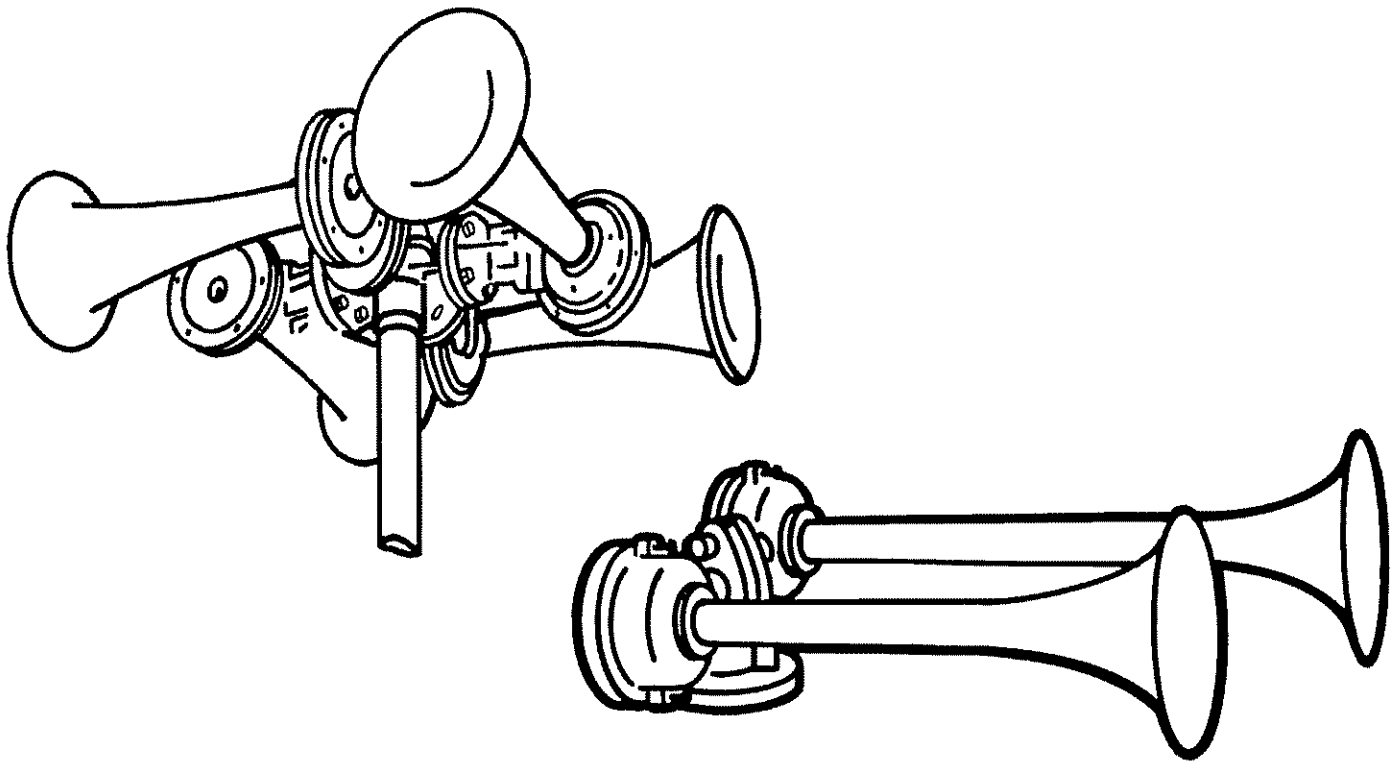


EDWARDS

AIRCHIME AIRHORNS



INSTALLATION AND MAINTENANCE MANUAL

INTRODUCTION

Industrial air horns should be located in the approximate centre of the area to be covered. You should mount the horn high, well clear of other buildings or high objects that would deaden or deflect the sound. If on a building, install near the corner or end on a suitable frame, clearing roof top by at least six feet. Point the horn to the area that is most important for the sound to be heard. Large area plants that have a number of buildings with a high inside noise level, may require additional horns. These should be located inside the buildings and tied into the main horn circuit so that all horns blow simultaneously.

INSTALLATION

All Model K and KM horns have fixed diaphragm caps that require no adjustment. The Model C has an adjustable diaphragm cap for initial tensioning. All models will emit a clear sharp note without distortion, operating at any pressure from 50 to 150 p.s.i. However, the loudness will vary in relation to the pressure. Therefore the operating pressure should be from 100 to 150 p.s.i. for maximum loudness and efficiency.

