



## Type VHD Absorption silencer with spark arrester

### Application

The TIO silencer/spark arrester type VHD can be installed in the exhausts of internal combustion engines etc.

### Design

The operation of the TIO silencer/spark arrester, type VHD, is based on the absorption system. The gas flow passes straight-through a perforated tube surrounded by highly efficient sound absorbing material, thus giving an excellent attenuation over a wide frequency range.

### Attenuation

The attenuation is approximately 25 dB(A). The attenuation in each middle frequency is shown in the adjacent graphic.

The shaded area shows the differences which probably appear due to the influence of temperature, back pressure and location of silencer/spark arrester.

The attenuation also depends on unsilenced noise level.

### Gas velocity

The recommended gas velocity is 35 – 50 m/sec. The maximum allowable gas velocity in the silencer is depending on the type of engine and related to the maximum back pressure which may be appear in the whole exhaust system.

### Pressure loss

The graph shows the approximate pressure drop across the silencer/spark arrester in relation to the gas velocity.

If required, we can advise in detail and make computer calculations.

### Temperature

Maximum: 600°C.

Special designs are available for higher temperatures.

### Insulation

If a low body temperature of the silencer/spark arrester is required, it is recommended to insulate the silencer/spark arrester.

### Material

In- and outside – normal steel, trade quality.

Execution with other materials like stainless steel and Cor-Ten steel are possible.

### Paint

One layer of zinc phosphate primer.

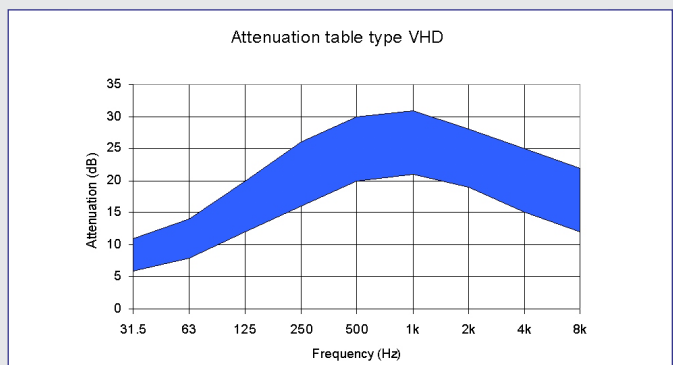
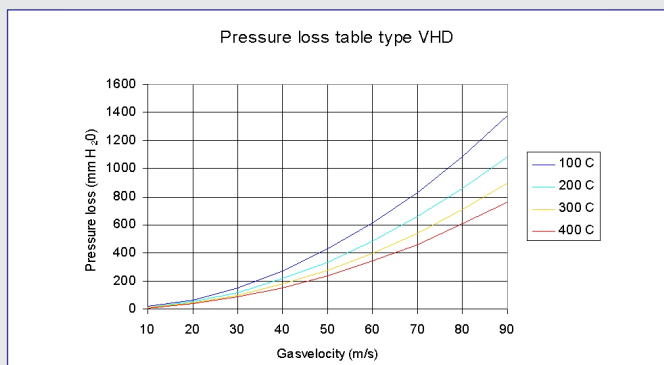
### Installation

Type VHD silencer/spark arrester may be installed vertically, horizontally or in any position wanted, but in consideration of the position of the spark arrester. The silencer/spark arrester type VHD has to be installed as close as possible to the end of the exhaust pipe.

When installing at site, it is possible to weld supports on the body.

### Special connection

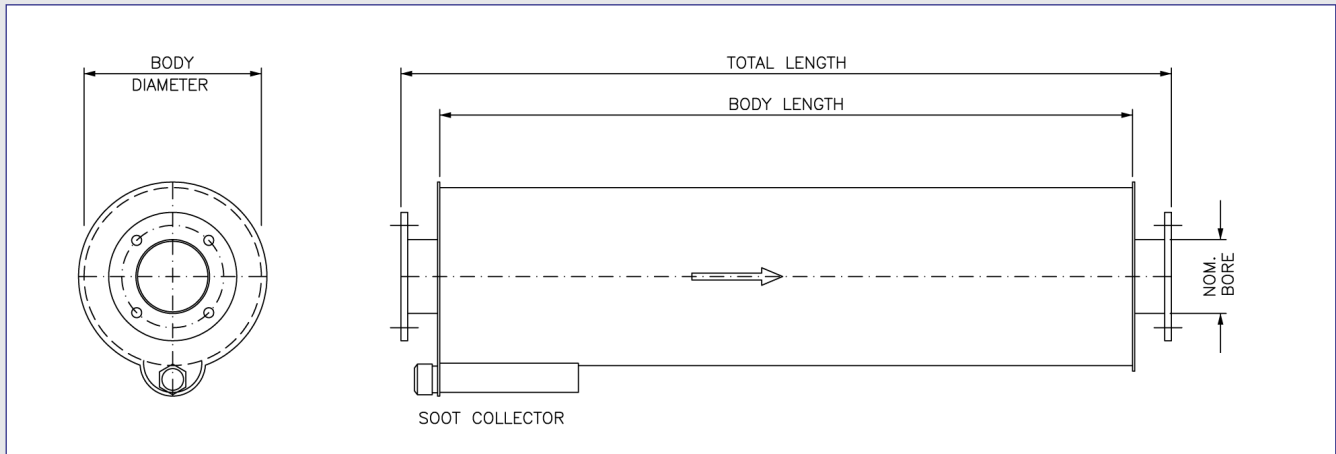
For in- and outlet are special connections on request available.



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### Executions with thread

Silencer type	Nominal bore	Body diameter	Body length	Total length
1"	25	110	454	516
1-1/4"	32	110	504	566
1-1/2"	40	110	754	840
2"	50	132	896	980

### Executions with TIO flanges

Silencer type	Nominal bore	Body diameter	Body length	Total length
1-1/2"	40	110	754	840
2"	50	132	896	980
2"	50	132	896	980
2-1/2"	70	157	1000	1100
3"	80	181	1000	1110
3-1/2"	94	181	1230	1350
4"	100	239	1240	1370
5"	125	320	1250	1390
6"	150	369	1540	1710
7"	175	390	1680	1880
8"	200	390	1830	2030
9"	225	478	1800	2030
10"	250	570	2135	2335
11"	275	570	2300	2500
12"	300	635	2500	2700
13"	325	635	2700	2900
14"	350	700	2800	3000
15"	375	700	2900	3200
16"	400	750	3100	3400
18"	450	800	3100	3400
20"	500	900	3300	3600
22"	550	1000	3500	3800
24"	600	1100	3700	4000