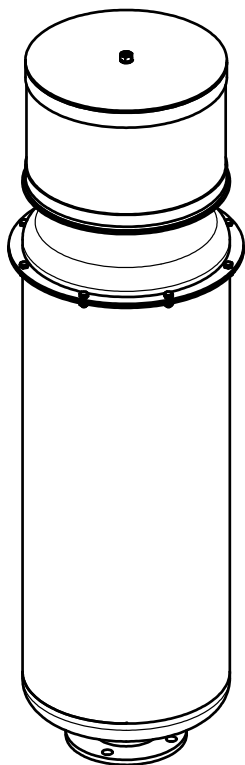
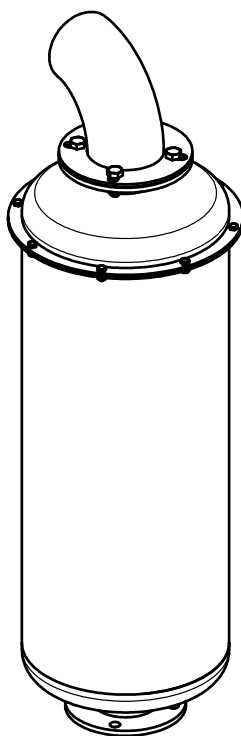


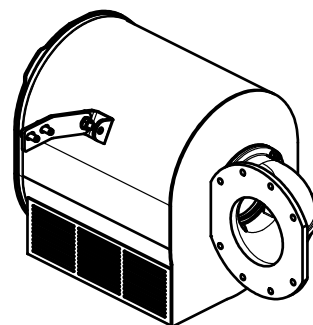
## ORIGINAL INSTRUCTIONS



STANDARD PVT-HELIX SILENCERS  
(INJECTION/DISCHARGE)



STANDARD PVT-HELIX SILENCERS  
(DISCHARGE)



COMPACT PVT-HELIX MUFFLER  
(INJECTION)

## TECHNICAL DATA SHEET

COD. 14140 147 00 - 14140 149 00  
 COD. 14140 146 00 - 14140 148 00  
 COD. 14140 143 00 - 14140 145 00  
 COD. 18470 004 00 - 18470 006 00  
 COD. 18470 003 00 - 18470 005 00  
 COD. 14140 142 00 - 14140 144 00  
 COD. 14140 139 00 - 14140 4N4 C0  
 COD. 14140 138 00  
 COD. 14140 127 00 - 14140 137 00  
 COD. 14140 141 00 - 14140 140 00

Rev. 05  
 12-12-2017

**Jurop**

COMPANY WITH  
 QUALITY SYSTEM  
 CERTIFIED BY DNV GL  
 = ISO 9001 =

COMPANY WITH  
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 = UNI EN ISO 3834-2 =

## 1. General warnings

This technical data sheet contains technical information concerning silencers for PVT and HELIX series lobe vacuum pumps and the main installation and maintenance instructions.

Complying with the instructions contained in this technical data sheet is crucial for the warranty on defective parts. Upon receiving the goods, ensure that they are intact and have not been accidentally damaged during transport. In the event parts of the accessory must be replaced, **only use original spare parts**.

## 2. Technical data

PVT and HELIX silencers are designed to be installed in correspondence with the discharge (standard silencers) or injection line (both standard and compact silencers) of lobe vacuum pumps without lubrication (typically of the PVT-HELIX Series), used to create a vacuum inside tanks.

The compact injection muffler replace the standard injection muffler. It is installed on the PVT-HELIX side. The suction group is developed to make the installation easier on stationary or mobile vacuum-pressure plants, conveying air.

PVT-HELIX silencers carry out two main functions:

- Attenuate the noise produced by decompressor operation;
- Filter the suctioned air (at injection) in order to prevent powdery particles over a determined size from entering the pump, thus compromising its operation.

Standard PVT-HELIX silencers are available in four categories:

- **Standard PVT200-280, HELIX300 Silencers**, made of painted S235JR mild steel and Stainless Steel AISI 304L;
- **Standard PVT400, HELIX450 Silencers**, made of painted S235JR mild steel and Stainless Steel AISI 304L;
- **Standard PVT700, HELIX750 Silencers**, made of painted S235JR mild steel and Compound material ("ultralight");
- **Standard PVT1000, HELIX1200 Silencer**, made of painted S235JR mild steel.

Each category has the following two types:

- **Filtered:** for injection installation (for all pumps) or to the discharge (for ATEX pumps, should they also be able to work under pressure, e.g. during tank draining operations);
- **Non-filtered:** for discharge installations (with the exception of ATEX pumps in which operation under pressure is provided for).

The figure to the side displays a schematic diagram of two standard silencers (e.g. installed to the discharge), highlighting the main features.

All silencers are equipped with UNI 2277-67 coupling flanges.

Filtered silencers have a Mesh 120 filtering degree.

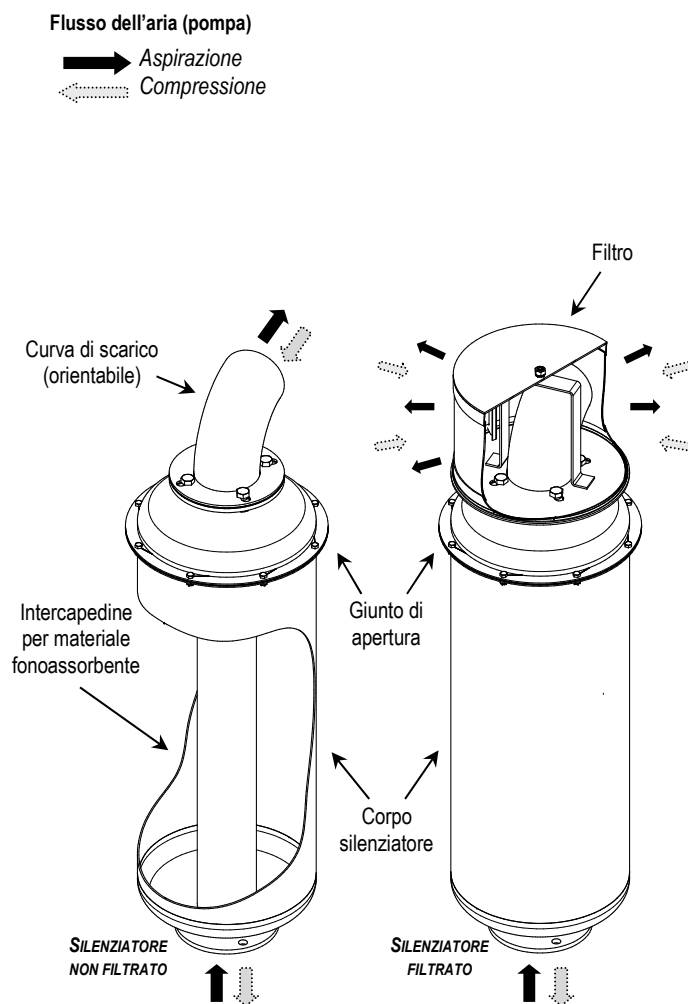
Compact PVT Silencers are available in four categories:

- **Compact PVT200 Silencer**, made of painted S235JR mild steel;
- **Compact PVT280-400, HELIX300-450 Silencer**, made of painted S235JR mild steel;
- **Compact PVT700, HELIX750 Silencer**, made of painted S235JR mild steel.

