Crispin Valves Operating Guide

Crispin

Since 1905

Crispin Multiplex Manufacturing Co. • 600 Fowler Avenue • Berwick, PA 18603 • 1-800-AIR-VALV
T: (570) 752-4524 • F: (570) 752-4962 • www.crispinvalve.com • sales@crispinvalve.com

Crispin Pressure Sewer Air Release Valve

OPERATION

The Pressure Sewer Air Release Valve allows air to be released from a system while the system is in operation and under pressure. This is accomplished by the mechanics of the simple or compound lever system inside the valve.

The buoyancy of the float raises the linkage to seal the orifice as the valve body fills upon start-up. While the system is in operation, accumulating air begins to displace the water in the valve body. As the water level drops, the weight of the float as multiplied by the lever system begins to pull the resilient seal away from its seat. This releases a quantity of air that allows more liquid to enter the valve body; in turn, the float raises to again seal the orifice. The valve will continue to function in this fashion as long as air accumulates

The body of the valve is elongated with the float suspended near the inlet. This prevents solids from contaminating the seating area.

MAINTENANCE

The valve should be inspected periodically for leakage, particularly at the seat area. Isolate or remove the valve from the system.

It is not necessary to remove the top flange from the valve to inspect the seat. The seat may be changed by removing the threaded top from the top flange, which exposes the seat. If the seat does require replacement, then the seat gasket should also be replaced.

The top flange must be removed to inspect the valve internally.

The linkage is easily disassembled by removing the pin clips from the bearing pins, then removing the bearing pins.

The valve plunger should be replaced if damaged or when it begins to deteriorate because of age.

The valve plunger is adjusted by removing the top flange, then turning the flange upside-down to expose the lever mechanism. The float is extended away from the valve orifice in order to pull the plunger away from the orifice. A light dusting of powder is spread over the valve seat, and the float is allowed to relax.

** These valves are intended for use on municipal waster water systems or approved industrial applications.*

While extending the float again, observe the powder pattern on the rubber valve, and make appropriate adjustments to permit full face contact of the rubber valve with the valve seat. Then replace the flange being careful not to allow the linkage to toggle over, which would prevent its functioning. This is done by either placing the valve body over the linkage, with the flange inverted and resting on a table, or by holding the linkage closed with a screwdriver while replacing the flange.

Crispin Pressure Sewer Air Release Valve (Continued)

HANDLING METHODS

The valves should be handled gently, so that the factory adjustments and clearances of internal linkages are not affected in anyway.

The valves are either strapped to pallets, or shipped in cartons to aid in handling.

STORAGE

The valves should be stored in a dry location with the inlet and outlet protection caps left in place. The location should be such that the valves will not be bumped around or dropped in order to prevent internal damage.

If the system is not started up after valve installation, then the outlets should be protected to prevent debris from entering the valves.

INSTALLATION

The valves should be installed at the high points in the line, in a vertical position, parallel with the center of gravity.

If the valves are to be installed in a manhole, adequate space should be provided so that the backflushing attachments can be maneuvered into their correct locations, and maintenance personnel can service the equipment.

Also, exhaust ventilation to atmosphere, wet well, or any other suitable location should be provided, and be of adequate size to pass the expected volume of valve exhaust air.

The valve should be mounted directly above the main or off to the side of the main, and separated by an isolation valve. When the valves are located a distance from the main, the slope of the inlet piping should be adequate in order to limit solids deposition from obstructing the inlet piping.

Pipe supports should be used whenever possible to anchor and support the valve or combination to help eliminate damage from abuse.

The inlet of the valve should be at the same elevation or greater than the elevation at the top of the pipe, with the piping to the inlet of the valve on a continuous upward slope.

Crispin Sewer Air and Vacuum Valve

OPERATION

The CRISPIN Air and Vacuum Sewer Valve exhausts large volumes of air as the system is filling and permits air to enter the line when a vacuum is drawn.

The Air and Vacuum Sewer Valve permits the passage of a volume of air equal to the volume being displaced in the line as the system is filling. As the liquid enters the valve body, the float begins to rise until the valve is seated at the orifice. If a vacuum is drawn due to column separation, a break in the line, etc., the float drops away from the orifice to relieve the vacuum and prevent system damage.

The body of the valve is elongated with the float suspended near the inlet. This prevents solids from contaminating the seating area.

MAINTENANCE

Inspect seating area for leaks while the valve is in service. Replace seat when required by following the instructions below.

SEAT REPLACEMENT

Isolate or remove the valve from the system. The Air and Vacuum Valve Top, which secures the Buna-N-Seat in place, may be held fast by either one of the following: an interference pin may be placed through the threads, or the top is bolted to the top flange.

Once the top is removed, the Buna-N-Seat will be exposed and can be replaced, if necessary. The top is replaced after coating the threads with a suitable thread sealer. Turn the top into the flange threads until it is snug. Tighten the one-quarter turn further, being careful not to deform the seat. The bolted top may be securely bolted in place.

FLOAT REPLACEMENT

Isolate or remove the valve from the system. Remove all the top flange nuts and bolts from the valve. Lift the top flange and the attached internal components from the valve body. With the float exposed, unscrew it from the float rod and replace it with a new float. Reposition the top flange on the valve body, and replace the flange bolts.

** These valves are intended for use on municipal waste water systems or approved industrial applications.*

Crispin Universal Sewer Air Release Valve

OPERATION

The CRISPIN Universal Sewer Air Release Valve provides two air release functions in a single body casting. The design permits the automatic escape of large quantities of air from a pipeline when the line is being filled, and allows the entry of air when a negative pressure occurs. The valve will also release accumulating air while the system is in operation and under pressure.

Air is forced out of a pipeline throughout the Air Release Valve by a liquid column as the line is being filled. As the liquid enters the Universal Sewer Air Release Valve, the float is made buoyant and rises with the rising liquid level. Both the air and vacuum and the pressure air release orifice will be sealed through the buoyant reaction of the float and the compound lever system. Accumulating air enters the valve body and displaces the liquid level, which causes the float to drop. The pressure air release orifice is opened and air escapes. The loss of compressed air causes a rise in the liquid level, which again raises the float and seals the valve. This cycle will continue to occur as long as air accumulates in the valve body.

MAINTENANCE

The valve should be inspected periodically for external leakage, particularly at the seating areas. (See below.)

SEAT REPLACEMENT

Refer to Sewer Air & Vacuum seat replacement.

INTERNAL INSPECTION

The top flange must be removed to inspect the valve internally. The internal linkage is easily disassembled by removing the pin clips from the bearing pins, then removing the bearing pins. The pressure seat should be inspected for wear and replaced if necessary.

The valve plunger should be replaced if damaged, or when it becomes deteriorated because of age. Normal life expectancy of Buna-N is four to five years. The valve plunger is adjusted by removing the top flange, then turning the flange upside-down, exposing the lever mechanism. The float is extended away from the flange in order to pull the plunger away from the Pressure Valve orifice. A light dusting of powder is spread over the pressure seat, and the float is allowed to relax. While extending the float again, observe the powder pattern on the rubber valve, and make appropriate adjustments to permit full face contact of the rubber valve with the valve seat. Secure the lock nut on the valve plunger threads. Replace the flange, being careful not to allow the linkage to toggle over, which would prevent it from functioning. Secure all flange bolts and nuts prior to repressurizing valve.

** These valves are intended for use on municipal waste water systems or approved industrial applications.*

Backflushing Instructions for Crispin Sewer Valve

The Sewer Air Release Valves must be backflushed periodically because of the nature of their application. Valves on systems which pass liquids bearing high solids content are backflushed to remove settled solids from the valve body, as well as to prevent scum and debris from building up on the valve mechanism.

The Sewer Valves purchased with back flush attachments are supplied with an inlet gate valve, two (2) blow-off gate valves on the side of the body, and a quick disconnect hose.

The backflush hose is attached to a fresh supply of water at 20-90 psi. With the hose coupled to the blow-off valve, the inlet gate valve is closed, and the bottom blow-off valve is opened. At this point, the sewer system pressure will blow off some of the solids. The top blow-off valve is then opened, and the valve is back-flushed with the fresh water. When it appears that the solids have been removed, the top blow-off valve is closed before the bottom blow-off valve, so that remaining water is allowed to escape. Then, the inlet gate is again opened.

