# Operating Manual

**Model: 129FC**
**Size: "**
**Serial #:**
**Sales Order :**

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OCV® FLUID SOLUTIONS LLC

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# installation, operating and maintenance instructions

# pressure control valve for fire protection service

# model 129FC

Ron 5-23-08

## GENERAL DESCRIPTION

The OCV Model 129FC Pressure Control Valve is designed to reduce a higher upstream pressure into a lower, constant downstream pressure. **The valve is UL-listed for use in fire protection systems in sizes 1.5" through 8", globe or angle pattern. It is designed to control downstream pressure in the range of 50-165 psi.**

The 129FC consists of the following components, arranged as shown on the schematic diagram.

1. **Model 65 Basic Control Valve,** a hydraulically-operated, diaphragm-actuated globe or angle valve which closes with an elastomer-on-metal seal.

2. **Model 1390 Pressure Reducing Pilot,** a three-way, normally-open pilot valve which senses downstream pressure under its diaphragm and balances it against an adjustable spring load. An increase in downstream pressure tends to make the pilot close.

3. **Model 159 Y-Strainer** which protects the pilot system from solid contaminants in the line fluid.

At user option, the 129FC may also be equipped with a **Model 155 Visual Indicator,** Item 4 on the schematic diagram.

### Theory of Operation (Refer to schematic diagram)

The degree of opening of the **Pressure Reducing Pilot (2)** determines the degree of opening of the main valve. The wider the pilot opens, the wider the main valve opens and the higher the pressure downstream. Conversely, the more the pilot closes, the more the main valve closes which reduces the pressure downstream.

Putting it all together, as downstream pressure tends to increase above the set point of the pressure reducing pilot, the pilot moves further closed. This results in an increase in pressure in the diaphragm chamber of the main valve. The main valve then closes slightly to restore downstream pressure to the set point. Conversely, as the downstream pressure tends to decrease below the set point, the pilot moves further open. This results in a decrease in pressure in the diaphragm chamber of the main valve. The main valve then opens wider to bring the downstream pressure back up to the set point. The net result of all this is a constant modulating action by the pilot and main valve and a downstream pressure which remains constant despite fluctuations in demand or inlet pressure.

## INSTALLATION

The 129FC is furnished fully factory-assembled and ready for installation at the appropriate point in the system. **The user is referred to the "Standard for Installation of Sprinkler Systems, NFPA 13", or the "Standard for Installation of Standpipe and Hose Systems, NFPA 14", as applicable, for installation requirements of these valves.** In order to ensure safe, accurate and efficient operation of the 129FC, these guidelines should be followed.

1. Make a careful inspection of the valve to insure that there has been no damage to the external piping, fittings and controls. Check that all fittings are tight.

2. It is recommended that either gate or block valves be installed on the inlet and discharge sides of the valve for preventive and/or corrective maintenance.

3. Prior to mounting the valve, all interconnecting piping should be thoroughly flushed of chips, scale, and foreign matter.

4. Install the valve in the line according to the flow arrow on the inlet flange. The arrow should point downstream.

5. Allow sufficient room around the valve for ease of adjustment and maintenance service.

6. **For a valve intended for use in sprinkler systems, a pressure relief valve, at least 1/2" in size, must be installed downstream of the Pressure Control Valve. Be sure to provide adequate drainage for the relief valve.**

## STARTUP AND ADJUSTMENT

**These valves are to be set to provide outlet pressures and flows, and are to be tested after installation in accordance with NFPA 13 or NFPA 14, or both, whichever is applicable, and tested periodically thereafter in accordance with NFPA 25.** The following procedures should be followed in the order presented in order to effect an initial startup of the 129FC.

1. **Install pressure gauges of the proper range upstream and downstream of the 129FC.** The unused side ports on the main valve body may be used for this purpose if there is no convenient location in the piping.
2. Remove the plastic cap from the pressure reducing pilot and loosen the adjusting screw jam nut. Turn the adjusting screw counterclockwise until it is loose enough to be turned by hand.
3. Start the pump, or otherwise start the system flowing. The main valve will at this time be either fully closed or open only a very small amount.
4. Carefully loosen one of the pipe plugs in the main valve bonnet until fluid appears around the threads. When only clear fluid (no air) is discharging, retighten the plug.
5. Open valves downstream of the 129FC to establish a minimum flow rate as shown in the table below.

| VALVE SIZE | MIN. FLOW |
|---|---|
| 1.5" | 25 GPM |
| 2" | 50 GPM |
| 2-1/2" | 70 GPM |
| 3" | 100 GPM |
| 4" | 200 GPM |
| 6" | 450 GPM |
| 8" | 750 GPM |

6. Slowly turn the adjusting screw of the pressure reducing pilot **clockwise** until the downstream pressure rises to the desired set point. Tighten the adjusting screw jam nut and replace the plastic cap.

7. **Slowly** close downstream valves to reduce flow to zero, while observing the pressure gauge. The pressure will rise above the set point a few psi. **This is normal.**

8. If pressure readjustment should ever be required, the pressure reducing pilot is adjusted **clockwise** to **increase** pressure; **counterclockwise** to **decrease** pressure.

## MAINTENANCE

**The user is referred to the "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, NFPA 25", for inspection, testing, and maintenance requirements for these valves.** Due to the simplicity of design of the 129FC, required maintenance is minimal. However, the following checks, periodically performed, will do much to keep the valve operating properly and efficiently.

1. Check for chipped or peeling paint.

2. Check for leaks at fittings and around flanges and connections. Tighten as required.

3. Check the screen of the Y-strainer for build-up of solid material. Clean as required. This point is most important, as a clogged strainer can keep the valve from operating properly. On new installations, it is recommended that the strainer be checked every day or two until experience dictates a greater or lesser interval.

## TROUBLESHOOTING

In the event of malfunction of the 129FC, the following guide should enable the technician to isolate the specific cause of the problem.

**A. Main Valve Fails to Open:**

1. Valve closed downstream of 129FC. Open as required.
2. Pressure reducing pilot adjusted too far counterclockwise. See Adjustment instructions.
3. Stem of pressure reducing pilot binding. See 1390 section of this manual.
4. Stem of main valve binding. See Basic Valve section of this manual.

**B. Main Valve Fails to Close:**

1. Strainer clogged. Clean as required.
2. Pressure reducing pilot adjusted too far clockwise. See Adjustment instructions.
3. Diaphragm of pressure reducing pilot ruptured. This will be evidenced by a discharge of fluid from the vent port in the pilot bonnet. Disassemble pilot and replace diaphragm.
4. Pressure reducing pilot stem binding or seat badly deteriorated. Disassemble pilot and determine cause. See 1390 section of this manual.
5. Main valve diaphragm ruptured. Replace diaphragm. See Basic Valve section of this manual.
6. Main valve stem binding or object in valve. Disassemble valve and determine cause. See Basic Valve section of this manual.

**C. Main Valve Opens and Closes, But Does Not Control Pressure:**

1. If the pressure remains too high despite adjustment of the pressure reducing pilot, refer to Main Valve Fails to Close, above.
2. If pressure remains too low despite adjustment of the pressure reducing pilot, refer to Main Valve Fails to Open, above.
3. If pressure oscillates, you may likely be in a period of very low demand. Frequently this problem will disappear as demand increases. In an extreme case, try adjusting the pressure slightly higher.

**D. Downstream Pressure Builds Too High When Demand Is Zero.**

1. Pressure Reducing Pilot leaking. Disassemble pilot and determine cause. See the 1390 section of this manual.
2. Main valve leaking. Disassemble main valve and determine cause. See the Model 65 Basic Valve section of this manual.