Each category has the following two types:

- **Filtered:** for injection installation (for all pumps) or to the discharge (for ATEX pumps, should they also be able to work under pressure, e.g. during tank draining operations);
- **Non-filtered:** for discharge installations (with the exception of ATEX pumps in which operation under pressure is provided for).

Filtered silencers have a Mesh 120 filtering degree.



The following table shows the main operation parameters and the possible combinations with different types of Jurop pumps:

SILENCERS						PVT PUMPS										
Model	Flow	Installation	Code	Material	Weight	200	200 ATEX	280	280 ATEX	400	400 ATEX	700	700 ATEX	1000	1000 ATEX	
STANDARD SILENCER PVT200	1280 m³/h	injection/discharge	1414014700	mild steel	57,0 kg	●	●									
			1414014900	stainless steel	57,0 kg	●	●									
		discharge	1414014600	mild steel	46,0 kg	●	○									
			1414014800	stainless steel	46,0 kg	●	○									
COMPACT SILENCER PVT200	1280 m³/h	injection	1847000300	mild steel	29,5 kg	●										
			1847000500	mild steel	33,0 kg	●	●									
STANDARD SILENCER PVT280-HELIX300	1850 m³/h	injection/discharge	1414014700	mild steel	57,0 kg			●	●							
			1414014900	stainless steel	57,0 kg			●	●							
		discharge	1414014600	mild steel	46,0 kg			●	○							
			1414014800	stainless steel	46,0 kg			●	○							
COMPACT SILENCER PVT280-HELIX300	1850 m³/h	injection	1847000400	mild steel	29,5 kg			●								
			1847000600	mild steel	32,5 kg			●	●							
STANDARD SILENCER PVT400-HELIX450	2600 m³/h	injection/discharge	1414014300	mild steel	64,0 kg					●	●					
			1414014500	stainless steel	64,0 kg					●	●					
		discharge	1414014200	mild steel	52,0 kg					●	○					
			1414014400	stainless steel	52,0 kg					●	○					
COMPACT SILENCER PVT400-HELIX450	2600 m³/h	injection	1847000400	mild steel	29,5 kg					●						
			1847000600	mild steel	32,5 kg					●	●					
STANDARD SILENCER PVT700-HELIX750	4150 m³/h	injection/discharge	1414013900	mild steel	135,0 kg							●	●			
			141404N4C0	compound mat.	32,0 kg								●	●		
		discharge	1414013800	mild steel	108,0 kg								●	○		
COMPACT SILENCER PVT700-HELIX750	4150 m³/h	injection	1414012700	mild steel	82,0 kg							●				
			1414013700	mild steel	78,5 kg								●	●		
STANDARD SILENCER PVT1000-HELIX1200	6400 m³/h	injection/discharge	1414014100	mild steel	220,0 kg									●	●	
		discharge	1414014000	mild steel	193,0 kg										●	○

○ Only possible to couple if the pump is without 4-way valves (decompressor operation under pressure is not allowed).

### 3. Installation

PVT-HELIX silencers are designed to be installed in correspondence with the discharge and injection line (depending on the choice of model) of lobe vacuum pumps (without lubrication).

To ensure attenuation of the noise produced by the decompressor, we recommend installing the silencer as close as possible to it and minimising the hose sections in the line.

The discharge silencer (when assailed by decompressor discharge airflows) is subjected to the passage of high-temperature air that may cause overheating.



**Attention: place the silencer out of the reach of operators or provide suitable guards.**

An adjustable curved pipe is installed on the outlet of the silencer, in order to prevent rain from entering and to enable positioning of the output airflow. Pay special attention to the fumes suctioned by the vacuum pump and emitted through the silencer.



**Attention: direct the silencer discharge away from operators and from the intake duct of the vehicle engine.**

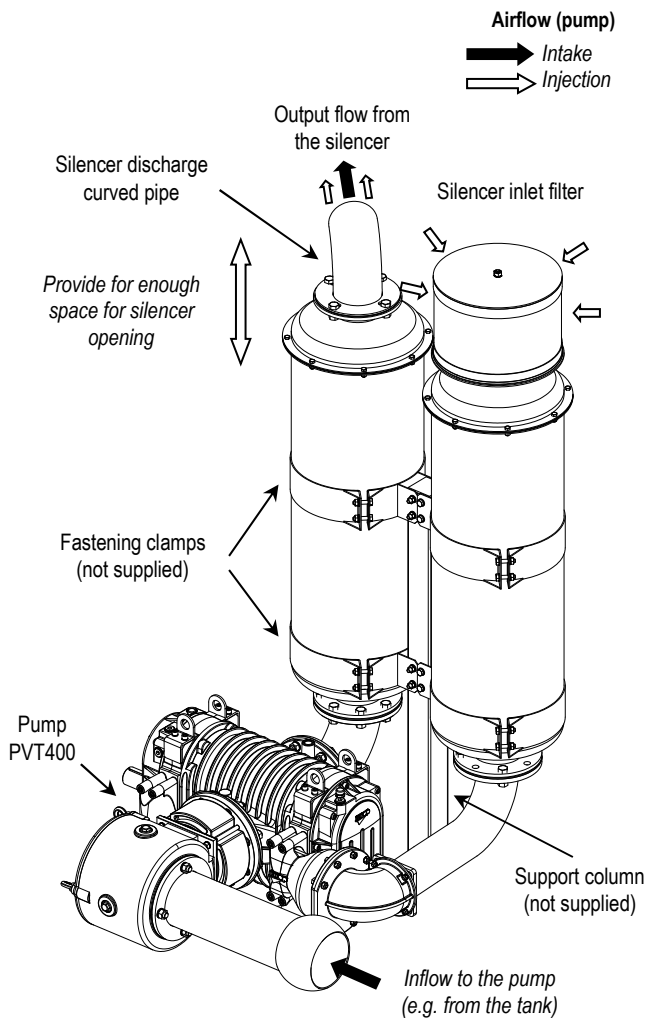
Direct the silencer discharge output away from the silencer suction inlet in order to prevent the input of hot fluids into the injection inlet.

The following table shows the correct installation position for the different types of standard PVT-HELIX silencers (input always facing downwards).

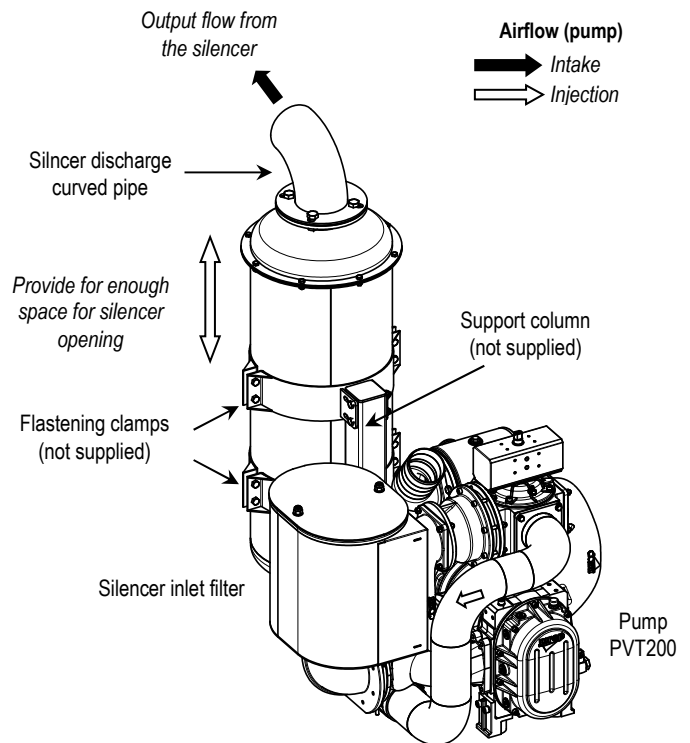
Model	Horizontal Inst.	Vertical Inst.
PVT200-280, HELIX300 Silencer		●
PVT400, HELIX450 Silencer		●
PVT700, HELIX750 Silencer	●	● (*)
PVT1000, HELIX1200 Silencer	●	

(\*) Installation is only permitted for silencers in mild steel; for vertical installations, provide for a discharge valve for any accumulated materials in the silencer in correspondence with the threaded sleeve placed below.

