

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

6" - 12" Figures 950-D, 950-U, 950H-D & 950H-U Dual Body Combination Air Valves for Water



TABLE OF CONTENTS

Section 1	Figure 950 Combination Air Valve
Section 2	Figure 930 Air & Vacuum Valve 6" & 8"
Section 3	Figure 930 Air & Vacuum Valve 10" & 12"
Section 4	Figure 920 Air Release Valve



234 Clay Avenue • Mars, PA 16046 USA
Telephone (724) 776-1020 • Fax (724) 776-1254
E-mail: info-ga@vag-group.com

Manual Number IOM-950.02-1025024 Rev A



WARNING: Cancer and Reproductive Harm – www.Prop65Warnings.ca.gov

Section 1

INSTALLATION, OPERATION and MAINTENANCE

Figures 950-D, 950-U, 950H-D and 950H-U Dual Body Combination Air Valves for Water

INTRODUCTION

This manual provides information to install, operate and maintain GA Industries dual body combination air valves to ensure a long service life. The valve is ruggedly constructed to provide many decades of dependable service with minimal maintenance.

CAUTION

The valve is NOT recommended for use with toxic, corrosive, or flammable fluids.

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

Dual body combination air valves consist of two individual valves assembled and piped together at the factory: a Figure 930 air & vacuum valve and a Figure 920 air release valve. Each valve is "normally open" and closes when water rises in the valve to lift the buoyant float and seal the orifice.

The Figure 930 air & vacuum valve has a large orifice that is the same size as the nominal size of the valve. During system filling, air is vented through the orifice at the same rate as water is entering the system. When water rises in the valve it lifts the float to seal off the orifice. The valve will remain closed if there is positive pressure within the valve but automatically open to admit air to alleviate the vacuum when the pipeline is drained and/or a negative pressure occurs inside the valve.

The Figure 920 air release valve has a small orifice that closes when water fills the valve. The valve's small orifice automatically opens to release air that accumulates in the valve while the system is pressurized and operational. The valve closes when the air is released. This cycle will occur as often as needed to prevent an excessive accumulation of air.

RECEIVING AND STORAGE

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

Valves should remain in a clean, dry, and weather protected area until installed. After completion of shop testing the valve is drained of the test water but

a small amount could remain so the valve should be protected from freezing during storage.

INSTALLATION

The valve is typically installed at high points in the system where air naturally rises during filling and in operation and a vacuum first form during draining.

The combination air valve is installed on top of the pipeline in a vertical orientation with an isolating valve between the pipeline and the air valve. Depending on the operating conditions, brief spillage may occur as the valve closes so proper drainage should be provided.

The air & vacuum valve outlet is supplied with a protective cowl or an optional Class 125 flanged outlet that can be piped to a drain.

Prior to installation ensure all debris, packing material or other foreign material has been removed from the valve.

If installed outdoors, below ground in a vault or in an unheated area, adequate freeze protection must be provided.

The valve should be installed with sufficient clearance to permit maintenance and removal of internal components.

Figure Numbers suffixed with "D" indicate the valve has an ANSI Class 125 flanged pipeline connection, Figure Numbers suffixed with "U" indicate the valve has ANSI Class 250 flanged pipeline connection. Flat-faced flanged valves should be mated with flat-faced flanges and full-face gaskets. If ring gaskets are used the bolt material shall be ASTM A307 Grade B (or equivalent). Higher strength bolting should only be used with full-face gaskets.

The Figure 950-D and 950-U have a maximum working pressure of 150 PSI. The Figure 950H-D has a maximum working pressure of 200 PSI and the Figure 930H-U has a maximum working pressure of 300 PSI.

Lower heavy valves using slings or chains around the valve body and/or the lifting eyes. DO NOT LIFT BY THE AIR RELEASE VALVE. Lubricate the bolts or

studs and insert around flange. Lightly tighten bolts until gaps are eliminated. Torque bolts in an alternating pattern in graduated steps. If leakage occurs wait 24 hours and re-torque the bolts but do not compress the gasket more than 50% or exceed bolt maximum torque rating.

START-UP

The valve does not require any calibration or adjustment prior to start-up.

PREVENTATIVE MAINTENANCE

No routine lubrication or adjustments are needed.

REPAIR INSTRUCTIONS

Instructions for the inspection, troubleshooting and repair of the GA Industries Figure 930 and 920 valves utilized in the Figure 950 are provided in the sections for each valve.

REPLACEMENT PARTS

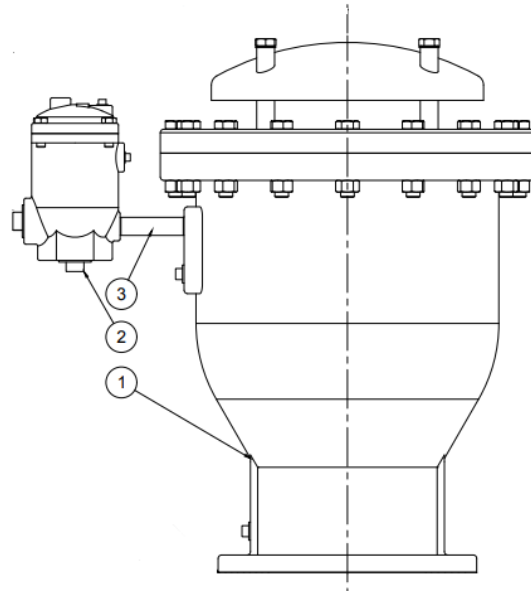
Genuine replacement parts are available from your local GA Industries representative or from the factory:

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

Please have the nameplate data available when ordering parts.

WARRANTY:

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



Item	Component
1	Figure 930 Air & Vacuum Valve
2	Figure 920 Air Release Valve
3	Pipe Nipple

Section 2

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Figures 930-D, 930-U

**6" & 8" Air & Vacuum Valves
for Clean Water**

Drawing EAV-7049



234 Clay Avenue • Mars, PA 16046 USA
Telephone (724) 776-1020 • Fax (724) 776-1254
E-mail: info-ga@vag-group.com

Manual Number 930.2-IOM 120220 Rev A



WARNING: Cancer and Reproductive Harm – www.Prop65Warnings.ca.gov

INSTALLATION, OPERATION and MAINTENANCE

Figures 930-D, 930-U Air & Vacuum Valves

INTRODUCTION

This manual will provide the information to properly install, operate and maintain the valve to ensure a long service life. The Figure 930 Air & Vacuum Valve is ruggedly constructed to provide years of trouble-free operation with minimal maintenance.

These Air & Vacuum Valves are not intended for use with fluids containing suspended solids such as wastewater and sewage. The GA Industries Figure 935 Sewage Service Air & Vacuum Valves are recommended for such applications.

CAUTION

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

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 930 Air & Vacuum Valve allows air that is being pushed ahead of the incoming fluid to escape and ensure a complete filling of the pipeline or vessel. Once the air has been exhausted and the system is pressurized the valve closes tight. It does not re-open unless and until the system is drained and/or a negative pressure condition occurs within the pipe or vessel to admit air to minimize the vacuum condition.

The Figure 930 employs the Kinetic aerodynamic operating principle to ensure the valve is not prematurely blown shut by the high velocity exiting air.

RECEIVING AND STORAGE

Inspect the valve upon receipt for damage during shipment. Carefully unload all valves to the ground without dropping. Do not pick up the

valve by the "cowl." 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

Figure Numbers suffixed with "D" (e.g., 930-D) indicate the valve has ANSI Class 125 flanged pipeline connection. Figure Numbers suffixed with "U" (e.g., 930-U) indicate the valve has ANSI Class 250 flanged pipeline connection.

Sizes 6" & 8" Figure Numbers 930-D and 930-U are standard with an outlet cowl, indicated by a "C" (e.g., 930-DC). In lieu of a cowl, the valve can be supplied with an ANSI Class 125 flanged outlet connection, indicated by a "J" (e.g., 930-UJ).

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 just prior to valve closure. If installed indoors or in a vault, the valve outlet should be directed 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.

Flat-faced flanged valves should be mated with flat-faced flanges and full-face gaskets. If ring

gaskets are used the bolt material shall be ASTM A307 Grade B (or equivalent). Higher strength bolting should only be used with full-face gaskets.

Lower heavy valves using slings or chains around the valve body and/or the lifting eye. Lubricate the bolts or studs and insert around flange. Lightly tighten bolts until gaps are eliminated. Torque bolts in an alternating pattern in graduated steps. If leakage occurs wait 24 hours and re-torque the bolts but do not compress the gasket more than 50% or exceed bolt maximum torque rating.

