

# INSTALLATION, OPERATION AND MAINTENANCE MANUAL

## Figure 905

**1/2", 3/4" & 1" Air Release Valves**

**Drawing EAV-7010**



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905-IOM 022620 Rev B



WARNING: Cancer and Reproductive Harm – [www.Prop65Warnings.ca.gov](http://www.Prop65Warnings.ca.gov)

# INSTALLATION, OPERATION and MAINTENANCE

## Figure 905 Air Release Valves

### INTRODUCTION

This manual will provide the information to properly install, operate and maintain the valve to ensure a long service life. The Figure 905 Air Release Valve is ruggedly constructed to provide years of trouble-free operation with minimal maintenance.

These Air Release Valves are not intended for use with fluids containing suspended solids such as wastewater and sewage. The GA Industries Figure 925, 927 or 929 Air Release Valves are recommended for such applications.

### CAUTION

The valve is NOT recommended for use with toxic fluids, fuels or fluids containing hazardous gases

### CAUTION

The valve will not function if used at a pressure higher than the maximum working pressure indicated on the nameplate.

The Shop Order (SO) Number, Figure Number, size and pressure rating are stamped on a nameplate attached to the valve. Please refer to the SO number when ordering parts.

### DESCRIPTION OF OPERATION

The Figure 905 Air Release Valve is designed to automatically vent air that has accumulated within the valve. These valves are usually installed at high points in the system where air tends to collect. The valve is "normally open" as shipped and will vent air through its orifice at the top of the valve. The float rises when water enters the valve and closes the orifice. Air from the system accumulates in the valve forcing the water level down until the float drops and opens the venting orifice. As air is released the water level rises lifting the float and re-closing the valve.

This sequence occurs as often as necessary to release air that has collected in the valve.

### RECEIVING AND STORAGE

Inspect the valve upon receipt for damage during shipment. Carefully unload all valves to the ground without dropping.

The valves should remain in a clean, dry and weather protected area until installed. For long term storage (greater than 6 months) the rubber surfaces of the seat should be coated with a non-toxic lubricant such as "SuperLube" made by Synco Chemical. Do not expose the rubber parts to sunlight or ozone.

### INSTALLATION

The Figure 905 is standard with NPT screwed connections. Consult the drawings of record to verify the configuration supplied and installed.

The valve must be installed in an upright vertical orientation, normally at a high point in the system.

If installed outdoors, below ground in a vault or in an unheated area, adequate freeze protection must be provided. Some discharge of water may occur during operation so the valve outlet should be piped to an adequate drain.

An isolating valve should be installed between the valve and the pipeline or system to facilitate maintenance.

Carefully screw threaded end valves onto pipe nipple using compatible thread sealant. Tighten valve using wrench flats. DO NOT OVERTIGHTEN.

### VALVE CONSTRUCTION

The standard Figure 905 Air Release Valve has a cast iron body, stainless steel float and linkage mechanism and a rubber seat and is suitable for use at working pressures from 10 to 150 PSI (69 to 1,034 kPa). If there is an "H" suffixed to the figure number (e.g., 905H) the valve is suitable for use at up to 200 PSI (1,379 kPa) working pressure. Refer to the List of Materials

submitted for the order if non-standard materials were provided.

Refer to Page 4 for details of construction and parts location.

The body (1) has an inlet connection at the bottom where the valve attaches to the system and a smaller outlet connection at the top through which air leaves the valve.

#### **WARNING**

Removing the valve from the line or disassembling the valve while there is pressure in the valve body may result in injury or damage to the valve

#### **PREVENTIVE MAINTENANCE**

Figure 905 Air Release Valves require no scheduled lubrication, adjustment or preventive maintenance.

A periodic visual inspection should be performed to ensure the outlet piping is not obstructed and to verify there is no fluid leakage.

#### **TESTING**

Valve operation can be easily tested. Close the inlet isolation valve and remove or loosen the pipe plug nearest the inlet to drain the water from the valve. The float should drop as the water leaves the valve. NOTE: A ball or gate valve can be installed in place of the pipe plug to facilitate testing.

Replace or tighten the pipe plug and slowly open the inlet isolating valve. The valve should float closed and seat tightly.

#### **TROUBLESHOOTING**

- Valve Does Not Close / Fluid Leakage  
Verify debris has not collected on the seat preventing tight closure

Verify rubber orifice button and/or orifice seating surfaces are not damaged

Verify float has buoyancy

Verify linkage mechanism operates freely without binding or sticking

Verify pressure at valve inlet is at least 10 PSI

- Valve Does Not Open  
Verify debris in the valve is not preventing the float from freely falling when fluid is drained from valve

Verify linkage mechanism operates freely without binding or sticking

Verify pressure at valve inlet does not exceed maximum working pressure

#### **DISASSEMBLY**

Although the Figure 905 air release valve may be more easily serviced by removing it from the line, all valves can be serviced while the body remains connected to the pipeline. A skilled technician with proper tools should perform all work. No special tools are required.