When operating at pressures below 50 p.s.i., horns can be supplied with larger inlet orifices to maintain loudness at lower pressure. Therefore make sure that the stated working pressure of the horn is in accordance with the pressure of the air system.

1. Air supply line should be one size larger than the inlet connection of the horn.
2. Air supply line should rise continuously through well graded piping, free from pockets and long horizontal runs.

3. Air supply at the horn should be clean and dry. Install separators, traps and strainers to maintain this.
4. Air supply should be taken from top of air tank or main supply line.
5. Use thread seal sparingly and on male threads only.
6. Avoid the use of elbows if possible. Long radius bends are less restrictive.
7. On extreme long runs, a buffer tank, located close to the horn, will compensate excessive pressure drop.
8. Install shut off valves where necessary to facilitate servicing.
9. Install operating valve close to horn for sharp concise blasts - Sound should not "trail off" at the completion of a signal.
10. Before connecting horn and valve, blow out all lines thoroughly, tapping pipe with hammer to free loose scale and pipe chips.
11. Pressure drop at the horn should not exceed 15 p.s.i., when blowing. Install test gauge at the horn inlet to check this when installing.
12. Outside runs that are exposed to cold weather conditions should be well protected or consideration given to electric heating of the pipe.

If the above procedure has been followed, the horn will sound loud and clear when the manual valve is pulled or the solenoid energized.

These instructions are general and cannot possibly meet every contingency with regard to installation, operation or maintenance. If further information is required or to deal with specific problems, please consult Edwards.

MAINTENANCE - MODEL K AND KM

Diaphragm head components and their order of assembly is shown in figure 1 and 2. This is typical for all model K and KM Horns.

1. To dismantle, remove cap screws (1) and insert pin or wire in hole (E) to remove diaphragms and cushion ring (3 and 4).
2. Clean thoroughly and inspect discs (3) for unusual wear, cracks, or scuff marks.
3. Inspect cushion ring (4); it should measure .145 in thickness and not show signs of flattening or hardening.

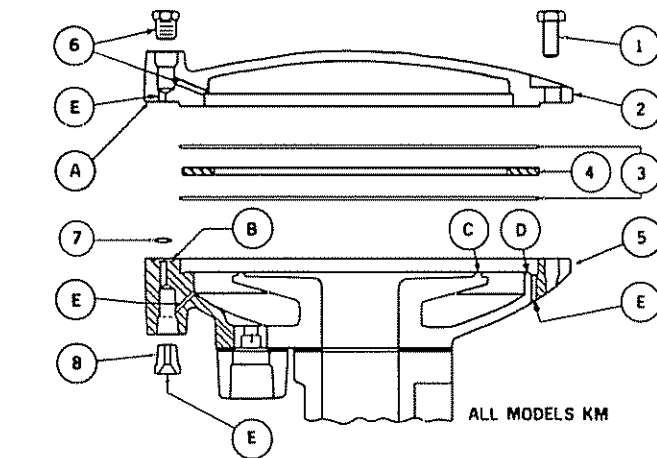


FIGURE 1

4. Wipe off and inspect seats (C and D). Remove any particles that are lodged or embedded. This should be done carefully without destroying the flatness or smooth surface of the seat faces. (If air system is not clean, seats can become badly scuffed or nicked and should be returned to factory for adjustments.)

5. Make certain that relief holes (E) are clear and unrestricted.
6. Replace any damaged or worn parts with factory replacements (both the diaphragm disc (3) and cushion ring (4) are made of special mill ordered materials. General materials will not give the same results or service).
7. Wipe seat faces (C and D) clean.

