AcoustiClean Sonic Horn
Installation and Operation Instructions

Model ACL 9475
Model ACL 17220
Model ACL 34230
Model ACL 53100
Model A600
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INSTALLATION INSTRUCTIONS

1. AcoustiClean® Sonic Horns must be solidly mounted to a vessel by either bolting it through the largest flange or through an interim flange. The horns require a complete and unrestricted hole cut into the vessel for the sound to pass through. The horns are designed to be installed by one of the following methods, depending on the type of horn:

A. Flush mounted – The end of the largest bell section is mounted flush to the outside of the vessel. The mounting surface of the horn must be secured such that the sound can exhaust from the end of the bell into the vessel.

B. Mounting surface sandwiched between bell sections – The horn is mounted such that the end of the last or middle bell section protrudes inside the vessel.
INSTALLATION INSTRUCTIONS continued

C. **Mounting surface sandwiched between bell section(s) and sound generator** – The horn is mounted with all bell sections protruding into the vessel. This approach is to be used for mounting the Model A600 horn, where the small end of the bell section will be put through a 4-1/2” hole from the inside of the vessel and attached to the sound generator, which will then be bolted to the vessel. A mounting tube is not needed to install the Model A600.

D. A horn could be hung on a chain inside a bag house, duct or vessel if no other option is available.

2. AcoustiClean® Sonic horns are designed to be installed either horizontally, vertically, or facing downward between horizontal and vertical.
3. All bolts, nuts and washers must be securely tightened and the horn mounted to the vessel before sounding the horn off.
4. Gasket material is not required between flat mating surfaces of the bells.
5. All installation, piping, and air requirements specified in this document should be followed to ensure the most effective cleaning results.
PIPING AND AIR REQUIREMENTS for Models ACL 17220 / 34230 / 53100 / 9475
(See next page for Model A600)

1. Air pressure requirements: 70-90 PSI
2. Air volume requirements: 40-80 CFM
   Note: At 80 PSI, the horn will use approximately 60 CFM of air.
   A 10-second sound blast will use approximately 10 CFM of air.
3. A 1" rigid air supply pipe is required to bring the air within 24" of the sound generator.
4. While a filter air regulator is not required, it is recommended if the plant air system is excessively wet or dirty.
5. A locking ball valve should be installed for safety and maintenance isolation.
6. A 3/4" solenoid valve mounted on a 1" to 3/4" rigid reducer, followed by a 3/4" x 30" long stainless steel braided flex hose is recommended for actuation of the AcoustiClean® Sonic Horn.
7. A DIN plug mounted solenoid can be provided by Control Concepts.

*Sonic horn depicted is representative of a general horn and not a specific model.
PIPING AND AIR REQUIREMENTS for Model A600

1. Air pressure requirements: 70-90 PSI
2. Air volume requirements: 40-80 CFM
   Note: At 80 PSI the horn will use approximately 60 CFM of air.
   A 10 second sound blast will use approximately 10 CFM of air.
3. A 1" rigid air supply pipe is required to bring the air within 24" of the sound generator.
4. While a filter air regulator is not required, it is recommended if the plant air system is excessively wet or dirty.
5. A locking ball valve should be installed for safety and maintenance isolation.
6. A 3/4" solenoid valve mounted on a 1" to 3/4" rigid reducer, followed by a 3/4" x 30" long stainless steel braided flex hose is recommended for actuation of the AcoustiClean® Sonic Horn.
7. A DIN plug mounted solenoid can be provided by Control Concepts.
Installation and Operation Instructions

ASCO®

General Service Solenoid Valves
Brass or Stainless Steel Bodies
3/8” to 2 1/2” NPT

Features
- Wide range of pressure ratings, sizes, and resilient materials provide long service life and low internal leakage
- High flow valves for liquid, corrosive, and air/inert gas service
- Lead-free versions available for Safe Drinking Water Act Compliance
- Industrial applications include:
  - Car wash
  - Laundry equipment
  - Air compressors
  - Industrial water control
  - Pumps

Construction

<table>
<thead>
<tr>
<th>Valve Parts in Contact with Fluids</th>
<th>Brass</th>
<th>304 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seals and Discs</td>
<td>NBR or PTFE</td>
<td></td>
</tr>
<tr>
<td>Disc-Holder</td>
<td>PA</td>
<td></td>
</tr>
<tr>
<td>Core Tube</td>
<td>305 Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>Core and Plugnut</td>
<td>430F Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>Springs</td>
<td>302 Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>Shading Coil</td>
<td>Copper</td>
<td>Silver</td>
</tr>
</tbody>
</table>

*Catalog Numbers 8210G127, 8210G129, 8210G132, 8210G133 have 316L Stainless Steel bodies.