# MODEL 129FC

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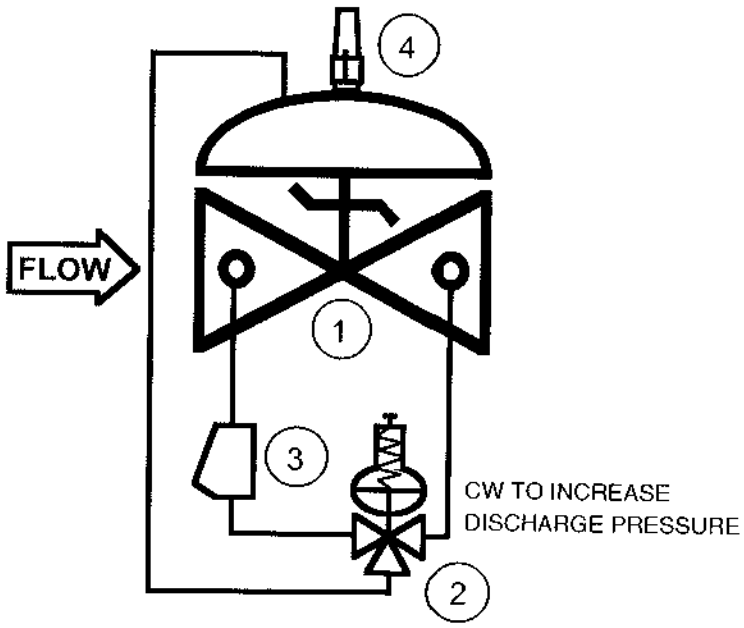
## PRESSURE CONTROL VALVE
## (CONTROLS DISCHARGE PRESSURE)




| ITEM | PART NO. | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | 65 | 1 | BASIC VALVE ASSEMBLY (GLOBE OR ANGLE) |
| 2 | 1390 | 1 | PRESSURE REDUCING PILOT (50-165 PSI) |
| 3 | 159 | 1 | Y-STRAINER |
| 4 | 155 | 1 | VISUAL INDICATOR (OPTIONAL) |

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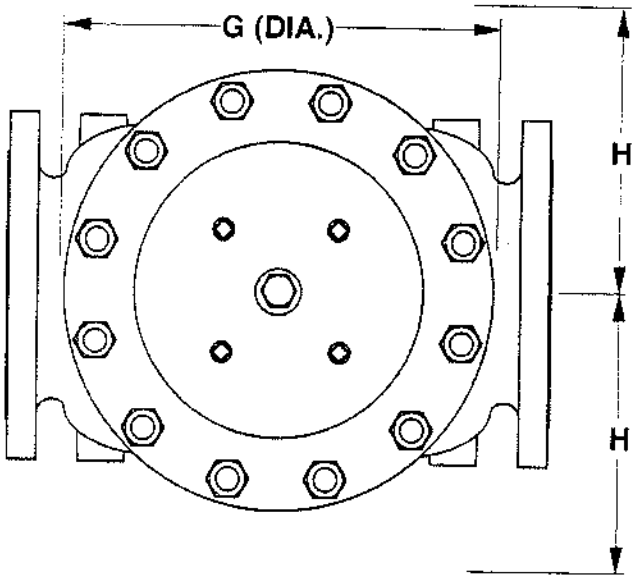
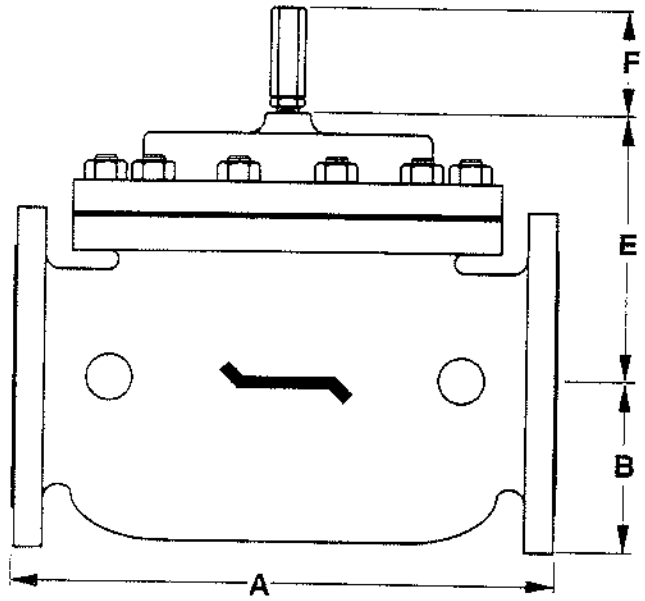
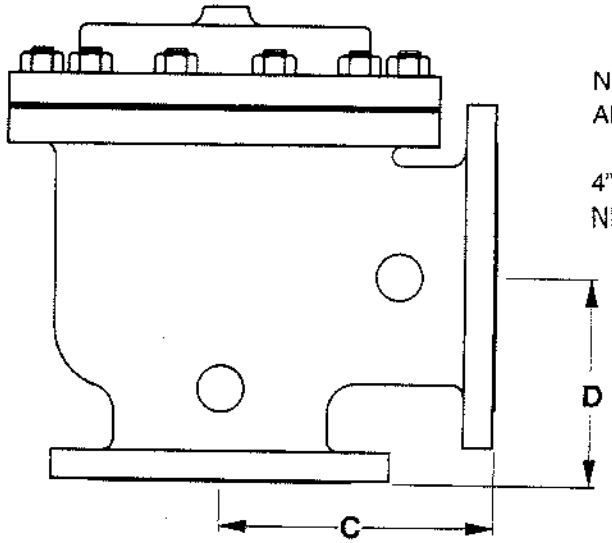



| DIM | ANSI CLASS | VALVE SIZE 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | S.E | 8.75 | 8.75 | 9.88 | 10.50 | 13.00 | – | – | – | – | – | – | – | – |
| | 150 | 8.50 | 8.50 | 9.38 | 10.50 | 12.00 | 15.00 | 17.75 | 25.38 | 29.75 | 34.00 | 39.00 | 40.38 | 62.00 |
| | 300 | 8.75 | 8.75 | 9.88 | 11.12 | 12.75 | 15.62 | 18.62 | 26.38 | 31.12 | 35.50 | 40.50 | 42.00 | 63.75 |
| B | SE | 1.44 | 1.44 | 1.69 | 1.88 | 2.25 | – | – | – | – | – | – | – | – |
| | 150 | 2.31 | 2.50 | 3.00 | 3.50 | 3.75 | 4.50 | 5.50 | 6.75 | 8.00 | 9.50 | 10.62 | 11.75 | 16.00 |
| | 300 | 2.62 | 3.06 | 3.25 | 3.75 | 4.12 | 5.00 | 6.25 | 7.50 | 8.75 | 10.25 | 11.50 | 12.75 | 18.00 |
| C | SE | 4.38 | 4.38 | 4.75 | 6.00 | 6.50 | – | – | – | – | – | – | – | – |
| | 150 | 4.25 | 4.25 | 4.75 | 6.00 | 6.00 | 7.50 | 10.00 | 12.69 | 14.88 | 17.00 | – | 20.81 | – |
| | 300 | 4 3/8 | 4.38 | 5.00 | 6.38 | 6.38 | 7.81 | 10.50 | 13.19 | 15.56 | 17.75 | – | 21.62 | – |
| D | SE | 3.12 | 3.12 | 3.88 | 4.00 | 4.50 | – | – | – | – | – | – | – | – |
| | 150 | 3.00 | 3.00 | 3.88 | 4.00 | 4.00 | 5.50 | 6.00 | 8.00 | 11.38 | 11.00 | – | 15.69 | – |
| | 300 | 3.25 | 3.25 | 4.12 | 4.38 | 4.38 | 5.81 | 6.50 | 8.50 | 12.06 | 11.75 | – | 16.50 | – |
| E | ALL | 6.00 | 6.00 | 6.00 | 7.00 | 6.50 | 7.92 | 10.00 | 11.88 | 15.38 | 17.00 | 18.00 | 19.00 | 27.00 |
| F | ALL | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 | 3.88 | 6.38 | 6.38 | 6.38 | 6.38 | 6.38 | 8.00 |
| G | ALL | 6.00 | 6.00 | 6.75 | 7.69 | 8.75 | 11.75 | 14.00 | 21.00 | 24.50 | 28.00 | 31.25 | 34.50 | 52.00 |
| H | ALL | 10.00 | 10.00 | 11.00 | 11.00 | 11.00 | 12.00 | 13.00 | 14.00 | 17.00 | 18.00 | 20.00 | 20.00 | 28.50 |