The figure below shows a schematic diagram of a possible correct installation of silencers for a *standard PVT400 pump* (therefore, the use of a non-filtered silencer to the discharge is permissible). In order to be installed correctly, silencers must be supported by means of clamping points, e.g., with metal clamps (refer to the figure on the side), or with special support systems.



The figure below shows a schematic diagram of a possible correct installation of compact silencer for a *standard PVT200 pump* (therefore, the use of a non-filtered silencer to the discharge is permissible). In order to be installed correctly, silencers must be supported by means of clamping points, e.g., with metal clamps (refer to the figure on the side), or with special support systems.



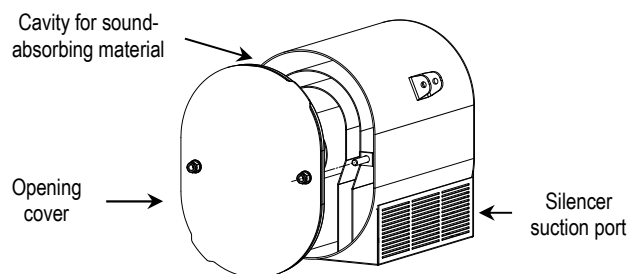
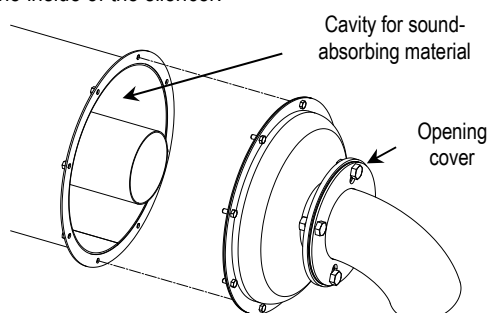
PVT-HELIX series silencers can be opened (with the exception of the compound material version), thus enabling any worn sound-absorbing material to be replaced. You are, therefore, advised to position the silencer in such a way that the removable cover is sufficiently accessible.

The compact injection silencer is installed on the PVT-HELIX side. Provide enough space for air injection. An inefficient air injection could cause the vacuum pump overheating during the vacuum operation.

#### 4. Maintenance

PVT-HELIX silencers are equipped with an opening cover (with the exception of compound material versions) to enable replacement of the worn sound-absorbing material (mineral wool) inside.

Remove the fastening screws (8 or 12, depending on the model) of the cover and open the silencer. Replace the worn sound-absorbing material inside. Once the worn material has been removed, proceed in washing the inside of the silencer.



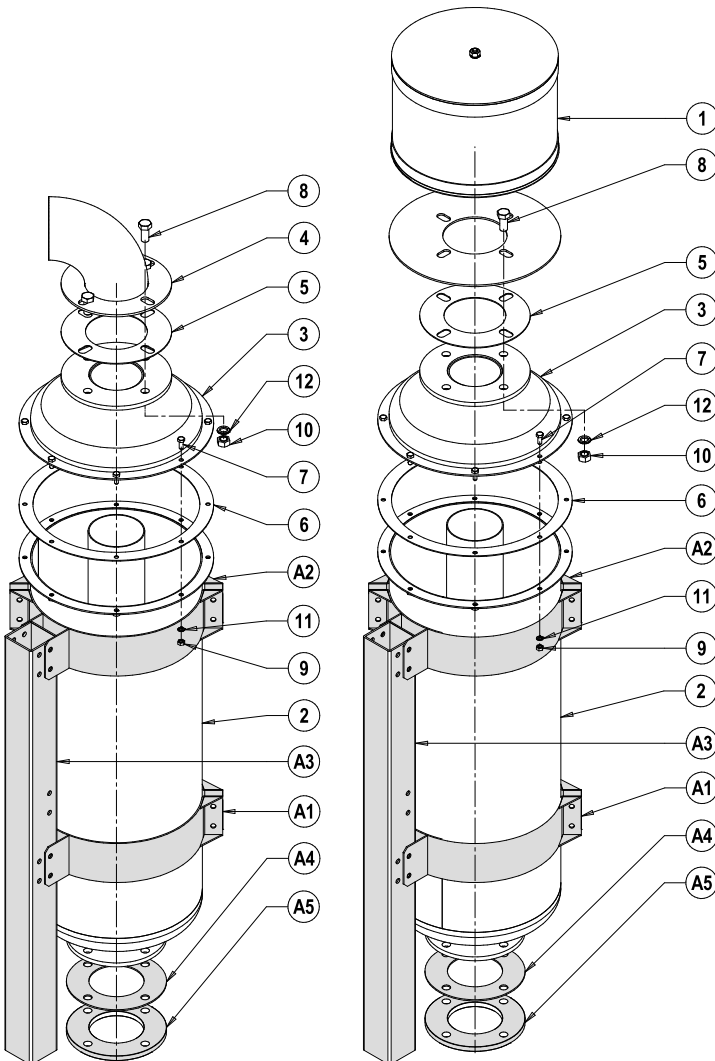
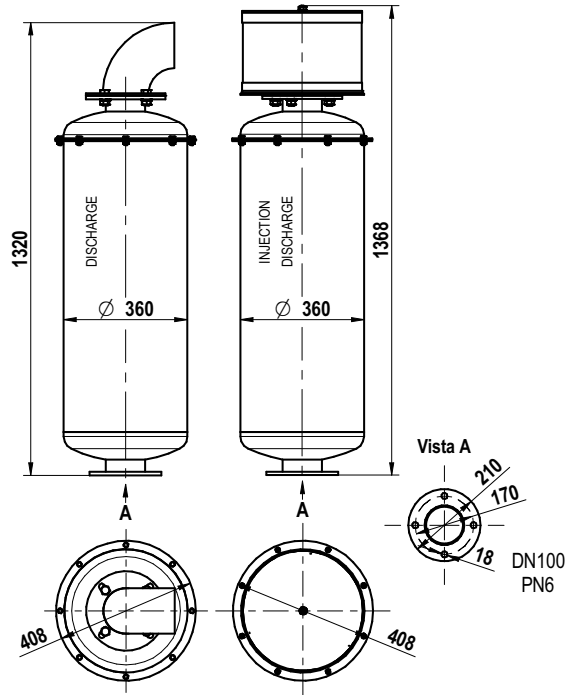
To order replacement material, supply the following code:

**Mineral wool** code 4022213600, refer to the following page for quantities.

Check weekly the cleanliness of the silencer suction port. Remove all the filth that obstruct the air-flow.

