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All the products described in this catalogue are manufactured according to **WAMGROUP S.p.A. Quality System procedures**. The Company's Quality System, certified in July 1994 according to International Standards **UNI EN ISO 9002** and extended to the latest release of **UNI EN ISO 9001**, ensures that the entire production process, starting from the processing of the order to the technical service after delivery, is carried out in a controlled manner that guarantees the quality standard of the product.

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1.1 Description

SILOTOP® zero (code silab) is a specialized filter for the venting of pneumatically loaded silos.

The filter consists of a stainless steel body, a carbon steel seal frame and engineering polymer cover.

The pulse-jet air cleaning system entirely integrated in the cover is made of a compressed air tank and built-in aluminium solenoid valves that allows lowering dimensions and maintenance.

1.2 Function

Dust separated from the air flow by special POLYPLEAT® filter elements drops back into the silo after an integrated automatic reverse air jet cleaning system inside the weather protection cover has removed it from the filter elements.

Unless otherwise specified, all the dimensions are in millimetres.

2.1 Main features

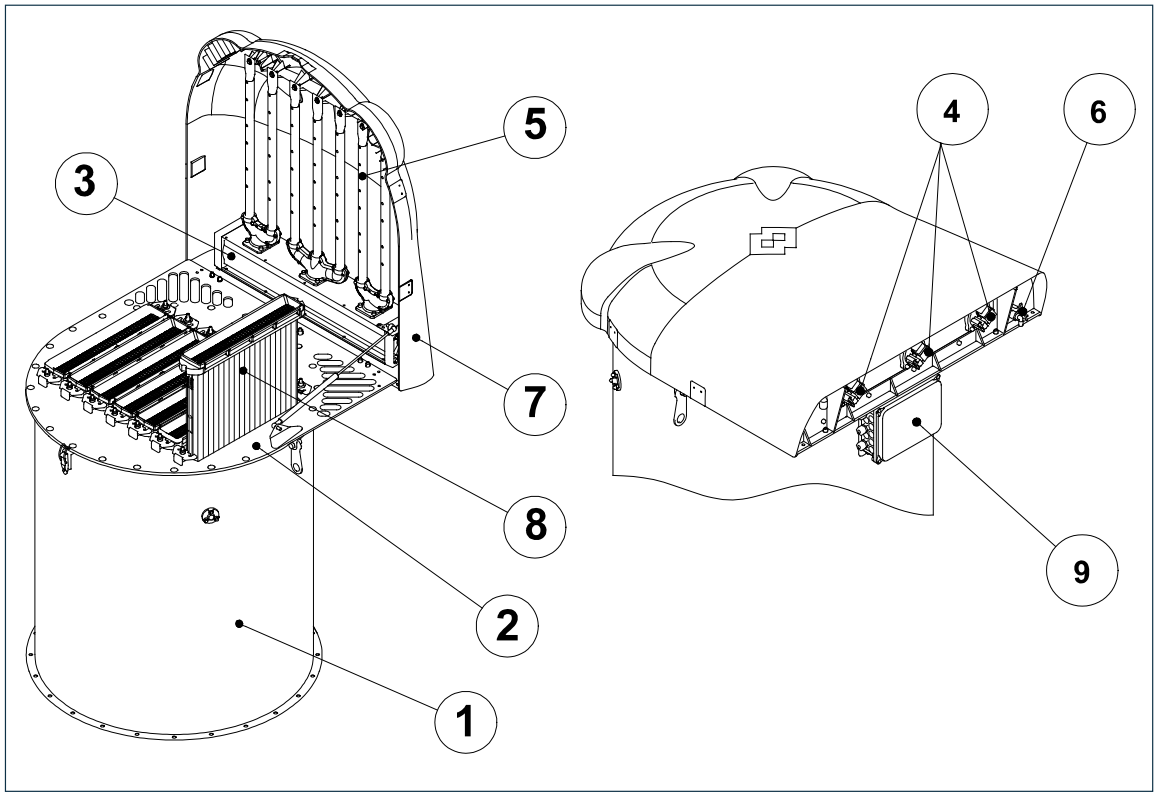
The main filter function is to cause the flowing out of the air during silo filling, intercepting at the same time the dust particles and preventing their dispersal in the environment, avoiding though air pollution.