NOTE: 3" VALVE DIMENSIONS ARE FOR NEW MODEL 3100

4" VALVE DIMENSIONS ARE FOR NEW MODEL 4400

REV. A SDJ 6-6-02
REV. B SDJ 2-3-03

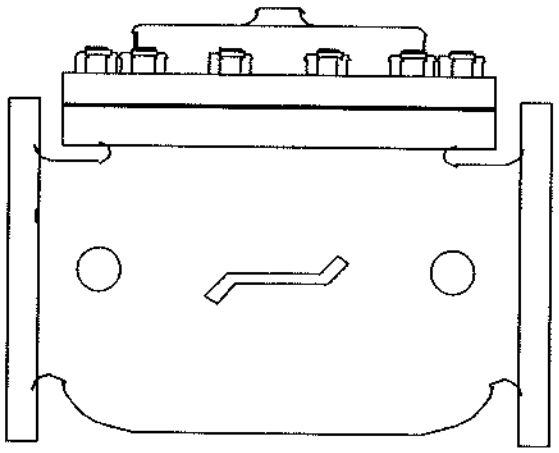
| TOLERANCES |
|---|
| UNLESS NOTED |
| FRACTIONAL ±1/64 |
| DECIMAL ±.005 |
| MACH. FINISH 125 |
| ANGULAR ±1/2° |

| DRAWN BY | DATE |
|---|---|
| SDJ | 10-6-97 |
| CHKD. BY | DATE |

**OCV Control Valves**
TULSA, OKLAHOMA U.S.A.

# GENERAL VALVE DIMENSIONS

| SIZE | DRAWING NUMBER | REV. |
|---|---|---|
| A | 65D | B |



# installation, operating, and maintenance instructions

# series 65

# basic control valve

## GENERAL DESCRIPTION

The OCV Series 65 is a hydraulically-operated, diaphragm-actuated valve. It is available in either a globe (Model 65) or angle (Model 65A) configuration. The diaphragm is nylon-fabric bonded with synthetic rubber and forms a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. An elastomeric seat disc forms a tight seal with the valve seat when pressure is applied above the diaphragm.

## FUNCTIONAL DESCRIPTION

Because the Series 65 is a hydraulically operated valve, it requires a minimum line pressure of approximately 5 psig in order to function. The valve functions on a simple principle of pressure differential. The line pressure at the inlet of the valve is bypassed through the pilot control piping to the diaphragm chamber of the valve. This pressure, together with the valve spring, works against the pressure under the valve seat. Because the effective area of the diaphragm is greater than that of the seat, the valve is held tightly closed. As the controlling pilot(s) allow the pressure to bleed off the diaphragm chamber, the two opposing pressures begin to balance and the valve will begin to open. The valve can be used to perform a simple on-off function, or with the proper pilot system, a modulating, or regulating function.

In cases where the line fluid is unusually dirty, or is otherwise unsuitable for operating the valve, an independent operating pressure source may be employed. The pressure available from such a source must be equal to, or greater than, line pressure.

## INSTALLATION

In order to insure safe, accurate and efficient operation of the OCV control valve, the following list of checkpoints and procedures should be followed when installing the valve.

1. Make a careful visual inspection of the valve to insure that there has been no damage to the external piping, fittings or controls. Check that all fittings are tight.
2. Thoroughly flush all interconnecting piping of chips, scale and foreign matter prior to mounting the valve.
3. Install the valve in the line according to the flow arrow on the inlet flange. The arrow should point downstream.
4. Allow sufficient room around the valve for ease of adjustment and maintenance service.

In addition, it is highly recommended that:

1. Isolation valves (eg., gate or butterfly) be installed on the inlet and discharge sides of the valve to facilitate isolating the valve for maintenance.
2. Pressure gauges be installed at the inlet and outlet sides of the valve to provide monitoring of the valve during initial start-up and during operation. The body side ports, if unused by the pilot system, provide a convenient connection for the gauges.
3. All valves larger than 6" be installed horizontally, i.e., with the bonnet pointed up, for ease of adjustment and maintenance servicing.

## MAINTENANCE

The OCV control valve requires no lubrication and a minimum of maintenance. However, a periodic inspection should be established to determine how the fluid being handled is affecting the efficiency of the valve. In a water system, for example, the fluid velocity as well as the substances occurring in natural waters, such as dissolved minerals and suspended particles, vary in every installation. The effect of these actions or substances must be determined by inspection. It is recommended that an annual inspection, which includes ex-

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amination of the valve interior, be conducted. Particular attention should be paid to the elastomeric parts, i.e., the diaphragm and seat disc. Any obviously worn parts should be replaced.

## REPAIR PROCEDURES

In the event of malfunction of the OCV control valve, troubleshooting should be conducted according to the procedures outlined for the specific model of valve. Then, if those steps indicate a problem with the main valve, this section will outline the procedures necessary to correct the problem.

Problems with the main valve can be classed in three basic categories:

1. VALVE FAILS TO OPEN
   a. Diaphragm damaged* - See Procedure A
   b. Stem binding - See Procedure B
2. VALVE FAILS TO CLOSE
   a. Diaphragm damaged* - See Procedure A
   b. Stem binding - See Procedure B
   c. Object lodged in valve - See Procedure B
3. VALVE OPENS AND CLOSES BUT LEAKS WHEN CLOSED
   a. Seat disc damaged - See Procedure C
   b. Seat ring damaged - See Procedure D

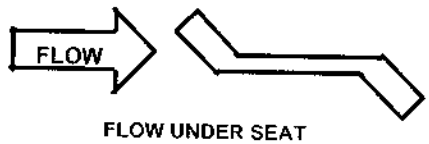
**A diaphragm failure can prevent the valve from either opening or closing, depending on the flow direction. Most water service valves flow "under the seat", in which case a diaphragm failure will keep the valve from closing. On the other hand, most fuel service valves flow "over the seat", in which case a diaphragm failure will keep the valve from opening. To determine which you have, examine the bridge mark cast into the side of the valve body, then compare it with the figures below.*

### *PROCEDURE A : DIAPHRAGM REPLACEMENT*

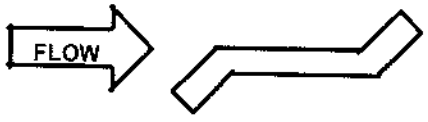
1. Isolate the valve from the system by closing upstream amd downstream block valves.
2. Loosen one of the tubing connections on the bonnet. Allow any residual pressure to bleed off.
3. Remove all tubing connected at the bonnet.
4. Remove the bonnet nuts.
5. Remove the bonnet. If the bonnet sticks in place, it may be loosened by rapping sharply around its edge with a *rubber-headed* mallet. *NOTE: 8" and larger valves are equipped with eye bolts through which a chain can be fastened to aid in lifting the bonnet.*
6. Remove the spring.
7. Remove the diaphragm plate capscrews and the diaphragm plate.
8. Remove the old diaphragm.
9. Making sure the dowel pin holes are in the proper location, place the new diaphragm over the studs and press down until it is flat against the body and spool.
10. Replace the diaphragm plate and the diaphragm plate capscrews.
11. Tighten all diaphragm plate capscrews snugly.
12. Replace the spring.
13. Replace the bonnet and reinstall the bonnet nuts.
14. Tighten the bonnet nuts snugly using a criss-cross tightening pattern.
15. Reinstall the control tubing.
16. Reopen the upstream and downstream block valves.
17. Before placing the valve back in service, perform the air bleed procedure described in the first section of this manual.

