Bulletin “L”

Stoddard Silencers

Specialists in Industrial Silencing

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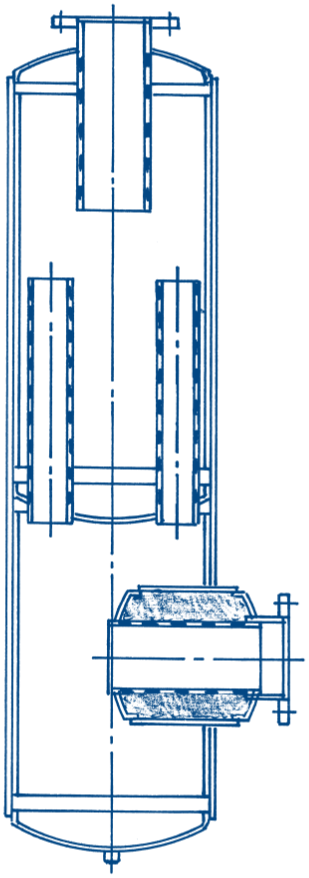
ROTARY BLOWER INTAKE SILENCERS



Stoddard Silencers

Series "L"

Rotary Blowers Intake Silencers

Intake Silencers

Intake silencers effectively reduce the noise and destructive low frequency pulsations that can be detrimental to surrounding equipment and personnel, as well as neighbors. The noise and/or pulsation energy generated at the blower inlet is a function of both blower speed and blower size.

It is an established fact that the smaller size blowers do not develop destructive low frequency pulses, whereas larger blowers do. To properly eliminate these destructive pulsations, a chamber type silencer with a minimum volume of 12 to 15 times the blower displacement is required. This parameter has been incorporated in all application recommendations employing chamber type intake silencers.

Blower speed plays an important part in the correct selection of a silencer. For slow speed blowers, the chamber type silencer performs best on all sizes. For applications not requiring this degree of silencing on small size blowers, the absorption type silencer has been used successfully for many years.

For high-speed blowers (i.e., blowers with operating speeds above the transition speed) a chamber-absorption type silencer is required. This combination design is necessary to reduce the increased high frequency noise energy that is developed above the transition speed and also effectively treat the energy contained in the low frequencies.

Normally acceptable inlet silencer pressure drop is in the range of 3 to 8 inches of water. All inlet silencers will meet this criteria if properly sized in accordance with this bulletin.

Size Selection Chart - Intake Silencers

Inlet Silencer Size	Blower Inlet CFM	Inlet Silencer Size	Blower Inlet CFM	Inlet Silencer Size	Blower Inlet CFM	Inlet Silencer Size	Blower Inlet CFM	Inlet Silencer Size	Blower Inlet CFM
1	0- 33	3	184-282	6	861-1235	14	4676- 5655	22	11,556-14,030
1½	34- 78	3½	283-378	8	1236-2125	16	5656- 7425	24	14,031-16,745
2	79-128	4	379-551	10	2126-3335	18	7426- 9320	26	16,746-19,700
2½	129-183	5	552-860	12	3336-4675	20	9321-11,555	28	19,701-22,890

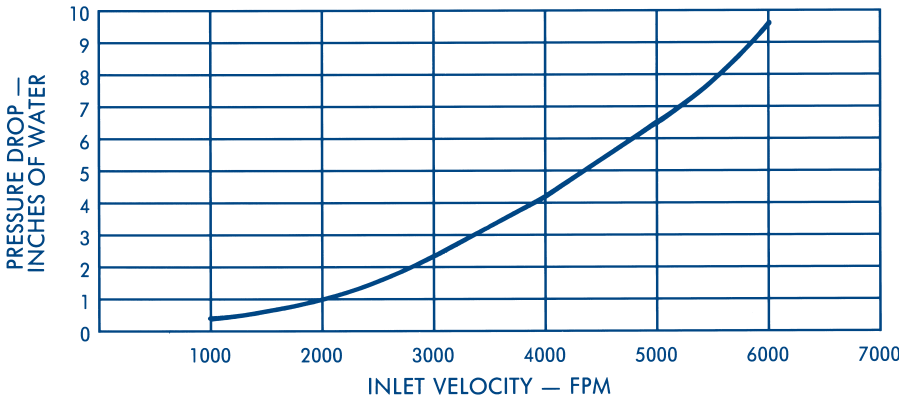
Model Selection Chart - Intake Silencers

Gear Size	Intake Transition Speed - RPM (3300 FPM)*	Below Transition Speed	Above Transition Speed	Gear Size	Intake Transition Speed - RPM (3300 FPM)*	Below Transition Speed	Above Transition Speed
2	6297	D13	L61	10	1259	L41	L61
2½	5038	or	or	12	1049	↓	↓
3	4198	L41	L63	14	899		
4	3148	↓	↓	16	787		
4½	2798			18	699		
5	2519			20	629		
6	2099			22	572		
7	1799			24	524		
8	1574						

*Transition speeds shown are for two lobe rotary blowers. For three lobe blowers use 67% of the rpm shown.