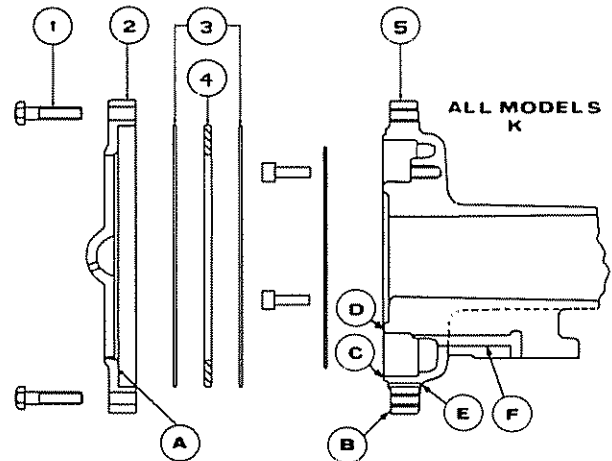


FIGURE 2

8. Wipe and install new parts in order shown. They should turn freely in head (5).
9. Do not squeeze the discs together when placing in head or cap.
10. Faces (A and B) must be clean before replacing cap (2).
11. Make certain that the "O" ring (7) is in position before replacing cap (2).
12. Alternately tighten opposite cap screws (1) a little at a time to bring cap evenly and snug to head.

MAINTENANCE - MODEL C

Diaphragm head components and their assembly is shown in figure 3. This is typical for all model C horns.

1. To dismantle, loosen lock nuts (3) and machine screws (4). Remove adjusting ring (2).
2. Clean thoroughly and inspect diaphragm (1) for unusual wear, cracks, or scuff marks.
3. Wipe off and inspect body (5). Remove any particles that are lodged or embedded. This should be done carefully without destroying the inside surface of the body (5). (If air system is not clean, the body should be returned to the factory for adjustments.)

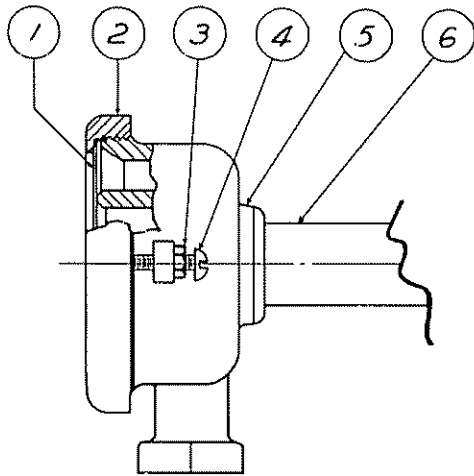


FIGURE 3

4. Replace any damaged or worn parts with factory replacements. The diaphragm (1) is made of special mill ordered materials. (General materials will not give the same results or service.)
5. Wipe and install new parts.
6. Make certain that the diaphragm (1) is in position before replacing adjusting ring (2).

7. Tension the adjusting ring (2) for maximum loudness and efficiency. Tighten machine screws (4) and lock nuts (3).

MULTI-TONE HORNS

All diaphragm heads are common on multi-tone models and are serviced as indicated in the maintenance section.

Protect ears with cotton or other means when testing.

With horn sounding, place hand in front of each horn mouth to determine if all horns blowing.

For test purposes, all horns should be sounding at 15 to 20 p.s.i. and increase in loudness as the air is increased to maximum operating pressure.

TROUBLESHOOTING

HORN STOPS BLOWING. Air not getting at horn - Wiring open/no voltage at solenoid - Solenoid coil defective or voltage not correct.

HORN RASPY AND DISTORTED. Cracked diaphragm - Chips lodged on diaphragm seat - Loose cap.