### *PROCEDURE B: CORRECTION OF BINDING STEM*

1. Perform Steps 1 thru 6 of Procedure A, above.
2. Remove the spool assembly from the valve. *NOTE:*




**FLOW UNDER SEAT**
**DIAPHRAGM FAILURE = VALVE FAILS TO CLOSE**




**FLOW OVER SEAT**
**DIAPHRAGM FAILURE = VALVE FAILS TO OPEN**

*On smaller valves, this can be accomplished simply by grasping the stem and pulling upward. Valves 6" and larger have the top of the stem threaded to accept an eyebolt to aid in lifting the spool out of the body. 6" thru 12" valves are threaded 3/8-16. 14" and 16" valves are threaded 5/8-11.*

3. Carefully examine both ends of the stem for deep scratches, scoring or buildup of mineral deposits.

Polish the stem if necessary using a fine grade of emery cloth.

4. Similarly, examine and polish the upper bushing (in the bonnet) and the lower guide (in the seat ring).
5. Reinstall the spool assembly.
6. Reassemble the valve, following Steps 12 thru 17 in Procedure A.

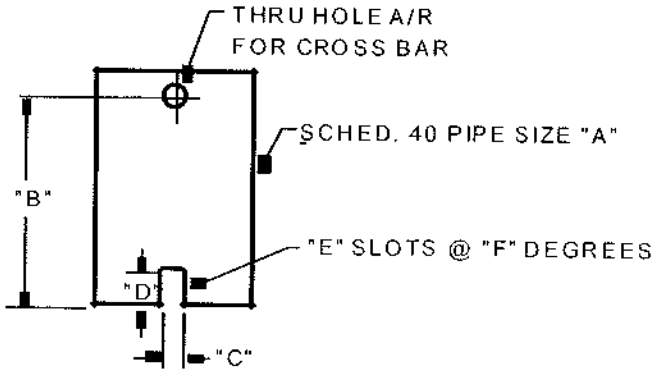
*PROCEDURE C: SEAT DISC REPLACEMENT*

1. Perform Steps 1 and 2 of Procedure B, above.
2. With the spool assembly removed from the body, remove the seat retainer screws.
3. Slide the seat retainer off the lower end of the stem.
4. Remove the seat disc from its groove in the spool. *NOTE: The seat disc may fit quite tightly in the groove. If necessary, it may be pried out using a thin-bladed screwdriver or similar tool.*
5. Install the new seat disc in the groove.
6. Reinstall the seat retainer and tighten the seat retainer screws.
7. Reassemble the valve, following Steps 5 and 6 of Procedure B.

*PROCEDURE D: SEAT RING REPLACEMENT*

*NOTE: It is rare for a seat ring to require replacement. Minor nicks and scratches in the seating surface can usually be smoothed out with emery cloth.*

1. Perform Steps 1 and 2 of Procedure B, above.
2. If you are working on a 4" or smaller valve, follow Steps 3 thru 9, below.
3. If you are working on a 6" or larger valve, follow Steps 10 thru 16, below.
4. Seat rings in valves 4" and smaller are threaded into the valve body. To remove, you will need a special seat ring tool. You may fabricate one using standard pipe as shown in the sketch below, or one may be purchased from OCV.
5. Using the seat ring tool, unthread the seat ring from the body.
6. Remove the old o-ring from the counterbore in the body.
7. Install the new o-ring in the counterbore.
8. Using the seat ring tool, install the new seat ring.
9. Reassemble the valve, following Steps 5 & 6 of Procedure B.
10. Seat rings in valves 6" and larger are bolted into the body with socket head capscrews. In addition you will note that the seat ring is equipped with additional threaded holes that may be used for "jacking" the seat ring out of the body.
11. Remove the socket head capscrews.
12. Remove the old seat ring from the body by temporarily installing two or more of the capscrews in the "jacking" holes.
13. Install a new o-ring in the groove of the new seat ring. Lubricate the o-ring and outer seat ring wall with Vaseline® or similar lubricant.
14. Install the new seat ring in the body, making sure that the capscrew holes line up.
15. Replace and tighten all the capscrews.
16. Reassemble the valve, following Steps 5 and 6 of Procedure B.




| VALVE SIZE | "A" PIPE SIZE | "B" MIN. LENGTH | "C" SLOT WIDTH | "D" SLOT DEPTH | "E" NO. OF SLOTS | "F" SLOT SPACING |
|---|---|---|---|---|---|---|
| 1-1/4" | 3/4" | 6" | 3/8" | 3/8" | 2 | 180° |
| 1-1/2" | 3/4" | 6" | 3/8" | 3/8" | 2 | 180° |
| 2" | 1-1/2" | 7" | 3/8" | 3/8" | 2 | 180° |
| 2-1/2" | 2" | 8" | 1/2" | 1/2" | 3 | 120° |
| 3" | 2-1/2" | 9" | 5/8" | 5/8" | 2 | 180° |
| 4" | 3" | 10" | 5/8" | 5/8" | 2 | 180° |

REVISED 3-17-97



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NOTES:

●1. USED WHEN STN STL SEAT RING IS FURNISHED.

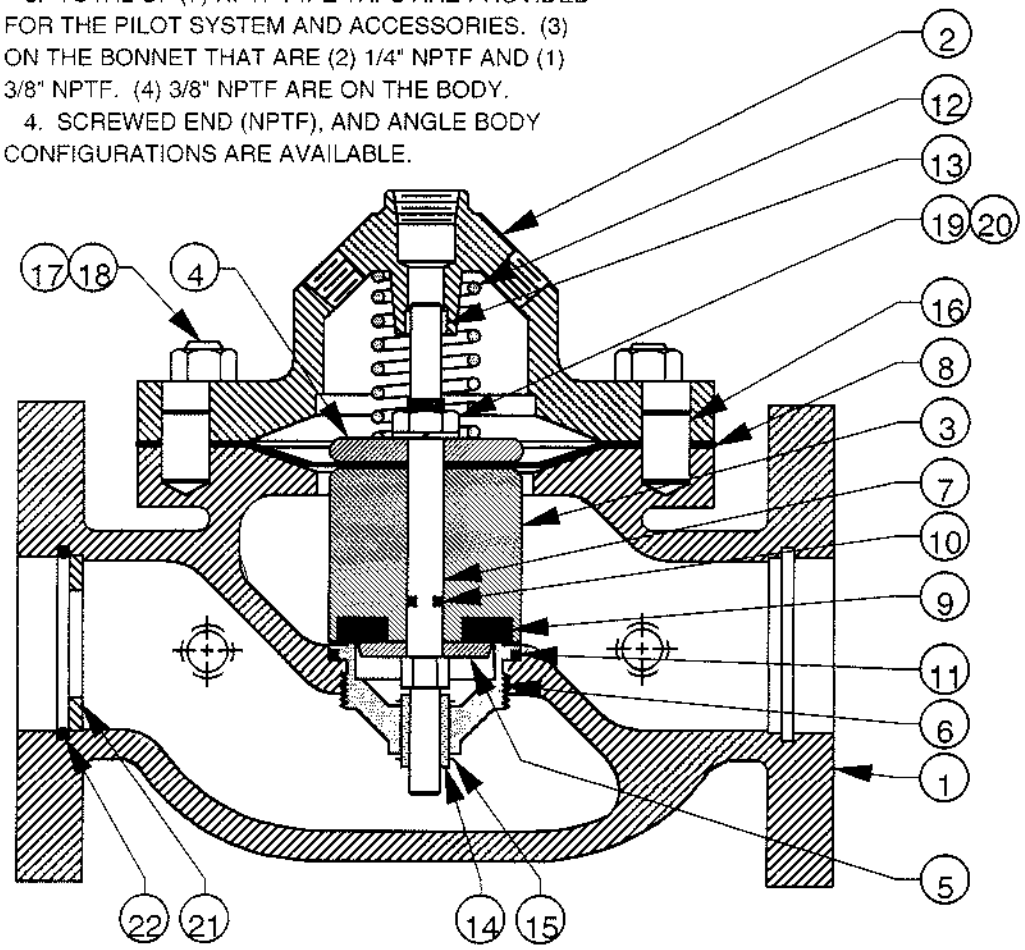
■ 2. USED ON RATE-OF-FLOW CONTROL VALVE ONLY.