VALVE CONSTRUCTION

The standard Figure 930 Air & Vacuum Valve has a cast iron body and cover, a 316 stainless steel float ball, Buna-N rubber seat and an outlet cowl. 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 an outlet connection at the top through which air leaves the valve (during filling) and enters the valve (during draining). The outlet may be fitted with a "cowl" to deflect air during venting and minimize entry of foreign matter during air admission or a flanged connection to permit the outlet to be piped to a drain.

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 930 Air & Vacuum Valves require no scheduled lubrication, adjustment or preventive maintenance.

The float ball with attached float guide are the only moving parts and require no lubrication.

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 vacuum forms inside the valve as the water leaves. 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 when pressurized.

TROUBLESHOOTING

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

Verify the pressure at the valve inlet is at least 10 PSI

Verify rubber seat and/or float ball seating surfaces are not deformed or damaged

Verify float guide is undamaged and attached to float

Verify float has buoyancy

Verify float ball rises freely without binding or sticking

- Valve Does Not Open
Verify there is no pressure inside the valve.

Verify there is no debris in the valve that is preventing the float from freely falling when fluid is drained from valve

DISASSEMBLY

Although small a size Figure 930 Air & Vacuum 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 bolts and nuts (4 and 8) and lift off cover (2), it may be necessary to pry the cover off.

Remove the rubber seat (3) and lift out the float ball (5) with float guide (12) attached. Remove the rubber cushion (7) and flange bearing (12).

Inspect all parts for wear and damage. Minor scratches in the float are normal. Some floats may contain sand for added weight but if water is detected replace the float. Clean any scale build up from the float ball. 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 or damaged parts should be replaced.

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

Please have the nameplate data available when ordering parts.

REPAIR KITS

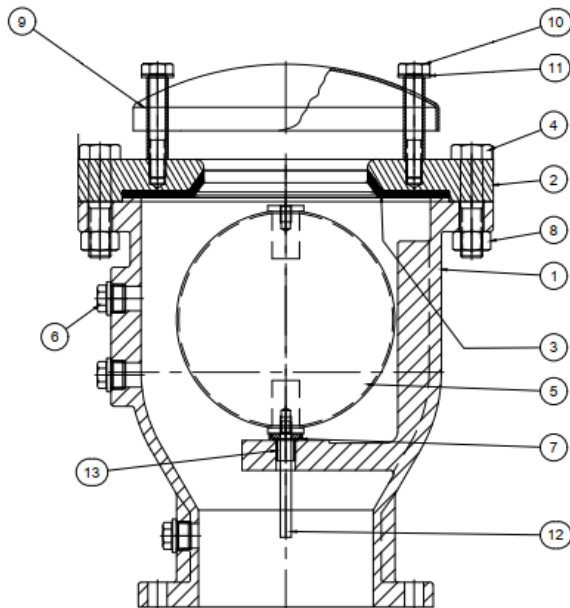
Soft Goods Repair Kits
 6" Kit A930-6 Part Number 2-80-11000-017
 8" Kit A930-8 Part Number 2-80-11000-018

Soft goods kit contains items 3 and 7

All other parts ordered individually

WARRANTY

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



PARTS LIST
 6" and 8" Figures 930-D, 930-U

Item	Name	Standard Material
1.	Body	Cast Iron
2.	Cover	Cast Iron
3.	Seat	Buna-N Rubber
4.	Cover Bolts	Zinc Plated Steel or 316SS
5.	Float Ball	316 Stainless Steel
6.	Pipe Plug	Malleable Iron
7.	Cushion	EPDM Rubber
8.	Cover Nut	Zinc Plated Steel or 316 SS
9.	Cowl	Steel
10.	Cowl Bolt	Zinc Plated Steel or 316 SS
11.	Cowl Washer	Zinc Plated Steel or 316 SS
12.	Float Guide	303 Stainless Steel
13.	Bearing	Acetal Copolymer

Note: Parts 9, 10 & 11 not supplied on Figure 930-DJ or 930-UJ Air & Vacuum Valves with flanged outlet.