**STANDARD PVT-HELIX SILENCER**

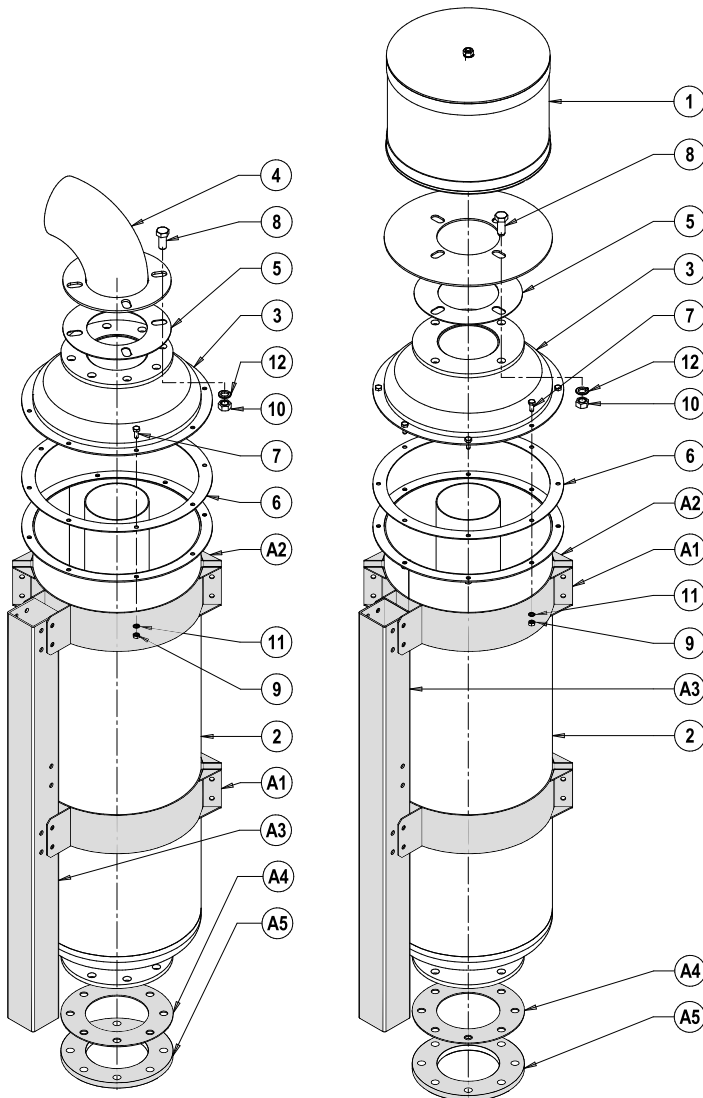
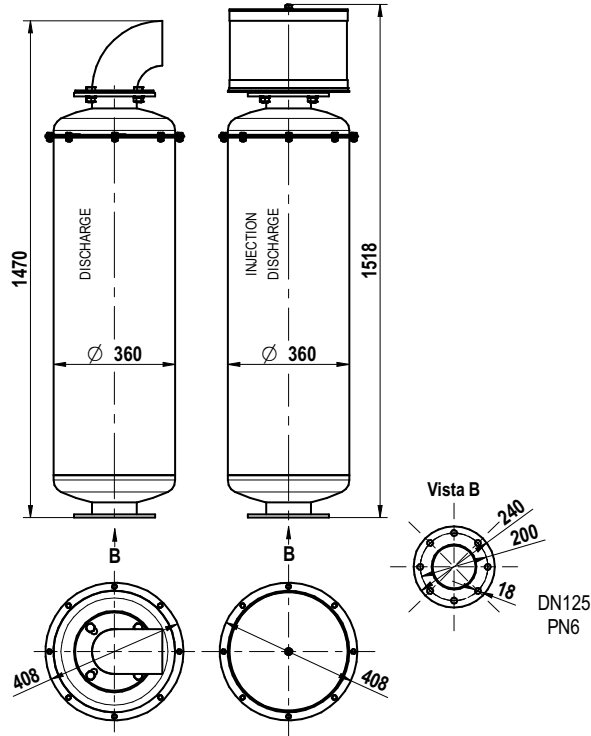
Standard PVT200-280, HELIX300 Silencer (mild steel - stainless steel)



Pos.	Code	Description	Q.ty
1	1445007100	FILTER SIL. PVT200-280-400	1
2	15470ZTQB0	SILENCER (IRON)	1
	15470ZTWB0	SILENCER (INOX)	1
3	15470ZTRB0	COVER (IRON)	1
	15470ZTXB0	COVER (INOX)	1
4	1563001NC0	CURVED PIPE	1
5	1680701LC0	GASKET SIL. PVT200-280-400	1
6	16807ZSYB0	GASKET SIL. PVT200-280-400	1
7	4026102806	SCREW TE M8X20 GALV.	8
	4026150407	SCREW TE M8X20 INOX	8
8	4026103209	SCREW TE M16X35 GALV.	4
	4026150811	SCREW TE M16X40 INOX	4
9	4026308005	NUT M8 ESAG. GALV.	8
	4026310007	NUT M8 ESAG. INOX	8
10	4026308009	NUT M16 ESAG. GALV.	4
	4026310011	NUT M16 ESAG. INOX	4
11	4026350706	WASHER GROWER 8 GALV.	8
	4026350405	WASHER GROWER 8 INOX	8
12	4026350711	WASHER GROWER 16 ZINC.	4
	4026350410	WASHER GROWER 16 INOX	4
<b>Accessories available upon request</b>			
A1	15130164B0	IRON CLAMP D.360 FE WITH SUPP.	2
A2	15130165B0	IRON CLAMP D.360	2
A3	1613043600	STANDING SUPPORT	1
A4	16807X7VA0	GASKET DN100 PN6	1
A5	4026713007	4-HOLES FLANGE DN100 PN6 TH.12 (IRON)	1
	4026713707	4-HOLES FLANGE DN100 PN6 TH.12 (INOX)	1
	4022213600	MINERAL WOOL	9 kg

These accessories do not include nuts and bolts.

Standard PVT400, HELIX450 Silencer (mild steel - stainless steel)



Pos.	Code	Description	Q.ty
1	1445007100	FILTER SIL. PVT200-280-400	1
2	15470ZSQB0	SILENCER (IRON)	1
	15470ZTMB0	SILENCER (INOX)	1
3	15470ZSRB0	COVER (IRON)	1
	15470ZTDB0	COVER (INOX)	1
4	1563001NC0	CURVED PIPE	1
5	1680701LC0	GASKET SIL. PVT200-280-400	1
6	16807ZSYB0	GASKET SIL. PVT200-280-400	1
7	4026102806	SCREW TE M8X20 GALV.	8
	4026150407	SCREW TE M8X20 INOX	8
8	4026103209	SCREW TE M16X35 GALV.	4
	4026150811	SCREW TE M16X40 INOX	4
9	4026308005	NUT M8 ESAG. GALV.	8
	4026310007	NUT M8 ESAG. INOX	8
10	4026308009	NUT M16 ESAG. GALV.	4
	4026310011	NUT M16 ESAG. INOX	4
11	4026350706	WASHER GROWER 8 GALV.	8
	4026350405	WASHER GROWER 8 INOX	8
12	4026350711	WASHER GROWER 16 GALV.	4
	4026350410	WASHER GROWER 16 INOX	4