3. TOTAL OF (7) NPTF PIPE TAPS ARE PROVIDED FOR THE PILOT SYSTEM AND ACCESSORIES. (3) ON THE BONNET THAT ARE (2) 1/4" NPTF AND (1) 3/8" NPTF. (4) 3/8" NPTF ARE ON THE BODY.

4. SCREWED END (NPTF), AND ANGLE BODY CONFIGURATIONS ARE AVAILABLE.

▲ = RECOMMENDED SPARE PARTS (INCLUDED IN REPAIR KITS)

| | |
|---|---|
| BUNA-N KIT | PN 904009 |
| VITON KIT | PN 904109 |
| EPDM KIT | PN 904409 |




| ITEM | PART NO | QTY | DESCRIPTION | | MATERIAL |
|---|---|---|---|---|---|
| 1 | 301009<br>301314<br>301510<br>301739 | 1 | (1 1/4")<br>BODY, 150# | 301609<br>BODY, 300# | DUCT IRON<br>STEEL<br>ALUMINUM<br>STN STL |
| 1 | 301010<br>301312<br>301511<br>301740<br>301138 | 1 | (1 1/2")<br>BODY, 150# | 301610<br>301720<br>BODY, 300# | DUCT IRON<br>STEEL<br>ALUMINUM<br>STN STL<br>BRONZE |
| 2 | 303009<br>303309<br>303509 | 1 | BONNET | (303709 STN STL)<br>(303138 BRONZE) | DUCT IRON<br>STEEL<br>ALUMINUM |
| 3 | 305409<br>305509 | 1 | SPOOL | (305709 STN STL) | STEEL<br>ALUMINUM |
| 4 | 307409<br>307509 | 1 | DIAPHRAGM PLATE | | STN STL<br>ALUMINUM |
| 5 | 309409<br>309509 | 1 | SEAT RETAINER | | STN STL<br>ALUMINUM |
| 6 | 311109<br>311709 | 1 | SEAT RING | | BRONZE<br>STN STL |
| 7 | 313709 | 1 | STEM | (313009 MONEL) | STN STL |
| ▲ 8 | 690009<br>690109 | 1 | DIAPHRAGM | (690057 EPDM) | BUNA-N<br>VITON |
| ▲ 9 | 690515<br>691515 | 1 | SEAT DISC | (690528 EPDM) | BUNA-N<br>VITON |
| ▲ 10 | 611010 | 1 | O-RING | (614010 EPDM) | VITON |
| ▲ 11 | 610032<br>611032 | 1 | O-RING | (614032 EPDM) | BUNA-N<br>VITON |
| 12 | 650715 | 1 | SPRING | | STN STL |
| ● 13 | 510100<br>300083 | 1 | UPPER BUSHING | | BRONZE<br>TEFLON |
| ● 14 | 300084 | 1 | LOWER BUSHING | | TEFLON |
| ● 15 | 630700 | 2 | SNAP RING | | STN STL |
| 16 | 620701 | 2 | DOWEL PIN | | STN STL |
| 17 | 300025 | 8 | STUD (531702 SS C'SCREW) | | ZINC PL STL |
| 18 | 590000 | 8 | NUT (685750 SS FLAT WSHR) | | ZINC PL STL |
| 19 | 590717 | 1 | HEX NUT | | STN STL |
| 20 | 685701 | 1 | LOCKWASHER | | STN STL |
| ■ 21 | 306725<br>306726 | 1 | ORIFICE PLATE, STD BORE | 1 1/4"<br>1 1/2" | STN STL<br>STN STL |
| ■ 22 | 630730<br>630731 | 1 | SNAP RING | 1 1/4"<br>1 1/2" | STN STL<br>STN STL |

| CHG | E.C. NO. | DATE | BY |
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**REVISIONS**

**REF DWG NO'S**

| MATERIAL | TOLERANCES |
|---|---|
| | UNLESS NOTED<br>FRACTIONAL ±1/64<br>DECIMAL ±.005<br>MACH. FINISH 125√<br>ANGULAR ±1/2° |
| NO. REQ'D | DRAWN BY RON / DATE 5-23-96 |
| SCALE NONE | CHKD. BY / DATE |

OCV Control Valves TULSA, OKLAHOMA U.S.A.

# 1 1/4" - 1 1/2" BASIC VALVE

| SIZE | DRAWING NUMBER | REV. |
|---|---|---|
| A | 2900 | |

NOTES:

● 1. USED WHEN STN STL SEAT RING IS FURNISHED.

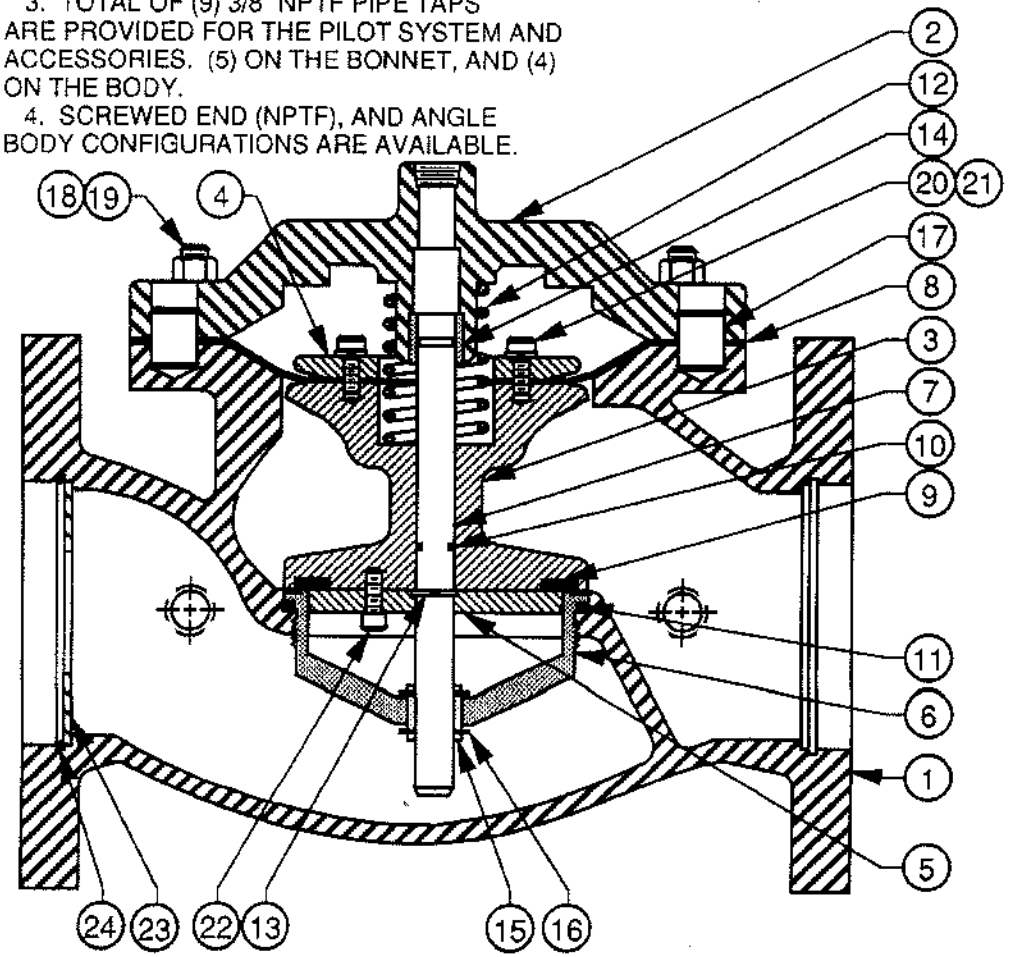
■ 2. USED ON RATE-OF-FLOW CONTROL VALVE ONLY.

3. TOTAL OF (9) 3/8" NPTF PIPE TAPS ARE PROVIDED FOR THE PILOT SYSTEM AND ACCESSORIES. (5) ON THE BONNET, AND (4) ON THE BODY.

4. SCREWED END (NPTF), AND ANGLE BODY CONFIGURATIONS ARE AVAILABLE.

▲ = RECOMMENDED SPARE PARTS (INCLUDED IN REPAIR KITS)

| | |
|---|---|
| BUNA-N KIT | PN 904000 |
| VITON KIT | PN 904100 |
| EPDM KIT | PN 904400 |




| ITEM | PART NO | QTY | DESCRIPTION | | MATERIAL |
|---|---|---|---|---|---|
| 1 | 301000<br>301300<br>301500<br>301730<br>301133 | 1 | BODY, 150# | 301600<br>301700<br>BODY, 300#<br>301729<br>301137 | DUCT IRON<br>STEEL<br>ALUMINUM<br>STN STL<br>BRONZE |
| 2 | 303000<br>303300<br>303500 | 1 | BONNET | (303700 STN STL)<br>(303132 BRONZE) | DUCT IRON<br>STEEL<br>ALUMINUM |
| 3 | 305000<br>305500 | 1 | SPOOL | (305700 STN STL) | DUCT IRON<br>ALUMINUM |
| 4 | 307000<br>307500 | 1 | DIAPHRAGM PLATE | | STN STL<br>ALUMINUM |
| 5 | 309000<br>309500 | 1 | SEAT RETAINER | | STN STL<br>ALUMINUM |
| 6 | 311100<br>311700 | 1 | SEAT RING | (311000 MONEL) | BRONZE<br>STN STL |
| 7 | 313700<br>313000 | 1 | STEM | (313014 MONEL) | STN STL<br>STN STL/DELRIN |
| ▲ 8 | 690000<br>690100 | 1 | DIAPHRAGM | (690059 EPDM)<br>(690200 GYLON) | BUNA-N/NYLON<br>VITON/NYLON |
| ▲ 9 | 690500<br>691500 | 1 | SEAT DISC | (690550 TEFLON)<br>(690529 EPDM) | BUNA-N<br>VITON |
| ▲ 10 | 611012 | 1 | O-RING | (614012 EPDM) | VITON |
| ▲ 11 | 610038<br>611038 | 1 | O-RING | (614038 EPDM) | BUNA-N<br>VITON |
| 12 | 650703 | 1 | SPRING | | STN STL |
| 13 | 630733 | 1 | SNAP RING | | STN STL |
| ● 14 | 510104<br>300034 | 1 | UPPER BUSHING | | BRONZE<br>TEFLON |
| ● 15 | 300024 | 1 | LOWER BUSHING | | TEFLON |
| 16 | 630705 | 2 | SNAP RING | | STN STL |
| 17 | 620701 | 2 | DOWEL PIN | | STN STL |
| 18 | 300025 | 8 | STUD (531734 SS C'SCREW) | | ZINC PL STL |
| 19 | 590000 | 8 | NUT (685750 SS FLAT WSHR) | | ZINC PL STL |
| 20 | 530700 | 4 | SKT HD CAPSCREW | | STN STL |
| 21 | 685700 | 4 | LOCKWASHER | | STN STL |
| 22 | 530707 | 3 | SKT HD CAPSCREW | | STN STL |
| ■ 23 | 306716 | 1 | ORIFICE PLATE, STD BORE | | STN STL |
| ■ 24 | 630726 | 1 | SNAP RING | | STN STL |

| CHG | E.C. NO. | DATE | BY |
|---|---|---|---|
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| | | | |
| | | | |

REVISIONS

REF DWG NO'S

MATERIAL

NO. REQ'D

SCALE NONE

TOLERANCES

UNLESS NOTED
FRACTIONAL ±1/64
DECIMAL ±.005
MACH. FINISH 125
ANGULAR ±1/2°

DRAWN BY RON

DATE 4-19-96

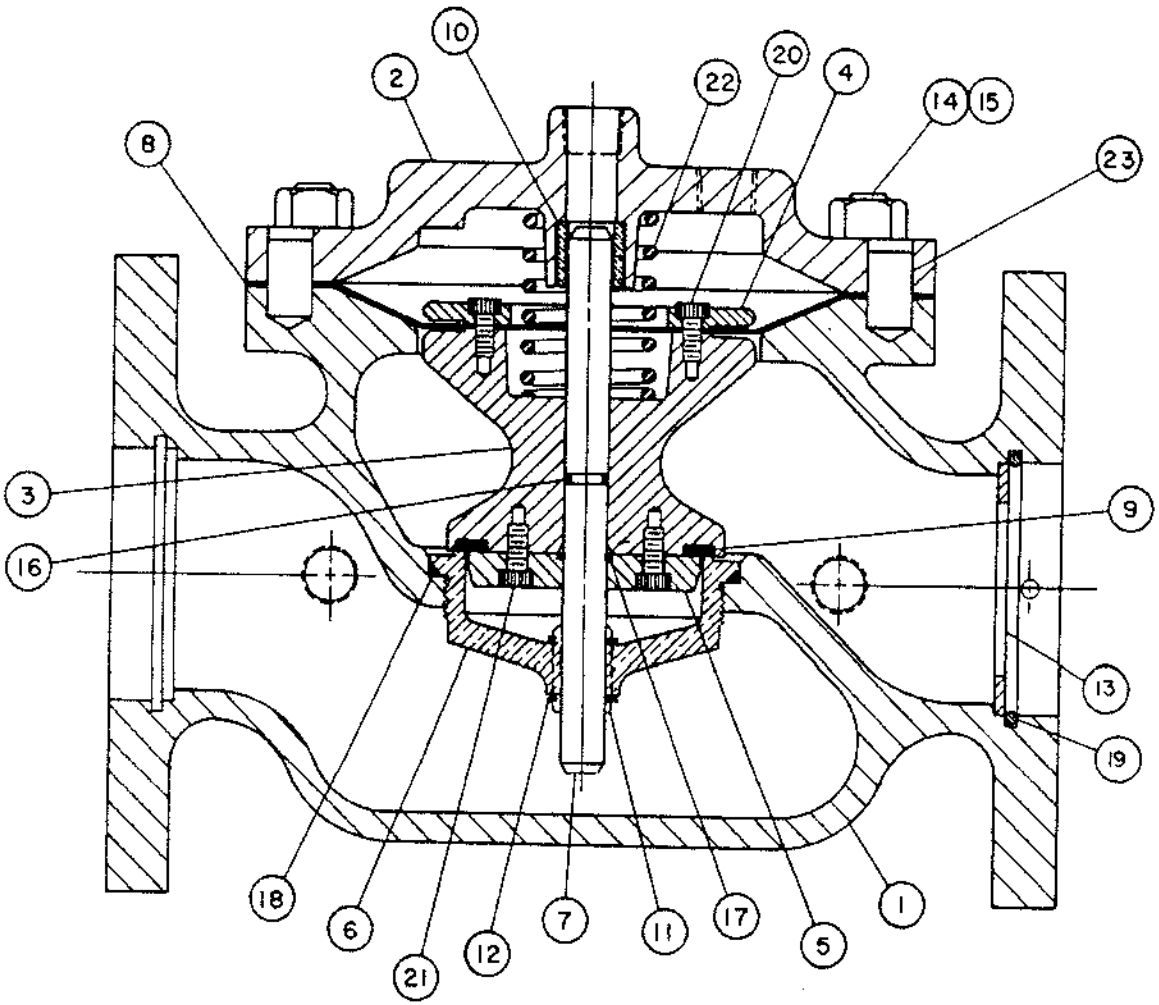
CHKD. BY

DATE

OCV Control Valves TULSA, OKLAHOMA U.S.A.

# 2" BASIC VALVE

| SIZE | DRAWING NUMBER | REV. |
|---|---|---|
| A | 2600 | |




NOTE:

1. WHEN ORDERING PARTS, PLEASE SPECIFY, ITEM NO., PART NO., AND MATERIAL.
2. ▲ = RECOMMENDED SPARE PARTS.
3. ● ORIFICE PLATE FURNISHED ON RATE OF FLOW CONTROL VALVE ONLY.
4. ○ PARTS USED WHEN STAINLESS STEEL SEAT RING IS FURNISHED.

| | ITEM | OCV NO. | QTY. | DESCRIPTION | MATERIAL |
|---|---|---|---|---|---|
| | 23 | 620701 | 2 | DOWEL PIN | STN. STEEL |
| | 22 | 650729 | 1 | SPRING | STN. STEEL |
| | 21 | 530702 | 4 | SCREW, SOC. HEAD CAP | STN. STEEL |
| | 20 | 530702 | 6 | SCREW, SOC. HEAD CAP | STN. STEEL |
| ● | 19 | 630727 | 1 | SNAP RING | STN. STEEL |
| | 18 | 610152 | 1 | O-RING | BUNA-N |
| | 17 | 630421 | 1 | SNAP RING | STEEL |
| ▲ | 16 | 611012 | 1 | O-RING | VITON |
| | 15 | 590011 | 8 | NUT | CAD. PL. STL. |
| | 14 | 300026 | 8 | STUD | CAD. PL. STL. |
| ● | 13 | 306717 | 1 | ORIFICE PLATE | STN. STEEL |
| ○ | 12 | 630705 | 1 | SNAP RING | STEEL |
| ○ | 11 | 300024 | 1 | LOWER BUSHING | TEFLON |
| | 10 | 300034 | 1 | UPPER BUSHING | TEFLON |
| ○ | | 510104 | 1 | UPPER BUSHING | BRONZE |
| ▲ | 9 | 691510 | 1 | SEAT | VITON |
| | | 690510 | 1 | SEAT | BUNA-N |
| ▲ | 8 | 690124 | 1 | DIAPHRAGM | VITON |
| | | 690024 | 1 | DIAPHRAGM | BUNA-N |
| | 7 | 313711 | 1 | STEM | STN. STEEL |
| | 6 | 311711 | 1 | SEAT RING | STN. STEEL |
| | | 311111 | 1 | SEAT RING | BRONZE |
| | 5 | 309011 | 1 | SEAT RETAINER | DUCTILE IRON |
| | 4 | 307011 | 1 | DIAPHRAGM PLATE | DUCTILE IRON |
| | 3 | 305011 | 1 | SPOOL | DUCTILE IRON |
| | 2 | 303011 | 1 | BONNET | CAST IRON |
| | 1 | 301111 | 1 | BODY, S.E. | CAST IRON |
| | | 301611 | 1 | BODY, 250 LB. | CAST IRON |
| | | 301011 | 1 | BODY, 125 LB. | CAST IRON |

| REVISIONS | | | | REF. DWG NO'S |
|---|---|---|---|---|
| E | | | | |
| D | | | | |
| C | | | | |
| B | | | | |
| A | | | | |
| CHG | E C NO | DATE | BY | |

MATERIAL

TOLERANCES
UNLESS NOTED
FRACTIONAL ± 1/64
DECIMAL ± .005
MACH. FINISH 125
ANGULAR ± 1/2°

NO REQ'D

SCALE

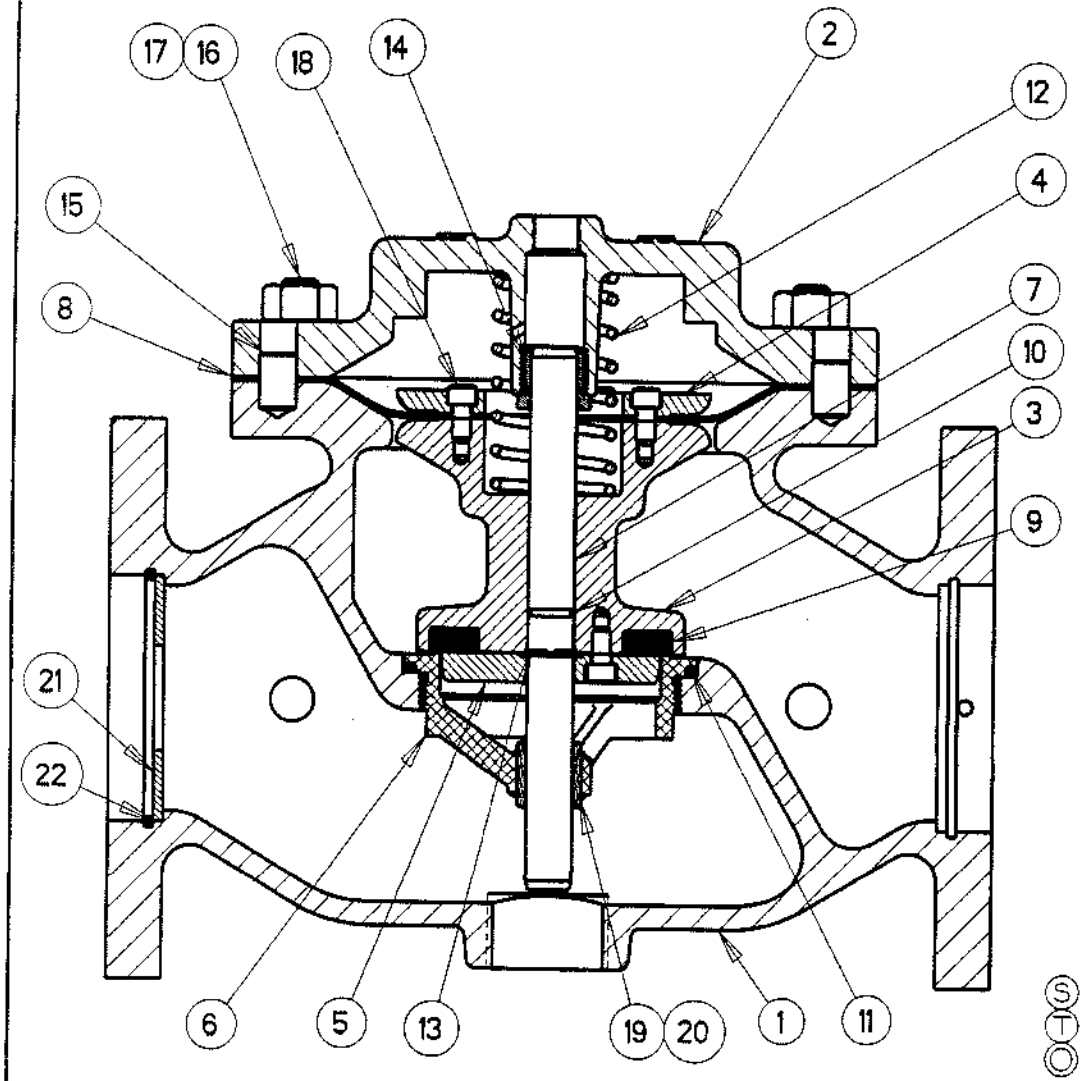
DRAWN BY | DATE

CHKD. BY | DATE

OCV Control Valves
OWEN, OKLAHOMA, U.S.A.

2 1/2" VALVE ASSEMBLY

SIZE C | DRAWING NUMBER 2800 | REV. A




| ITEM | PART NO | QTY | DESCRIPTION | MATL |
|---|---|---|---|---|
| 1 | 301091<br>301691<br>301391<br>301791 | 1 | BODY, 150#<br>BODY, 300#<br>BODY, 150#<br>BODY, 300# | DUCT. IRON<br>DUCT. IRON<br>CAST STEEL<br>CAST STEEL |
| 2 | 303091<br>303391 | 1 | BONNET | DUCT. IRON<br>CAST STEEL |
| 3 | 305091 | 1 | SPOOL | DUCT. IRON |
| 4 | 307091 | 1 | DIAPHRAGM PLATE | STN. STL. |
| 5 | 309091 | 1 | SEAT RETAINER | STN. STL. |
| 6 | 311191<br>311791(T) | 1 | SEAT RING | BRONZE<br>STN. STL. |
| 7 | 313791 | 1 | STEM | STN. STL. |
| 8 | 690091(S)<br>690191(S) | 1 | DIAPHRAGM | NYLON/BUNA-N<br>NYLON/VITON |
| 9 | 690591(S)<br>691591(S) | 1 | SEAT DISC | BUNA-N<br>VITON |
| 10 | 611014(S) | 1 | O-RING | VITON |
| 11 | 610154(S)<br>611154(S) | 1 | O-RING | BUNA-N<br>VITON |
| 12 | 650700 | 1 | SPRING | STN. STL. |
| 13 | 630706 | 1 | SNAP RING | STN. STL. |
| 14 | 300291<br>300631(T) | 1 | UPPER BUSHING | BRONZE<br>TEFLON |
| 15 | 620701 | 2 | DOWEL PIN | STN. STL. |
| 16 | 300026 | 8 | STUD | ZN PL STL |
| 17 | 590011 | 8 | HEX NUT | ZN PL STL |
| 18 | 530700 | 9 | SKT HD CAPSCREW | STN. STL. |
| 19# | 300071(T) | 1 | LOWER BUSHING | TEFLON |
| 20# | 630711(T) | 2 | SNAP RING | STN. STL. |
| 21 | 306743(◎) | 1 | ORIF. PL.(1.41" BORE) | STN. STEEL |
| 22 | 630732(◎) | 1 | SNAP RING | STN. STL. |