First ensure there is no pressure within the valve. Remove the cover screws (13) and lift off cover (2) with float and linkage attached. It may be necessary to pry the cover off. Be careful not to damage or lose the cover gasket (3) unless it will be replaced.

Remove the spring pin (14) to free the float arm (5) with float ball (9) attached. Remove the rubber orifice button (7) by pulling it out of the float arm (5). No further disassembly is needed to replace the rubber orifice button (10)

Use a 1/2" hex socket to remove the orifice (4) and lift off the leverage bracket (6).

Remove the float screw (10) being careful not to lose the lock washer (11).

Inspect all parts for wear and damage. Minor scratches and dents in the float are normal. Some floats may contain sand for added weight but if water is detected replace the float. Carefully clean the orifice of scale. Replace damaged parts.

#### **REASSEMBLY**

Reassembly is performed in reverse order from disassembly. Clean all parts especially the threaded, seating and sealing surfaces before reassembling valve. Worn parts should be replaced.

Clean with Loctite 649 (or equal) primer and apply Loctite® 271 (or equal) sealant to the threads of the orifice (4) before installation into cover. Torque to maximum 22 ft-lbs.

Lubricate orifice button (7) and pull the small end through the hole in the float arm (5) until it locks in place.

Apply Loctite 242 (or equal) to the threads of the float screw (10) before installation. Align float arm with the bracket and install spring pin.

Place cover gasket (3) and cover (2) with the float assembled on the body and install cover screws. Tighten cover screws in an alternating pattern.

Carefully introduce pressure and check for leaks

**REPLACEMENT PARTS**

Genuine replacement parts are available from your local VAG/GA Industries representative or from the factory:

VAG USA, LLC  
 234 Clay Avenue  
 Mars, PA 16046 USA  
 Telephone: 724-776-1020  
 Fax: 724-776-1254  
 E-mail: [quotes-ga@vag-group.com](mailto:quotes-ga@vag-group.com)

Please have the nameplate data available when ordering parts.

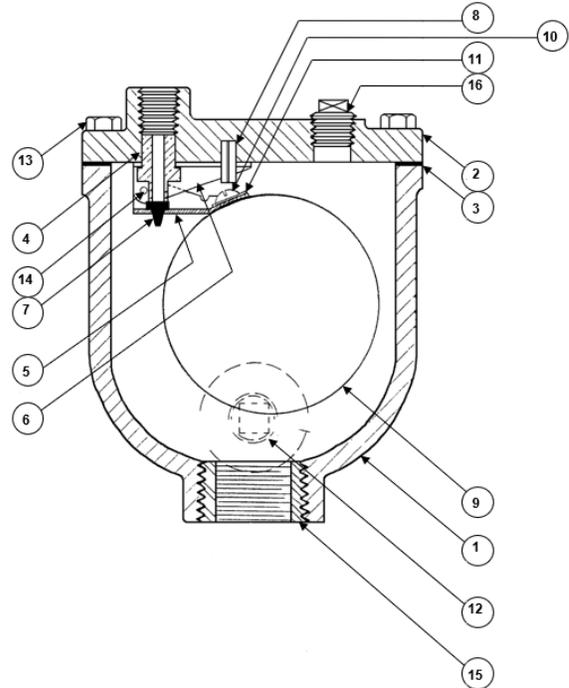
**REPAIR KITS**

Soft Goods Kit A905 (Part Number 2-80-11000-002) includes items 3 and 7.

Linkage Kit AL905 (Part Number 2-80-11000-078) includes items 5, 6, 8 and 14.

**WARRANTY**

The Warranty for GA Industries valves is included in our Terms and Conditions which can be found here: <https://gaindustries.com/terms>



**Figure 905 Air Release Valve**

Item	Description	Standard Material
1	Body	Cast Iron
2	Cover	Cast Iron
3	Cover Gasket	Buna N Rubber
4	Orifice	316 SS
5	Float Arm	316 SS
6	Leverage Bracket	316 SS
7	Orifice Button	Buna N Rubber
8	Spirol Pin	302 SS
9	Float Ball	316 SS
10	Float Screw	304 SS
11	Lock Washer	302 SS
12	Pipe Plug	Steel
13	Cover Screw	Zinc Plated Steel
14	Spirol Pin	302 SS
15	Reducing Bushing*	Steel

\* Used only for 1/2" or 3/4" connection size