2.2 Safety prescriptions for use

The equipment has NOT been design to operate in hazardous conditions or with hazardous materials; therefore, the Manufacturer must be given prior notice if the machine is to satisfy these requirements.

- The materials considered as being hazardous are the following: explosive, toxic, flammable, harmful or similar.

3.1 Standard machine description

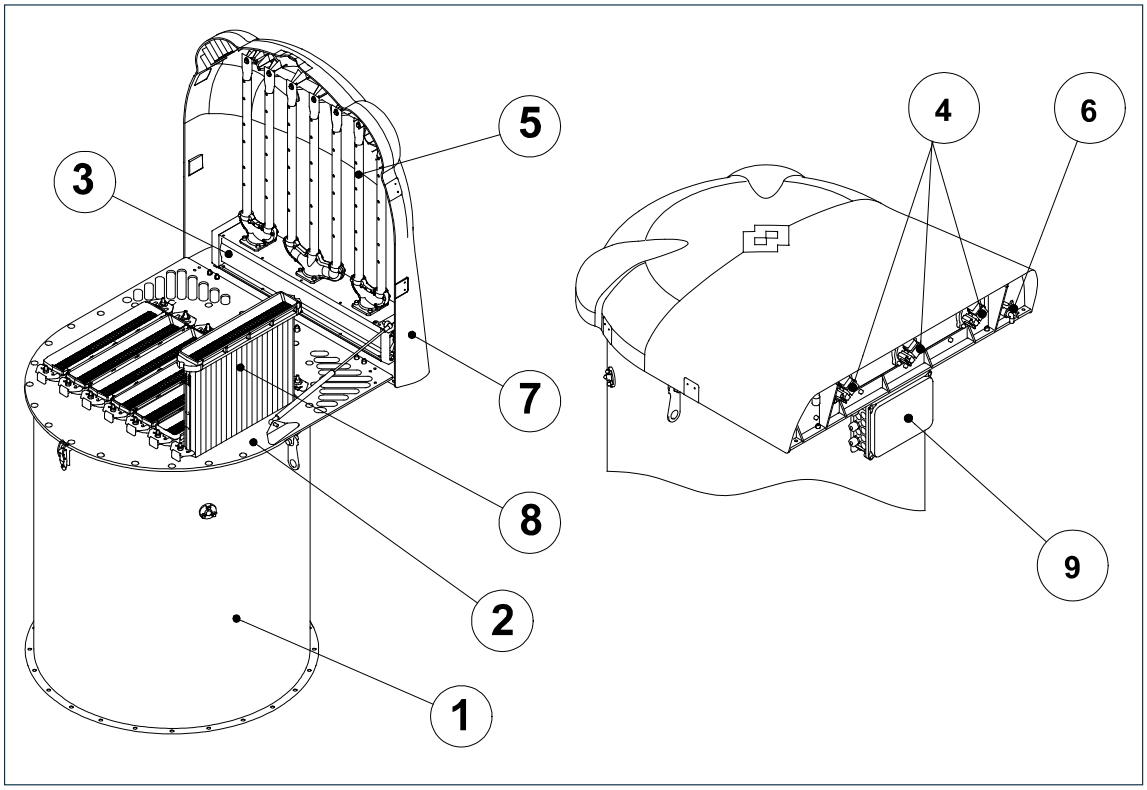


ITEM	DESCRIPTION	MATERIAL	THICKNESS	FINISHING
1	Filter body	304 SS / 430 SS	1 mm	2B (UNI EN 10088-2/4-1997)
2	Seal frame	CARBON STEAL	6 mm	Powder - coated RAL 7001
3	Air tank	Aluminium	3 mm	Anodized light
4	Solenoid valves	Aluminium	-	Black opaque elecrtophoresis
5	Blowing pipes	Plastic	-	-
6	Condensate drainage cock	-	-	-
7	Weather protection cover	-	-	-
8	Filter elements **POLYPLEAT®**	-	-	-
9	Electronic timer	-	-	-

*Accordin to UNI-EN 10088 (1997)/AISI (1974) / DIN 17440 (1985).