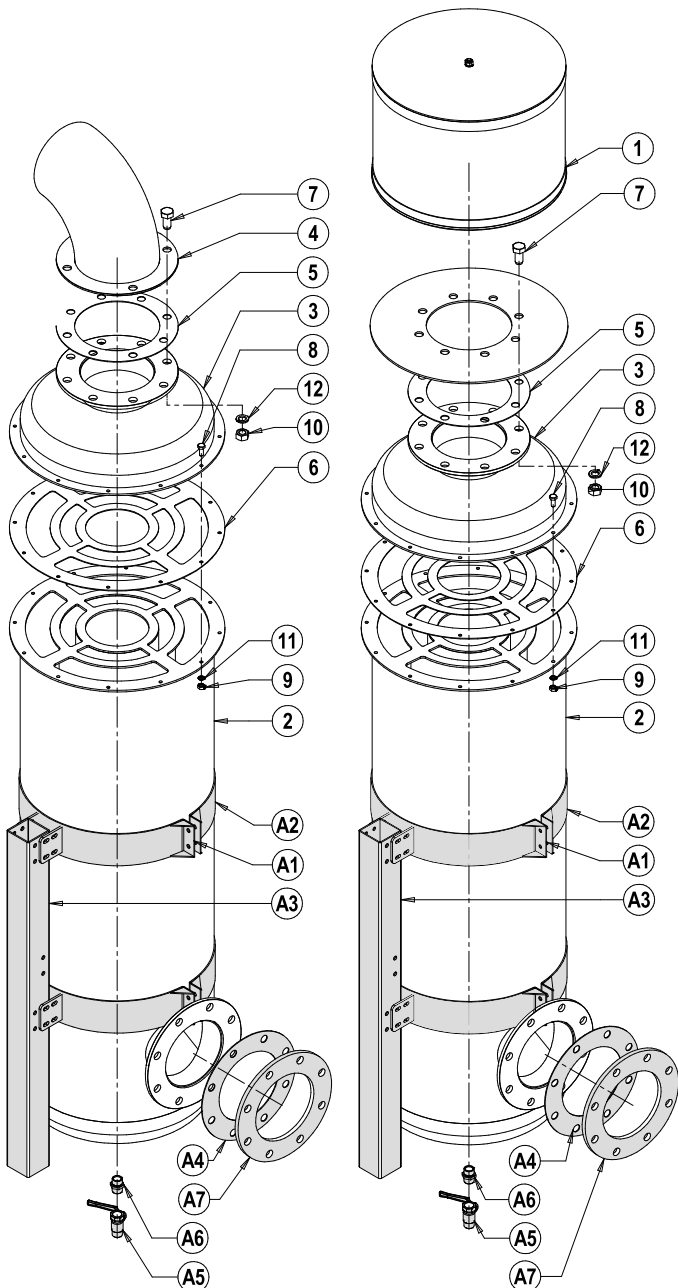
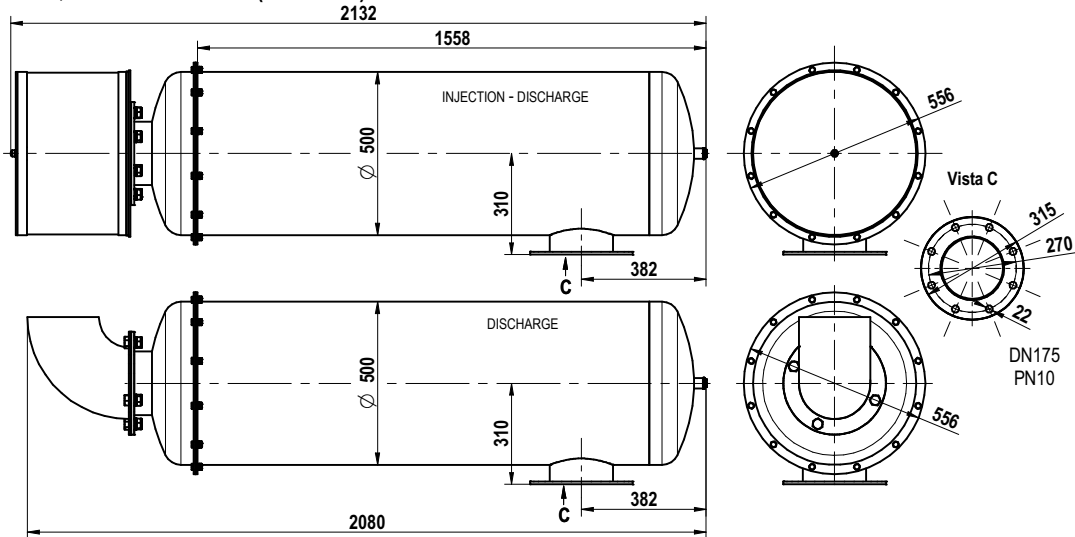
Accessories available upon request

A1	15130164B0	IRON CLAMP D.360 WITH SUPP.	2
A2	15130165B0	IRON CLAMP D.360	2
A3	1613043600	STANDING SUPPORT	1
A4	16807X7VA0	GASKET DN100 PN6	1
A5	4026713008	8-HOLES FLANGE DN125 PN6 TH.14 (IRON)	1
	16100PNPB0	8-HOLES FLANGE DN125 PN6 TH.10 (INOX)	1
	4022213600	MINERAL WOOL	11kg

These accessories do not include nuts and bolts.



**Standard PVT700, HELIX750 silencer (mild steel)**



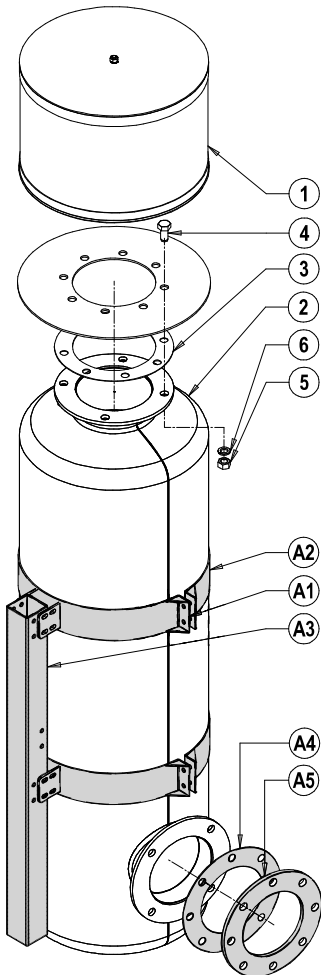
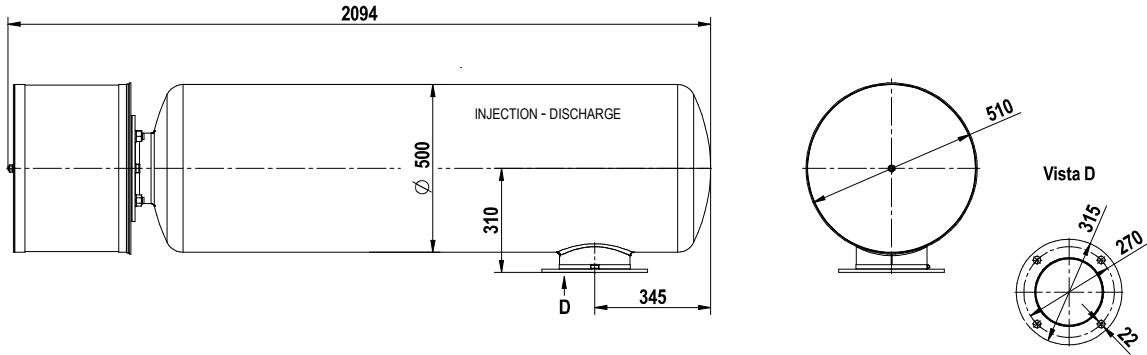
Pos.	Code	Description	Q.ty
1	1445007000	FILTER SIL. PVT700	1
2	15470ZR4B0	SILENCER (IRON)	1
3	15470ZRNBO	COVER (IRON)	1
4	15630027C0	CURVED PIPE	1
5	16807026C0	GASKET SIL. PVT700	1
6	16807ZRRB0	GASKET SIL. PVT700	1
7	4026101811	SCREW TE M20X40 GALV.	8
8	4026102907	SCREW TE M10X25 GALV.	12
9	4026308006	NUT M10 ESAG. GALV.	12
10	4026308011	NUT M20 ESAG. GALV.	8
11	4026350708	WASHER GROWER 10 GALV.	12
12	4026350713	WASHER GROWER 20 GALV.	8