Section 3

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Figures 930-D, 930-U

10" & 12" Air & Vacuum Valves for Clean Water



234 Clay Avenue • Mars, PA 16046 USA
Telephone (724) 776-1020 • Fax (724) 776-1254
E-mail: info-ga@vag-group.com

Manual Number 930.3-IOM 120320 Rev A



WARNING: Cancer and Reproductive Harm – www.Prop65Warnings.ca.gov

INSTALLATION, OPERATION and MAINTENANCE

10" & 12" Figures 930-D, 930-U Air & Vacuum Valves

INTRODUCTION

This manual will provide the information to properly install, operate and maintain the valve to ensure a long service life. The Figure 930 Air & Vacuum Valve is ruggedly constructed to provide years of trouble-free operation with minimal maintenance.

These Air & Vacuum Valves are not intended for use with fluids containing suspended solids such as wastewater and sewage. The GA Industries Figure 935 Sewage Service Air & Vacuum Valves are recommended for such applications.

CAUTION

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

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 930 Air & Vacuum Valve allows air that is being pushed ahead of the incoming fluid to escape and ensure a complete filling of the pipeline or vessel. Once the air has been exhausted and the system is pressurized the valve closes tight. It does not re-open unless and until the system is drained and/or a negative pressure condition occurs within the pipe or vessel to admit air to minimize the vacuum condition.

The Figure 930 employs the Kinetic aerodynamic operating principle to ensure the valve is not prematurely blown shut by the high velocity exiting air.

RECEIVING AND STORAGE

Inspect the valve upon receipt for damage during shipment. Carefully unload all valves to the ground without dropping. Do not pick up the valve by the "cowl." 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

Figure Numbers suffixed with "D" (e.g., 930-D) indicate the valve has ANSI Class 125 flanged pipeline connection. Figure Numbers suffixed with "U" (e.g., 930-U) indicate the valve has ANSI Class 250 flanged pipeline connection.

Sizes 10" & 12" Figure Numbers 930-D and 930-U are standard with an outlet cowl, indicated by a "C" (e.g., 930-DC). In lieu of a cowl, the valve can be supplied with an ANSI Class 125 flanged outlet connection, indicated by a "J" (e.g., 930-UJ).

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 just prior to valve closure. If installed indoors or in a vault, the valve outlet should be directed 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 OVER-TIGHTEN.

Flat-faced flanged valves should be mated with flat-faced flanges and full-face gaskets. If ring

gaskets are used the bolt material shall be ASTM A307 Grade B (or equivalent). Higher strength bolting should only be used with full-face gaskets.

Lower heavy valves using slings or chains around the valve body and/or the lifting eye. Lubricate the bolts or studs and insert around flange. Lightly tighten bolts until gaps are eliminated. Torque bolts in an alternating pattern in graduated steps. If leakage occurs wait 24 hours and re-torque the bolts but do not compress the gasket more than 50% or exceed bolt maximum torque rating.

VALVE CONSTRUCTION

The standard Figure 930 Air & Vacuum Valve has a cast iron body and cover, a 316 stainless steel float ball, Buna-N rubber seat and an outlet cowl. 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 an outlet connection at the top through which air leaves the valve (during filling) and enters the valve (during draining). The outlet may be fitted with a "cowl" to deflect air during venting and minimize entry of foreign matter during air admission or a flanged connection to permit the outlet to be piped to a drain.

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 930 Air & Vacuum Valves require no scheduled lubrication, adjustment or preventive maintenance.

The float ball with attached float guide are the only moving parts and require no lubrication.

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 vacuum forms inside the valve as the water leaves. 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 when pressurized.

TROUBLESHOOTING

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

Verify the pressure at the valve inlet is at least 10 PSI

Verify rubber seat and/or float ball seating surfaces are not deformed or damaged

Verify float guide is undamaged and attached to float

Verify float has buoyancy

Verify float ball rises freely without binding or sticking

- Valve Does Not Open
Verify there is no pressure inside the valve.

Verify there is no debris in the valve that is preventing the float from freely falling when fluid is drained from valve

DISASSEMBLY

Although small size Figure 930 Air & Vacuum Valves 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 bolts and nuts (4 and 8) and lift off cover (2), it may be necessary to pry the cover off.

Lift out the float ball (10) with float guide (9) attached. Remove the rubber cushion (8) and flange bearing (13).