CLEANING UNIT

Compressed air in counter current



It comprises:

- Solenoid valves (1) fitted directly inside compressed air reservoir (2) to reduce load loss to the minimum;
- Iron blow pipe in AISI 304 (3);
- Externally anodised aluminium air reservoir with two heads (4) also made of aluminium with opaque black cataphoresis treatment ;
- Air intake (5).
- Condensate drainage tap (6).

The timer electronic (7) sequentially handles flow of compressed air to the blowing pipes.

The filter requires connection to a compressed air pipe at minimum 5 bar and maximum 6 bar constant pressure.

The air must be free of moisture and oil.

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3.0 STANDARD VERSION OF THE MACHINE AND OPTIONS

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ELECTRONIC TIMER

- The electronic timer controls the compressed air cleaning cycle of the filtering elements in sequential mode, with the possibility of changing the blowing time and pause time between one blowing cycle and the next.
- The WAM® controller board can be powered at 24V - 260V AC/DC, 50/60 Hz and is installed inside a box which guarantees protection degree IP66 (in accordance with CEI EN 60529).
- Pause times range from 5 to 90 sec., operating times range from 100 to 300 milliseconds. The board is provided with a timer fixed at 10 minutes to allow further cleaning of the filter at the end of the operating cycle.

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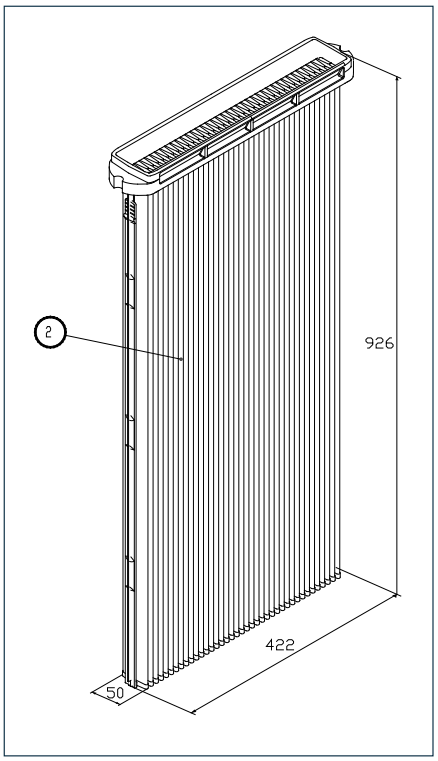
3.0 STANDARD VERSION OF THE MACHINE AND OPTIONS

FILTER ELEMENTS



The SILOTOP® zero dust collectors feature POLYPLEAT® filter elements.

These elements are parallelepiped-shape having dimensions according to the previous drawing; the filter media is of the non-woven pleated fabric, polyester based with Nanofiber coating.

The filtering surface equals 14 m^2 or 24 m^2, depending on the version chosen.

TYPE	ITEM	DESCRIPTION	MATERIAL
POLYPLEAT®	1	Head	Thermoplastic material
	2	Filtering media	Polyester non-woven

3.2 Versions - Order code

The SILAB filters range includes the following machines to be ordered on the basis of a finished code.