**Accessories available upon request**

A1	15130A81B0	IRON CLAMP D.500 WITH SUPP.	2
A2	15130A82B0	IRON CLAMP D.500	2
A3	1613043600	STANDING SUPPORT	1
A4	1680711900	GASKET DN175 PN10	1
A5	4024409903	BALL VALVE M/F 3/4"	1
A6	4026740004	NIPPLE 3/4"	1
A7	16100L4KB0	8-HOLES FLANGE DN175 PN10 TH.12 (IR)	1
	4022213600	MINERAL WOOL	32kg

These accessories do not include nuts and bolts.

**Standard PVT700, HELIX750 Silencer (compound material)**



Pos.	Code	Description	Q.ty
1	1445007000	FILTER SIL. PVT700	1
2	1547004500	SILENCER (COMPOUND MATERIAL)	1
3	16807026C0	GASKET SIL. PVT700	1
4	4026101811	SCREW TE M20X40 GALV.	8
5	4026308011	NUT M20 ESAG. GALV.	8
6	4026357011	WASHER M20 GALV. (SIL. INJ.)	8

**Accessories available upon request**

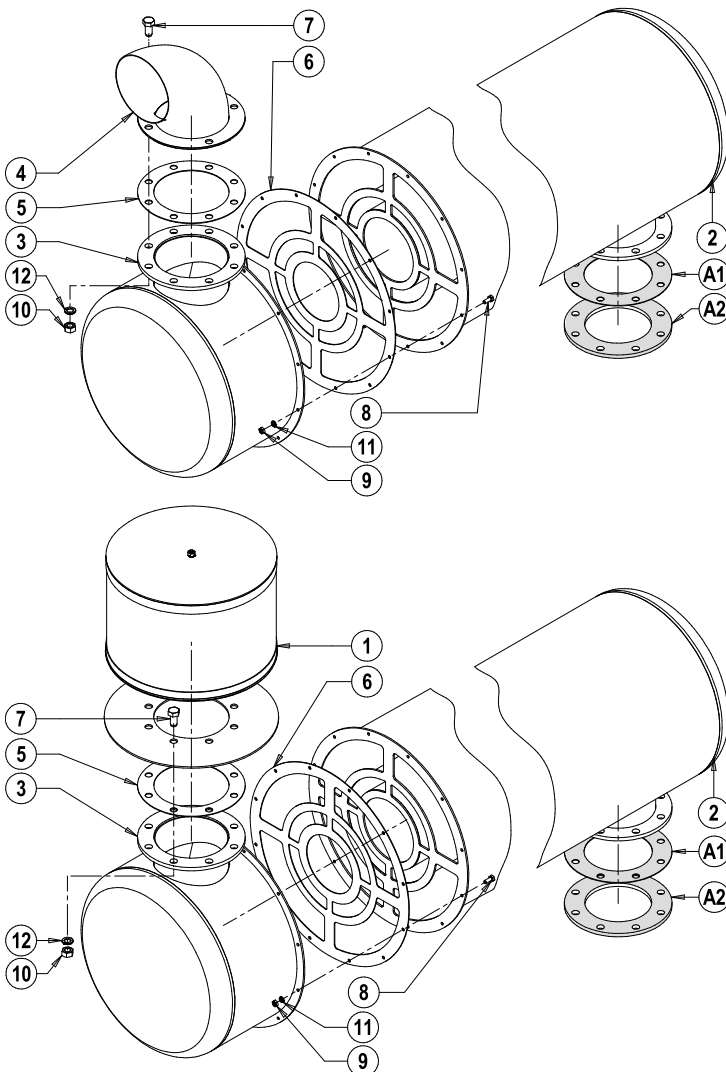
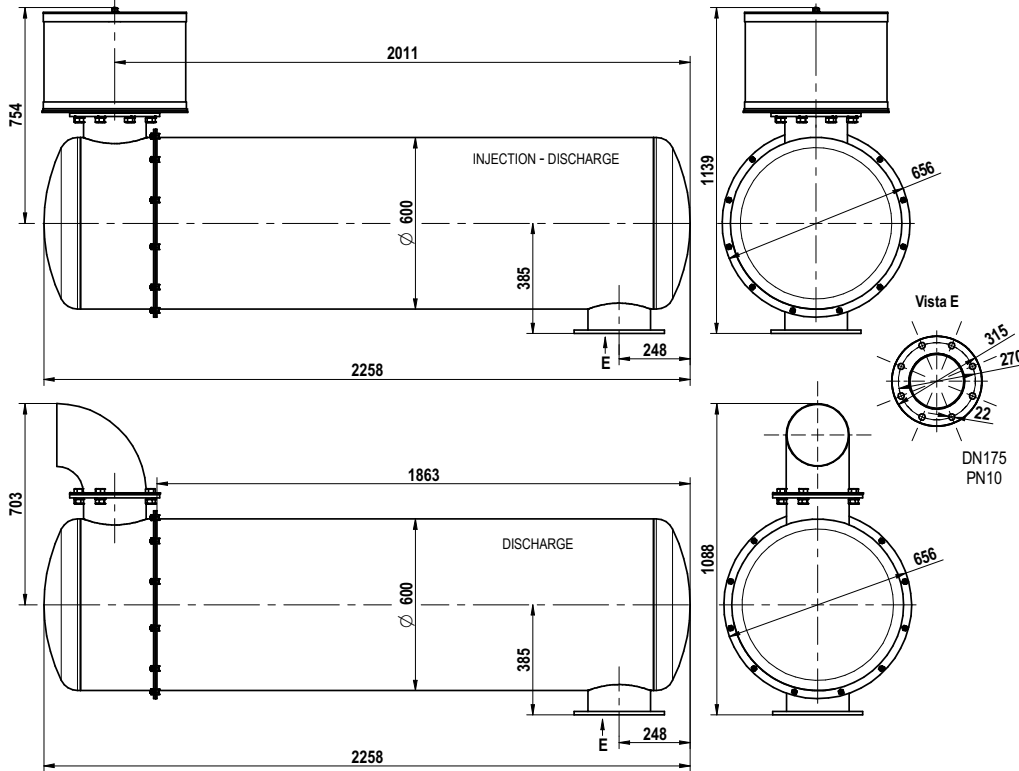
A1	15130A81B0	IRON CLAMP D.500 WITH SUPP.	2
A2	15130A82B0	IRON CLAMP D.500	2
A3	1613043600	STANDING SUPPORT	1
A4	1680711900	GASKET DN175 PN10	1
A5	4026713610	8-HOLES FLAN. DN175 PN10 TH.14 (INOX)	1
	16100L4KB0	8-HOLES FLAN. DN175 PN10 TH.12 (IRON)	1

4022213600 MINERAL WOOL 32kg

These accessories do not include nuts and bolts.