Invert cover and remove O-ring (6), seat screws (5), follower ring (4) and seat (3).

Inspect all parts for wear and damage. Minor scratches in the float are normal. Some floats may contain sand for added weight but if water is detected replace the float. Clean any scale build up from the float ball. The float ball (10) can be inverted to obtain a fresh sealing surface. 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 or damaged parts should be replaced.

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

Please have the nameplate data available when ordering parts.

REPAIR KITS

Soft Goods Repair Kits
 10" Kit A930-10 Part Number 2-80-11000-012
 12" Kit A930-12 Part Number 2-80-11000-013

Soft goods kit contains items 3, 6 and 8

All other parts ordered individually

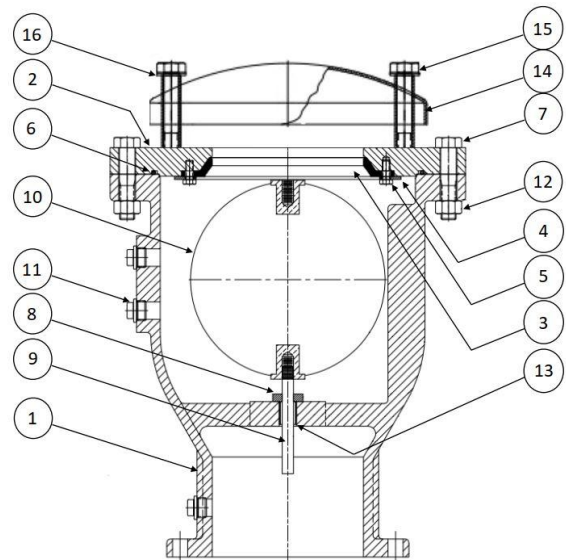
WARRANTY

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

PARTS LIST
 10" and 12" Figures 930-D, 930-U

Item	Name	Standard Material
1.	Body	Cast Iron
2.	Cover	Cast Iron
3.	Seat	Buna-N Rubber
4.	Follower Ring	316 Stainless Steel
5.	Seat Screws	304 Stainless Steel
6.	Cover O-ring	Buna-N Rubber
7.	Cover Bolt	Zinc Plated Steel or 316 SS
8.	Cushion	EPDM Rubber
9.	Float Guide	303 Stainless Steel
10.	Float Ball	316 Stainless Steel
11.	Pipe Plug	Steel
12.	Cover Nut	Zinc Plated Steel or 316 SS
13.	Guide Bearing	Acetal Copolymer
14.	Cowl	Steel
15.	Cowl Bolt	Zinc Plated Steel or 316 SS
16.	Cowl Washer	Zinc Plated Steel or 316 SS

Note: Parts 14, 15 & 16 not supplied on Figure 930-DJ or 930-UJ Air & Vacuum Valves with flanged outlet.



Section 4

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Figure 920

1" & 2" Compound Lever Air Release Valves

Drawing EAR-7003



234 Clay Avenue • Mars, PA 16046 USA
Telephone (724) 776-1020 • Fax (724) 776-1254
E-mail: info-ga@vag-group.com

Manual Number 920-IOM 022420 Rev E



WARNING: Cancer and Reproductive Harm – www.Prop65Warnings.ca.gov

INSTALLATION, OPERATION INSTALLATION, OPERATION and MAINTENANCE

Figure 920 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 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 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" 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 920 is standard with NPT screwed connections. An optional flange pipeline connection is available on special order.

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.

Flat-faced flanged valves should be mated with flat-faced flanges and full-face gaskets. If ring gaskets are used the bolt material shall be ASTM A307 Grade B (or equivalent). Higher strength bolting should only be used with full-face gaskets.

Lower heavy valves over the mating flange using slings or chains around the valve body. Lubricate the bolts or studs and insert around flange. Lightly tighten bolts until gaps are eliminated. Torque bolts in an alternating pattern in graduated steps. If leakage occurs wait 24 hours and re-torque the bolts but do not compress the gasket more than 50% or exceed bolt maximum torque rating.