The range is follows the body material differences, the filtering surface, and the presence/absence of a pressure meter.

	m²	Body material	Differential pressure meter
SILAB14	14	SS 304	n.a.
SILAB14E	14	SS 430	n.a.
SILAB14V	14	SS 304	digital pressure meter (MDPE)
SILAB14EV	14	SS 430	digital pressure meter (MDPE)
SILAB24	24	SS 304	n.a.
SILAB24E	24	SS 430	n.a.
SILAB24V	24	SS 304	digital pressure meter (MDPE)
SILAB24EV	24	SS 430	digital pressure meter (MDPE)

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3.3 Accessories

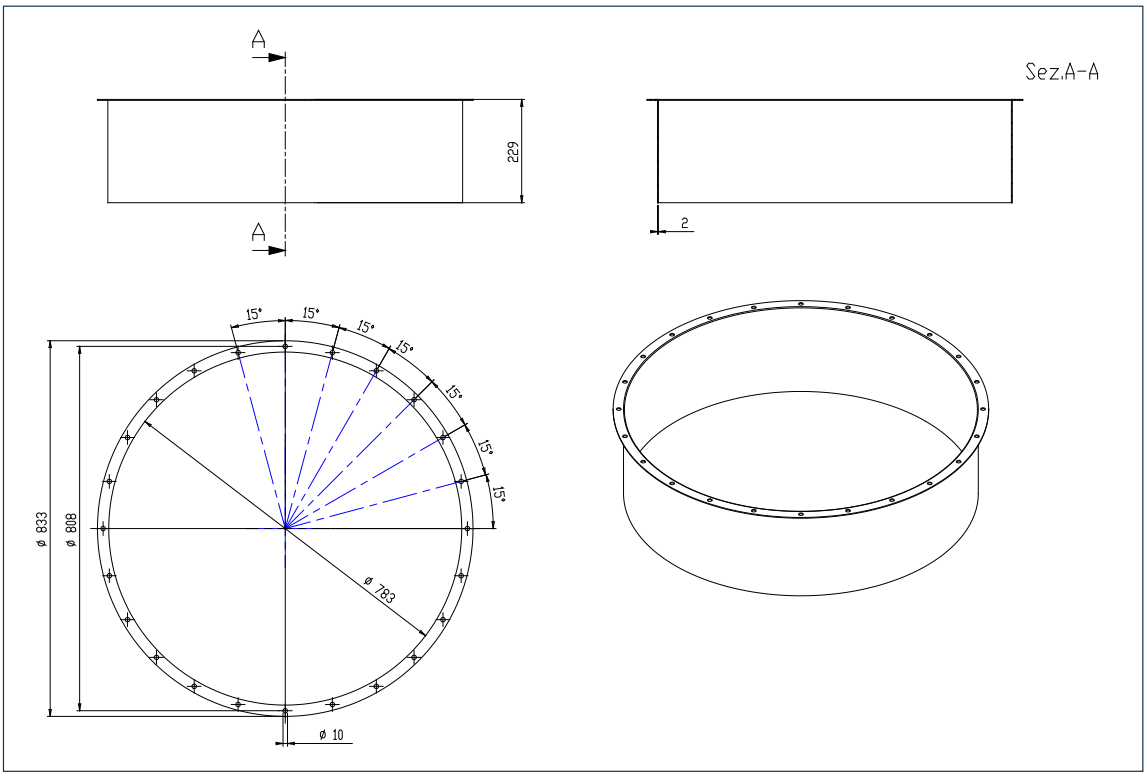
*BOTTOM RING**

Used to connect the filter with a hopper, silo etc.

The ring is welded on the silo, hopper or cell and then bolted to the filter.

FINISHING:

- Carbon steel powder- coated RAL 7001 (silver grey)
- SS 304

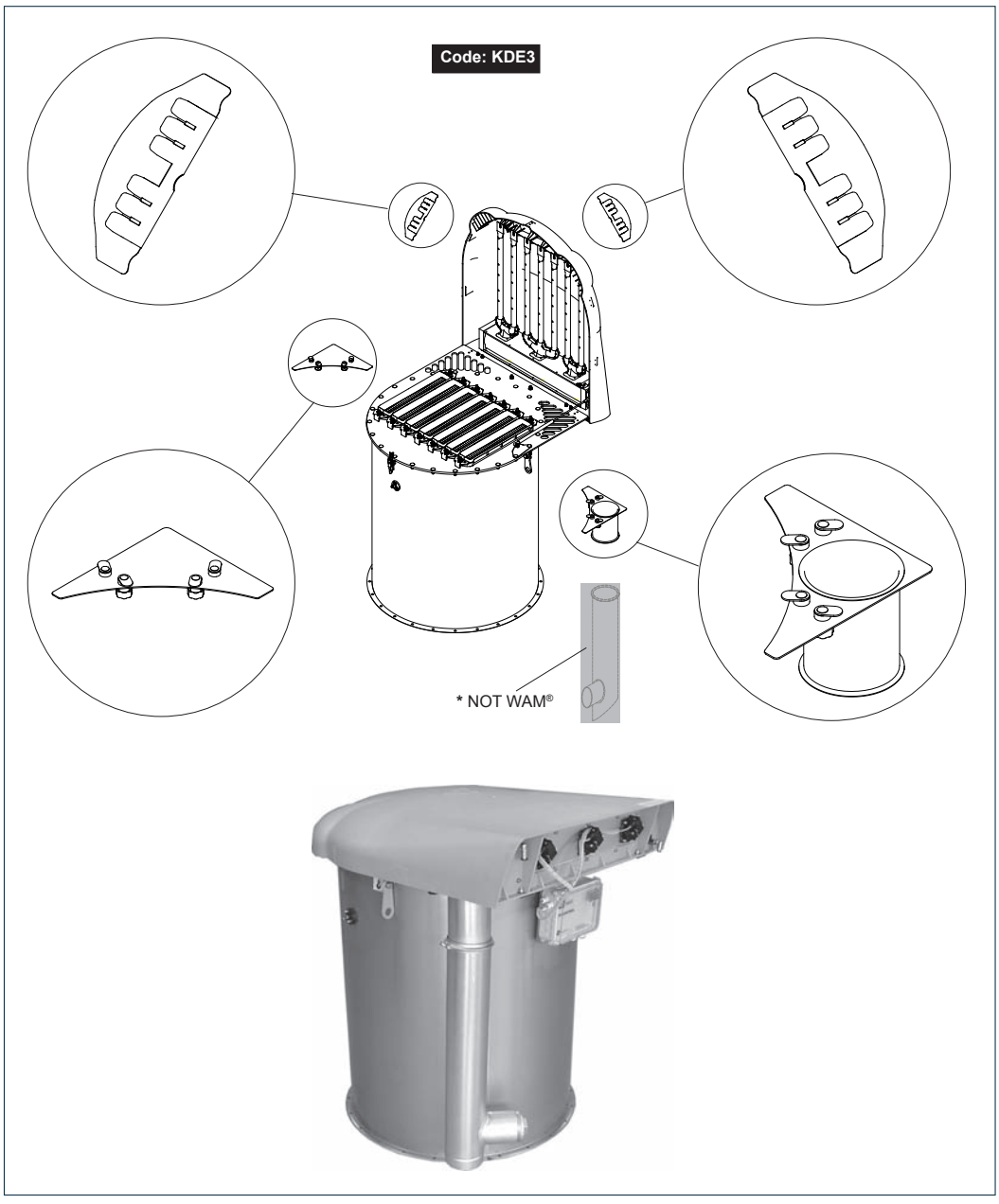


Fe CODE	U	F	N	8	0	0	1
SS 304 CODE	U	F	N	8	0	0	2

* = to be ordered separately

*EMISSIONS SAMPLING CONNECTION KIT**

If it is found to be necessary to check the filter emissions (basic supply) a special kit is available for conveying all the air from the filter outlet into a single pipe.