Intake Silencer Pressure Drop Curve and Calculations

Intake Silencer Pressure Drop Curve
For Models D13, L41, L41H, L41G, L63, L63H, and L61, L61H



Intake Silencer Pressure Drop Calculations

1. Determine inlet velocity based on size from selection chart.

$$\text{Inlet Velocity FPM} = \frac{\text{Inlet CFM x 186.4}}{(\text{Silencer Size})^2} = \text{(Feet Per Minute)}$$

Note: Inlet CFM refers to inlet capacity of blower

$$\text{Inlet Velocity} = \frac{\qquad\qquad}{(\qquad)^2} \text{ x } 186.4 = \qquad\qquad \text{Feet Per Minute}$$

2. Convert inlet velocity to velocity pressure

$$\text{Velocity Pressure} = \left(\frac{\text{Inlet Velocity}}{4000}\right)^2 = \text{(Inches of Water)}$$

Note: Inlet velocity was determined in step one above.

$$\text{Velocity Pressure} = \left(\frac{\qquad\qquad}{4000}\right)^2 = \qquad\qquad \text{inches of water}$$

3. Calculate pressure drop across silencer size selected.

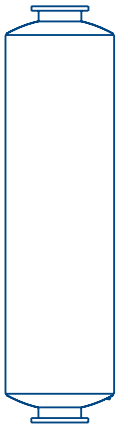
Pressure Drop = Velocity Pressure x Friction Factor. = (Inches of Water)

Note: Velocity pressure determined in step two above.

For Models D13, L41 & L41H, L41G, L63, L63H and L61 & L61H

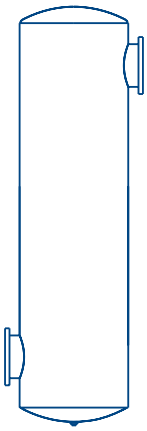
Pressure Drop = _____ x 4.2 = _____ inches of water.

Basic Silencer Configurations

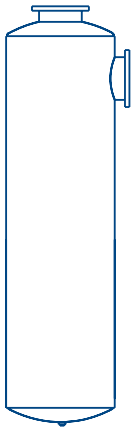


In-Line
Configuration

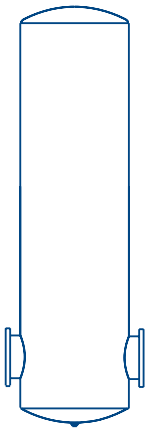
"H"
Configuration



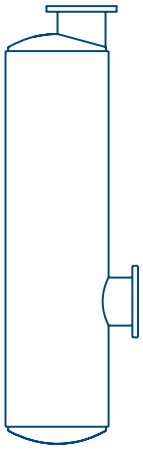
"R"
Configuration



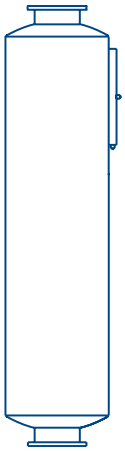
"G"
Configuration



"T"
Configuration



"HX"
Configuration

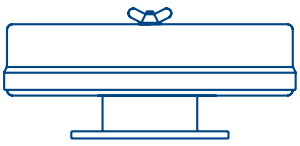


Spark
Arrester

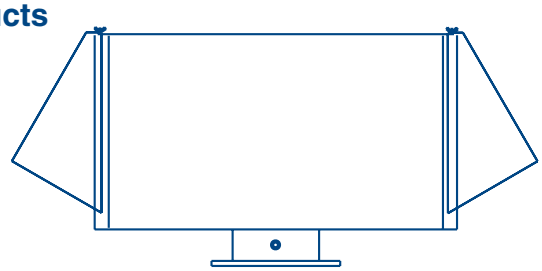
Flanged, NPT and plain pipe tubes inlet, outlet are available

See Accessory Bulletin "A" for optional mounting brackets, raincaps, and other accessories

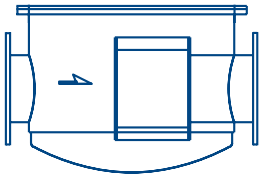
Other Stoddard Silencers Products



F64 Air Filters
Up to 5600 CFM



F21 Panel Air Filters
2500 CFM and Up



F65 In-Line Air Filters
Up to 5600 CFM

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