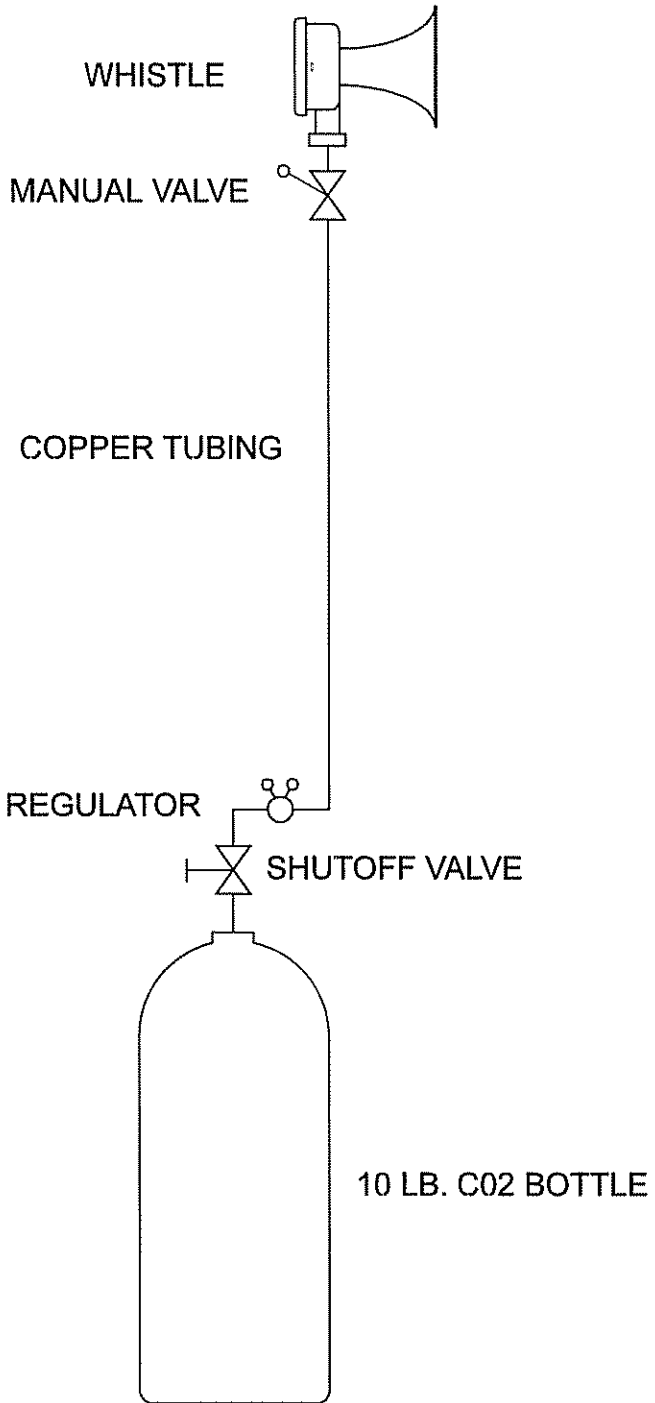
HORN HISSES WHEN BLOWN. Diaphragm warped and not seating properly - Excessive pressure - Diaphragm seat badly scuffed.

CHANGE IN CHARACTER OF SOUND. Cracked diaphragm - Warped diaphragm - all horns not blowing (Multi-tone models).

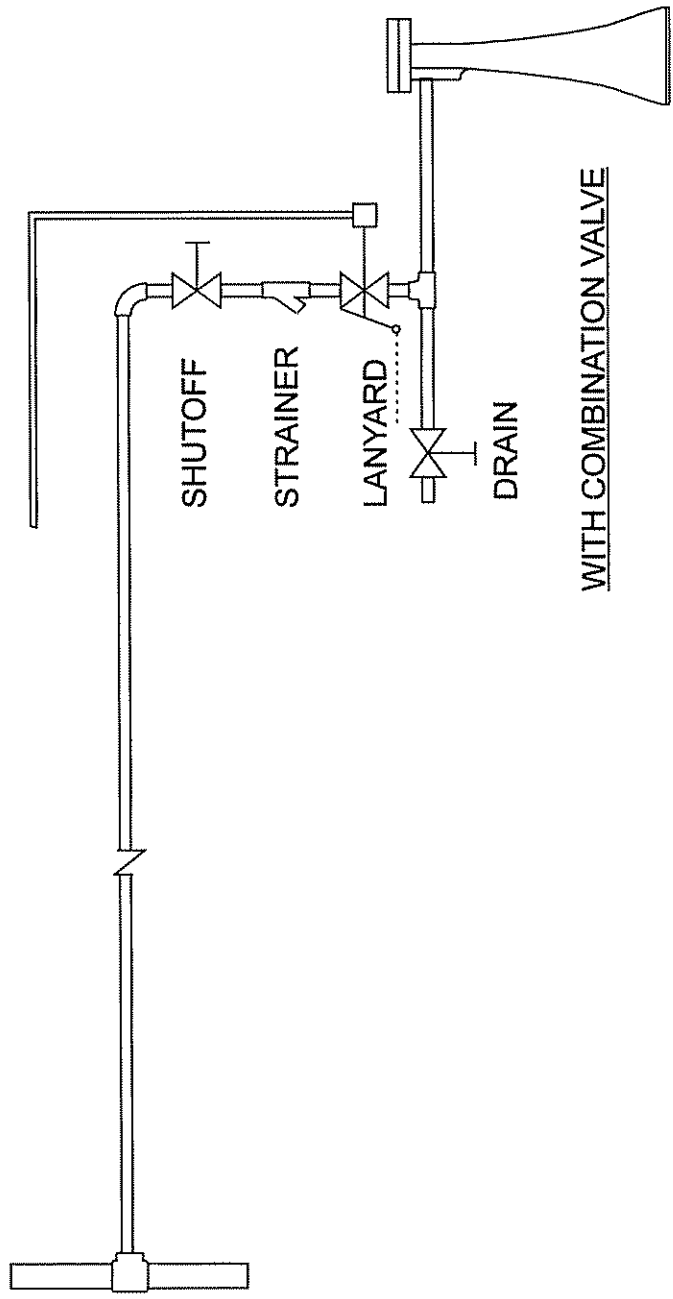
HORN FAILS TO SHUT OFF. Manual valve stuck - Chip lodged in solenoid plunger tube - Solenoid valve frozen - Short circuit in electrical supply.