On combinations with the pressure sewer piped out of the side of the air and vacuum, the isolating valve between the pressure and air and vacuum valve is closed. The inlet to the air and vacuum is closed and its bottom 1" blow-off valve is opened to relieve internal pressure and settled sludge. The bottom blow-off valve is also opened on the Pressure Valve for the same reason, and then backflushed with clean water. When the water passing out of the bottom blow-off valve is clear, this blow-off valve is closed, and the isolation valve is opened in order to facilitate backflushing of the Air and Vacuum Valve. After backflushing is complete, all blow-off valves are closed, and isolation valves are opened to put the valves back in service.

Valves in combination on a yoke assembly are backflushed individually using the procedure outlined above. An alternative procedure uses the CRISPIN backflushing system. This system allows the solids to be forced back into the force-main for disposal.

Troubleshooting

PRESSURE SEWER VALVE

Seat Leakage

—If a low volume leak persists with the rubber valve against the orifice, then the rubber valve should be adjusted or replaced.

—Replace rubber valve, if valve has been in operation longer than five years.

—More frequent backflushing may be required to prevent debris from reaching the orifice area.

Valve Fails To Release Air

—Backflush the valves to be certain that the internals are free to function.

AIR AND VACUUM SEWER VALVE

—If the valve leaks on pressures less than 5 psig, then the seat material is too hard and should be replaced with a softer seat.

—If leaks persist at low or high pressures, backflush the valve to remove debris from the seat area.

—If water blows out of the top, the valve may not be sized properly.

**NOTE: No special tools are required.*

Crispin Air and Vacuum Valve

OPERATION

The CRISPIN Air and Vacuum Valve exhausts large quantities of air as the system is filling, and permits air to enter the line when a vacuum is drawn.

The Air and Vacuum Valve permits the passage of a volume of air equal to the volume being displaced in the line as the system is filling. As the liquid enters the valve body, the float begins to rise until it seats itself at the orifice. If a vacuum is drawn due to column separation, a break in the line, etc., the float drops away from the orifice to relieve the vacuum and prevent system damage.

MAINTENANCE

Inspect seating area for leaks while the valve is in service. Replace seat (Part No. 5) when required.

SEAT REPLACEMENT

Isolate or remove the valve from the system. The top (Part No. 1S or Part No. lP) which secures the Buna-N seat (Part No. 5) in place, may be held fast by either one of the following: an interference pin may be placed through the threads (l/2" thru 4"), or the top is bolted (6" thru 10") to the top flange (Part No. 2).

Remove the interference pin, and begin to remove the top with a pipe wrench by turning the top counter-clockwise. Once the top is removed, the Buna-N Seat will be exposed. It is important that for proper operation of the valve, the Buna-N Seat be replaced every five years under normal operating conditions. It is always best to apply a coating of suitable thread sealer to the threads of the top before screwing the top into the top flange of the valve. Turn the top clockwise until it is snug, then tighten the top one-quarter turn, being careful not to deform the seat.

The top for the Air and Vacuum Valves (6" thru 10") is bolted to the top flange, and the Buna-N Seat is easily removed by unbolting the top, and following the same procedures as stated above. The cover flange for valves sized 12" thru 16" must be removed to expose the seat.

FLOAT REPLACEMENT

Isolate or remove the valve from the system. Remove all the top flange nuts and bolts from the valve. Lift the top flange (Part No. 2) from the body of the valve. Remove the stainless steel float (Part No. 6) from inside the valve and replace. Prior to connecting the top flange to the body, it is important to examine the gasket (Part No. 4) on the valve body. If the gasket shows wear or tear, replace. Reposition the top flange on the valve body, and replace the top flange nuts and bolts.

INSTALLATION

The valve shall be installed at the high points in the line and mounted vertically. The inlet of the valve should be at the same elevation or greater than the elevation at the top of the pipe, with the piping to the inlet on a continuous upward slope. The valve should be protected from freezing. For detailed information on the proper sizing of CRISPIN Air and Vacuum Valves, refer to the CRISPIN Catalog and/or Technical Reference No. 2.

Air & Vacuum Valve Continued...

Troubleshooting

AIR AND VACUUM VALVE

Valve Leaking: Seating Problem

—If the valve is four to five years old, then the Buna-N Seat needs replacing.

—If the valve leaks on pressure less than 15 psig, then the seat material is too hard and needs to be replaced with soft seat material.

Valve Leaking: Float Damage

—Review application for proper sizing of Air and Vacuum Valves. Refer to CRISPIN Catalog page 76).