**Standard PVT1000, HELIX1200 Silencer (mild steel)**

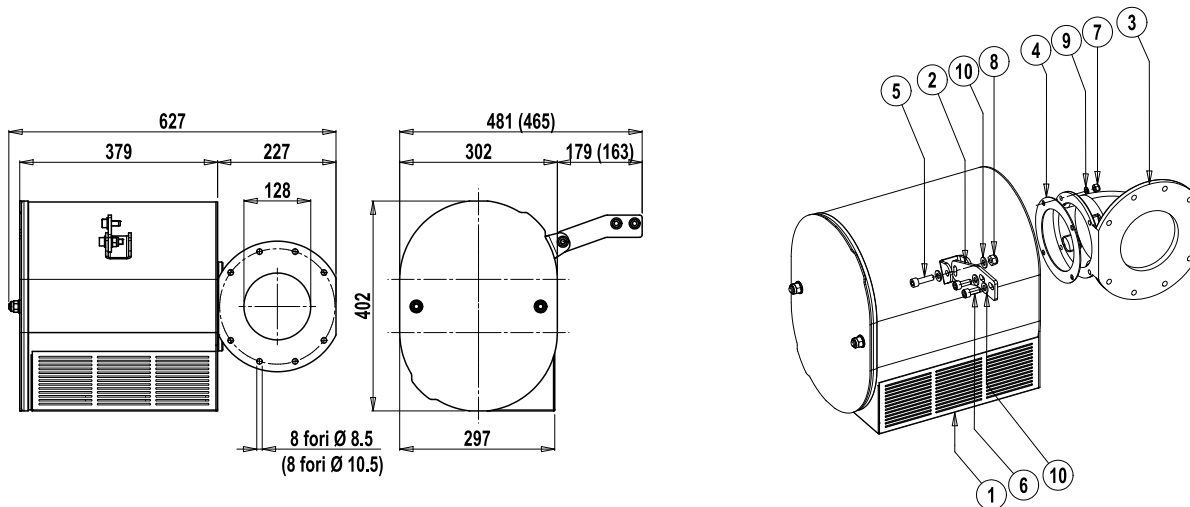


Pos.	Code	Description	Q.ty
1	1445007000	FILTER SIL. PVT1000	1
2	15470ZGUB0	SILENCER (IRON)	1
3	15470ZH3B0	COVER (IRON)	1
4	15630027C0	CURVED PIPE	1
5	16807026C0	GASKET SIL. PVT1000	1
6	16807ZJT B0	GASKET SIL. PVT1000	1
7	4026101811	SCREW TE M20X40 GALV.	8
8	4026102907	SCREW TE M10X25 GALV.	12
9	4026308006	NUT M10 ESAG. GALV.	12
10	4026308011	NUT M20 ESAG. GALV.	8
11	4026350708	WASHER GROWER 10 GALV.	12
12	4026350713	WASHER GROWER 20 GALV.	8

**Accessories available upon request**

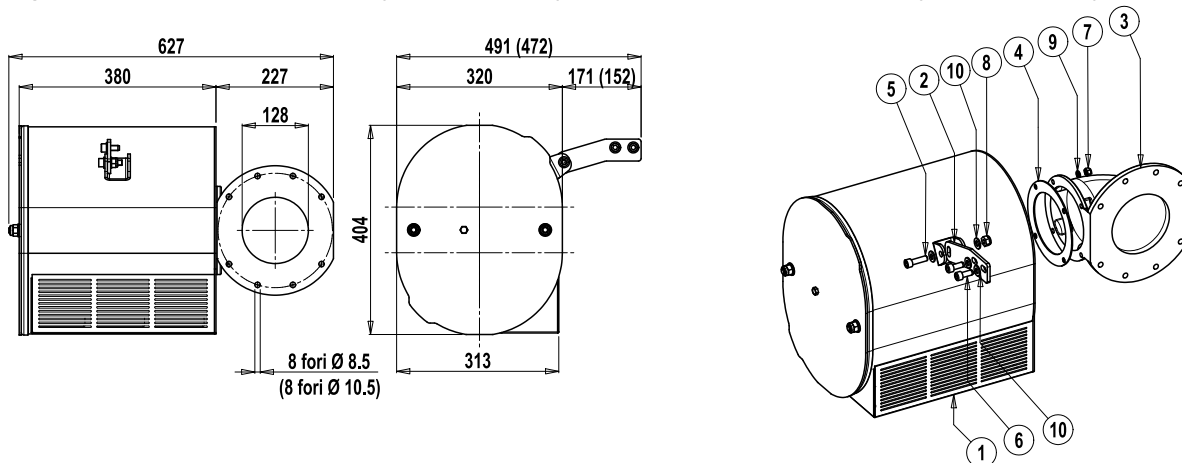
A1	1680711900	GASKET DN175 PN10	1
A2	16100L4KB0	8-HOLES FLANGE DN175 PN10 TH.12 (IRO)	1
	4022213600	MINERAL WOOL	60kg

These accessories do not include nuts and bolts.

**COMPACT PVT-HELIX SILENCER**
**Compact Silencer without filter for PVT200 (code 1847000300) and for PVT280-400, HELIX300-450 (code 1847000400)**


Dimensions reported in ( ) refer to PVT280-400 models.

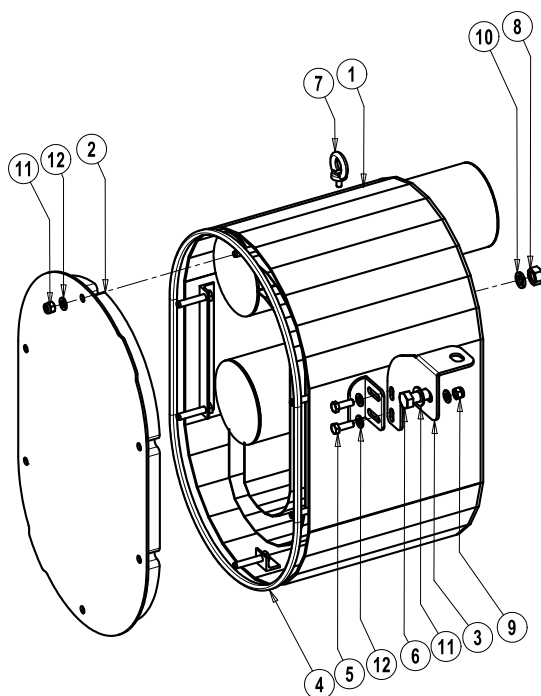
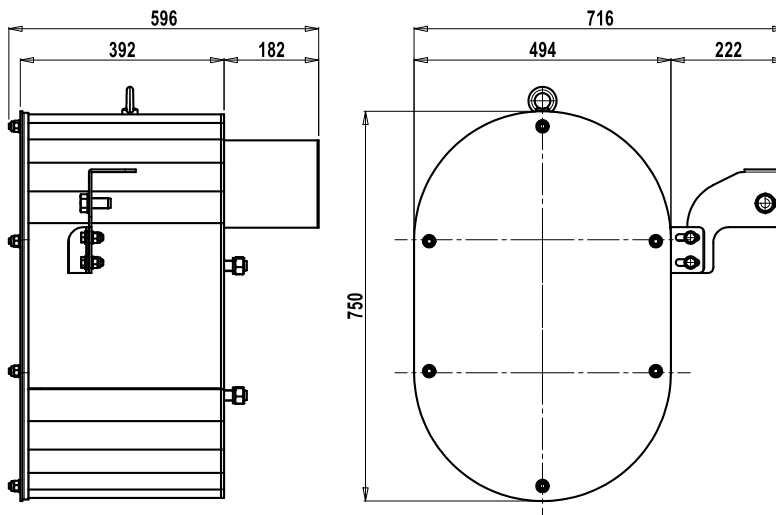
Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1414012800	PVT200-400 INJECTION SILENCER	1	5	4026120507	SCREW TCEI M10X35	1
2	16120MJJB0	STANDING SUPPORT (SIL. PVT200)	1	6	4026121808	SCREW TCEI M10X25	2
	16120MJMB0	STANDING SUPPORT (SIL. PVT280-400)	1	7	4026305504	NUT M8 SELF-BLOCKING	4
3	1627105300	COLLECTOR (SIL. PVT200)	1	8	4026305507	NUT M10 SELF-BLOCKING	1
	1627104200	COLLECTOR (SIL. PVT280-400)	1	9	4026350706	WASHER GROWER 8	4
4	1680712700	GASKET	1	10	4026357006	WASHER M10	4
					4022213600	MINERAL WOOL	2,5kg