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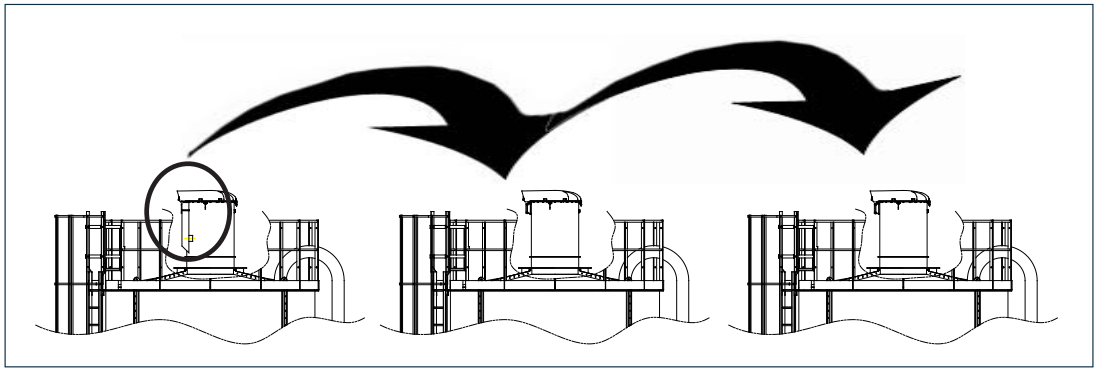
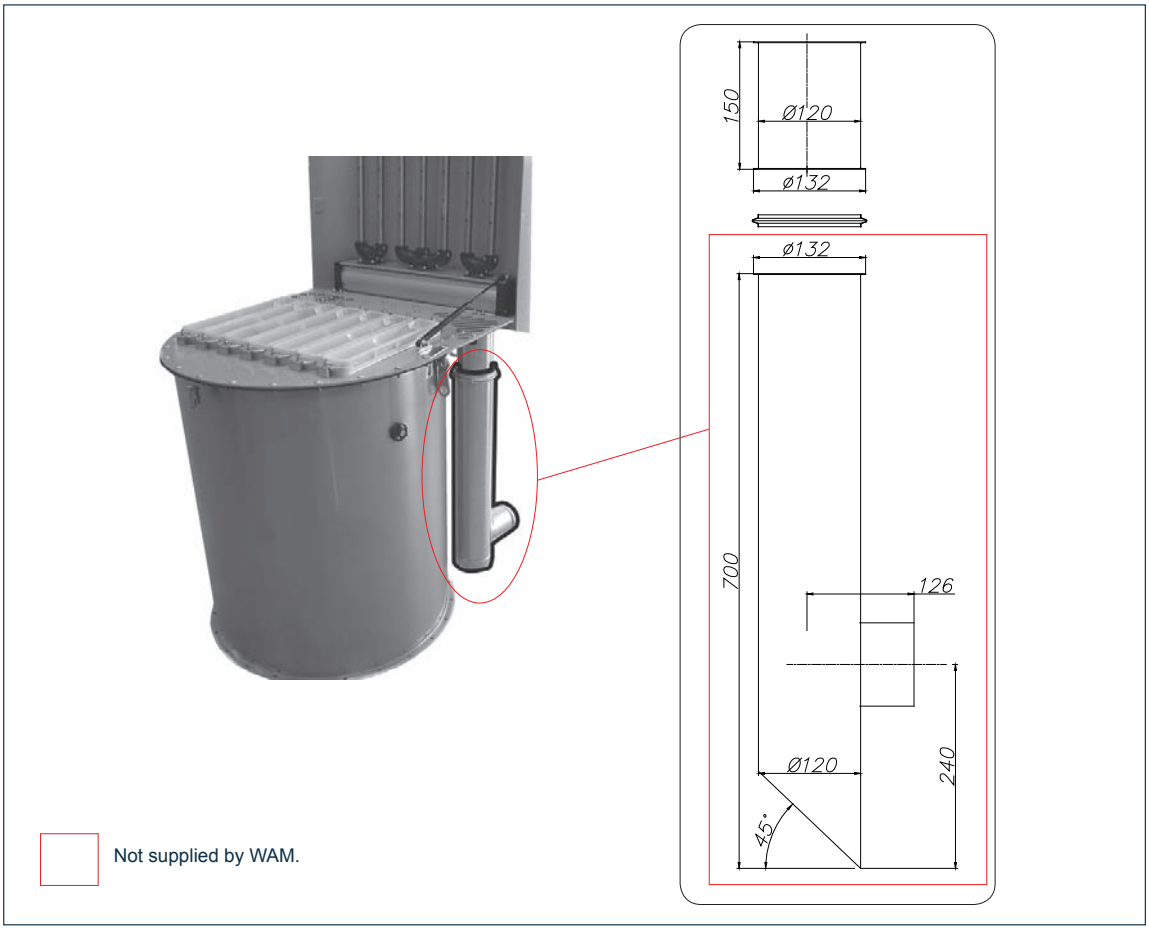


In case of plants with many filters, WAM® suggests using a single tube to be shifted from one filter to another. After making the measurement, remove the tube and air closure plates.



4.0 ENVIRONMENTAL OPERATING LIMITS

LIMITS OF USE

The filters operate under the following conditions:

1) Maximum permitted temperatures of the air flow:

POSITIVE: 80° C continuous
100 °C peak
NEGATIVE: - 20 °C

2) Maximum allowed static pressure of filter body:

POSITIVE: 750 mmH_2O (0.075 bar - 7.5 kPa)
NEGATIVE: -500 mmH_2O (-0.050 bar -5 kPa)

The filters have **not** been designed to operate in hazardous conditions or with hazardous materials; in case the machine must fulfil such requirements, it is mandatory to inform the manufacturer.

- The materials considered as being hazardous are the following: explosive, toxic, flammable, harmful or similar.

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5.0 DIMENSIONS AND WEIGHTS

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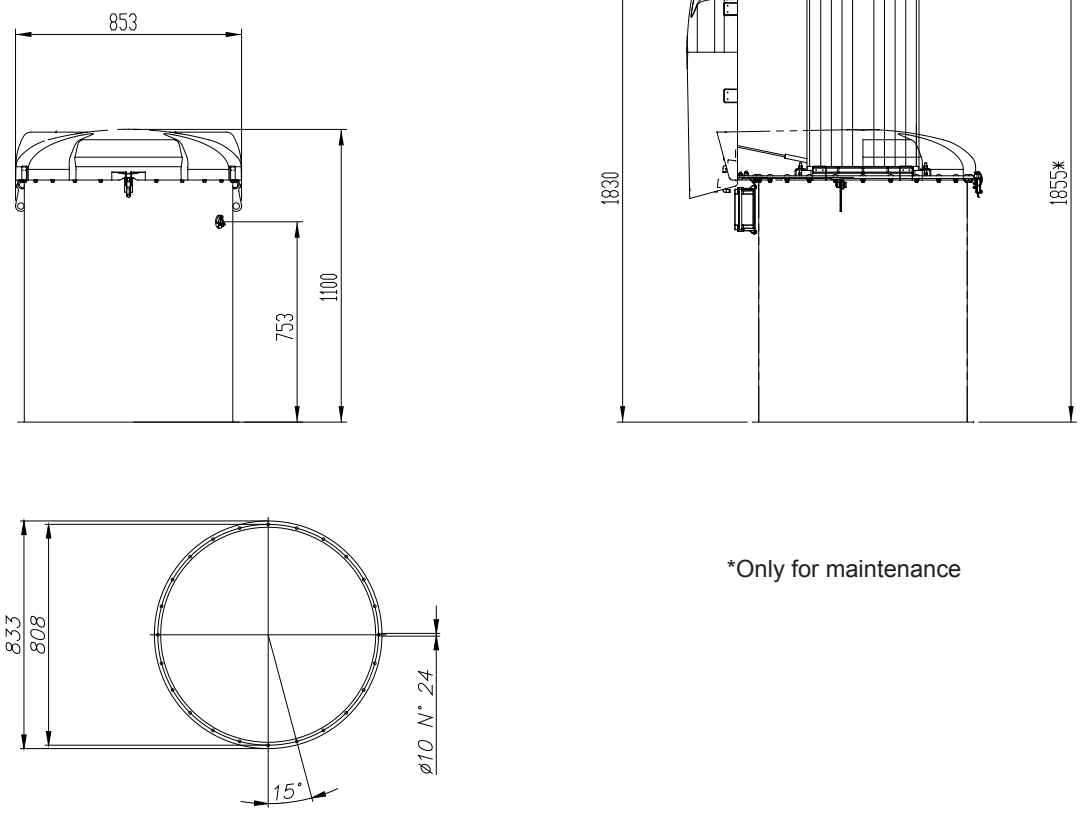