VALVE CONSTRUCTION

The standard Figure 920 Air Release Valve has a cast iron body and cover, 316 stainless steel float and linkage mechanism and a rubber seat. Optional materials such as 316 stainless steel or ductile iron body and cover can be provided. 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 920 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 the pressure at the 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 the pressure at the valve inlet does not exceed the maximum working pressure

DISASSEMBLY

While small valves 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 bolts and nuts (16 & 17) and lift off cover (2) with float and linkage attached. It may be necessary to pry the cover off. Be careful no to damage or lose O-ring (21).

Remove the two spring pins connecting the lever arm (5) and float arm (6) to the bracket (3). The float and linkage will be free from the cover.

Remove the spring pin connecting the pivot link (12) to the float arm (6) and remove the float screw (13) and lockwasher (9). Remove the hex nut (8) and lockwasher (9) and unscrew the orifice button (7) from the lever arm (5).

Remove the bracket screw (4) to remove the leverage bracket (3). Using a hex socket remove the orifice (20) from the cover.

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

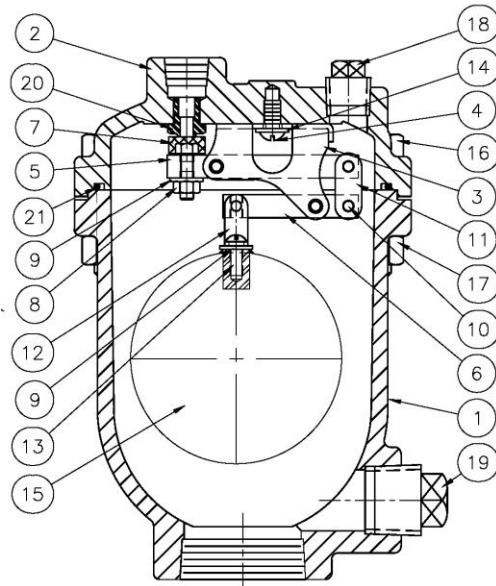
Clean all parts especially seating and sealing surfaces before reassembling valve. Worn parts should be replaced during re-assembly.

Apply Loctite® PST thread sealant to orifice (20) and thread into cover. Torque to maximum 22 ft-lbs.

Thread orifice button (7) all the way into lever arm (5) and install hex nut (8) and lockwasher (9) but do not tighten. Connect the lever arm (5) and float arm (6) to the bracket (3) using two spring pins.

Adjust the orifice button (7) so that the end of the lever arm (5) nearest the orifice button is about 1/16" (1.6mm) farther from the cover than the opposite end when the orifice button (7) is gently resting on the orifice (20). Secure by tightening hex nut (8)

Secure float (15) to pivot link (12) using screw (13) and lockwasher (9). Attach pivot link (12) to float arm (6) using spring pin. Verify free movement of linkage mechanism and that the orifice button (7) presses against the orifice (3) when the float is lifted and pulls away when falls.



Lubricate and place O-ring (21) in cover (2) and carefully place cover (2) on body (1) ensuring o-ring is retained. Install the cover bolts (16) and nuts (17) and tighten 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.co

Please have the nameplate data available when ordering parts.

REPAIR KITS

Soft Goods Kit A920 (Part Number 2-80-11000-005) includes Items 7, 8, 9 and 21.

Linkage Kit AL920 (Part Number 2-80-11000-081) includes Items 3, 4, 5, 6, 10, 11, 12 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>

PARTS LIST

Item	Name	Material
1.	Body	Cast Iron
2.	Cover	Cast Iron
3.	Bracket	316 Stainless Steel
4.	Bracket Screw	304 Stainless Steel
5.	Lever Arm	316 Stainless Steel
6.	Float Arm	316 Stainless Steel
7.	Orifice Button	Buna-N/Stainless Steel
8.	Hex Nut	304 Stainless Steel
9.	Lock Washer	302 Stainless Steel
10.	Spring Pin	316 Stainless Steel
11.	Valve Link	316 Stainless Steel
12.	Pivot Link	316 Stainless Steel
13.	Float Screw	304 Stainless Steel
14.	Lock Washer	410 Stainless Steel
15.	Float Ball	316 Stainless Steel
16.	Cover Bolts	Zinc Plated Steel or 316SS
17.	Cover Nuts	Zinc Plated Steel or 316SS
18.	Pipe Plug	Steel or 316SS
19.	Pipe Plug	Malleable Iron or 316SS
20.	Orifice	316 Stainless Steel
21.	O-Ring	Buna-N Rubber

This page intentionally left blank.