—If valve has been installed on the pump discharge, the deep well top assembly (Part No. lD) must be applied to the valve to resolve this problem.

—If the valve inlet size is greater than 2”, then a surge check valve may be added to the inlet of this valve to alleviate the problem. The damaged float will require replacement.

Valve Leaking:

—Review application of this valve; valves may not be sized properly.

—If problem continues, please consult the factory.

** These valves are intended for use on municipal water systems or approved industrial applications.*

Crispin Vacuum Relief Valve

OPERATION

CRISPIN Vacuum Relief Valves are designed to allow air to enter a closed system when a vacuum is drawn due to column separation upon pump shut-down or line break.

The valve is normally held closed with a stainless steel spring to prevent air from being exhausted while filling the line. A resilient seat around the valve disc provides a positive drip tight seat while the line is full and operational.

If a negative pressure occurs in the line with a pressure differential across the orifice greater than .25 psig, then the valve will begin to open. As the vacuum becomes greater, this spring-operated valve produces an increasingly larger opening to address the increase in vacuum. The valve will close when the vacuum is eliminated.

MAINTENANCE

The valve internals are exposed by removing the flange bolts from the protective hood. The stainless steel set screws that hold the seat ring in place are removed. Pull the seat ring from the valve. This will allow the disc and spring to be removed and inspected. Replacement parts can be ordered from the bill of materials indicated on the drawings.

Troubleshooting

Valve Leaking: Seating Problem

—If the valve is four to five years old, then the Buna-N Seal on the seat ring is deteriorated and needs replacing.

—If the system pressure is less than 15 psig, the Buna-N material may need to be softer.

—Inspect the seating area for foreign material or debris.

—If problems should continue, please contact the factory.

** These valves are intended for use on municipal waste water systems or approved commercial and/or industrial applications.*

Crispin Pressure Air Release Valves

OPERATION

The CRISPIN Pressure Air Release Valve allows air to be released from a system while the system is in operation and under pressure. This is accomplished by the mechanics of the simple or compound lever system inside the valve.

The buoyancy of the float raises the linkage to seal the orifice as the valve body fills upon start-up. As accumulating air displaces the liquid in the valve body, the water level drops. The weight of the float multiplied by the lever system begins to pull the resilient seal away from the seat. This releases a quantity of air that allows more liquid to enter the valve body and, in turn, raises the float to again seat the orifice. The valve will continue to function in this fashion as long as air accumulates.

MAINTENANCE

The valve should be inspected periodically for leakage, particularly at the seat area.

SEAT REPLACEMENT

Isolate or remove the valve from the system. Remove the top (Part No. 1S) which secures the seat (Part No. lN-PVC Seat or Part No. lP- stainless steel seat) in place. Mark the location of the top in relation to the top flange (Part No. 20). With the proper size wrench, turn the top counter-clockwise.

Once the top is removed, the seat will be exposed. Remove the seat and the seat gasket (Part No. 23) and make the required replacement.

It is always best to coat the threads of the top with a suitable thread sealer prior to reassembling the valve. Turn the top into the flange thread (Part No. 20) until it is snug and as close as possible to the original mark. Tighten the top one-quarter turn.

INTERNAL REPAIRS:

The top flange (Part No. 20) must be removed for internal repair. Simply remove the flange nuts and bolts after isolating the valve from the system.

REPLACING VALVE PLUNGER

The valve plunger (Part No. 2–Buna-N Rubber) should be replaced when it begins to deteriorate because of age (4 to 5 years).

The linkage is easily disassembled by removing the pin clips from the bearing pins, then removing the bearing pins.

Now replace the valve plunger (Valve and Lever Assembly Part No. 6) and reconnect the bearing pins and clips.

Crispin Pressure Air Release Valves (continued)

ADJUSTING THE VALVE

The valve plunger is adjusted by removing the top flange, then turning the flange upside down, exposing the lever mechanism. The float is extended away from the valve orifice in order to pull the plunger away from the orifice. A light dusting of powder is spread over the valve seat and the float is allowed to relax.

While extending the float again, observe the powder pattern on the rubber valve, and make appropriate adjustments to permit its full face contact with the valve seat. Secure the plunger by locking the nut or screw.

Replace the flange, being careful not to allow the linkage to toggle over, which would prevent its functioning. This is done by placing either the valve body over the linkage with the flange inverted and resting on a table, or by holding the linkage closed with a screwdriver while replacing the flange on the body. Secure the flange nuts and bolts.

INSTALLATION

The CRISPIN Pressure Air Valve shall be installed at the high points in the line and mounted vertically. The inlet of the valve should be at the same elevation or greater than the elevation at the top of the pipe, with the piping to the inlet on a continuous upward slope. Valves should be protected from freezing.

For more detailed information on valve sizing, etc., please refer to the CRISPIN Catalog and/or Technical Reference No. 5.

Troubleshooting

Seat Leakage

—If a low volume leak persists with the rubber valve against the orifice, then the rubber valve should be adjusted or replaced.

—Replace the rubber valve if the valve has been in operation longer than five years.

—Inspect the valve seating area for foreign particles that could be preventing the valve from seating.

—Internal pressure should be adequate to provide a drip tight seat.

—If problem continues, please consult the factory.

** These valves are intended for use on municipal waste water systems or approved industrial applications.*

Crispin Deep Well Air Valves

OPERATION

The CRISPIN Deep Well Air Valve is similar in operation to that of the CRISPIN Air and Vacuum Valve. The difference is the addition of a deep well top assembly/throttling device.

The CRISPIN Deep Well Air Valve permits the escape of air from the well column when the pump starts, and allows the float to seat without chattering, premature closure or other destructive forces associated with rapid closure. The throttling device presents resistance to the exhausting air and rising column of water, so that when the water reaches the valve, the float will slowly rise to its seat.

The CRISPIN Deep Well Air Valve is field adjusted to accommodate field requirements by screwing the deep well stem into or out of the deep well top assembly. The initial adjustment should locate the plug at a point in the deep well top assembly, so that it is 75 percent visible when viewed through the discharge outlet. If the float continues to slam upon closure or if excessive amounts of water exit the valve discharge, the stem should be adjusted further into the deep well top assembly.

MAINTENANCE

Inspect seating area for leaks while the valve is in service. Replace seat when required.

SEAT REPLACEMENT

Isolate or remove the valve from the system. Remove the deep well top assembly (Part No. 1D) which secures the Buna-N seat (Part No. 5) in place. With the proper size wrench, turn the deep well top assembly counter-clockwise.

Once the top is removed, the Buna-N Seat will be exposed so that you can make the replacement. It is important that for proper operation of the valve, the Buna-N Seat be replaced every five years under normal operating conditions.

It is always best to add a coating of suitable thread sealer to the threads of the deep well top assembly prior to reassembling the valve. Turn the deep well top assembly clockwise until it is snug, then tighten the assembly one-quarter turn, being careful not to deform the seat.

FLOAT REPLACEMENT

Isolate or remove the valve from the system. Remove all the top flange nuts and bolts from the valve. Lift the top flange (Part No. 2) from the body of the valve. Remove and inspect the float (Part No. 6) and make the replacement. Prior to connecting the top flange to the body, it is important that the gasket (Part No. 4) be inspected.

If the gasket shows wear or tear, replace it. Reposition the top flange on the valve body, and replace the top flange nuts and bolts.

Crispin Deep Well Air Valves (continued)

INSTALLATION

The CRISPIN Deep Well Air Valve should be installed at the pump discharge and mounted vertically. The valve should be protected from freezing. For detailed information on the proper sizing of CRISPIN Deep Well Air Valves, please refer to the CRISPIN Catalog and/or Technical Reference

Troubleshooting

Valve Leaking: Seating Problem

—If the valve is four to five years old, then the Buna-N Seat needs replacing.

—If the valve leaks on pressure less than 15 psig, then the seat material is too hard and needs to be replaced with soft seat material.

Valve Leaking: Float Damage

—Review application for proper sizing of Deep Well Air Release Valves. Refer to the CRISPIN Catalog.

—If valve has been installed on the pump discharge, the deep well top assembly (Part No. lD) must be applied to the valve to resolve this problem.

—If the valve inlet size is greater than 2”, then a surge check valve may be added to the inlet of the valve to alleviate the problem. The damaged float will require replacement.

Valve Leaking

—Review application of this valve; valves may not be sized properly.

—If problem continues, please consult the factory.

** These valves are intended for use on municipal waste water systems or approved industrial applications.*

OPERATING GUIDE

Crispin Universal Air Release Valves

OPERATION

The CRISPIN Universal Air Release Valve is designed to permit the automatic escape of large quantities of air from a pipeline when the line is being filled, and to permit air to enter the pipeline when the line is being emptied. The CRISPIN Universal Air Release Valve will also release accumulating air while the line is in operation and under pressure. Therefore, the CRISPIN Universal Air Release Valve provides the function of the Air and Vacuum Valve and the Air Release Valve in a single body.

When the line is being filled, liquid rises into the valve and air escapes through the large orifice and into the atmosphere. Liquid entering the valve raises the float and lever mechanism, carrying with it the pressure plunger in the main valve. When the liquid has raised the float to its limit, the stainless steel main valve rests against the seat, and the pressure plunger also rests against its seat, which is the main valve. When this occurs, the valve is closed and no liquid can escape.

If accumulating air rises into the valve while the line is in operation and under pressure, it will displace the liquid at the top of the valve body, and the float will begin to drop as the liquid level drops. As this occurs, the pressure valve will open, permitting escape of the accumulating air, after which the liquid level will rise and the valve will close. Should a pipeline be drained for any reason, or a large break develop within the pipeline, the float will drop all the way down as the liquid level lowers in the valve body. The valve will then be in the full open position, permitting the entrance of air, and eliminating the danger of pipeline collapse due to a vacuum. These cycles will repeat automatically as each condition presents itself.

MAINTENANCE

The valve should be inspected periodically for leakage, particularly in the seating area.

SEAT REPLACEMENT

Isolate or remove the valve from the system. The top (Part No. 1S or lP) is threaded into the top flange (Part No. 2). The interference pin (Part No. 50) should be removed. Remove the top which secures the air and vacuum seat (Part No. 18). With the proper size wrench, turn the top counter clockwise. Once the top is removed, the seat will be exposed. Remove the seat and make the required replacement. It is always best to coat the threads of the top with a suitable thread sealer prior to reassembling the valve. Turn the top into the flange thread until it is snug. Tighten the top one-quarter turn, being careful not to deform the seat.

INTERNAL REPAIRS

Isolate or remove the valve from the system. The top flange (Part No. 2) must be removed for internal repair. Simply remove the flange nuts and bolts.

REPLACING THE PRESSURE VALVE

The Pressure Valve (Part No. 14) should be replaced when it begins to deteriorate because of age. Normal life is approximately 5 years. The linkage is easily disassembled by removing the pin clips from the bearing pin, then removing the bearing pins. Now replace the valve plunger (Valve and Lever Assembly Part No. 6) and reconnect the bearing pin and clips.

Crispin Universal Air Release Valves (continued)

ADJUSTING THE VALVE PLUNGER

The valve plunger is adjusted by removing the top flange, then turning the flange upside-down, exposing the lever mechanism. The float is extended away from the valve orifice in order to pull the plunger away from the orifice. A light dusting of powder is spread over the valve seat, and the float is allowed to relax. While extending the float again, observe the powder pattern on the rubber valve, and make appropriate adjustments to the valve plunger to permit full face contact on the rubber valve with the valve seat. Secure the plunger to the locking nut or screw.

Replace the flange, being careful not to allow the linkage to toggle over, which could prevent its functioning. This is done by placing either the valve body over the linkage with the flange inverted and resting on a table, or by holding the linkage closed with a screwdriver while replacing the flange.

INSTALLATION

The CRISPIN Universal Air Release Valve shall be vertically mounted at the high points in the line. The inlet of the valve should be at the same elevation or greater than the elevation at the top of the pipe, with the piping to the inlet on a continuous upward slope. Valves should be protected from freezing. More detailed information on valve sizing, etc., can be found in the CRISPIN Catalog and/or Technical Reference No. 8.

Troubleshooting

Valve Leaking: Air and Vacuum Seating Problem

—If the valve is four to five years old, then the BUNA-N air and vacuum seat (Part No. 18) is worn and needs replacing.

—If the valve leaks on pressure less than 15 psig, then the seat material is too hard and needs to be replaced with soft seat material.

—Inspect the seat area for grit or other loose debris.

Valve Leaking: Pressure Air Release Seat Leakage

—If a low volume leak persists with the rubber valve against the orifice, then the rubber valve should be adjusted or replaced.