*Only for maintenance

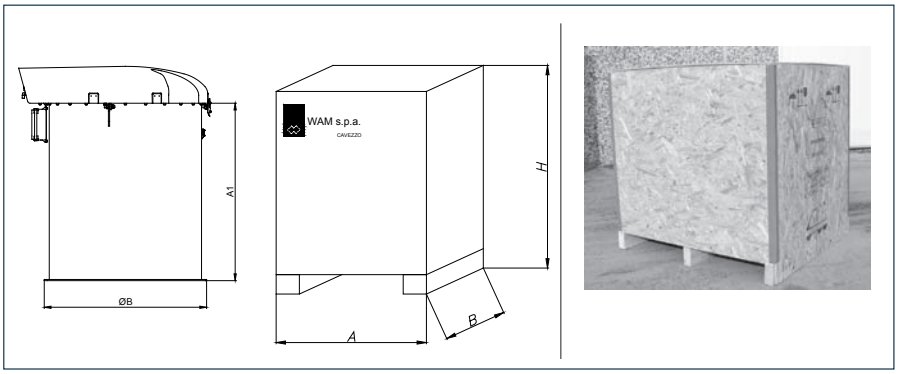
	ELEMENT (n°)	FILTERING SURFACE (m^2)	SOLENOID VALVES (n°)	WEIGHT* (kg)
SILAB14	4	14	2	72
SILAB24	7	24	3	79

*= filter weight without the packaging

5.0 DIMENSIONS AND WEIGHTS

PACKAGING

The filter comes supplied on a pallet of opportune dimensions, protect from a covering in panels to lignea matrix type OSB.



	ø B	A1	A	B	H	OVERALL PACKAGE WEIGHT (Kg)
SILAB14	837	914	1000	1100	1300	115
SILAB24						122

dimension in mm

6.1 Electrical requirements

Operating temperature.....-20°C to 80°C (normal operation); 100°C (maximum temperature)
Voltage.....24 ± 15% V (AC-DC) => 260 ± 15% V (AC-DC)
Frequency.....0 Hz (DC) => 60Hz
Output voltage and frequency.....24±10% (DC) controlled by µP for operation of the coils at 24V AC or DC
Max. power AC .....30 VA
Max. power DC .....30 W
For instructions, please refer to the Use, Installation and Maintenance manual.

6.2 Pneumatic requirements

The operation of the dust collector requires the connection to a pneumatic main supply. The compressed air must be:

1) Clean: with no residues that might damage the solenoid valves;
2) De-moist: The air tank is provided with a condensate drainage tap. It is however recommended to provide for a condensate separator.

Tank inlet pressure:

- Minimum 4 bar;
- Maximum 6 bar

The filters are supply with a quick release coupling for 12 mm tube at the air inlet.
For instructions, please refer to the Use, Installation and Maintenance manual.

6.3 Consumptions

	AIR TANK VOLUME	P (bar)	BLOW DURATION	CLEANING INTERVAL	Nm/h
SILAB14	5	4	0.1	56	1.8
SILAB24				39	2.5

INPUT VOLTAGE (VAC)	POWER CONSUMPTION (A)	POWER (W)
24	0,220	5.3
115	0,090	10.4
230	0,050	11.5
260	0,045	11.7