Electrical

<table>
<thead>
<tr>
<th>Standard Coil and Class of Insulation</th>
<th>Watt Rating and Power Consumption</th>
<th>Spare Coil Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DC Watts</td>
<td>AC</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>----------</td>
<td>---</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>6.1</td>
</tr>
<tr>
<td>F</td>
<td>11.6</td>
<td>10.1</td>
</tr>
<tr>
<td>F</td>
<td>16.8</td>
<td>16.1</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>17.1</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>20</td>
</tr>
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<td>F</td>
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<td>20.1</td>
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<td>F</td>
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<td>-</td>
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<tr>
<td>F</td>
<td>11.6</td>
<td>-</td>
</tr>
<tr>
<td>F</td>
<td>40.6</td>
<td>-</td>
</tr>
</tbody>
</table>
| Standard Votages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) | 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type I.
Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9.
((To order, add prefix “EF” to catalog number, except Catalog Numbers 8210B057, 8210B058, and 8210B059, which are not available with Explosionproof enclosures. See Optional Features Section for other available options.)

Nominal Ambient Temp. Ranges
RedHat II/RedHat AC: 32°F to 125°F (0°C to 52°C)
RedHat II DC: 32°F to 104°F (0°C to 40°C)
RedHat DC: 32°F to 77°F (0°C to 25°C) (104°F/40°C occasionally)
8210G227 AC: 32°F to 130°F (0°C to 54°C)
DC: 32°F to 90°F (0°C to 32°C)
Refer to Engineering Section for details.

Approvals
UL listed as indicated. CSA certified.
RedHat II meets applicable CE directives.
Refer to Engineering Section for details.
ATEX/IECEx certified with prefix “EV” as listed. Refer to Optional Features Electrical Section for details.
OPERATING INSTRUCTIONS

1. Horns should never be operated without proper hearing protection.
2. Never operate sonic horns when personnel are inside the vessel, or up or down-stream of the gas flow. Ensure safety procedures are established to "lock out" horns from being operated during vessel maintenance.
3. For most applications it is recommended to sound each horn for 10 seconds every 10 minutes when the vessel is in operation, or during evacuation and particle loading. If the production loading or evacuation cycle of the vessel is infrequent, then the horns may be sounded at the end of the cycle for 20 seconds.

MAINTENANCE

1. It is recommended that the titanium diaphragm be replace each year in order to maintain effective cleaning. This schedule is based on 10 second usage every 10 minutes, 24 hours per day, every day of the week. Maintenance frequency may vary based on usage.
2. Sound generators should be returned to Control Concepts for reconditioning approximately every 5 years due to wearing of the titanium seating surfaces. This recommended time period may be adjusted based upon individual usage.

TIMER CONTROL

1. For effective cleaning it is recommended that AcoustiClean® Sonic Horns be sounded off at regular intervals whenever there is a chance of particle loading, plugging or bridging. It is recommended that an electrical timer be used to control the horn sounding intervals. Timers may be PLC driven, relays or solid state.
2. Control Concepts can provide a DIN plug mounted timer (ASCO P/N272839-001) upon request see below:

Features
- Solid state electronic timer used to automatically control ASCO solenoid valves
- Typically used with ASCO Solenoid Valves for automatic draining of condensate in compressed air systems
- Selectable timing ranges (2-40 seconds "on"; 30 seconds to 45 minutes "off")
- Manual override for test/reset
- LED lights to indicate timing phase

Technical Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage</td>
<td>24-260V AC/DC 50/60 Hz</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>4 mA max.</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>14°F - 122°F</td>
</tr>
<tr>
<td>Environmental Protection Type</td>
<td>Type 4</td>
</tr>
<tr>
<td>Switch Capacity</td>
<td>1 Amp</td>
</tr>
<tr>
<td>Input Current Capacity</td>
<td>10 Amps for 10 mSec</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>100%</td>
</tr>
<tr>
<td>Repeat Accuray</td>
<td>± 0.1%</td>
</tr>
<tr>
<td>Scale Accuracy</td>
<td>± 10%</td>
</tr>
<tr>
<td>Reset/Test</td>
<td>Manual Touch Switch</td>
</tr>
<tr>
<td>Printed Circuit Board</td>
<td>U. S. 9440</td>
</tr>
<tr>
<td>Connection</td>
<td>DIN 43993 ISO 4401/8502</td>
</tr>
<tr>
<td>Indicators</td>
<td>LEDs to indicate phase</td>
</tr>
<tr>
<td>On Time</td>
<td>Adjustable from 2 to 40 sec.</td>
</tr>
<tr>
<td>Off Time</td>
<td>Adjustable from 30 sec to 45 min.</td>
</tr>
</tbody>
</table>

Timer and Accessories Kit Numbers

- Timer Catalog Number: 272839-001
- Power Cord Kit Number: 272802
- DIN Connector Kit Number: 272873

* - For use with DH 11 CVD Assemblies.
WARRANTY & PARTS

1. The warranty period for all Control Concepts AcoustiClean® Sonic Horns is 24 months from the date of installation.

2. Replacement parts, solenoid valves, timers, flex hoses, filter regulators, and ball valves can be obtained from Control Concepts by calling (860) 928-6551.