—Replace the rubber valve if the valve has been in operation longer than five years.

—Inspect the valve seating area for foreign particles that could be preventing the valve from seating properly.

—If problems should continue, please consult the factory.

** These valves are intended for use on municipal waste water systems or approved commercial and/or industrial applications.*

Crispin Negative Pressure Valves

OPERATION

The CRISPIN Negative Pressure Valves are float-operated valves that allow large volumes of air to be released when a pipe system is filling, and prevent air from being drawn into the system when a vacuum results.

MAINTENANCE

Inspect seating area for leaks while the valve is in service. Replace seat (Part No. 5) when required.

SEAT REPLACEMENT

Isolate or remove the valve from the system. The top (Part No. 1S) and inlet (Part No. 1S) which secure the Buna-N seat (Part No. 5) in place are held fast by an interference pin placed through the threads. Remove the interference pin and begin to remove the top with a pipe wrench by turning the top counter-clockwise. Once the top is removed, the Buna-N Seat will be exposed to make the replacements. It is important that for proper operation of the valve that the Buna-N Seat be replaced every five years under normal operating conditions. It is always best to apply a coating of suitable thread sealer to the threads of the top before screwing the top into the top flange (Part No. 2) of the valve. Turn the top clockwise until it is snug, then tighten the top one-quarter turn, being careful not to deform the seat.

FLOAT REPLACEMENT

Isolate or remove the valve from the system. Remove all of the top flange nuts and bolts from the valve. Lift the top flange (Part No. 2) from the body of the valve. Remove the stainless steel float (Part No. 6) from inside the valve and replace. Prior to connecting the top flange to the body, it is important to examine the gasket (Part No. 4) on the valve body. If the gasket shows wear or tear, replace. Reposition the top flange on the valve body and replace the top flange nuts and bolts.

INSTALLATION

The valve shall be installed at the high points in the line and mounted vertically. The inlet of the valve should be at an elevation greater than the elevation at the top of the pipe with the piping to the inlet on a continuous upward slope. Valve should be protected from freezing. The valve should be installed according to the air flow arrow cast on the valve body.

Troubleshooting

Valve Leaking: Seating Problem

—If the valve is four to five years old, then the Buna-N Seat (Part No. 5) is worn and needs replacing.

—Review application for proper sizing of the Negative Pressure Valve, please refer to CRISPIN Catalog page 58.

—If problems should continue, please contact the factory.

** These valves are intended for use on municipal water systems or approved commercial and/or industrial applications.*

Crispin Globe & Wafer Style Check Valves

OPERATION

Silent Check Valves are typically used downstream of a pump. These valves are designed to close before the pump stops completely. This prevents flow reversal, which eliminates water hammer and the system surges associated with valve closure.

Installation Instructions

Valves may be installed vertically, horizontally, or at other angles. Install the valve with proper positioning of the flow arrow. Support and align adjacent piping and the valve. Install lubricated flange bolts. Hand tighten, then torque the bolts using the cross-over flange bolt tightening method to load the bolts evenly, and eliminate concentrated stresses.

Valves must be mounted to ANSI cast iron or steel flanges with conventional flat face or ring gaskets. Proper centering of ring gaskets is important to prevent internal leakage. Never lift the valve by the bronze or stainless steel trim.

MAINTENANCE

If the valve must be serviced, it should be isolated and the line pressure relieved on both sides of the valve. The discharge flange can be loosened first. Then loosen the inlet flange to relieve the line pressure. After the valve is removed from the line, inspect the internal parts for wear. The valve seat ring (#2) is removed by first removing the retaining screws (#6). After the seat ring is removed, slowly remove the disc (#3). The valve spring (#4) and guide bushing (#5) will be exposed. The parts that are worn should be replaced. Metal to metal seats are a lapped set, therefore, the seat ring and disc should be replaced at the same time.

When the valve is to be reassembled, carefully place the disc and seat in the valve body so as not to destroy the lapped seat. Reinstall the valve in the line. Use new flange gaskets, and replace and torque the bolts using the cross-over flange bolt tightening method.

CAUTION

The valve seating should never be inspected by only removing the valve inlet flange piping, because seat damage or injury could occur.

** These valves are intended for use on municipal water systems or approved commercial and/or industrial applications.*