

## Steam Vent Silencer

Noise is one of the major forms of pollution. Results of noise pollution are very dangerous and hence we need to have control on noise level.

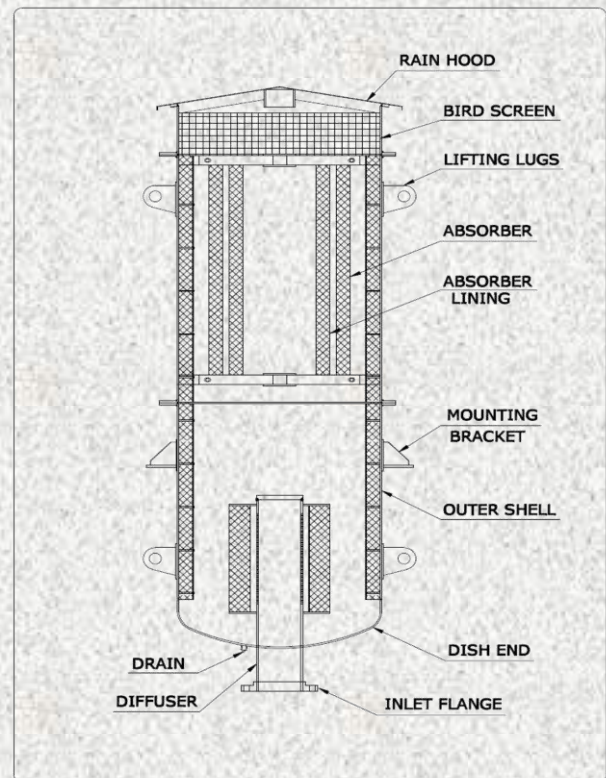
In order to meet environmental standards noise reduction requirements continue to increase. Noise limits for the avoidance of hearing damage should be in the range of 100 dB to 125 dB.

Steam is vented from boiler, either from safety valve or from start up warm up vent valves. Very high level of sound (approx 160 dB to 175 dB) is generated when steam is vented from elevated pressure to atmospheric pressure. Our product silencer is specially designed to reduce this sound level to around 85 to 110 dB that is to safety zone.

Our design of silencer is completely customized suitable for customers' requirements and site conditions. For Silencer design we follow guidelines as per OSHA and basic silencer design is as per ASME sec VIII div. I.

## Construction Features

1. Outer shell and Dish end –IS2062 Gr.B
2. Rain hood - IS2062 Gr.B
3. Bird screen-square mesh IS2062 Gr.B size 1" X1"
4. Support bracket/ lifting lug - IS2062 Gr.B
5. Absorber – Glass wool of high density
6. Absorber liner – SS304
7. Diffuser / Inlet pipe – SA335 P11/P22 or SA106 Gr.B, (depends on temperature of steam inlet)
8. Inlet flange – SA182 F11 / F22 or SA105, depends on temperature of steam inlet



## Working Principle

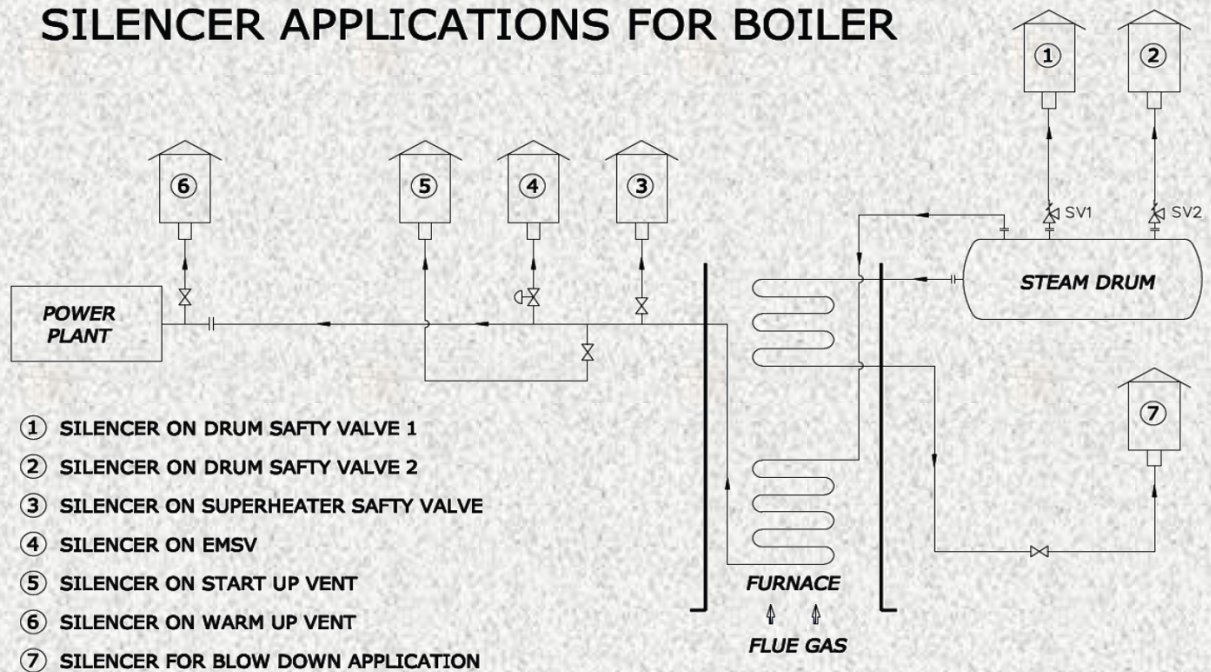
Since it is easy to attenuate high frequencies than deep frequencies, we use a diffuser pipe to change peak frequencies. This shifts low frequencies to high frequencies and as a positive side effect the noise level is reduced. At high frequencies glass-wool absorber functions very effectively. Outer shell diameter selected in such a way to improve absorption of high frequency sound waves. The combined overall effect of all this is low noise level.

## Applications

We design and manufacture silencers for

1. Superheated steam
2. Saturated steam
3. Start up and warm up vents
4. Blow down applications
5. For any other steam vents

## SILENCER APPLICATIONS FOR BOILER



### Design Input Parameters

Following input parameters are required to design silencer –

1. Steam flow rate in kg/hr
2. Steam inlet temperature to silencer (°C)
3. Steam inlet pressure to silencer (kg/cm<sup>2</sup>)
4. Inlet pipe size
5. Elevation level of silencer from ground

**Range** – Our design of silencer is completely customized as per our customers' requirements. We have wide range of silencers from 0.5TPH to 100TPH steam flow and for pressure 2kg/cm<sup>2</sup>(g) to 150kg/cm<sup>2</sup>(g). Generally we recommend to erect silencer vertically but for space constraints we can provide horizontal as well as inclined designs too.

### Application on Boiler

1. Silencer on drum safety valve
2. Silencer on drum safety valve 2
3. Silencer on superheater safety valve
4. Silencer on EMSV
5. Silencer on start up vent
6. Silencer on warm up vent
7. Silencer for Blow Down Application

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