Make repairs to horn as outlined under maintenance.

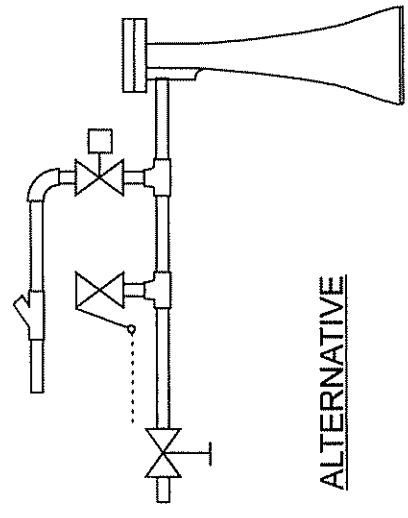
CO2 SYSTEM



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WITH COMBINATION VALVE



ALTERNATIVE

AIRCHIME HORNS ARE DESIGNED TO OPERATE EFFICIENTLY AT ALL PRESSURES BETWEEN 50 AND 150 PSI. THEY WILL OPERATE DOWN TO 25 PSI AND UP TO 175 PSI OR MORE WHEN REQUIRED. THE LOUDNESS OR SPL OF A HORN IS IN RELATION TO THE PRESSURE AND CONSUMPTION. GENERALLY THE HIGHER THE PRESSURE AND CONSUMPTION, THE LOUDER THE HORN. THE ORIFICE INTO THE HORN CAN BE INCREASED FOR THE LOWER PRESSURES AND DECREASED FOR THE HIGHER PRESSURES CONSULT FACTORY WHEN LIMITED TO LOW OR HIGH PRESSURES.

- 1 START WITH ONE PIPE SIZE LARGER THAN INLET INTO HORN AND INCREASE BY ONE PIPE SIZE FOR EVERY 100 FEET OF RUN.
- 2 PRESSURE DROP AT HORN SHOULD NOT EXCEED 15 PSI.
- 3 PIPE SHOULD BE INSTALLED WITH A CONTINUAL RISE TO THE HORN, FREE OF POCKETS THAT WOULD TRAP CONDENSATE. PLAN LAYOUT WITH AS FEW ELBOWS AS POSSIBLE.
- 4 COPPER TUBING AND FITTINGS ARE LESS RESTRICTIVE THAN IRON PIPE AND CAST FITTINGS. IF USING IRON PIPE USE TEFLON TAPE ON MALE THREADS.
- 5 INSTALL OPERATING VALVE CLOSE TO HORN FOR SHARP, CONCISE BLASTS. SOUND SHOULD NOT "TRAIL OFF" AT THE COMPLETION OF A SIGNAL.
- 6 AIR SUPPLY SHOULD BE TAKEN FROM TOP OF TANK OR MAIN SUPPLY LINE.
- 7 ON LONG UNAVOIDABLE RUNS, AN AIR RECEIVER LOCATED CLOSE TO HORN WILL AVOID EXCESSIVE PRESSURE DROP WHEN HORN IS SOUNDING.
- 8 INSTALL SHUTOFF VALVES WHERE NECESSARY TO FACILITATE SERVICING.
- 9 OUTSIDE RUNS EXPOSED TO COLD WEATHER SHOULD BE INSULATED OR PROTECTED WITH HEATING CABLE.
- 10 BEFORE CONNECTING HORN, BLOW OUT LINES THOROUGHLY TO REMOVE PIPE CHIPS OR OTHER ACCUMULATED MATTER.

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