



Type LSAD Reflection/absorption silencer

Application

The TIO silencers type LSAD can be installed in the exhausts of internal combustion engines etc.

The LSAD silencer gives an excellent attenuation over a wide frequency range.

Design

The acoustical performance of the silencer type LSAD is determined by several expansion chambers. The gas flow passes through these chambers which are connected by perforated tubes. Last section of the silencer is filled up with highly efficient sound absorbing material.

The type LSAD is a combination of resonance – absorption silencer.

Attenuation

The attenuation is approximately 40 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.

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 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

In order to avoid that noise radiation of the body of the silencer is of influence of the required noise level, it is recommended to insulate the silencer acoustically. As the body temperature is more or less the same as the temperature of the medium, we also advise to insulate the silencer thermally.

Material

In- and outside – normal steel, trade quality, acoustical material – mineral wool.

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

Paint

One layer of zinc phosphate primer.

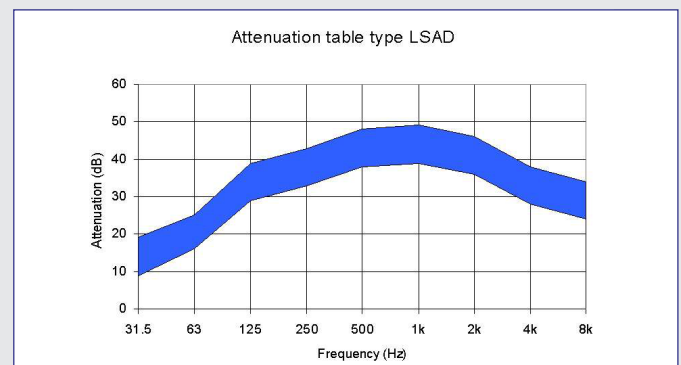
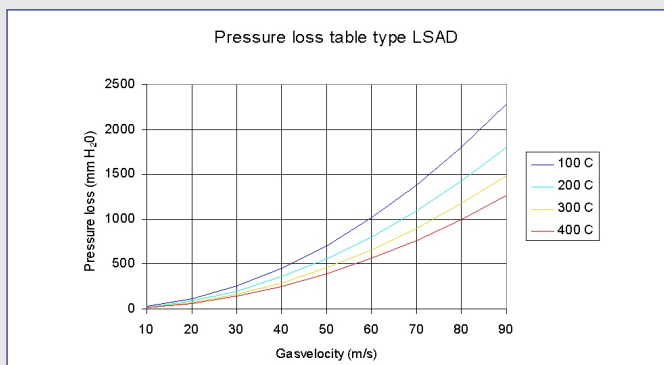
Installation

Type LSAD may be installed vertically, horizontally or in any position close to the engine.

Special connection

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

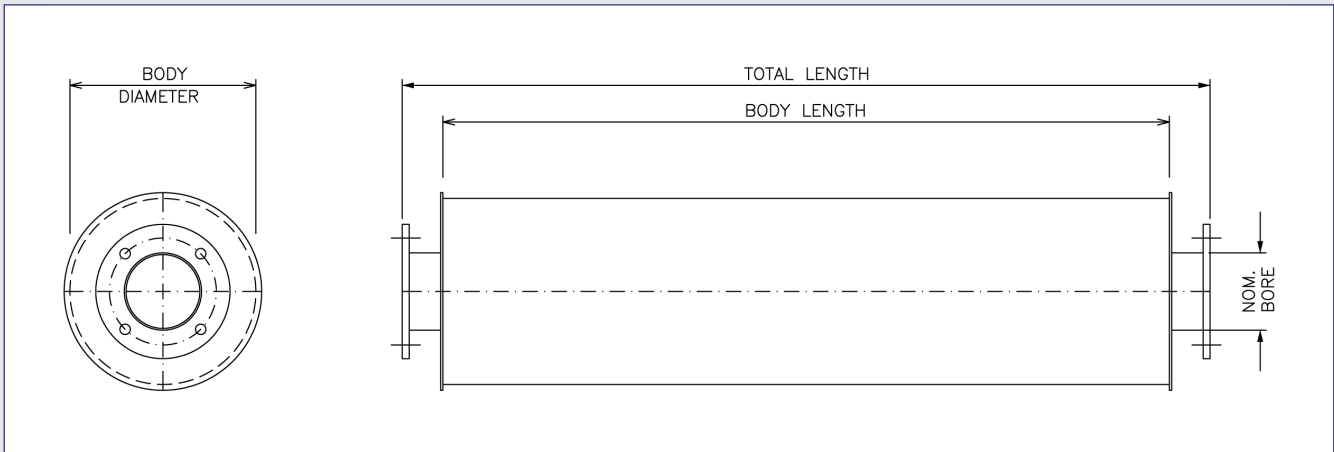
N.B. All TIO silencers can be combined with TIO spark arresters.



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Executions with TIO flanges

Silencer type	Nominal bore	Body diameter	Body length	Total length
1"	25	158	750	820

Executions with TIO thread

Silencer type	Nominal bore	Body diameter	Body length	Total length
1-1/2"	40	181	900	990
2"	50	240	1050	1140
2-1/2"	70	240	1250	1350
3"	80	240	1500	1610
3-1/2"	94	320	1650	1770
4"	100	369	1800	1930
5"	125	390	2000	2140
6"	150	457	2400	2550
7"	175	531	2700	2900
8"	200	608	3000	3200
9"	225	656	3300	3500
10"	250	756	3600	3800
11"	275	850	3800	4000
12"	300	911	4000	4200
13"	325	911	4500	4700
14"	350	911	5000	5200
15"	375	1020	5200	5400
16"	400	1067	5400	5600
18"	450	1220	5600	5800
20"	500	1370	5900	6100
22"	550	1370	6300	6500
24"	1600	1525	6500	6700