**Compact Silencer with filter for PVT200 (code 1847000500) and for PVT280-400, HELIX300-450 (code 1847000600)**


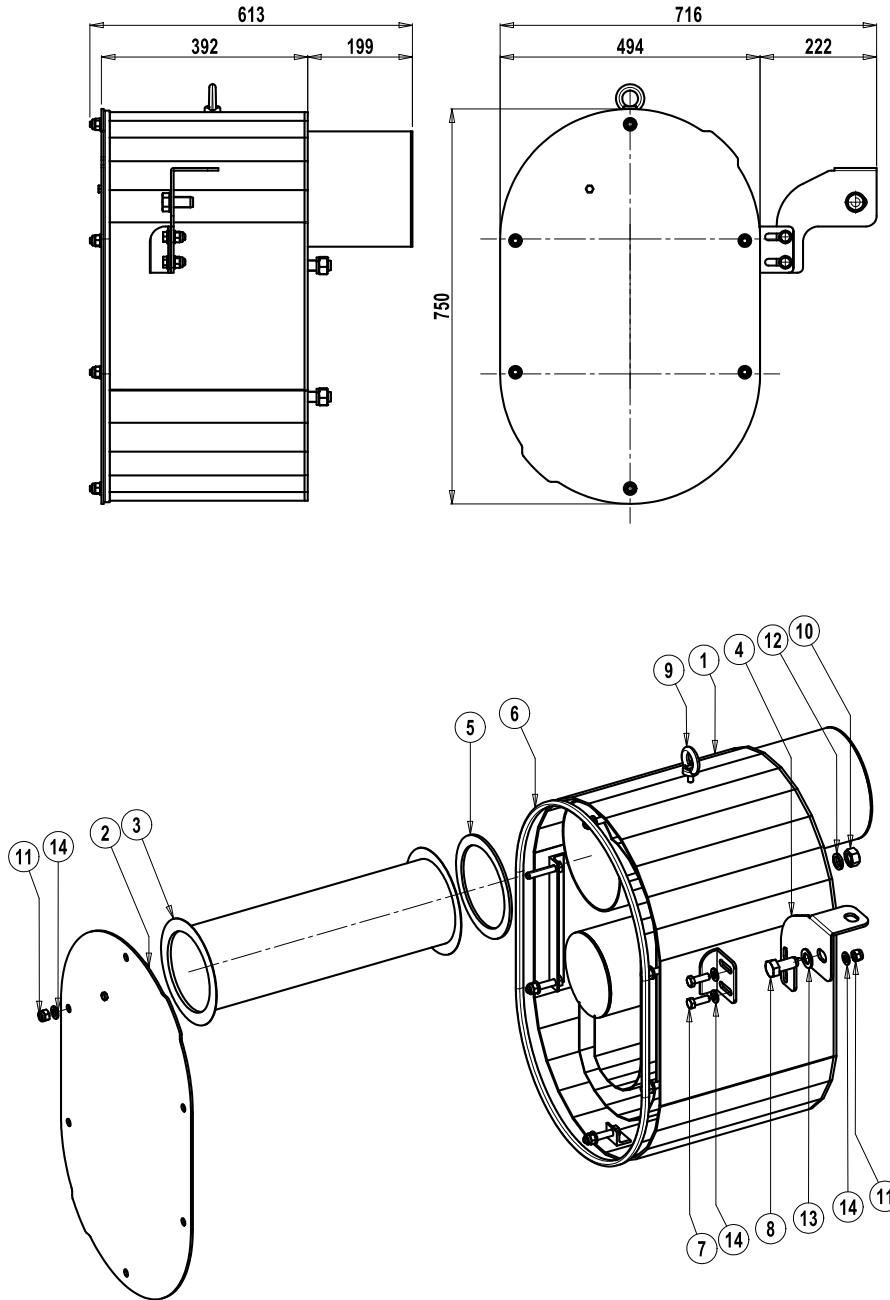
Dimensions reported in ( ) refer to PVT280-400 models.

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1414013600	PVT200-400 INJECTION SILENCER	1	5	4026120507	SCREW TCEI M10X35	1
2	16120MJJB0	STANDING SUPPORT (SIL. PVT200)	1	6	4026121808	SCREW TCEI M10X25	2
	16120ZDWB0	STANDING SUPPORT (SIL. PVT280-400)	1	7	4026305504	NUT M8 SELF-BLOCKING	4
3	1627105300	COLLECTOR (SIL. PVT200)	1	8	4026305507	NUT M10 SELF-BLOCKING	1
	1627104200	COLLECTOR (SIL. PVT280-400)	1	9	4026350706	WASHER GROWER 8	4
4	1680712700	GASKET	1	10	4026357006	WASHER M10	4
					4022213600	MINERAL WOOL	2,5kg

**Compact Silencer without filter for PVT700, HELIX750 (code 1414012700)**



Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	15120KHZB0	COMPACT SILENCER BOX	1	7	4026190100	EYE-BOLT M10	1
2	15400KHXB0	COMPACT SILENCER COVER	1	8	4026300811	NUT M20	4
3	16120KH5B0	STANDING SUPPORT (SIL. PVT700)	1	9	4026305508	NUT M12 SELF-BLOCKING	8
4	4022212101	SECTIONS 10X13,6	2,06mt	10	4026350512	WASHER GROWER 20	4
5	4026103003	SCREW TE M12X35	2	11	4026356111	WASHER M20	1
6	4026107712	SCREW TE M20X45	1	12	4026357007	WASHER M12	10
					4022213600	MINERAL WOOL	8,5kg

**Compact Silencer with filter for PVT700, HELIX750 (code 1414013700)**


Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	15120YWCB0	COMPACT SILENCER BOX	1	9	4026190100	EYE-BOLT M10	1
2	15400ZE7B0	COMPACT SILENCER COVER	1	10	4026300811	NUTM20	4
3	15450YWJB0	CARTRIDGE	1	11	4026305508	NUT M12 SELF-BLOCKING	8
4	16120KH5B0	STANDING SUPPORT (SIL. PVT700)	1	12	4026350512	WASHER GROWER 20	4
5	4022210002	MOUSSE (FOAM RUBBER) 20X5	0,6mt	13	4026356111	WASHER M20	1
6	4022212101	SECTIONS 10X13,6	2,06mt	14	4026357007	WASHER M12	10
7	4026103003	SCREW TE M12X35	2				
8	4026107712	SCREW TE M20X45	1				
					4022213600	MINERAL WOOL	8,5kg