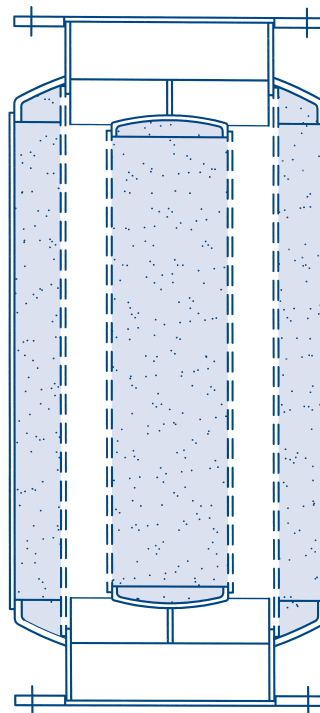




Specialists in Industrial Silencing

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FAN SILENCERS





Series "CF" Fan Silencers

A blower fan moves large quantities of air or gas at relatively low pressures, usually measured in inches of water column gauge ("H₂O) rather than in pounds per square inch (psi). This air or gas is moved due to the dynamic action of the rotating vanes or blades which impart velocity and pressure to the air or gas.

The noise generated by the rotation of the vanes or blades is fairly balanced across the noise spectrum, with some increase in the first three octave bands. However, due to the function of the human ear the mid to high range of frequencies are perceived to be louder and will result in problems with personnel who work nearby and/or those located some distance away. Fan blowers are normally constructed of

either cast iron or welded steel plate which do not remove the noise generated by the moving air/gas stream. This noise can be passed on through the piping or ducts which will radiate this noise throughout the system.

Effective treatment of the intake and discharge noise generated by the blower fan is accomplished by using a high volume, low pressure drop, absorption type silencer which can control the noise as a unit. Use of this type silencer eliminates the more costly alternative of lagging or lining the piping or duct work. Silencers can easily be retrofitted into existing blower systems and can be designed into future construction to create more effective noise control.

SILENCER SELECTION PROCEDURE

1. To avoid excessive self-noise generated by the passage of air through the silencer, select size according to the recommended cubic feet per minute (cfm) of air/gas given in the table below:
2. Refer to the pressure drop calculations on the following

page. Calculate the pressure drop for the silencer selected below. Check this pressure drop against the maximum allowable pressure drop.

If the pressure drop is too great, select the next larger size and recalculate. Where the pressure drop requirement is critical, this step may have to be repeated.

Silencer Size	Maximum cfm
8	1,900
10	2,950
12	4,250
14	5,780

Silencer Size	Maximum cfm
16	7,550
18	9,560
20	11,800
24	16,500

Silencer Size	Maximum cfm
30	25,750
36	37,120
42	51,950
48	67,850

Silencer Size	Maximum cfm
54	85,850
60	106,200
LARGER SIZES AVAILABLE ON REQUEST	

AT MAXIMUM CFM RATING AND STANDARD TEMPERATURE & PRESSURE, PRESSURE DROP IS APPROXIMATELY 1.42 INCHES OF WATER COLUMN.

INSTALLATION RECOMMENDATIONS

1. To structurally isolate the silencer from the blower fan as much as possible, Stoddard Silencers recommends the use of flexible connectors and independent supports.
2. Fan silencers may be used in tandem to achieve greater noise control.
3. To prevent high entrance/exit losses, transition pieces of the minimum length recommended (see Transition

Length Calculations) should be used between the blower fan and silencer.

4. When the C24 is used as an intake silencer, there should be a spool piece with a minimum length of 1½ pipe diameters between the silencer and the fan. This will allow for proper filling of the fan wheel and lessen the possibility of decreased fan performance.

SOUND POWER LEVEL MEASUREMENTS

1. Sound power levels in dbC and dbA, plus full octave band analysis can be provided by Stoddard Silencers. Full data on the model fan being used and operating conditions including, cfm, pressure, rpm and manufacturer's published sound power levels will be required.

Stoddard Silencers will provide calculations on silenced and unsilenced noise levels.

2. For installations where critical noise level requirements must be met, sales engineers are available to custom design a complete silencer package for your needs.

MINIMUM TRANSITION LENGTHS (MTL)

To minimize the amount of static pressure loss when transitioning from the fan outlet to a larger or smaller silencer inlet, Stoddard Silencers recommends the following minimum transition lengths (MTL):

ds = diameter of Silencer Inlet in inches

df = diameter of Fan Outlet in inches

$$MTL = (ds - df) \times 5.7$$