

Discharge Line Mufflers

tech
tips



Purpose and Design

The purpose of a muffler is to reduce noise due to gas pulsations by allowing the gas to expand in the muffler chambers, smoothing out the flow. Mufflers have internal baffles designed for minimum pressure drop. These baffles change the velocity of the discharge gasses passing thru the muffler. This results in a dampening effect on high frequency sound waves in the gasses on high speed compressors. This also irons out the pulsating waves in low speed compressors.

Note: A muffler is not designed to eliminate vibrations.

Selecting the Size of a Muffler

Select a muffler with a connection size that matches or exceeds the line size of the discharge line. There is no tonnage ratings for mufflers, since the muffler will remove pulsations from the discharge regardless of flow.

Installation

Mufflers with offset connector fittings permits vertical, horizontal, or angle mounting when properly installed.

Install the muffler on the discharge as close to the compressor as possible to reduce noise in the discharge line.

All catalog mufflers are bi-directional, therefore there is no inlet or outlet.

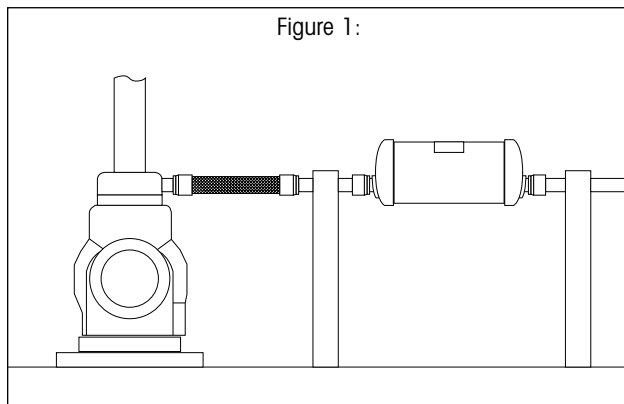
When mounted in the horizontal or angle position the side with the label must be on the top center to insure proper flow of the oil. The outlet should be lower than the inlet when possible, or the muffler may collect oil from the discharge and fill up, reducing its muffling ability and cause loss of oil in the compressor crankcase.

Mufflers that are mounted vertically will not trap oil.

A vibration eliminator should be installed between the compressor discharge valve and the muffler to prevent vibration from being transmitted to the line. A support must be installed between the vibration eliminator and muffler. This support must be wide enough so as not to act as a pivot point and transmit the vibration load. If this support is omitted, the pressure line could go into vibration due to the weight of the muffler.

Correct location of the support (Figure 1):

1. Support between metallic hose and muffler (not on the muffler body).



2. Support behind the muffler.

A single muffler may be installed on a common discharge line, but some customers prefer to install one muffler per compressor on parallel racks (see Figure 2). 4" and 6" diameter (102 and 152 mm) mufflers include a 1/8" pipe fitting on one end for pressure relief devices, as required by UL207. A pipe plug is installed.

Trouble-shooting

Mufflers will only remove noise due to discharge gas pulsations. If the noise is due to vibration of the compressor or lines, vibration eliminators should be added to the discharge lines and possible the suction lines.

If leaks are discovered around the muffler connections after the system has been running for some time, replace the muffler and insure that the muffler has been sufficiently supported to prevent vibration and weight problems. Our brazing and reinforcing techniques for mufflers are regularly fatigue tested to insure that mufflers can withstand the rigorous discharge conditions, but excessive vibration can caused fatigue failure in the discharge line, muffler fittings, or the adjoining areas.

Figure 2:

