

Installation, Operation, and Maintenance Manual

Series 825Y, 825YA, 825, 825D, 825YD, 826YD

Reduced Pressure Backflow Prevention Assemblies

⚠ WARNING



Read this Manual **BEFORE** using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.



⚠ WARNING

Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If the information provided here is not consistent with local building or plumbing codes, the local codes should be followed. This product must be installed by a licensed contractor in accordance with local codes and ordinances.

⚠ WARNING

Need for Periodic Inspection/Maintenance: This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. All products must be retested once maintenance has been performed. Corrosive water conditions and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal and external components helps assure maximum life and proper product function.

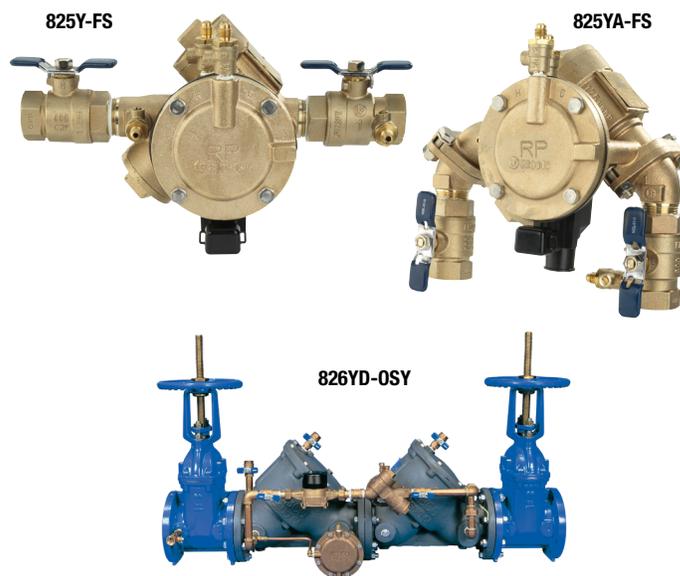
NOTICE

An add-on connection kit is required to activate the flood sensor. Without the connection kit, the flood sensor is a passive component and has no communication with any other device. (A retrofit sensor connection kit is also available for existing installations. See "Add-on and Retrofit Sensor Connection Kits," for ordering details.)

NOTICE

Use of the flood sensor does not replace the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including the need to provide proper drainage in the event of a discharge.

Watts® is not responsible for the failure of alerts due to connectivity or power issues.



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A WATTS Brand

FEBCO manufactures several series of Reduced Pressure Backflow preventers. Series 825Y and 825YA are available in sizes ¾" to 2" with bronze body and cover as standard. Other materials are available. (No longer manufactured, Series 825 sizes 2½" to 10" were constructed with cast iron; Series 825 Type D and 825 Type YD sizes 2½" to 10", with standard body material of ductile iron.)

How It Operates

The FEBCO Reduced Pressure Backflow preventer assembly consists of two independently operating, spring-loaded check valves with a pressure differential relief valve located between the two checks.

The pressure drop across the first check valve is approximately 6.0 psid with no flow. The relief valve consists of a hydraulically balanced diaphragm with the high pressure side hydraulically connected to the upstream side of the first check. The low pressure side is hydraulically connected to the reduced pressure zone, thus the relief valve remains closed during normal operation. The low pressure side of the diaphragm is spring loaded to force the relief valve open when the pressure drop across the first check (and across the diaphragm) reduces to approximately 2.5 psid. A complete assembly includes two shutoff valves and four test cocks.

Figures 1 and 2 show sectional views of typical components and flow passages with corresponding pressure readings (no flow conditions) at the various locations within the assembly.

Figure 1

825Y, ¾" – 2"

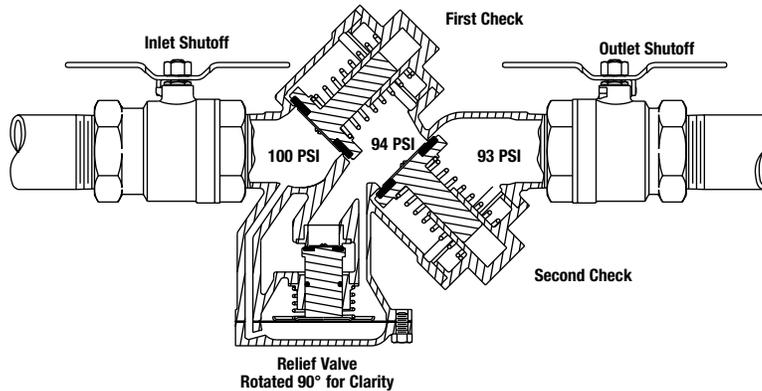
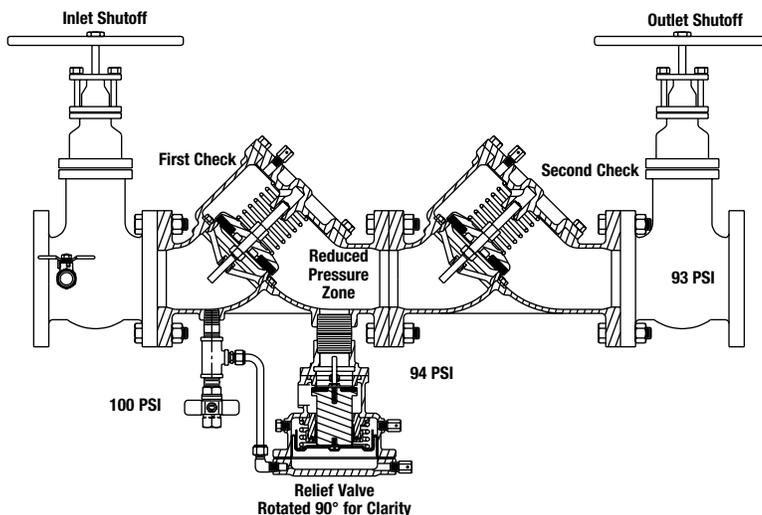


Figure 2

825Y, 2½" – 10"



Installation Guidelines

Proper installation of the assembly is essential to the protection of the water supply. See Figures 3 and 4 for a visual guide on proper setup.

- Install the assembly in a horizontal position with a minimum clearance of 12" between the relief valve discharge port and floor or grade, and a minimum of 18" horizontal clearance around the unit for access and ease of testing and maintenance of the relief valve.
- Avoid installation of a reduced pressure assembly in a pit. Approval agencies do not recommend such installations. Flooding of the pit can result in cross-connection contamination. If local codes permit installation of a reduced pressure assembly in a pit, adequate drainage must be provided to prevent the pit from flooding under maximum discharge conditions.
- Plan placement of the assembly. Locate the unit where water discharged from the relief port is not be objectionable or able to cause damage to property and/or equipment.
- To be approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research, purchase and install the assembly with resilient seated shutoffs to ensure bubble tight closure for more consistent results during testing.

CAUTION

Open and close resilient seated shutoffs slowly to prevent water hammer damage to the system and assembly.

- FEBCO reduced pressure assemblies are designed for in-line servicing. Avoid time-consuming removal of the unit when possible.
- Ensure the supply water pressure does not exceed the manufacturer's maximum water pressure rating of the assembly to avoid damage to the system or the assembly caused by system pressure. In addition, provide protection against thermal water expansion, extreme backpressure, and/or water hammer.
- Most field problems occur because dirt or debris present in the system at the time of installation becomes trapped in the first check seating area resulting in continuous discharge from the relief valve in a static or backflow condition. **FLUSH THE SYSTEM BEFORE THE ASSEMBLY IS INSTALLED.** To effectively flush the system after the assembly has been installed, remove the internal components of both checks then open the inlet shutoff to allow water to flow for a sufficient time to flush debris from the line and assembly. If debris in the water system continues to cause fouling, install a strainer upstream of the assembly.

Figure 3
Typical Installation

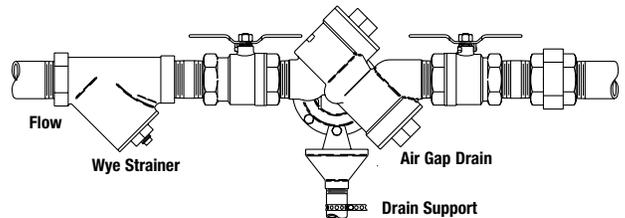
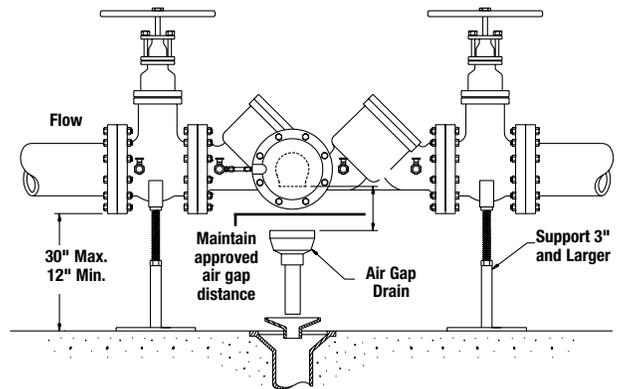


Figure 4
Indoor Installation



Freeze Protection

The reduced pressure backflow prevention assembly is subject to damage if the internal water is allowed to freeze. All assemblies should be installed with resilient seated shutoffs so that a drip tight closure can be achieved to prevent refilling of the assembly after the freeze protection procedure is performed. The unit must be protected from freezing by a heated enclosure, draining, insulation using heat tape, or other suitable means. The unit must always be accessible, however, for testing and maintenance. If the system is shut down during freezing weather, use the following procedure to drain internal passages.

Series 825YA can be removed from the line as a winterizing procedure. See Figure 5 for proper half open/half closed (45 degree) position of the ball valve for freeze protection.

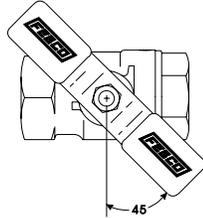


Figure 5

Series 825Y (3/4" – 2")

Water Shutoff

1. Slowly close the main shutoff valve upstream of the assembly.
2. Drain the system water upstream of the first check by means other than through the assembly.

Check Valve Draining

1. First check (zone). Open test cocks No. 2 and No. 3. All water between the first and second check valves drains through the relief valve port.
2. Second check (downstream). Remove the second check cap, spring, and disc holder. All water downstream of the second check (that is, higher than the outlet shutoff valve) drains through the body.

Relief Valve Draining

1. If the device is equipped with optional drain plugs, remove the plugs in the relief valve cover and body. Open test cocks No. 2 and No. 3. All water drains through the plug holes.
2. For standard models (not equipped with optional drain plugs), loosen the relief valve cover and allow water to drain from both sides of the diaphragm.

Ball Valve Shutoff Draining

1. If the assembly has been installed with ball valve shutoff valves, these must also be properly drained to prevent freeze damage. After the draining procedure has been completed on the backflow prevention assembly, position all ball valve shutoffs and test cocks in a half open/half closed (45 degree) position. (See Figure 5.)
2. Open the ball valve approximately 45 degrees while draining the pipeline and assembly to allow water between the ball and valve body to drain. Leave the ball valve in this position for the winter to prevent freeze damage.
3. Fully close the ball valves before the system is repressurized. OPEN AND CLOSE BALL VALVES SLOWLY TO PREVENT DAMAGE TO THE SYSTEM CAUSED BY WATER HAMMER.

Series 825, 825D, 825YD (2 1/2" – 10")

1. Slowly close the supply valve within the freeze protected area, open the air bleed valves on check valve No. 1 and relief valve (three places), then open test cocks No. 2 and No. 3. Water within the zone is drained to the lowest point of the relief valve discharge port (relief valve seat). A small amount of water remains in the bottom of the valve body, but is insufficient to cause freezing damage.
2. With this procedure, about one-half of the relief valve is drained. To drain the relief valve on Series 825 and 825D, loosen the relief valve cover bolts and allow the relief valve to drain. Retighten

the bolts before repressurizing system. To drain the relief valve on Series 825YD, open the two air bleeds (one on the body, the other on the cover), then remove drain plugs. Replace drain plugs before repressurizing the system.

3. The system design must provide a means for draining upstream of the check valve No. 1 and downstream of the check valve No. 2. Test cocks No. 1, No. 2, and No. 4 and the air bleed valve on check valve No. 2 may be opened to allow air to enter to assist in draining. Depending on the system design, these sections should be drained to the pipe centerline.
4. Position the assembly shutoff valves and test cocks in the half open/half closed position to allow complete draining of the assembly shutoff valve bodies and test cocks.
5. Some units contain a drain plug in the bottom of the second check body. Open test cocks and remove plug to drain.

Vandalism Protection

Use these guidelines to protect and secure an assembly if the unit is installed where vandalism may be a problem.

- On 3/4" to 2" units, remove the shutoff valve handles to discourage tampering.
- On 2 1/2" to 10" units, loop a chain between the shutoff valves and lock into position to prevent tampering with. Test cock handles can also be removed.

On backflow prevention assemblies installed in conjunction with fire sprinkler systems, consider placing an alarm on the OS&Y shutoff valves to signal unauthorized closure.

A protective cage can be installed over the unit to discourage vandals. If a cage is used, install it so that adequate clearance is available for maintenance and testing, or ensure that it is completely removable. Also allow for any discharge from the relief valve to drain fully from the cage.

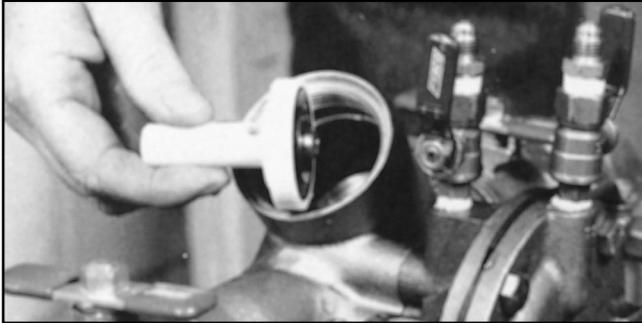
Take advantage of the screwdriver-adjusted test cocks that come with some units for vandal resistance.



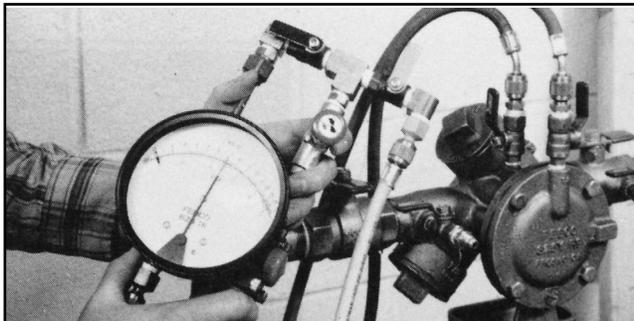
General Service Guidelines

These general service guidelines are applicable to all models and sizes. See the applicable parts list and figures for visual aid information.

- FEBCO backflow prevention assemblies can be serviced with commonly available tools and are designed for ease of maintenance. The assemblies are designed to be serviced in line, eliminating the need for removal from the line during servicing.



- The most common cause of check fouling and relief valve discharge is dirt and debris in the seating areas. Flush the line clean of debris before installation of the assembly. To flush the line after installation, slowly close the inlet shutoff valve, remove the covers and internal assemblies of both check valves, then open the inlet shutoff valve to allow sufficient flow of water through the assembly to clear all sand, debris, and other particles from the line. If debris in the water continues to cause fouling, install a strainer upstream of the assembly.
- Rinse all parts with clean water before reassembly.
- Do not use any petroleum based oil, grease, solvent, or pipe dope on any parts unless instructed to do so. Use only water resistant lubricants that comply with FDA requirements for use in potable water systems.
- Carefully inspect diaphragms, seals, and seating surfaces for damage or debris. If the check valve seat disc has been severely cut at the seat ring diameter, the assembly has been subjected to extremely high and repeated backpressure. Either thermal water expansion or water hammer is the most likely cause. If back pressure persists, consider installation of a pressure relief valve downstream of the assembly.
- Use caution to avoid damaging any guiding surfaces while handling parts. Do not force parts together. The O-ring seals used in FEBCO assemblies require only a small tightening force to ensure a positive seal.
- Test the unit after servicing to ensure proper operation.



Suggested Tool Kits

Series 825Y (3/4" – 2")

- 1 Crescent wrench (10")
- 1 Phillips screwdriver, medium
- 1 Straight blade screwdriver, medium
- Allen head wrenches, (3/16" and 1/4")
- 1 Thin blade knife or reamer
- 1 Socket set (1/2" and 9/16")
- Differential pressure test kit
- FDA Approved lubricant
- Needle nose pliers

Series 825, 825D, 825YD (2 1/2" – 10")

- 1 Crescent wrench (12")
- 1 Phillips screwdriver, medium
- 1 Straight blade screwdriver, medium
- 1 Drive socket set (3/8" or 1/2")
- 1 Spring removal tool
- 1 Torque wrench
- Differential pressure test kit
- FDA Approved lubricant

Troubleshooting

Check Procedure with Differential Pressure Gauge

Call customer service if you need assistance with technical details.

CHECKLIST	READING	PROBLEM
Check differential across check valve No. 1	2 to 3 psid	Leak in check valve No. 1 or No. 2
	6 to 8 psid and steady	Malfunctioning pressure relief valve
	2 to 7 psid and steady	Inlet pressure fluctuating
Check differential across check valve No. 1	2 to 3 psid	Leak in check valve No. 1 or No. 2
	6 to 8 psid and steady	Malfunctioning pressure relief valve

Check Procedure Without Differential Pressure Gauge

CHECKLIST	READING	PROBLEM
Close gate valve No. 2	If discharge stops	Leak in check valve No. 2
	If discharge does not stop	Try the next remedy
Open test cock No. 4 to produce a flow greater than the differential relief valve discharge	If discharge stops	Leak in check valve No. 1
	If discharge does not stop	Malfunctioning pressure relief valve

PROBLEM	CAUSE	SOLUTION
Continuous discharge from relief valve during NO-FLOW condition (discharge stops with water flow). With this symptom, the pressure drop across the No. 1 check valve would be 2 to 3 PSID. If a flow of water (more than the discharge) is created through the valve, the pressure drop should increase to approximately 7 PSID.	Debris fouling No. 1 check valve.	Inspect and clean.
	Outlet pressure higher than inlet pressure and debris fouling No. 2 check valve.	Inspect and clean.
	Disc holder/stem not moving freely in guide(s).	Inspect for dirt or other foreign material.
	Damaged seat or seat disc.	Inspect and replace. Seat disc can be reversed.
	Leakage at o-ring on the seat ring or disc holder/stem (825, 825D, 825YD).	Inspect and replace O-ring.
	Leakage under seat disc due to dirt or damage disc holder or disc.	Inspect and replace or repair.
	Leakage through diaphragm due to stretched holes or cut (825, 835YD).	Inspect and replace diaphragm.
Intermittent discharge from relief valve during NO-FLOW condition. With this symptom, the pressure drop across the No. 1 check valve would be varying from about 2 to 7 PSID.	Inlet line pressure variations causing relief valve to discharge:	Eliminate or reduce pressure variations.
	Pressure surges (water hammer) causing relief valve to discharge as pressure wave passes through "ZONE."	Eliminate or reduce pressure surges.
Continuous discharge from relief valve during FLOW and NO-FLOW conditions. With this symptom, the pressure drop across the No. 1 check valve would be 7 PSID or more at all times.	Seat disc dislodged from cavity in the in the main stem (this can be caused by pressure surges during initial filing of system lines).	Reposition disc in main stem cavity. Repressurize system slowly.
	Debris fouling the relief valve seat.	Inspect and clean.
	Debris fouling the relief valve seat passage.	Inspect and clean.
	Dirt or scaling jamming main stem or spring button.	Inspect and clean or replace.
	Leakage at main stem or o-ring/diaphragm.	Inspect and clean or replace O-ring and/or main stem.
	Jammed main stem due to excessive torque on center bolt (825, 825D).	Do not exceed 15 inch-pound torque on main stem center bolt.
Relief valve does not open above 2.0 psid during field testing.	Outlet gate valve not closed completely.	Check for debris blocking gate.
	Plugged low pressure hydraulic passage (from "ZONE" to inner diaphragm).	Inspect and clean.
	Improper alignment of internal parts during reassembly (causing high resistance to movement).	Disassemble and center the button, spring and main stem.
	Jammed main stem due to excessive torque on center bolt (825, 825D only).	Do not exceed 15 inch-pound torque on main stem center bolt.
First check pressure drop is low (less than 5 psid) during field testing.	Debris fouling first check seat.	Inspect and clean.
	Debris fouling second check seat with backpressure.	Inspect and clean.
	Inlet pressure variations causing inaccurate gauge reading.	Eliminate pressure variations.
	Disc holder not perpendicular to stem; therefore, disc not parallel to seat ring (825, 825D, 825YD).	Inspect and reassemble if required. NOTE: Spring must be removed when tightening disc holder to stem.
	Damaged seat or seat disc.	Inspect and replace as required.
	Worn guide, bushings or stem.	Inspect and replace as required.
	Guide not properly seated in cover (825, 825D, 825YD only).	Inspect and reassemble.
Discharge from drain hole in relief valve spacer (825 and 825D only).	Leakage under diaphragm retaining screw (8 places).	Apply thin layer of sealant around each thread, insert on bottom and reassemble.
	Leakage under diaphragm at main stem diameter.	Apply thin layer of sealant on button at the main stem diameter. DO NOT EXCEED 15 INCH POUNDS when tightening center bolt.
	Hole in diaphragm.	Replace diaphragm with fabric side towards the button.
Second check fails to hold back pressure during field testing.	Outlet gate valve not closed completely.	Check for debris blocking gate.
	Debris fouling second check seat.	Inspect and clean.
	Disc holder/stem not moving freely in guide(s).	Inspect for dirt or other foreign material.
	Disc holder not perpendicular to stem (therefore, disc not parallel to seat ring) (825, 825D, 825YD).	Inspect and reassemble if required. NOTE: SPRING MUST BE REMOVED WHEN TIGHTENING DISC HOLDER TO STEM.
	Damaged seat or seat disc.	Inspect and replace as required.
	Worn guide, bushings or stem.	Inspect and replace as required.
	Guide not properly seated in cover (825, 825D, 825YD only).	Inspect and reassemble.

NOTICE

If check valve seat disc has been severely cut at the seat ring diameter, the assembly is being subject to extremely high and repeated back pressure. Either thermal water expansion or water hammer are the most likely causes.

Field Testing

Purpose of Test

To test the operation of the DIFFERENTIAL PRESSURE RELIEF VALVE and CHECK VALVE (See Figures 6, 7, 8, and 9.)

Equipment Required for Test

Differential Pressure Gauge test kit

Test Differential Relief Valve

The differential relief valve must operate to keep the zone between the two check valves at least 2 psi less than the supply pressure.

1. Slowly close the outlet shutoff on the discharge side of the backflow preventer.
2. Open air bleeds and test cocks until all air from the check valves is released.
3. Connect the "high" side of the differential pressure gauge to test cock No. 2 and the "low" side to test cock No. 3.
4. Open test cocks No. 2 and No. 3 and bleed all air from the hose and gauge.
5. Slowly open bypass valve needle No. 1 until the differential gauge needle starts to drop. Hold the bypass in this position and observe the reading on the gauge at the moment the first discharge is noted from the relief valve. The differential pressure at the time the relief valve opens must be no lower than 2 psi.
6. Close the bypass needle valve.

Test Check Valve 1

The check valve must be at least 3 psi more than the relief valve opening pressure.

1. Open test cock No. 4 to flow a small amount of water through the unit to restore normal pressures.
2. Observe the differential gauge with bypass valve No. 1 closed and test cocks No. 2 and No. 3 open. The gauge should remain at a reading of at least 3 psi above the relief valve. If it drops below this, the check valve is leaking and must be serviced.

Test Check Valve 2

The check valve must be tight against reverse flow under all pressure differentials.

1. Connect the "high" side of the differential pressure gauge to test cock No. 4 (third hose).
2. Open test cock No. 4. With bypass needle valve No. 1 closed and bypass valve No. 2 open, observe the gauge reading. The differential pressure should not drop to the relief valve opening point.

Restore Operation

Restore all valves and test cocks to the original positions. Open and close the resilient seated shutoffs slowly to prevent damage to the system and assembly.

Figure 6
Series 825Y, 3/4" – 2"

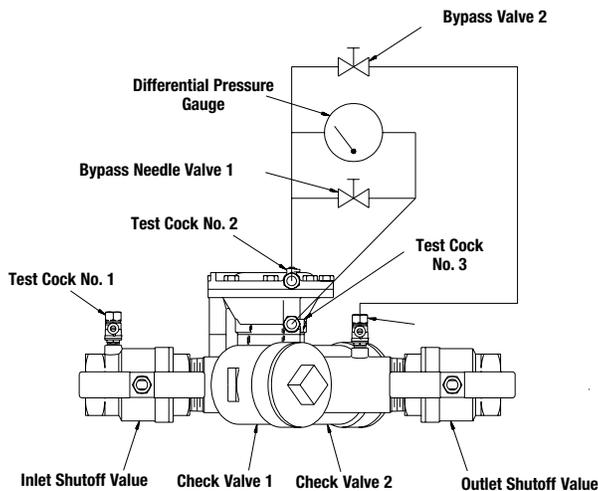
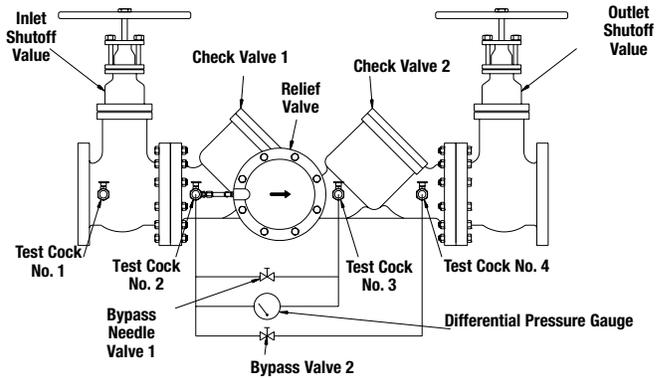


Figure 7
Series 825YD, 2 1/2" – 10"



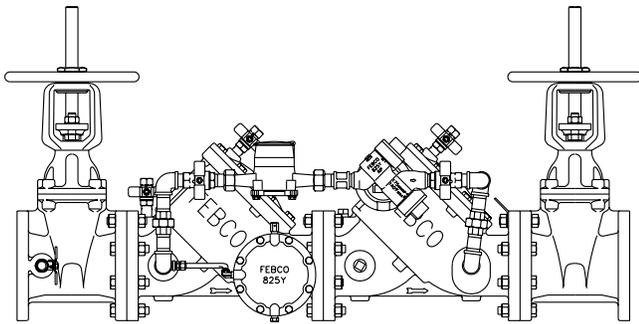
Test for the 826YD

This device is tested with the same procedure as Series 825YD. However, the bypass 825Y 3/4" valve must be isolated from the mainline valve using the 3/4" ball valves during the test and tested separately.

Proper Bypass Operations

Flow 3 gpm through the bypass by opening the mainline test cock No. 4. Use the flow meter for this measurement (one gallon flow in a 20 second period). After the flow rate has been set, collect the discharge flow in a container for 20 seconds. The volume of water collected should be one gallon.

Figure 8
Series 825YD, 2 1/2" - 10"



Restore Operation

After testing restore all valves to the original positions.

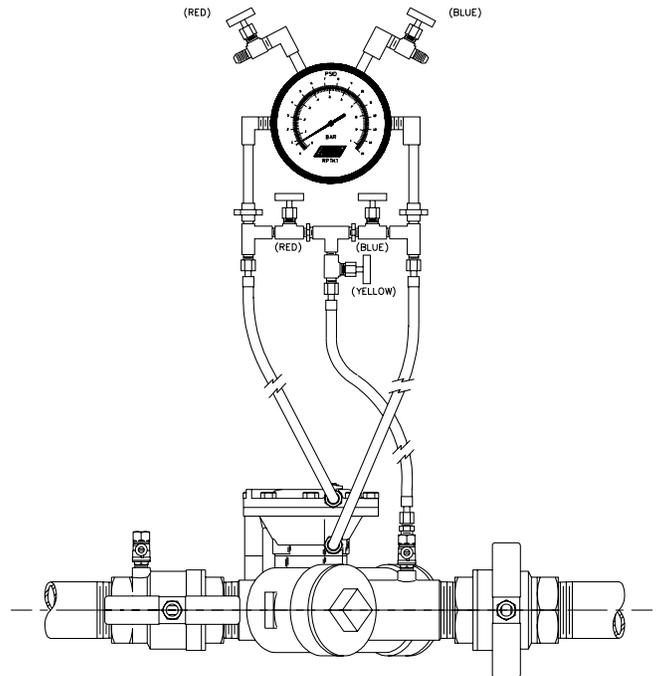
NOTICE

This is a suggested typical test method. Check with the local code for approved test procedures in the area.

Testing with the FEBCO Test Kit

FEBCO Test Kit includes gauge, complete with hoses, fittings, adapters, and laminated instructions in a compact plastic case. FEBCO Test Kit includes a differential pressure gauge used to test all approved reduced pressure assemblies including Series 825Y, 825YA, 825YD reduced pressure assemblies and Series 826YD reduced pressure detector check.

Figure 9
Test Kit



Services Procedures

Series 825Y, 825YA Valve Body and Relief Valve (3/4" – 2")

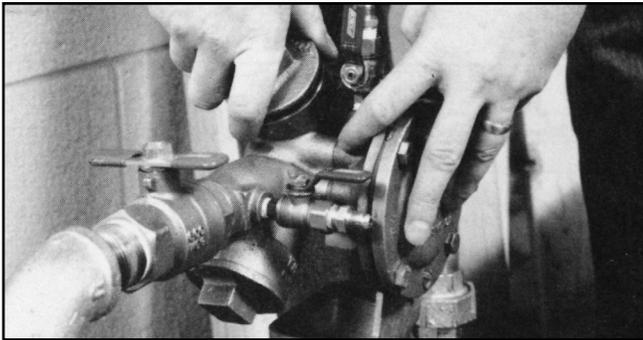
Check Valve Inspection/Repair

For visual aid information on all procedures in this section, see Figure 10.

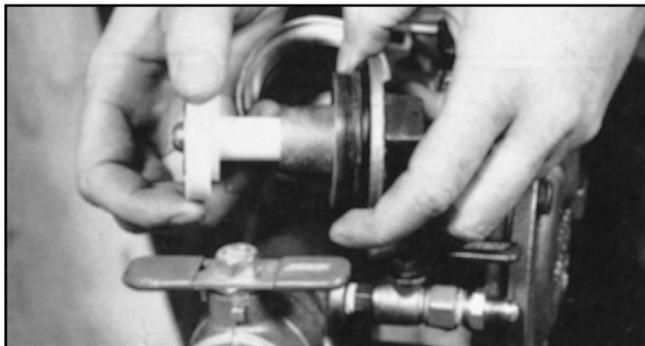
1. Close the inlet and outlet shutoff valves. Bleed the residual pressure by opening test cock No. 4 first, next No. 3, then No. 2. (See Figure 6 for test cock locations.)
2. Unscrew the cap by using the appropriate sized wrench.

⚠ CAUTION

The cap is spring loaded. First check spring force on 3/4" to 1 1/2" is 10 lb. The first check spring force on valves 1 1/2" to 2" is 28 lb. Retain the cap with the appropriate amount of hand force to avoid injury. The second check spring force is approximately one-fourth of the first check spring.



3. Remove the spring and disc holder assembly.
4. Inspect the guiding bore of the cap and poppet stem for any buildup of calcium or other mineral deposits. If this condition exists, remove the buildup with the careful use of an appropriate sized reamer or a thin blade knife: 3/4" – 1 1/4" cap, 5/8" (0.6250) reamer; 1 1/2" – 2" cap, 7/8" (0.8750) reamer.
5. Check the disc holder and stem in the guide to ensure free movement by clearing all debris.



Check Valve Seat Replacement

1. Hold the disc holder assembly in one hand and remove the screw and disc washer.

⚠ CAUTION

The use of pliers or other tools may damage the guiding surfaces and require unnecessary replacement. Do not scratch or mark the sealing or guiding surfaces.

2. Inspect the seat disc for wear or cuts. Remove the old seat disc and install a new one, or turn the used disc over if a new seat disc is unavailable.



NOTICE

The seat discs are symmetrical. It is usually possible to turn the disc over and obtain an effective seal.

3. If the seat disc has been severely cut along the seat ring diameter, the assembly is being subjected to extremely high backpressure from thermal water expansion, water hammer, or other causes of excessive water pressure. Seat discs damaged in such a manner should be replaced and not turned over for reuse.

Check Valve Reassembly

1. Position the disc in the cleaned holder and retain with disc washer and screw.

⚠ CAUTION

DO NOT OVERTIGHTEN THE SCREW, SECURE WITH APPROXIMATELY 12 INCH-LB.

2. Position the spring around the centering ring of the disc holder and reinsert the disc holder assembly into the check body.

NOTICE

Ensure the heavy check spring is installed in check valve No. 1; otherwise, the valve cannot operate properly and a continuous discharge may occur.

3. Apply a thin coating of FDA Approved lubricant on the O-ring in the cap and thread the cap onto the check valve body by using the appropriate sized wrench.
4. Close test cocks No. 4, next No. 3, then No 2 and slowly open first the inlet and then the outlet shutoff valves and return the assembly to service. (See Figure 7 for test cock locations.)
5. Test the assembly to ensure it is operating properly.

Relief Valve Inspection/Repair

1. Slowly close the inlet and outlet shutoff valves and bleed off the residual pressure by opening test cock No. 4 first, next No. 3, then No. 2. (See Figure 6 for test cock locations.)
2. Remove the cap screws, diaphragm cover, diaphragm, and port bushing from the relief valve.
3. Remove the integral relief valve assembly by pulling it straight out of the body to remove the internal assembly.
4. Remove the disc washer and seat disc by removing the screw.



5. To remove spring and/or main stem from the guide, keep the unit compressed and remove the screw (item 18) located in the center of the button. Push the main stem through the guide and remove the O-ring from the main stem. Inspect and clean or replace the O-ring and seat disc as required. Clean all parts thoroughly with clean water before reassembly.

Relief Valve Seat Removal

Standard only on units manufactured after October 1988 with serial numbers higher than those listed below. (For an exploded view of the relief valve, see Figure 10.)

Series 825Y with Replaceable Valve Seat Ring

¼" Serial number S6528 and above

1" Serial number S6163 and above

1½" Serial number S5710 and above

2" Serial number S5089 and above

1. While the relief valve is disassembled, remove the two Allen head socket cap screws by using the appropriate sized Allen head wrench. (Use ⅜" Allen head wrench for ¾" and 1" assemblies, and ¼" Allen head wrench for 1½" and 2" assemblies.)
2. Pull the relief valve body from the main valve body. Pull the discharge shield from the seat ring.
3. Remove the seat ring with the appropriate sized socket or needle nose pliers. Use care to avoid damage to the seat edge. The replaceable relief valve seat is standard only on units manufactured after October 1988.
4. Inspect the seat ring, O-rings, bushings, and gasket seals for damage. Rinse all parts with clean water before reassembly.

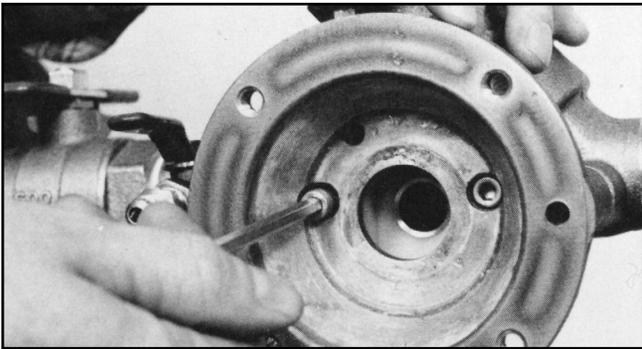


Relief Valve Reassembly

1. Lubricate the seat ring O-ring with FDA Approved lubricant and thread the seat ring into the valve body until seated. Do not overtighten. (The replaceable relief valve seat ring are standard on units manufactured after October 1988.)
2. Position the discharge shield over the seat ring diameter and, taking care not to damage the two flow passages, reinstall the O-rings and guide bushings.

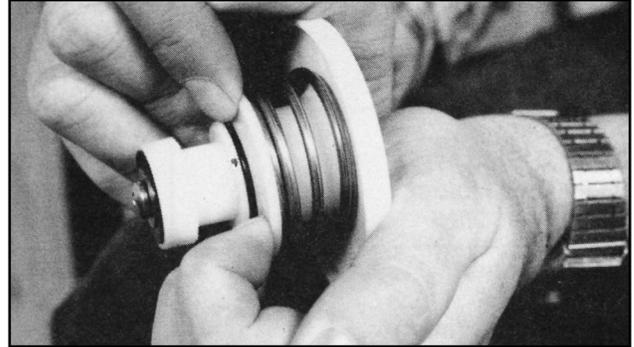


3. Carefully place the relief valve body over the bushing and tighten the two cap screws to retain the relief valve body to the main valve body. New cap screw sealing washers should be installed to avoid leakage.

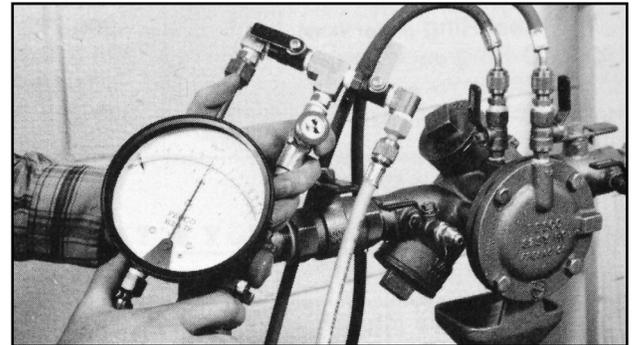


4. Lubricate the O-rings and main stem using FDA Approved lubricant. Place the main stem and spring into the guide and replace the flathead screw located at the center button.

5. Place the disc washer and seat disc in position and retain with machine screw. Depress the diaphragm button to ensure it is free moving.



6. Place the relief valve module into the relief valve body and mount the diaphragm. Use care when positioning the diaphragm over the port bushing. Replace the relief valve cover and tighten the cap screws.
7. After completing the reassembly, slowly open the inlet shutoff valve. Then bleed air from each chamber and from the relief valve cover by opening test cocks No. 4, No. 3, and No. 2. (See Figure 7 for test cock locations.) Slowly open the outlet shutoff valve and return the valve to service.
8. Test the assembly to ensure it is operating properly.



Series 825, 825D, 825YD Valve Body (2½" – 3")

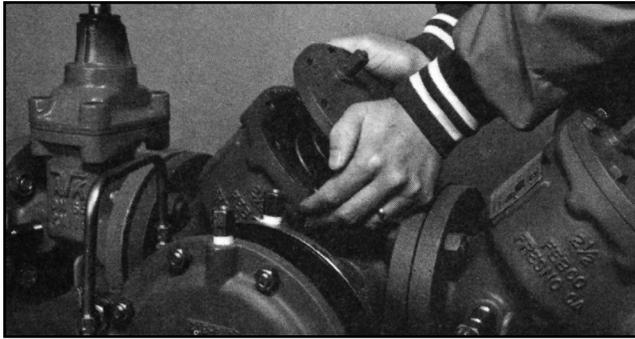
Check Valve Disassembly

For visual aid information, see Figure 12.

1. Slowly close the outlet shutoff valve and inlet shutoff valve. Bleed residual pressure by opening test cocks No. 4 first, next No. 3, then No. 2. (See Figure 7 for test cock location.)
2. Remove the cover bolts uniformly while holding the cover in place, then remove the cover.

CAUTION

Spring is retained in body by cover.



3. Lift the check assembly from the valve body being careful not to damage the internal epoxy coating.
4. If necessary, unthread the bushing (item 4A) from the cover.

Check Assembly Repair

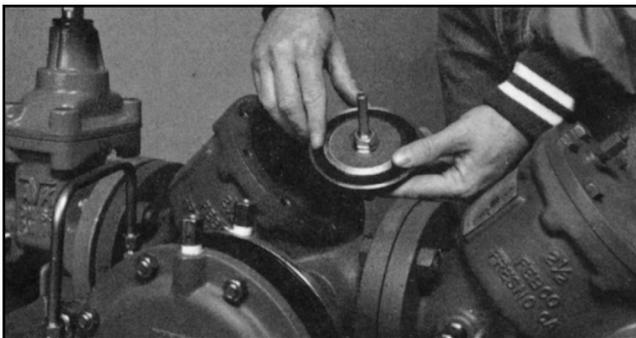
For visual aid information, see Figures 14 and 15.

1. Unthread the nut on the stem and remove the disc washer and seat disc.
2. Inspect the seat disc for wear or damage. Replace with a new seat disc or turn the used disc over if a new disc is unavailable.

NOTICE

The discs are symmetrical. It is usually possible to turn the disc over and obtain an effective seal.

3. If the seat disc has been severely cut along the seat disc ring diameter, the assembly is being subjected to extremely high backpressure from thermal water expansion, water hammer, or other causes of excessive water pressure. A disc damaged in such a manner must be replaced and not turned over for reuse.



Valve Seat Removal in Series 825

This procedure applies to models with the threaded-in seat ring. (See Figure 12.)

1. Remove the seat ring by unthreading in counterclockwise direction being careful not to damage the internal epoxy coating in the valve. (For more information, see "Seat Ring Tool.")

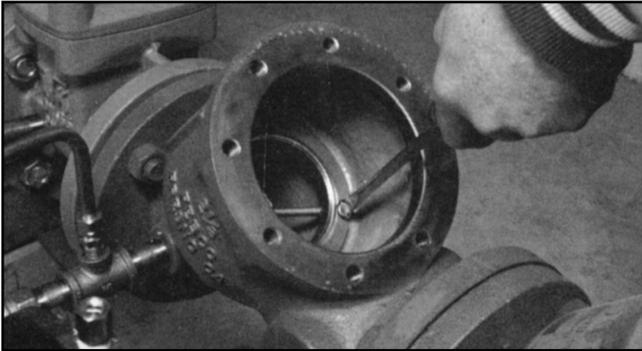


2. Remove the bushing and bushing nut (items 2A and 2B).
3. Remove the O-ring.

Valve Seat Removal

This procedure applies to Series 825D and 825YD with the bolted-in seat ring. (For visual aid information, see Figure 13.)

1. Remove the three cap screws and washers retaining the seat ring.



2. Pull the seat ring from the valve body being careful not to damage the internal epoxy coating of valve.
3. If necessary, unthread the bushing (Item 2A) from the seat ring.
4. Remove the o-ring.

Valve Seat Reassembly

This procedure applies to Series 825 with the threaded-in seat ring. (For visual aid information, see Figure 12.)

1. Lubricate the O-ring with FDA Approved lubricant and replace in the seat ring.
2. Reinsert the bushing into the seat ring center.
3. Thread the seat ring into the valve body in a clockwise direction being careful not to damage the internal epoxy coating of valve.

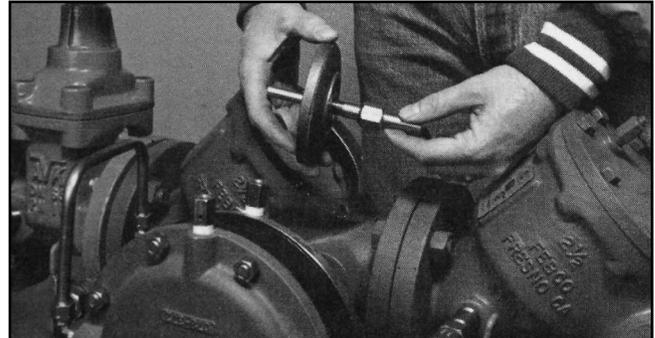
This procedure applies to Series 825D and 825YD with the bolted-in seat ring. (For visual aid information, see Figure 13.)

1. Lubricate the O-ring with FDA Approved lubricant and replace in seat ring.
2. Thread the bushing into the seat ring.
3. Place the seat ring carefully into valve body and retain with the three cap screws and washers being careful not to damage the internal epoxy coating of valve.

Check Valve Reassembly

For visual aid information, see Figures 14 and 15.

1. Position the disc in the cleaned holder and retain with disc washer. Insert the stem into the disc holder, replace the nut on the stem, and tighten.



NOTICE

On some Series 825 valves, the disc holder is sealed to the stem with a sealant. If the seal is broken, the stem and holder must be cleaned and new sealant applied. Other Series 825 valves, as well as Series 825D and 825YD, use an O-ring so sealant is not required.

2. Thread the bushing into the cover.
3. Carefully place the stem of the check assembly into the seat ring bushing. Replace the spring centering diameter on the disc washer.

NOTICE

Be sure the heavier spring (6 psi) is placed in the first check and the lighter spring (2 psi) is placed in the second check; otherwise, the unit does not operate properly and discharge from the relief valve could occur. The wire diameter is visibly thicker on the heavier spring and thinner on the lighter spring. Avoid damaging the internal epoxy coating of the valve.

4. Place the cover on the check body securing the spring and stem into the cover.
5. Bolt the cover onto the check body while holding the cover in place with appropriate hand force. The spring is retained in the body by the cover.
6. Slowly open the inlet shutoff valve. Bleed air from the valve by opening test cock No. 4 first, then test cocks No. 3, No. 2, and No. 1, as well as air bleeds on all the covers. (See Figure 7 for test cock locations.)
7. Slowly open the outlet shutoff valve and return the check valve to service.
8. Test the assembly to ensure proper operations.

Series 825, 825D, 826YD Valve Body (4" – 10")

Check Valve Disassembly

For visual aid information, see Figures 14 and 15.

1. Slowly close the outlet gate valve then slowly close the inlet gate valve. Bleed residual pressure by opening first test cock No. 4 first, next No. 3, then No. 2. (See Figure 7 for test cock locations.)
2. Remove the cover bolts and cover. Unscrew the bolts uniformly to avoid binding of the cover. The spring pushes the cover approximately ½" off the top of the valve body.

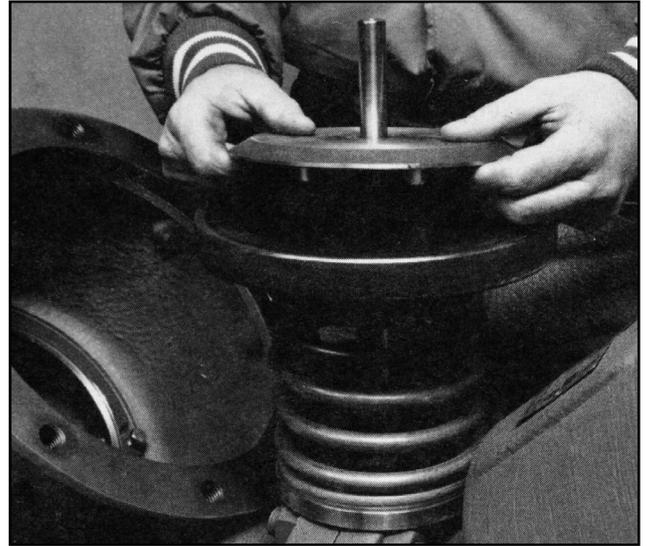
Seat Disc Removal

⚠ CAUTION

Some Series 825 cast iron units have threaded disc holders with four (4) cast lugs (6 lugs on 10" assemblies), ½" high located on the back side, outside the spring diameter. If the Series 825 being serviced does not have these lugs, SPRING TENSION MUST BE RELEASED BY USING THE SPRING REMOVAL TOOL BEFORE FURTHER DISASSEMBLY. DO NOT ATTEMPT TO REMOVE THE SPRING TENSION WITHOUT THE USE OF THIS TOOL. (See the "Spring Removal" procedure.) Some Series 825, 825D, and 825YD assemblies have the disc holder threaded on the stem. Therefore, the seat disc can be removed without releasing the spring tension.



1. Unthread the retaining nut from stem and remove the disc washer and seat disc.



2. Inspect seat disc for wear or damage. Replace with the new seat disc or turn used disc over if a new disc is unavailable.

NOTICE

The discs are symmetrical. It is usually possible to turn the disc over and obtain an effective seal.

3. If the seat disc has been severely cut along the seat disc ring diameter, the assembly is being subjected to extremely high backpressure from thermal water expansion, water hammer, or other causes of excessive water pressure. A seat disc damaged in this manner should be replaced and not turned over for reuse.
4. Remove the disc holder from stem.

NOTICE

On some Series 825 valves the disc holder is sealed to the stem with a sealant. If the seal is broken, the stem and holder must be cleaned and new sealant applied. Other Series 825 valves, as well as Series 825D and 825YD, use an O-ring which eliminates the need for sealant.

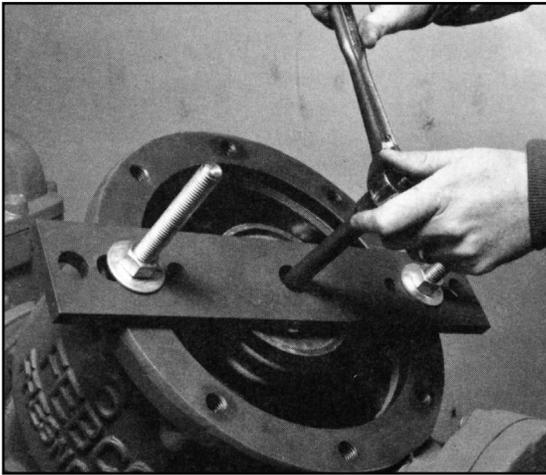
Spring Removal

For visual aid information, see Figures 14 and 15.

CAUTION

TO AVOID POSSIBLE INJURY, DO NOT ATTEMPT TO REMOVE SPRING TENSION WITHOUT THE USE OF THE SPRING REMOVAL TOOL SHOWN IN FIGURE 19. ON SOME SERIES 825 VALVES, THE SPRING MUST BE REMOVED BEFORE THE RUBBER SEAT DISC CAN BE REMOVED.

1. Leave the check assembly in the valve body.



2. Install long studs in the body 180 degrees apart.
3. Place the spring removal tool over the stud and retain with nuts. (See Figure 19 for dimensions.)
4. Unthread the cap screw (Item 7A) by using a $\frac{9}{16}$ " hex socket.
5. Release the spring tension by unthreading the nuts on the long studs. Use alternating turns to keep the tool parallel to the valve body.
6. Remove the spring guide and stem assembly.
7. Remove the guide bushing by unthreading.

Valve Seat Removal, 4" – 10"

This procedure applies to Series 825 with threaded-in seat ring. (For visual aid information, see Figure 12.)



1. Remove the check valve as described in the preceding procedure.
2. Remove the seat ring by unthreading in the counterclockwise direction. (For more information, see "Seat Ring Tool.")
3. Remove the bushing and bushing nut, if used.
4. Remove the O-ring.

Valve Seat Removal, 4" – 10"

This procedure applies to Series 825D and 825YD with the bolted-in seat ring. (For visual aid information, see Figure 13.)

1. Remove check valve as described in the preceding procedure.
2. Remove the three cap screws and washers retaining the seat ring.
3. Pull the seat ring from the valve body.
4. Unthread the bushing (Item 2A) from the seat ring.
5. Remove the O-ring.

Valve Seat Reassembly, 4" – 10"

This procedure applies to Series 825 with the threaded-in seat ring Type (For visual aid information, see Figure 12.)

1. Lubricate the O-ring with FDA Approved lubricant. Reposition the O-ring in the seat ring groove.
2. Replace the bushing and bushing nut (if used) in the seat ring.
3. Thread the seat ring into the seating area in a clockwise direction. Be careful not to damage the internal epoxy coated surfaces.

Valve Seat Reassembly, 4" – 10"

This procedure applies to Series 825D and 825YD with the bolted-in seat ring. (For visual aid information, see Figure 13.)

1. Lubricate the O-ring with FDA Approved lubricant. Reposition the O-ring in the seat ring groove.
2. Thread the bushing into the seat ring.
3. Place the seat ring carefully into the valve body and retain with three cap screws and washers being careful not to damage the internal epoxy coated surfaces.

Check Valve Reassembly

1. Reverse the disassembly procedure to put the check valve together.
2. Make sure the O-ring is properly placed in the groove. Do not force the cover into the body.
3. Do not damage the epoxy coated surfaces.
4. Test the unit to ensure proper operation.

Series 825, 825D, 825YD Relief Valve (2½ – 10")

Relief Valve Disassembly

This procedure applies to Series 825 and 825D non-modular relief valve. (For visual aid information, see Figures 12 and 16.)

1. Remove the copper tubing from the relief valve body.
2. Unthread the relief valve completely from the check valve body, leaving the seat ring in the check valve body.

NOTICE

If the seat ring is removed with the relief valve, the seat ring must be unthreaded from the relief valve diaphragm plate, being careful not to damage the seat ring threads and seating surface.

3. Remove the cover bolts and nuts, diaphragm cover, and spacer from the relief valve assembly.
4. Turn the relief valve upside down, unthread screw (Item 35) by using a 9/16 hex socket, and remove the diaphragm assembly, spring button, and spring.
5. Unthread the screw (Item 48) and remove the diaphragm washer and diaphragm from the diaphragm button.
6. Push the main stem out of the bottom of the relief valve body.
7. Remove the O-ring from the body.



Relief Valve Reassembly

This procedure applies to Series 825 and 825D non-modular relief valve. (For visual aid information, see Figure 16.)

1. Assemble the washer, outer diaphragm, spacer, diaphragm button, inner diaphragm, and washer by securing with the cap screws to form the diaphragm assembly. When installing diaphragms, make sure that the side of the diaphragm marked "button side" is toward the diaphragm button and that the diaphragm is not pinched.
2. Lubricate the main stem O-ring with FDA Approved lubricant. Place the seat disc on the main stem and place the disc washer on the seat disc.
3. Slide the main stem bolt through the main stem assembly and place inside the relief valve body cavity with the main stem bolt protruding.
4. Position the spring over the bolt and fit the diaphragm assembly over the spring. Compress the diaphragm assembly into the spring until the main stem bolt threads into the diaphragm assembly. Secure by using a torque wrench. **DO NOT TIGHTEN THE MAIN STEM BOLT BEYOND 15 INCH-LB TO AVOID CAUSING DISTORTION OF THE MAIN STEM (ITEM 30).**
5. Thread the seat ring into the main valve body and thread the relief valve into the seat ring.

6. Reconnect the copper tubing to relief valve.
7. Slowly open the inlet shutoff valve and bleed air by opening test cock No. 4 first, then test cocks No. 3, No. 2, and all air bleeds.
8. Slowly open the outlet shutoff valve and return the valve to service.
9. Test the assembly to ensure proper operation.

Relief Valve Seat Disc Replacement

This procedure applies to Series 825YD modular relief valve. (For visual aid information, see Figure 17.)

1. Disconnect the sensing tubing. Remove the relief valve cover (Item 21) by loosening the cover bolts (Item 25) and remove the outer diaphragm (Item 26).
2. Grasp the relief valve button (Item 24) with one hand. Insert fingers into the rectangular relief valve port on the bottom of the relief valve and apply force to the seat disc. Pull the relief valve module straight out from the body. **DO NOT TWIST.**
3. Place the relief valve module on a flat surface. Holding the main stem with one hand, loosen and remove the lower guide (Item 35) and disc washer (Item 33). Remove the rubber seat disc (Item 32) and turn over or replace as required. Inspect all parts and clean using clean water. (See the "Relief Valve Inner Diaphragm Replacement" procedure, if necessary.)
4. Replace the disc washer and lower guide then tighten. Lubricate the O-ring (Item 31a), with FDA Approved lubricant. Insert the relief valve module into relief valve body, using fingers to help guide the lower guide into the bushing (Item 36a) on the relief valve seat ring. Push the module straight in. **DO NOT TWIST.**
5. If the relief valve module does not have a center label piece covering the screw (Item 48), inspect the screw for burrs. If a burr is visible, remove or cover the burr with a piece of flexible tape. This protects the surface of the diaphragm.
6. Replace the diaphragm, placing the marked side against the button. Work the rolled edge into the space between the module and the body making sure it is not pinched or buckled.



7. Replace the cover, tighten the cover bolts, and reconnect the sensing tubing. Return to service and test the assembly to ensure proper operation.



Relief Valve Seat Ring Replacement

This procedure applies to Series 825YD with modular relief valve. (For visual aid information, see Figures 13 and 17.)

1. Disconnect the sensing tubing. Loosen and remove the four mounting bolts (Item 38) from the adapter. Remove the relief valve.
2. Pull the seat ring (Item 36) out from the relief valve body and inspect for damage. Replace as required.
3. Reposition the relief valve to the adapter ensuring the O-ring (Item 36b) is properly positioned. Tighten the mounting bolts.
4. Reconnect the sensing tubing. Return to service and test the assembly to ensure proper operation.

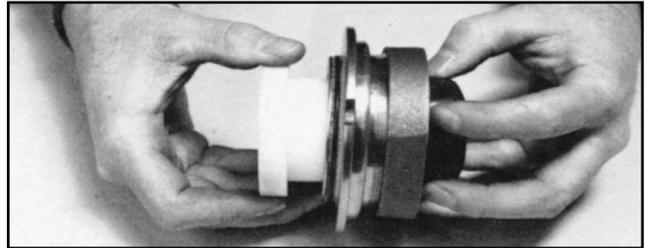
Relief Valve Inner Diaphragm Replacement

This procedure applies to Series 825YD with modular relief valve. (For visual aid information, see Figure 17.)

1. Disconnect the sensing tubing. Remove the cover (Item 21) by loosening and removing cover bolts (Item 25).
2. Remove the outer diaphragm (Item 26). Grasp the relief valve button (Item 24) with one hand. Insert fingers into the rectangular relief valve port on the bottom of the relief valve and apply force to the seat disc. Pull the relief valve module straight out. **DO NOT TWIST.**
3. Remove the lower guide (item 35) and disc washer (item 33). Place the relief valve module upside down on a clean flat surface. Remove the center label piece protecting the screw head and save this piece for reassembly. With one hand apply force sufficient to hold the button against the main stem. Keep the spring (Item 28) compressed (spring is approximately 35 lb) while unscrewing the pan head screw (item 48). Remove the screw and relieve the spring tension. Remove the button and spring.
4. Remove the main stem and unthread the retainer (Item 34) from the upper guide (Item 32). Remove the slip ring (Item 27a) and inner diaphragm (item 27). Inspect, clean, and replace parts as required.



5. To reassemble, position the bead on the inner diaphragm into the groove of the upper guide. Place the slip ring over the diaphragm. Lubricate the retainer threads using an FDA Approved lubricant and thread the retainer onto the upper guide. Tighten to 60 inch-lb of torque.
6. Insert the main stem into the diaphragm and "roll" the diaphragm into position by grasping the end of the diaphragm and main stem with one hand and push the upper guide toward the other hand.
7. Test to make sure the diaphragm is positioned properly by sliding the upper guide back and forth through the full travel. It must move freely and easily.
8. Once the inner diaphragm has been rolled, force the end of the main stem snug against the end of the inner diaphragm. The screw hole in the end of the main stem should be visible.



9. Replace the spring and button and tighten the screw while holding the button in place.
10. Make sure the screw (Item 48) is free of burrs that may cut the outer diaphragm. Reposition the center label piece (saved during disassembly) over the screw head.
11. Replace the disc washer and lower guide ensuring the seat disc is clean and in position. Lubricate the upper guide O-ring (Item 31a) using an FDA Approved lubricant to ease installation. **DO NOT USE LUBRICANT ON ANY OTHER PART.**
12. Position the relief valve module back into the body using fingers to help guide the lower guide into the relief valve seat ring bushing. Push the module straight in. **DO NOT TWIST.**
13. Replace the outer diaphragm, placing the marked fabric side against the button. Work the rolled edge into the space between the module and the body, making sure it is not pinched or buckled.
14. Replace the cover, tighten the cover bolts, and reconnect the sensing tubing. Return the valve to service and test to ensure proper operation.

Parts – Valve Body

Series 825Y, 825YA (3/4" – 2")

Valve Body

ITEM NO.	DESCRIPTION	QTY.*	3/4"	1"	1 1/4"	1 1/2"	2"
3	Bushing	3	500-290	500-290	500-290	500-290	500-290
4	O-ring	2	398-202-72	398-202-72	398-202-72	398-202-72	398-202-7 2
5	Gasket	2	340-078	340-078	340-078	340-079	340-079
6	Cap Screw	2	515-513-05	515-513-05	515-513-05	515-514-06	515-514-0 6
7	Cap	2	101-134	101-134	101-134	101-135	101-135
8	O-ring	2	398-226-72	398-226-72	398-226-72	398-235-72	398-235-7 2
9	Disc Holder	2	500-270	500-270	500-270	500-278	500-278
10	Seat Disc	2	400-099	400-099	400-099	400-103	400-103
11	Washer	2	300-084	300-084	300-084	300-108	300-108
12	Screw	2	516-543-03	516-543-03	516-543-03	516-543-03	516-543-0 3
13	Spring (Inlet)	1	630-125	630-125	630-125	630-137	630-137
14	Spring (Outlet)	1	630-1 15	630-1 15	630-1 15	630-1 18	630-1 18
15	Bolt	4	511-514-06	51 1-514-06	51 1-514-06	-----	-----
15	Bolt	8	-----	-----	-----	51 1-515-07	511-515-07
16	Cover	1	101-029	101-029	101-046	101-035	101-035
17	Diaphragm	1	400-101	400-101	400-101	400-104	400-104
18	Screw	1	700-107	700-107	700-107	519-513-03	519-513-0 3
19	Button	1	500-284	500-284	500-284	300-107	300-107
20	Spring	1	630-126	630-126	630-126	630-138	630-138
21	Main stem	1	500-273	500-273	500-273	500-280	500-280
22	O-ring	1	398-1 13-72	398-1 13-72	398-1 13-72	398-120-72	398-120-7 2
23	Guide	1	500-277	500-277	500-277	500-281	500-281
24	O-ring	1	398-022-72	398-022-72	398-022-72	398-127-72	398-127-7 2
25	Seat Disc	1	400-102	400-102	400-102	400-105	400-105
26	Washer	1	300-104	300-104	300-104	300-105	300-105
27	Screw	1	700-137	700-137	700-137	519-513-03	519-513-0 3
101	Seat Ring (Relief Valve)	1	200-779	200-779	-----	200-780	200-780
102	O-ring (Relief Valve)	1	398-019-72	398-019-72	-----	398-026-72	398-026-7 2
103	Elbow (YA only)	2	101-194	101-195	-----	101-189	101-190
104	O-ring (YA only)	2	398-223-72	398-223-72	-----	398-230-72	398-230-7 2

*Quantity required per valve.

Shutoffs

ITEM NO.	DESCRIPTION	QTY.*	3/4"	1"	1 1/4"	1 1/2"	2"
29	Ball Valve (Inlet)	1	781-053	781-054	781-055	781-056	781-057
29A	Ball Valve (Outlet)	1	781-048	781-049	781-050	781-051	781-052
30	Testcock	4	781-074	781-074	781-075	781-075	781-075

*Quantity required per valve.

Series 825 (2½" – 10")

Check Valve Body

ITEM NO.	DESCRIPTION	QTY.*	2½"	3"	4"	6"	8"	10"
2	Seat Ring	2	780-273	780-274	780-275	780-276	780-277	780-278
2A	Bushing	2	780-280	780-280	780-281	780-281	780-282	780-282
3	Guide	2	-----	-----	190-001	190-002	190-003	190-004
4	Cover	2	780-306	780-307	780-308	780-309	780-310	780-311
4A	Bushing	2	780-312	780-312	780-313	780-313	780-313	780-313
5	Disc Holder	2	190-013	190-014	190-005	190-006	190-007	190-008
6	Disc Washer	2	190-016	190-017	190-009	190-010	190-011	190-012
7	Stem	2	780-332	780-333	780-334	780-335	780-336	780-337
7A	Screw	2	-----	-----	511-515-08	511-515-08	511-515-08	511-515-08
7B	Washer	2	-----	-----	780-338	780-338	780-338	780-338
9	Spring (Outlet)		780-341	780-342	780-343	780-344	780-345	780-346
10	Spring (Inlet)		780-349	780-350	780-351	780-352	780-353	780-354
11	Seat Disc	2	780-357	780-358	780-359	780-360	780-361	780-362
12	O-ring	2	398-238-72	398-246-72	398-254-72	398-264-72	398-273-72	780-095
13	Cap Screw	16	511-516-08	511-516-08	511-517-08	511-519-12	511-520-12	
13	Cap Screw	24	-----	-----	-----	-----	-----	511-520-14
14	O-ring	2	398-244-72	398-252-72	398-263-72	398-272-72	398-451-72	740-102
15	Lock nut	2	521-547-00	521-547-00	521-550-00	521-550-00	521-551-00	521-551-00
16	Gasket	3	780-365	780-366	780-367	780-368	780-369	780-370
17	Bolt	12	511-019-18	511-019-20	-----	-----	-----	-----
17	Bolt	24	-----	-----	521-019-22	521-020-26	521-020-28	-----
17	Bolt	36	-----	-----	-----	-----	-----	511-021-30
17A	Nut	12	521-019-00	521-019-00	-----	-----	-----	-----
17A	Nut	24	-----	-----	521-019-00	521-020-00	521-020-00	-----
17A	Nut	36	-----	-----	-----	-----	-----	521-021-00
40	Plug Cock	4	781-047	781-047	781-047	781-048	781-048	781-048
41	Nipple	4	571-181-44	571-181-44	571-181-44	571-181-55	571-181-55	571-181-55
50	Air Bleed	4	9594A1 10					
51	O-ring	2	398-014-72	398-014-72	398-116-72	398-116-72	398-118-72	398-118-72
121	Relief Valve Assembly	1	902-440L	902-440L	902-446L	902-446L	902-446L	902-446L

*Quantity required per valve.

Shutoffs

ITEM NO.	DESCRIPTION	QTY.*	2½"	3"	4"	6"	8"	10"
42	Resilient Sealed NRS (Inlet)	2	781-005	781-006	781-007	781-008	781-009	781-010
42	Resilient Sealed OS&Y (Inlet)	2	780-891	780-893	780-895	780-897	780-899	780-901
42A	Resilient Sealed NRS (Outlet)	2	781-011	781-012	781-013	781-014	781-015	781-016
42A	Resilient Sealed OS&Y (Outlet)	2	780-890	780-892	780-894	780-896	780-898	780-900

*Quantity required per valve.

Assembly/Kit

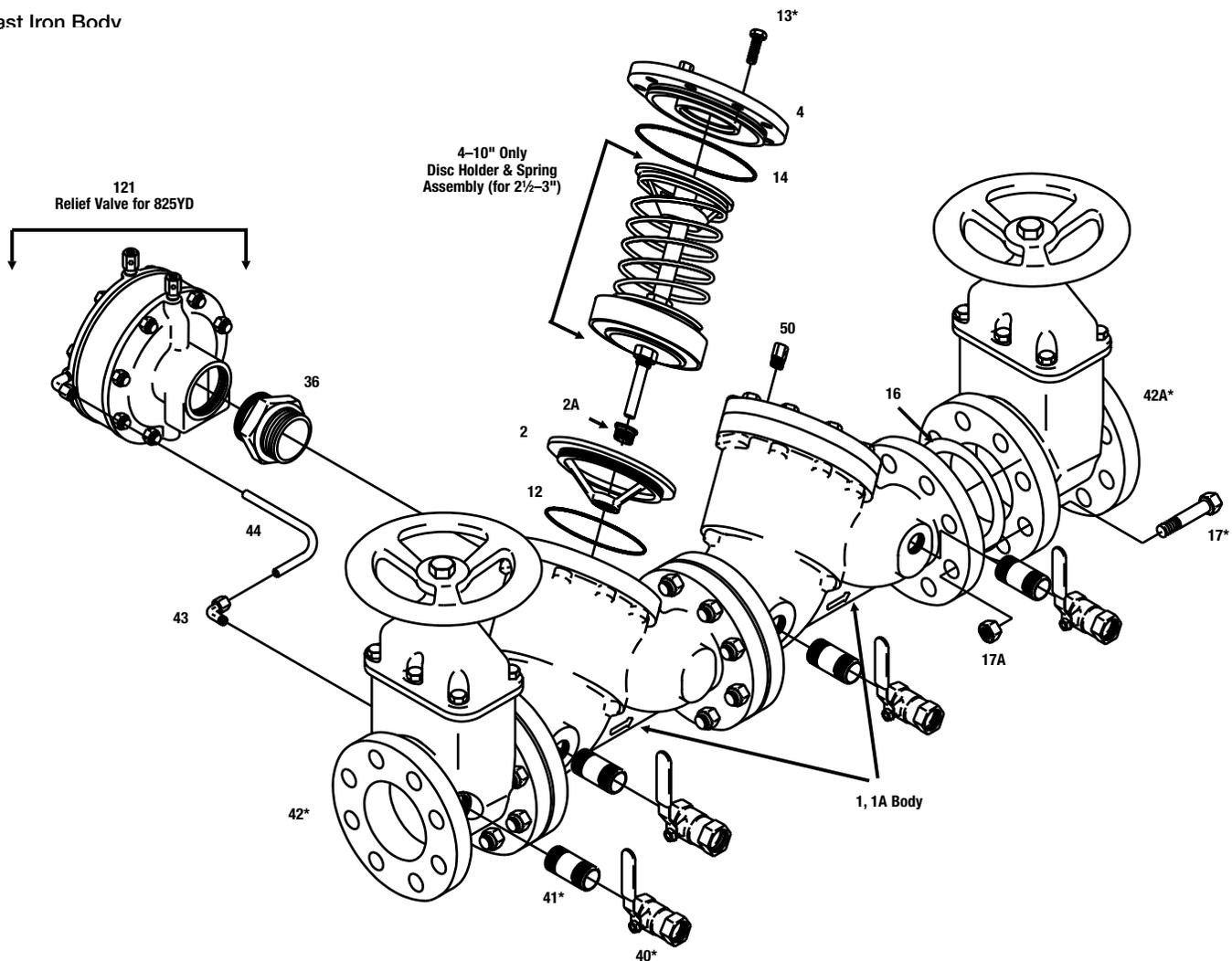
DESCRIPTION	2½"	3"	4"	6"	8"	10"
Relief Valve Assembly* (121) (825)	905-526	905-100	905-101	905-101	905-522	905-522
(825D)	905-100	905-100	905-100	905-101	905-522	905-522
Spring Assembly #1 Check (3, 4A, 5, 6, 7, 7A, 10, 11, 15, 51)	905-085	905-087	902-466	902-468	902-470	902-472
Spring Assembly #2 Check (3, 4, 5, 6, 7, 7A, 7B, 9, 10, 11, 15, 51)	905-086	905-088	902-467	905-469	902-471	902-473
Seat Ring Kit (2, 2A, 12)	902-386	902-385	902-384	902-383	902-382	902-381
Rubber Parts, CI & DI Bodies (11, 14, 51)	905-059	905-060	905-061	905-062	905-063	905-064
Relief Valve Kit (Rubber Parts) (26, 27, 32, 39, 49, - 2 ea.)	905-066	905-066	905-067	905-067	905-067	905-067
LG Mounting Kit (16, 17, 17A, 40, 41, Both Ends)	905-036	905-037	905-038	905-039	905-040	905-041

*825YD relief valve is used for replacement.

Figure 12

Series 825, 2½" – 10"

Cast Iron Body



*Denotes Commercial Parts Available.

Some parts are sold in kits only. Consult Parts Price List for specifics.

Series 825D, 825YD (2½" – 10")

Check Valve Body

ITEM NO.	DESCRIPTION	QTY.*	2½"	3"	4"	6"	8"	10"
2	Seat Ring	2	101-145	101-144	101-136	101-137	101-138	101-139
2A	Bushing	2	500-291	500-291	500-292	500-292	780-282	780-282
2C	Washer	6	360-079	360-079	360-078	360-078	360-078	360-078
2D	Cap screw	6	519-513-04	519-513-04	511-514-06	511-514-06	511-514-06	511-514-06
3	Guide	2	-----	--- ---	190-001	190-002	190-003	190-004
4	Cover	2	902-497	902-498	902-499	902-500	902-501	902-502
4A	Bushing	2	780-312	780-312	780-313	780-313	780-313	780-313
5	Disc Holder	2	190-013	190-014	190-005	190-006	190-007	190-008
6	Disc Washer	2	190-016	190-017	190-009	190-010	190-011	190-012
7	Stem	2	780-332	780-333	780-334	780-335	780-336	780-337
7A	Screw	2	-----	--- ---	511-515-08	511-515-08	511-515-08	511-515-08
7B	Washer	2	-----	--- ---	780-338	780-338	780-338	780-338
9	Spring (Outlet)		780-341	780-342	780-343	780-344	780-345	780-346
10	Spring (Inlet)		780-349	780-350	780-351	780-352	780-353	780-354
11	Seat Disc	2	780-357	780-358	780-359	780-360	780-361	780-362
12	O-ring (Seat Ring)	2	398-237-72	398-242-72	398-253-72	398-263-72	398-272-72	398-274-72
13	Cap screw	16/24	511-516-08	511-516-08	511-517-10	511-519-12	511-520-12	511-520-14
14	O-ring (Cover)	2	398-346-72	398-354-72	398-365-72	398-374-72	398-379-72	398-381-72
15	Locknut	2	521-547-00	521-547-00	521-550-00	521-550-00	521-551-00	521-551-00
16	Gasket	3	780-365	780-366	780-367	780-368	780-369	780-370
17	Bolt	10	511-019-18	511-019-20	--- ---	-----	--- ---	--- ---
17	Bolt	18	--- ---	-----	511-019-22	511-020-26	511-020-28	
17	Bolt	36	--- ---	-----	--- ---	-----	--- ---	511-021-30
17A	Nut	14	521-019-00	521-019-00	--- ---	-----	--- ---	--- ---
17A	Nut	30	--- ---	-----	521-019-00	521-020-00	521-020-00	--- ---
17A	Nut	36	--- ---	-----	--- ---	-----	--- ---	521-021-00
17B	Stud	2	513-019-26	513-019-26	--- ---	-----	--- ---	--- ---
17B	Stud	6	-----	--- ---	513-019-26	513-020-32	513-020-32	--- ---
39	Nipple	1	573-181-81	573-181-81	573-181-81	573-183-11	573-183-11	573-183-11
40	Plug Cock	4	781-047	781-047	781-047	781-048	781-048	781-048
41	Nipple	3	571-181-44	571-181-44	571-181-44	571-181-55	571-181-55	571-181-55
41A	Nipple	2	571-181-43	571-181-43	571-181-43	571-181-53	571-181-53	571-181-53
41B	Tee		571-131-42	571-131-42	571-131-42	571-131-52	571-131-52	571-131-52
43	Tube Fitting 90°	1	571-231-23	571-231-23	571-231-23	571-231-23	571-231-23	571-231-23
43A	Tube Fitting	1	571-211-23	571-211-23	571-211-23	571-211-23	571-211-23	571-211-23
50	Air Vent	4	9594A110	9594A110	9594A110	9594A110	9594A110	9594A110
51	O-ring	2	398-014-72	398-014-72	398-116-72	398-116-72	398-118-72	398-118-72

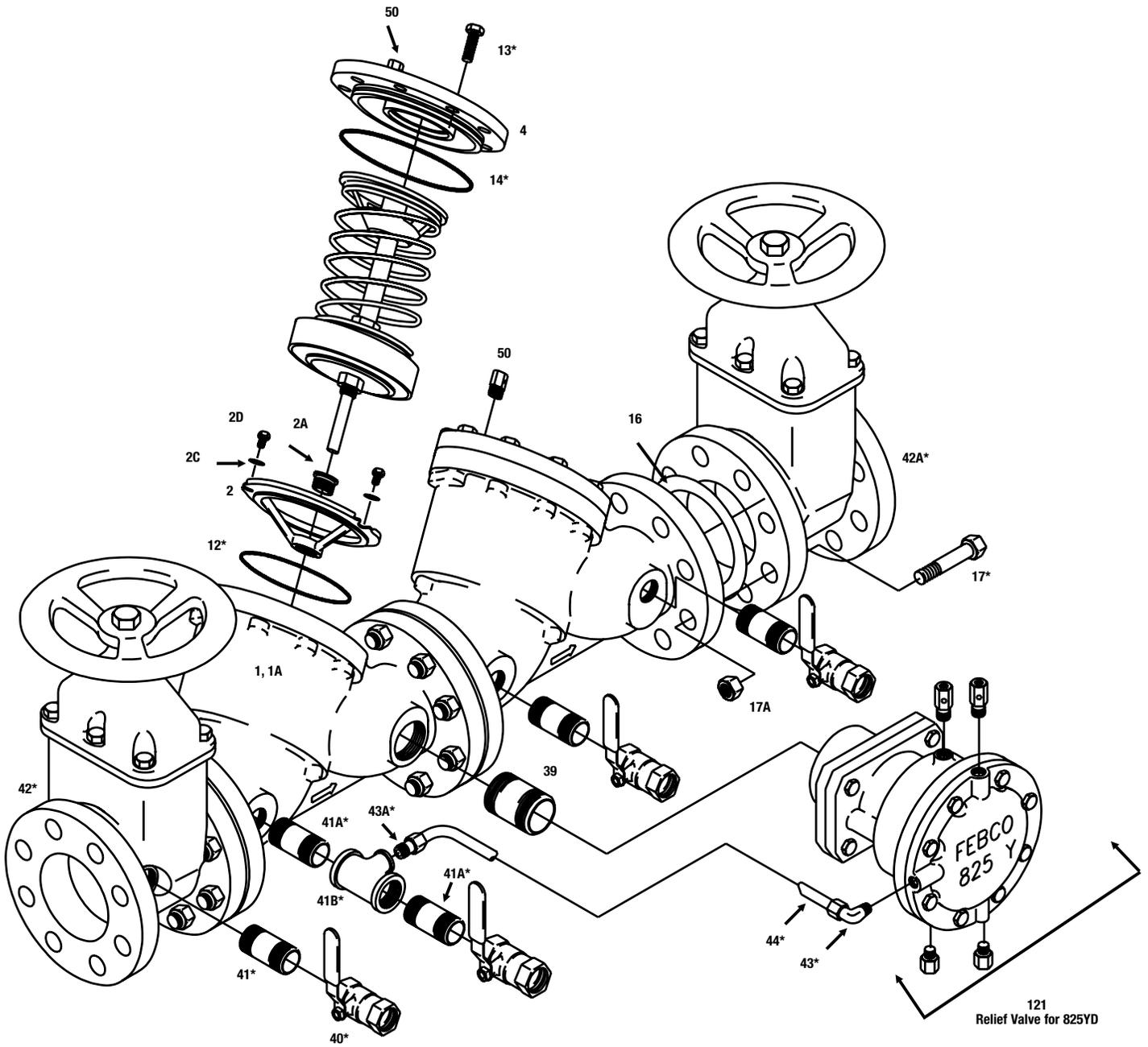
*Quantity required per valve.

Shutoffs

ITEM NO.	DESCRIPTION	2½"	3"	4"	6"	8"	10"
42	Resil ient Sealed NRS (Inlet)	781-005	781-006	781-007	781-008	781-009	781-010
42	Resil ient Sealed OS&Y (Inlet)	780-891	780-893	780-895	780-897	780-899	780-901
42A	Resil ient Sealed NRS (Outlet)	781-011	781-012	781-013	781-014	781-015	781-016
42A	Resil ient Sealed OS&Y (Outlet)	780-890	780-892	780-894	780-896	780-898	780-900

*Quantity required per valve.

Figure 13
Check Assembly



*Denotes Commercial Parts Available
Some parts are sold in kits only. Consult Parts Price List for specifics.

Assembly/Kit - Series 825D

DESCRIPTION	2½"	3"	4"	6"	8"	10"
Spring Assembly #1 Check (3, 4A, 5, 6, 7, 7A, 7B, 10, 11, 15, 51)	905-085	905-087	902-466	902-468	902-470	902-472
Spring Assembly #2 Check (3, 4A, 5, 6, 7, 7A, 7B, 9, 10, 11, 15, 51)	905-086	905-088	902-467	905-469	902-471	902-473
Rubber Parts, CI & DI Bodies (11, 14, 51)	905-059	905-060	905-061	905-062	905-063	905-064
Relief Valve Kit (Type D Only)	902-440	902-440	902-440	902-446	902-446	902-446
Relief Valve Kit (26, 27, 32, 39, 49, - 2 ea.) (Rubber Parts)	905-066	905-066	905-066	905-067	905-067	905-067
LG Mounting Kit (16, 17, 17A, 17B, 40, 41, Both Ends)	905-036	905-037	905-038	905-039	905-040	905-041

Assembly/Kit - Series 825YD

DESCRIPTION	2½"	3"	4"	6"	8"	10"
Spring Assembly #1 Check (3, 4A, 5, 6, 7, 7A, 7B, 10, 11, 15, 51)	905-085	905-087	902-466	902-468	902-470	902-472
Spring Assembly #2 Check (3, 4A, 5, 6, 7, 7A, 7B, 9, 10, 11, 15, 51)	905-086	905-088	902-467	905-469	902-471	902-473
Seat Ring Kit (2, 2A, 2C, 2D, 12)	902-386YD	902-385YD	902-384YD	902-383YD	902-382YD	902-381YD
Rubber Parts, CI & DI Bodies (11, 14, 51)	905-059	905-060	905-061	905-062	905-063	905-064
Large Mounting Kit (16, 17, 17A, 17B, 40, 41, Both Ends)	905-036	905-037	905-038	905-039	905-040	905-041
Relief Valve Assy (Type YD Only) (21 - 50)	905-100	905-100	905-100	905-101	905-101	905-101
Relief Valve Kit - Rubber (26, 27, 27A, 31A, 32)	905-102	905-102	905-102	905-102	905-102	905-102
Relief Valve Seat Ring Kit (22A, 22B, 36, 36A, 36B)	905-103	905-103	905-103	905-103	905-103	905-103
Internal Modular Assembly - Relief Valve Kit	905-104	905-104	905-104	905-104	905-104	905-104

Figure 14

Check Assembly, 4" – 10"

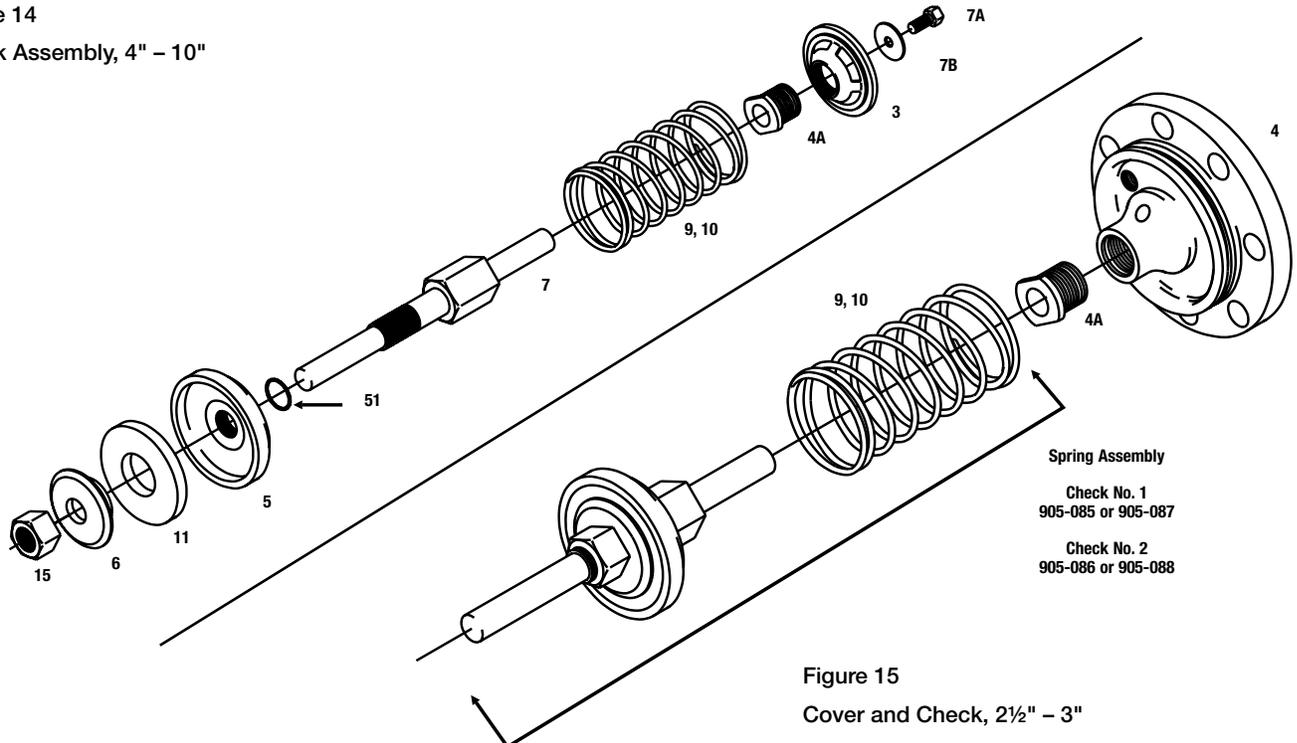


Figure 15

Cover and Check, 2½" – 3"

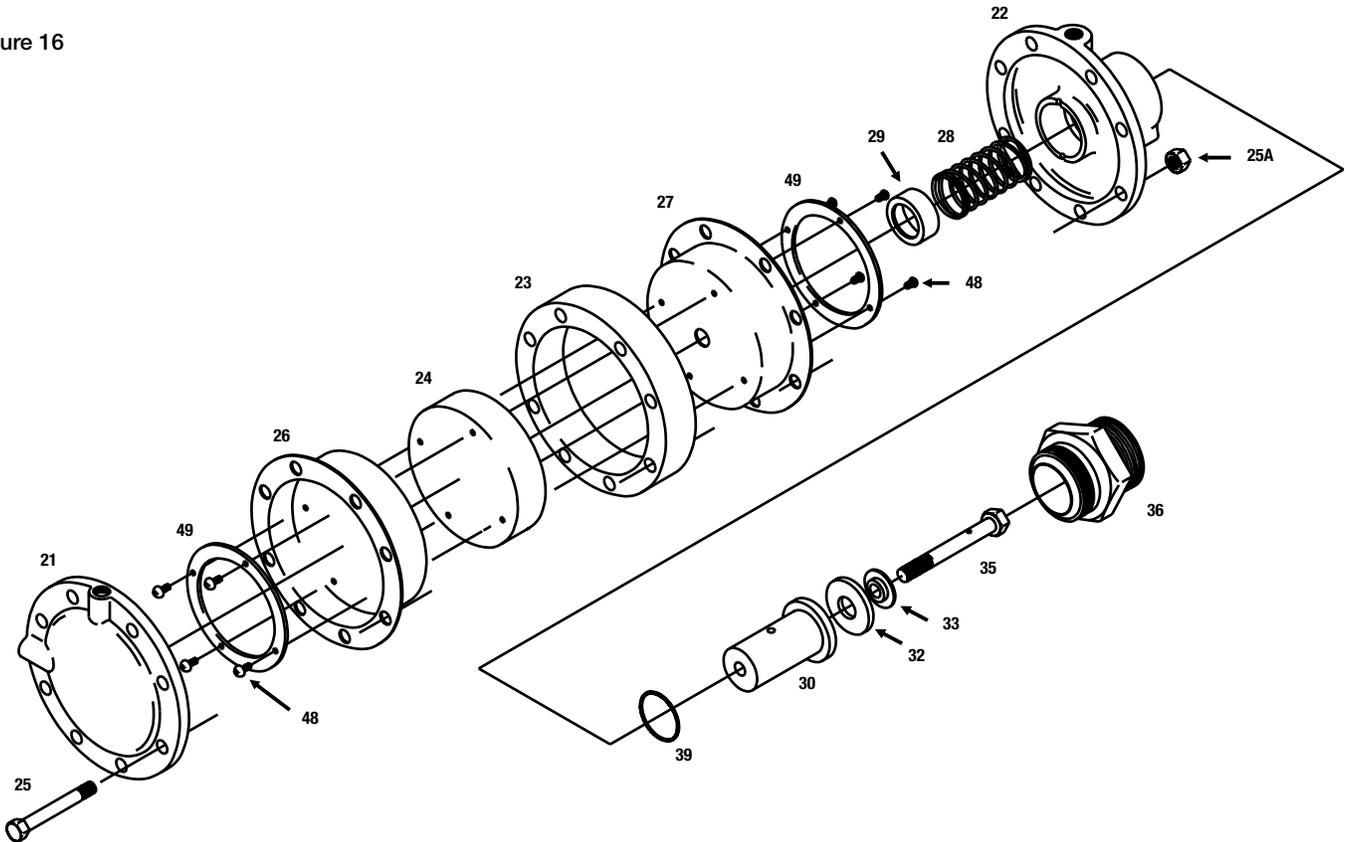
Parts – Relief Valve Series 825, 825D (2½" – 10")

Relief Valve

ITEM NO.	DESCRIPTION	QTY.*	2½"	3"	4"	6"	8"	10"
21	Diaphragm Cover	1	780-372	780-372	780-372	780-372	780-372	780-372
23	Diaphragm Spacer	1	780-377	780-377	780-377	780-377	780-377	780-377
24	Diaphragm Button	1	780-379	780-379	780-379	780-379	780-379	780-379
25	Bolt	8	511-515-22	51 1-515-22	51 1-515-22	51 1-515-22	51 1-515-22	51 1-515-22
25A	Nut	8	521-515-00	521-515-00	521-515-00	521-515-00	521-515-00	521-515-00
26	Diaphragm	1	780-381	780-381	780-381	780-381	780-381	780-381
27	Diaphragm	1	780-383	780-383	780-383	780-383	780-383	780-383
28	Spring	1	780-385	780-385	780-386	780-386	780-386	780-386
29	Spring Button	1	780-388	780-388	780-389	780-389	780-389	780-389
30	Main Stem	1	780-391	780-391	780-392	780-392	780-392	780-392
32	Seat Disc	1	780-395	780-395	780-395	780-395	780-395	780-395
33	Disc Washer	1	780-397	780-397	780-398	780-398	780-398	780-398
35	Orifice Bolt	1	780-399	780-399	780-399	780-399	780-399	780-399
36	Seat Ring (825)	1	780-402	780-403	780-404	780-404	780-405	780-405
36	Seat Ring (825D)	1	780-403	780-403	780-403	780-404	780-405	780-405
39	O-ring	1	398-222-72	398-222-72	398-330-72	398-330-72	398-330-72	398-330-72
48	Cap Screw	8	700-137	700-137	700-137	700-137	700-137	700-137
49	Daphragm Washer	2	780-415	780-415	780-415	780-415	780-415	780-415

*Quantity required per valve.

Figure 16



*Denotes Commercial Parts Available

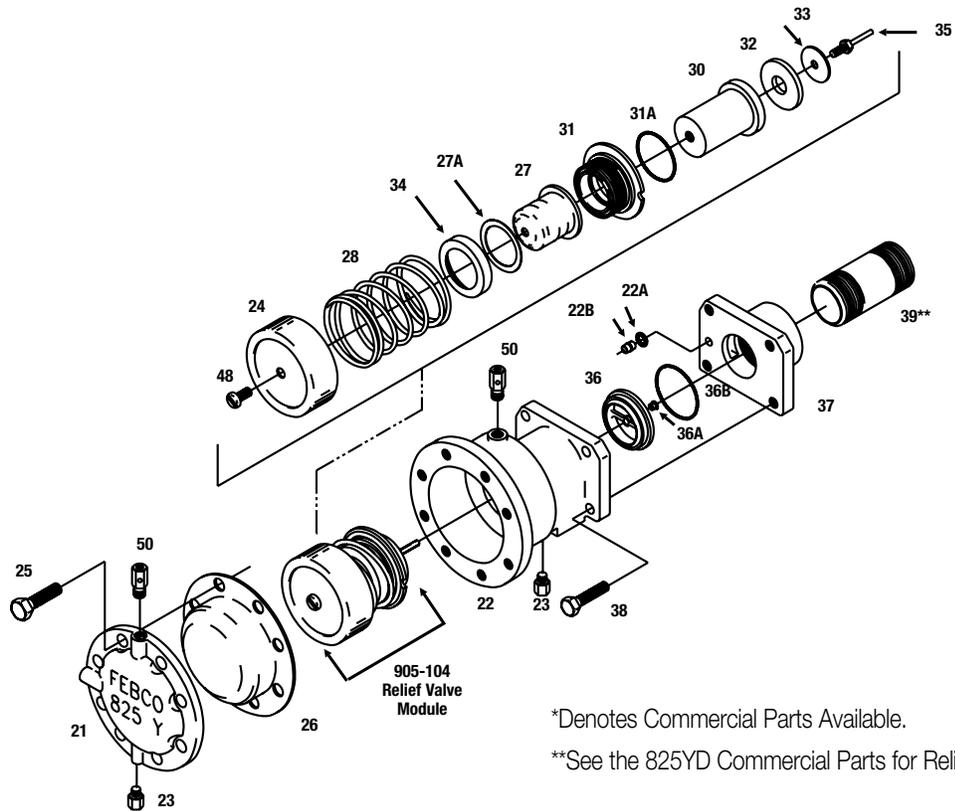
Series 825YD (2½" – 10")

Relief Valve

ITEM NO.	DESCRIPTION	QTY.*	2½"	3"	4"	6"	8"	10"
21	Cover-RV	1	101-113	101-113	101-113	101-113	101-113	101-113
22	Body-RV	1	101-112	101-112	101-112	101-112	101-112	101-112
22A	O-ring	1	398-202-72	398-202-72	398-202-72	398-202-72	398-202-72	398-202-72
22B	Bushing	1	500-290	500-290	500-290	500-290	500-290	500-290
24	Diaphragm Button	1	300-118	300-118	300-118	300-118	300-118	300-118
25	Cap Screw	8	511-515-08	511-515-08	511-515-08	511-515-08	511-515-08	511-515-08
26	Diaphragm - Outer	1	400-108	400-108	400-108	400-108	400-108	400-108
27	Diaphragm - Inner	1	400-109	400-109	400-109	400-109	400-109	400-109
27A	Slip Ring	1	340-103	340-103	340-103	340-103	340-103	340-103
28	Spring	1	630-128	630-128	630-128	630-128	630-128	630-128
30	Main Stem	1	500-298	500-298	500-298	500-298	500-298	500-298
31	Upper Guide	1	101-114	101-114	101-114	101-114	101-114	101-114
31A	O-ring	1	398-145-72	398-145-72	398-145-72	398-145-72	398-145-72	398-145-72
32	Seat Disc	1	780-395	780-395	780-395	780-395	780-395	780-395
33	Disc Washer	1	300-119	300-119	300-119	300-119	300-119	300-119
34	Retainer	1	101-116	101-116	101-116	101-116	101-116	101-116
35	Lower Guide	1	240-102	240-102	240-102	240-102	240-102	240-102
36	Seat Ring		101-115	101-115	101-115	101-115	101-115	101-115
36A	Bushing	1	500-299	500-299	500-299	500-299	500-299	500-299
36B	O-ring		398-229-72	398-229-72	398-229-72	398-229-72	398-229-72	398-229-72
37	Mounting Plate	4	101-143	101-143	101-142	101-142	101-142	101-142
38	Cap Screw	1	511-514-07	511-514-07	511-514-07	511-514-07	511-514-07	511-514-07
39	Nipple		573-181-81	573-181-81	573-181-81	573-181-81	573-181-81	573-181-81
48	Cap Screw		519-513-04	519-513-04	519-513-04	519-513-04	519-513-04	519-513-04
50	Air Bleed		9594A110	9594A110	9594A110	9594A110	9594A110	9594A110

*Quantity required per valve.

Figure 17



*Denotes Commercial Parts Available.

**See the 825YD Commercial Parts for Relief Valve table.

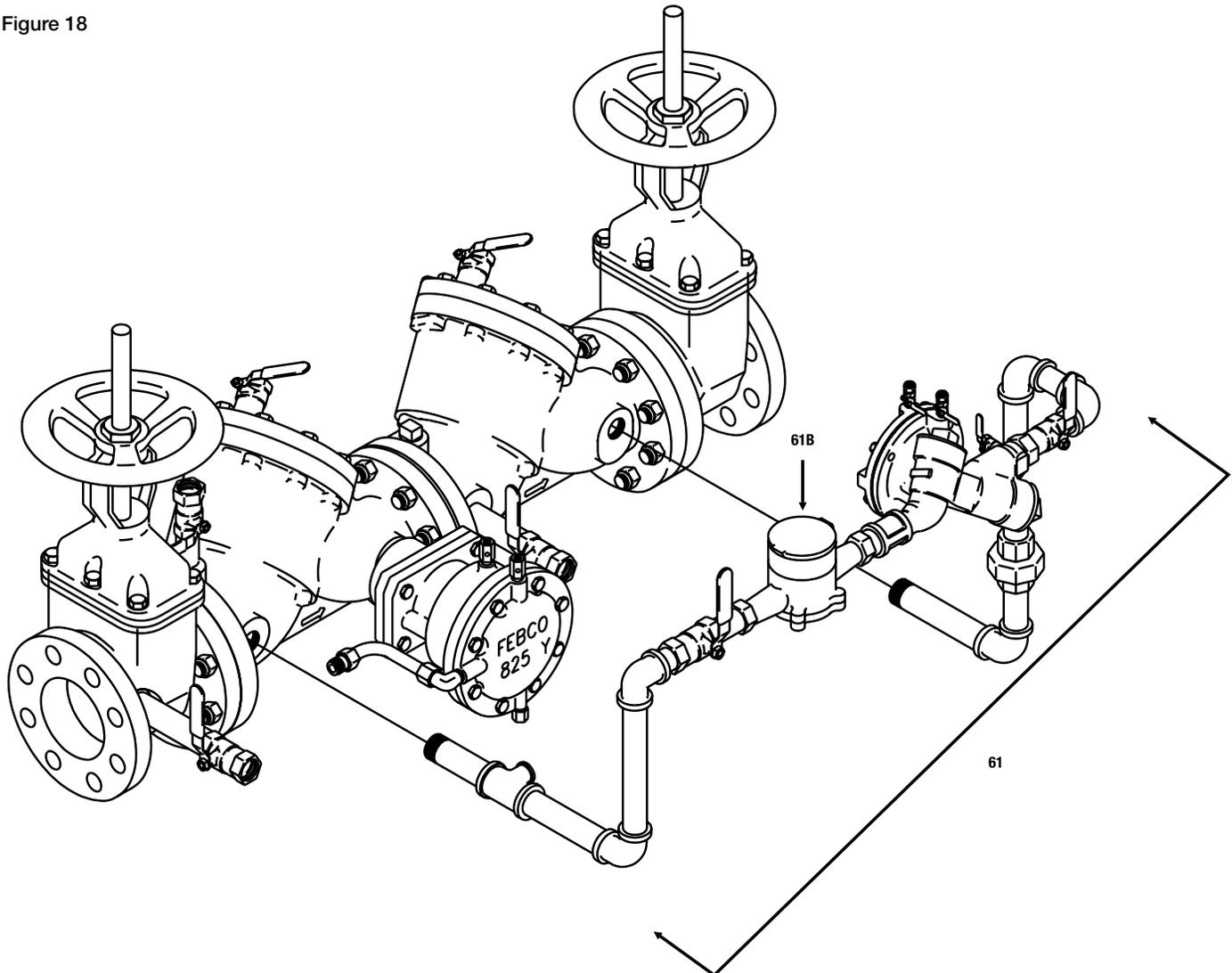
Series 826YD (2½" – 10")

Relief Valve with Bypass

REF NO.	DESCRIPTION	2½"	3"	4"	6"	8"	10"
9	1st Check Spring	780-349	780-350	630-142	630-143	630-144	630-145
9	2nd Check Spring	630-140	630-141	780-778	780-779	780-780	780-781
42	Resilient Wedge OS&Y Gate Valve	780-891	780-893	780-895	780-897	780-899	780-901
61	Bypass Kit	905-127	905-127	905-127	905-127	905-127	905-127
61B	Meter (Std. - Gal.)	780-666	780-666	780-666	780-666	780-666	780-666

The items listed above are used only on Series 826YD and are not interchangeable with Series 825YD.

Figure 18



Spring Removal Tool

VALVE SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
4"	9 1/2	4 1/4	5/8	1/2 - 13	5 1/2
6"	12 1/2	5 5/8	3/4	5/8 - 11	5 1/2
8"	14 1/4	6 3/8	7/8	3/4 - 10	7
10"	16 1/2	7 1/2	7/8	3/4 - 10	7

NOTICE

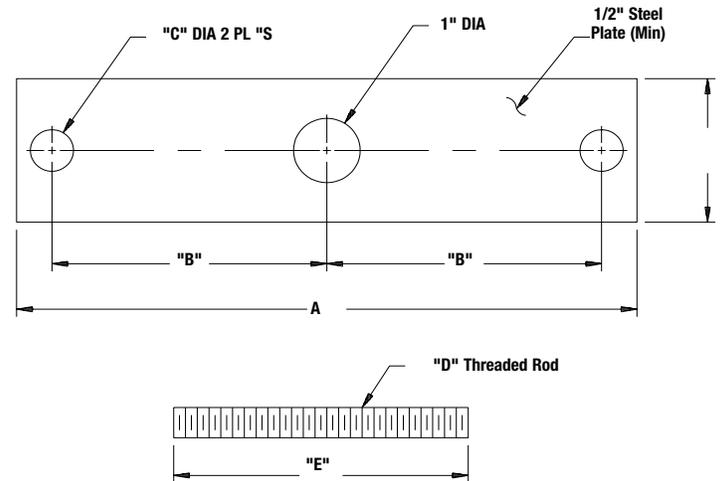
This information is provided to expedite servicing of FEBCO products. One tool may be fabricated for use on all required sizes by drilling all holes at appropriate dimensions in a single steel plate of maximum required length.

To order a FEBCO spring removal tool, order part number 905-121.

CAUTION

To avoid possible injury during use, do not fabricate the tool from lesser strength material or to smaller dimensions than the minimums shown.

Figure 19



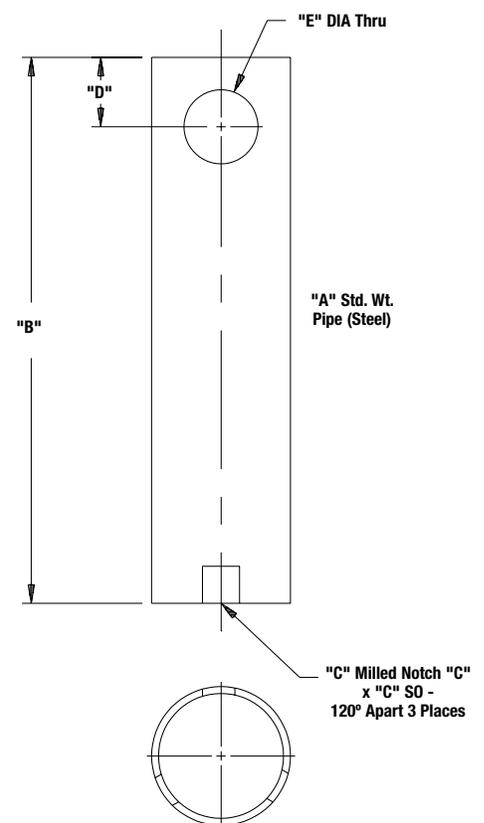
Seat Ring Tool

For Series 825 only

VALVE SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
1 1/2"	1 1/2"	6	3/8	3/4	3/4
2"	1 1/2"	6	3/8	3/4	3/4
2 1/2"	2 1/2"	8	1/2	1	1
3"	3	8	1/2	1	1
4"	4	9	1/2	1	1
6"	6	10	3/8	1	1
8"	8	12	3/8	1	1
10"	8	12	3/8	1	1

NOTE: This information is provided to expedite servicing of FEBCO products.

Figure 20



Commercially Available Parts

Relief Valve - Series 825, 825D (1½" – 10")

ITEM NO.	DESC.	MATERIAL	SIZE							
			1½"	2"	2½"	3"	4"	6"	8"	10"
25/25A	Bolt & Nut	ST STL	¾-16 x 2½ (8)	¾-16 x 2½ (8)	¾-16 x 2¾ (8)					
39	O-ring	BUNA-N	568-214 1 x 1¼ x ½	568-222 1½ x 1¾ x ½	568-222 1½ x 1¾ x ½	568-222 1½ x 1¾ x ½	568-330 2½ x 2½ x ¾			
48	Cap Screw	ST STL	10-32 x ½ Socket Head (8)							

Main Valve - Series 825 (1½" – 10")

ITEM NO.	DESC.	MATERIAL	SIZE	SIZE						
			1½"	2"	2½"	3"	4"	6"	8"	10"
2B	Bushing Nut	ST STL	7/16-20 Hex (2)	9/16-18 Hex (2)	9/16-18 Hex* (2)	9/16-18 Hex* (2)	7/8-14 Jam* (2)	7/8-14 Jam* (2)		
7A	Screw	ST STL					¾-16 x 1 (2)	¾-16 x 1 (2)	¾-16 x 1 (2)	¾-16 x 1 (2)
12	O-ring	BUNA-N	568-228 2¼ x 2½ x ½ (2)	568-231 2¾ x 2¾ x ½ (2)	568-238 3½ x 3¾ x ½ (2)	568-246 4½ x 4¾ x ½ (2)	568-254 5½ x 5¾ x ½ (2)	568-264 7½ x 7¾ x ½ (2)	568-273 9¾ x 10 x ½ (2)	10¾ x 10¾ x ½ (2)
13	Cap-Screw	ST STL	½-13 x 1¼ (8)	¾-16 x 7/8 (12)	7/16-14 x 1 (16)	7/16-14 x 1 (16)	½-13 x 1¼ (16)	5/8-11 x 1½ (16)	¾-10 x 1½ (16)	¾-10 x 1¾ (24)
14	O-ring	BUNA-N	568-234 3 x 3¼ x ½ (2)	568-240 3¾ x 4 x ½ (2)	568-244 4¼ x 4½ x ½ (2)	568-252 5¼ x 5½ x ½ (2)	568-263 7¼ x 7½ x ½ (2)	568-272 9½ x 9¾ x ½ (2)	568-451 11 x 11½ x ¼ (2)	12¾ x 13 x ½ (2)
15	Lock-Nut	ST STL	¾-24 (15)	½-24-20 (15)	½-20 (15)	½-20 (15)	¾-16 (15)	¾-16 (15)	7/8-14 (15)	7/8-14 (15)
17	Bolt & Nut	STEEL	½-13 x 1¾ (12)	5/8-11 x 2 (12)	5/8-11 x 2¼ (12)	5/8-11 x 2½ (12)	5/8-11 x 2¾ (24)	¾-10 x 3 (24)	¾-10 x 3¼ (24)	7/8-9 x 3½ (36)
40	Test Cocks	BRASS	¼" IPS (4)	¼" IPS (4)	½" IPS (4)	½" IPS (4)	½" IPS (4)	¾" IPS (4)	¾" IPS (4)	¾" IPS (4)
51	O-ring	BUNA-N			568-014 ½ x 5/8 x ¼	568-014 ½ x 5/8 x ¼	568-116 ¾ x 1½ x 3/32	568-116 ¾ x 1½ x 3/32	568-118 7/8 x 1½ x 3/32	568-118 7/8 x 1½ x 3/32

Commercial Parts for Main Valve - Series 825Y (¾" – 2")

ITEM NO.	DESC.	MATERIAL	SIZE	SIZE	SIZE	SIZE	SIZE
			¾"	1"	1¼"	1½"	2"
4	O-ring	BUNA-N	568-202	568-202	568-202	568-202	568-202
6	Cap Screw	ST STL	¼-20 x ⅝ Allen Head	¼-20 x ⅝ Allen Head	¼-20 x ⅝ Allen Head	15/16-18 x ¾ Allen Head	15/16-18 x ¾ Allen Head
8	O-ring	BUNA-N	568-226	568-226	568-226	568-235	568-235
12	Screw	ST STL	¼-28 x ¾ Pan Head	¼-28 x ¾ Pan Head	¼-28 x ¾ Pan Head	¼-28 x ¾ Pan Head	¼-28 x ¾ Pan Head
15	Bolt	ST STL	15/16-18 x ¾ Hex Head	15/16-18 x ¾ Hex Head	15/16-18 x ¾ Hex Head	¾-16 x 7/8 Hex Head	¾-16 x 7/8 Hex Head
18	Screw	ST STL	¼-20 x ¾ 80° Flat Head	¼-20 x ¾ 80° Flat Head	¼-20 x ¾ 80° Flat Head	¼-20 x ¾ 80° Flat Head	¼-20 x ¾ 80° Flat Head
22	O-ring	BUNA-N	568-113	568-113	568-113	568-120	568-120
24	O-ring	BUNA-N	568-022	568-022	568-022	568-127	568-127
27	Screw	ST STL	10-32 x ¾ Round Head	10-32 x ¾ Round Head	10-32 x ¾ Round Head	¼-20 x ½ Round Head	¼-20 x ½ Round Head
28	Plug	BRASS	⅛" IPS	⅛" IPS	⅛" IPS	¼" IPS	¼" IPS
29	Gate Valve (w/side tap)	BRONZE BRONZE	¾" NPT ⅛" IPS Side Tap	1" NPT ⅛" IPS Side Tap	1¼" NPT ¼" IPS Side Tap	1½" NPT ¼" IPS Side Tap	2" NPT ¼" IPS Side Tap
30	Test Cock	BRONZE	⅛" IPS	⅛" IPS	¼" IPS	¼" IPS	¼" IPS
102	O-ring	BUNA-N	568-019	568-019		568-026	568-026

Relief Valve - Series 825YD (2½" – 10")

ITEM NO.	DESC.	MATERIAL	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE
			2½"	3"	4"	6"	8"	10"
22A	O-ring	BUNA-N	568-202 ¼ x ½ x ⅛					
25	Cap Screw	ST STL	¾-16 x 1 (8)					
31A	O-ring	BUNA-N	568-145 29/16 x 2¾ x 3/32					
36B	O-ring	BUNA-N	568-229 2¾ x 2⅝ x ⅛					
38	Cap Screw	ST STL	5/16-18 x 7/8 Hex (4)					
39	Pipe Nipple	ST STL	1 ½" IPS x Close	1 ½" IPS x Close	1 ½" IPS x Close	2" IPS x Close	2" IPS x Close	2" IPS x Close
48	Cap Screw	ST STL	¼-20 x ½ Pan Head					

Main Valve - Series 825D, 825YD (2½" – 10")

ITEM NO.	DESC.	MATERIAL	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE
			2½"	3"	4"	6"	8"	10"
2D	Screw	ST STL	¼-20 x ½ (6)	¼-20 x ½ (6)	⅝-18 x ¾ (6)	⅝-18 x ¾ (6)	⅝-18 x ¾ (6)	⅝-18 x ¾ (6)
7A	Screw	ST STL			⅜-16 x 1 (2)	⅜-16 x 1 (2)	⅜-16 x 1 (2)	⅜-16 x 1 (2)
12	O-ring	BUNA-N	568-237 3⅜ x 3⅝ x ⅛ (2)	568-242 4 x 4¼ x ⅛ (2)	568-253 5⅜ x 5⅝ x ⅛ (2)	568-263 7¼ x 7½ x ⅛ (2)	568-272 9½ x 9¾ x ⅛ (2)	568-274 10 10¼ x ⅛ (2)
13	Cap Screw	ST STL	⅞-14 x 1 (16)	⅞-14 x 1 (16)	½-13 x 1¼ (16)	⅝-11 x 1½ (16)	¾-10 x 1½ (16)	¾-10 x 1¾ (16)
14	O-ring	BUNA-N	568-346 4⅛ x 4½ x ⅜ (2)	568-354 5⅛ x 5½ x ⅜ (2)	568-365 7 x 7⅞ x ⅜ (2)	568-374 9¼ x 9⅝ x ⅜ (2)	568-379 11 x 11⅜ x ⅜ (2)	568-381 12 x 12⅜ x ⅜ (2)
15	Lock-Nut	ST STL	½-20 (15)	½-20 (15)	¾-16 (15)	¾-16 (15)	⅞-14 (15)	⅞-14 (15)
17	Bolt & Nut	STEEL	⅝-11 x 2¼ (12)	⅝-11 x 2½ (12)	⅝-11 x 2¾ (24)	¾-10 x 3 (24)	¾-10 x 3¼ (24)	⅞-9 x 3½ (36)
40	Test Cocks	BRASS	½" IPS (4)	½" IPS (4)	½" IPS (4)	¾" IPS (4)	¾" IPS (4)	¾" IPS (4)
41	Nipple		571-181-44 Size (3)	571-181-44 Size (3)	571-181-44 Size (3)	571-181-55 Size (3)	571-181-55 Size (3)	781-181-55 Size (3)
41A	Nipple		571-181-43 Size (2)	781-181-43 Size (2)	781-181-43 Size (2)	571-181-53 Size (2)	781-181-53 Size (2)	781-181-53 Size (2)
41B	Tee		571-131-42 Size	781-131-42 Size	781-131-42 Size	571-131-52 Size	781-131-52 Size	781-131-52 Size
43	Tube Fit. 90°		571-231-23 Size	571-231-23 Size	571-231-23 Size	571-231-23 Size	571-231-23 Size	571-231-23 Size
43A	Tube Fit.		571-211-23 Size	571-211-23 Size	571-211-23 Size	571-211-23 Size	571-211-23 Size	571-211-23 Size
51	O-ring	BUNA-N	568-014 ½ x ⅝ x ⅛ (2)	568-014 ½ x ⅝ x ⅛ (2)	568-116 ⅝ x ¾ x ⅛ (2)	568-116 ⅝ x ¾ x ⅛ (2)	568-118 ¾ x ⅞ x ⅛ (2)	568-118 ¾ x ⅞ x ⅛ (2)

These parts are commercially available through most hardware distributors or retailers.

Gate valves, test cocks, flange, gaskets, and other parts are also commercially available, but not listed.

*Denotes parts only used on valves manufactured before 1981.

Repair Kits

Before contacting the local FEBCO parts distributor, write down the following information to have on hand when placing the order. The serial number located on the assembly ID plate can assist in ordering the proper kit. Some parts are sold only in kit form.

- Item number and name. Locate the number and name of the item in the "Parts" section.
- Kit number. Use the tables below to find the number of the kit containing the item.
- Valve size. Verify the size of the valve that the item is to be used on.
- Model number. Record the full model number. On large assemblies (2½" to 10"), the model number is located on the name plate. On small assemblies (¾" to 2"), the model number is cast on the body.
- Type code. Identify the "type" code for valve sizes 2½" to 10". (Ductile Iron bodies use the Type D or YD code on the name plate.)
- Part number. Provide the part number if appropriate.

Add-on and Retrofit Sensor Connection Kits

For Building Management Systems

ORDERING CODE	ADD-ON/RETROFIT KIT	DESCRIPTION
88009431	 <p>FP-FBF-BMS BMS Flood Sensor Connection Kit Series 825YA, LF825YA Sizes ¾" to 2"</p>	Includes sensor activation module with cable, power adapter, and ground wire. Use this kit to activate the flood sensor and enable flood detection capabilities on the relief valve of a new installation in a BMS configuration.
88009427	 <p>FP-RFK-FBF-BMS-CFS BMS Flood Sensor Retrofit Connection Kit Series 825YA, LF825YA Sizes ¾" to 2"</p>	Includes flood sensor (2), sensor activation module with cable, power adapter, and ground wire. Use this kit to add flood detection capabilities to the relief valve of an existing installation in a BMS configuration.

For Cellular Communication

ORDERING CODE	ADD-ON/RETROFIT KIT	DESCRIPTION
88009432	 <p>FP-FBF-CFS Cellular Flood Sensor Connection Kit Series 825YA, LF825YA Sizes ¾" to 2"</p>	Includes sensor activation module with cable, Cellular Gateway with mounting kit, power adapter, and ground wire. Use this kit to activate the flood sensor and enable flood detection capabilities as well as e-mail, text, and voice notifications.
88009428	 <p>FP-RFK-FBF-CFS Cellular Flood Sensor Retrofit Connection Kit Series 825YA, LF825YA Sizes ¾" to 2"</p>	Includes flood sensor (2), sensor activation module with cable, Cellular Gateway with mounting kit, power adapter, and ground wire. Use this kit to add flood detection capabilities to the relief valve of an existing installation and enable e-mail, text, and voice notifications.

Limited Warranty: FEBCO (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**



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