(S) : RECOMMENDED SPARE PARTS
(T) : PARTS PROVIDED WITH STAINLESS STEEL SEAT RING
(◎) : PROVIDED WITH RATE OF FLOW CONTROL VALVE ONLY

| CHG | ECN | DATE | BY |
|---|---|---|---|
| E | | | |
| D | | | |
| C | | | |
| B | | | |
| A | | | |

REVISIONS

REF DWG NO'S

MATERIAL

TOLERANCES

UNLESS NOTED
.XX ±.015
.XXX ±.005
ANGULAR ±0.5°
MACH. FINISH 125

NO. REQ'D

SCALE 40%

DRAWN BY SDJ DATE 081902

CHKD BY DATE

# OCV Control Valves

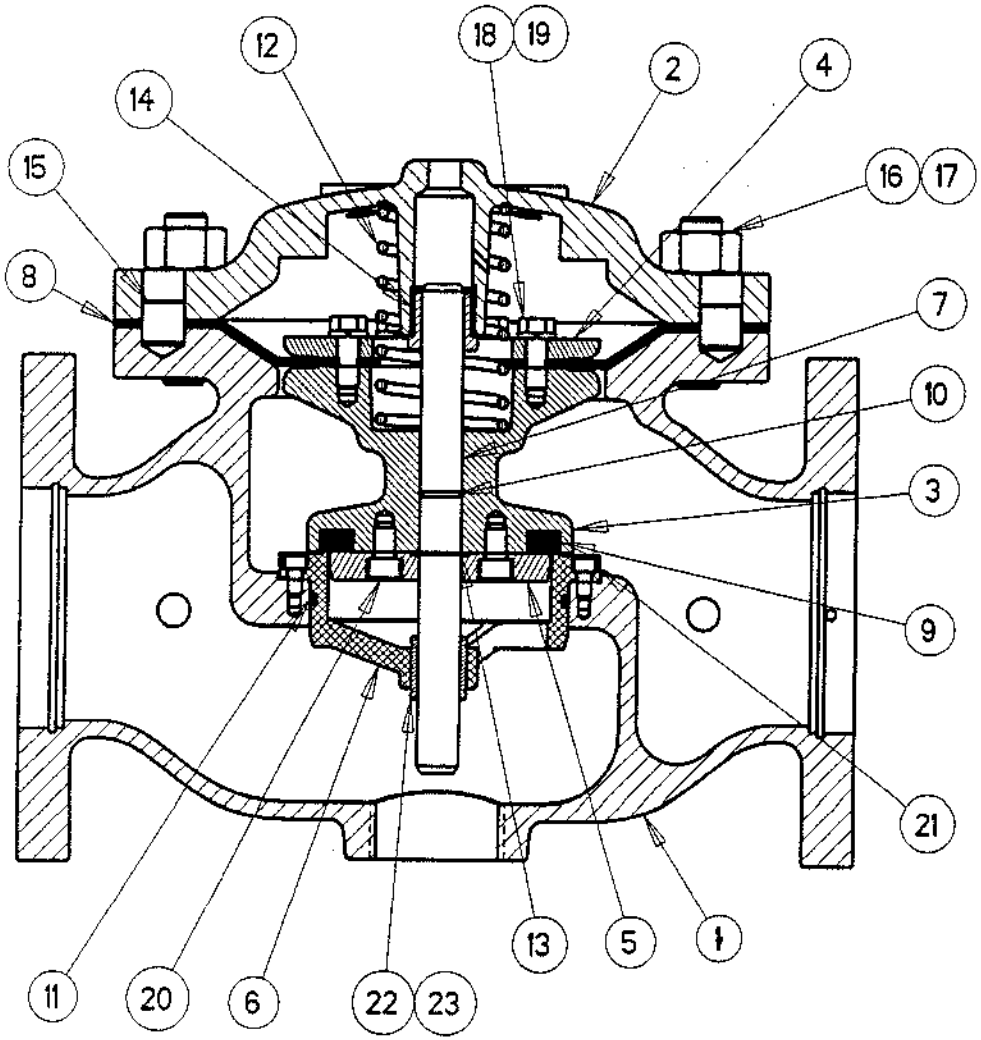
TULSA OKLAHOMA USA

## 3" BASIC VALVE ASSEMBLY

SIZE A

DRAWING NUMBER 3100

REV




| ITEM | PART NO | QTY | DESCRIPTION | MATL |
|---|---|---|---|---|
| 1 | 301044 | 1 | BODY, 150# | DUCT. IRON |
| 2 | 303044 | 1 | BONNET | DUCT. IRON |
| 3 | 305044 | 1 | SPOOL | DUCT. IRON |
| 4 | 307044 | 1 | DIAPHRAGM PLATE | DUCT. IRON |
| 5 | 309044 | 1 | SEAT RETAINER | STN. STL. |
| 6 | 311144<br>311744# | 1 | SEAT RING | BRONZE<br>STN. STL. |
| 7 | 313744 | 1 | STEM | STN. STL. |
| 8 | 690044* | 1 | DIAPHRAGM | NYL/BUNA-N |
| 9 | 690544* | 1 | SEAT DISC | BUNA-N |
| 10 | 611016* | 1 | O-RING | VITON |
| 11 | 610245* | 1 | O-RING | BUNA-N |
| 12 | 650764 | 1 | SPRING | STN. STL. |
| 13 | 630709 | 1 | SNAP RING | STN. STL. |
| 14 | 300244<br>300644# | 1 | UPPER BUSHING | BRONZE<br>TEFLON |
| 15 | 300708 | 2 | DOWEL PIN | STN. STL. |
| 16 | 300033 | 8 | STUD | ZN PL STL |
| 17 | 590005 | 8 | NUT | ZN PL STL |
| 18 | 531705 | 6 | HEX HD CAPSCREW | STN STL |
| 19 | 685701 | 6 | LOCKWASHER | STN. STL. |
| 20 | 530719 | 4 | SKT HD CAPSCREW | STN. STL. |
| 21 | 530701 | 6 | SKT HD CAPSCREW | STN. STL. |
| 22 | 300645# | 1 | LOWER BUSHING | TEFLON |
| 23 | 630707# | 2 | SNAP RING | STN. STL. |

* : RECOMMENDED SPARE PARTS

\# : PARTS USED WITH STAINLESS STEEL SEAT RING

| CHG | ECN | DATE | BY | REF DWG NO'S |
|---|---|---|---|---|
| E | | | | |
| D | | | | |
| C | | | | |
| B | | | | |
| A | | | | |

REVISIONS

MATERIAL: 150# DIBT, 150# DIST

TOLERANCES: UNLESS NOTED XX ±.015, XXX ±.005, ANGULAR ±0.5°, MACH. FINISH 125

NO. REQ'D

SCALE: 30%

DRAWN BY: SDJ — DATE: 7-30-02

CHK'D BY — DATE

# OCV Control Valves

TULSA OKLAHOMA USA

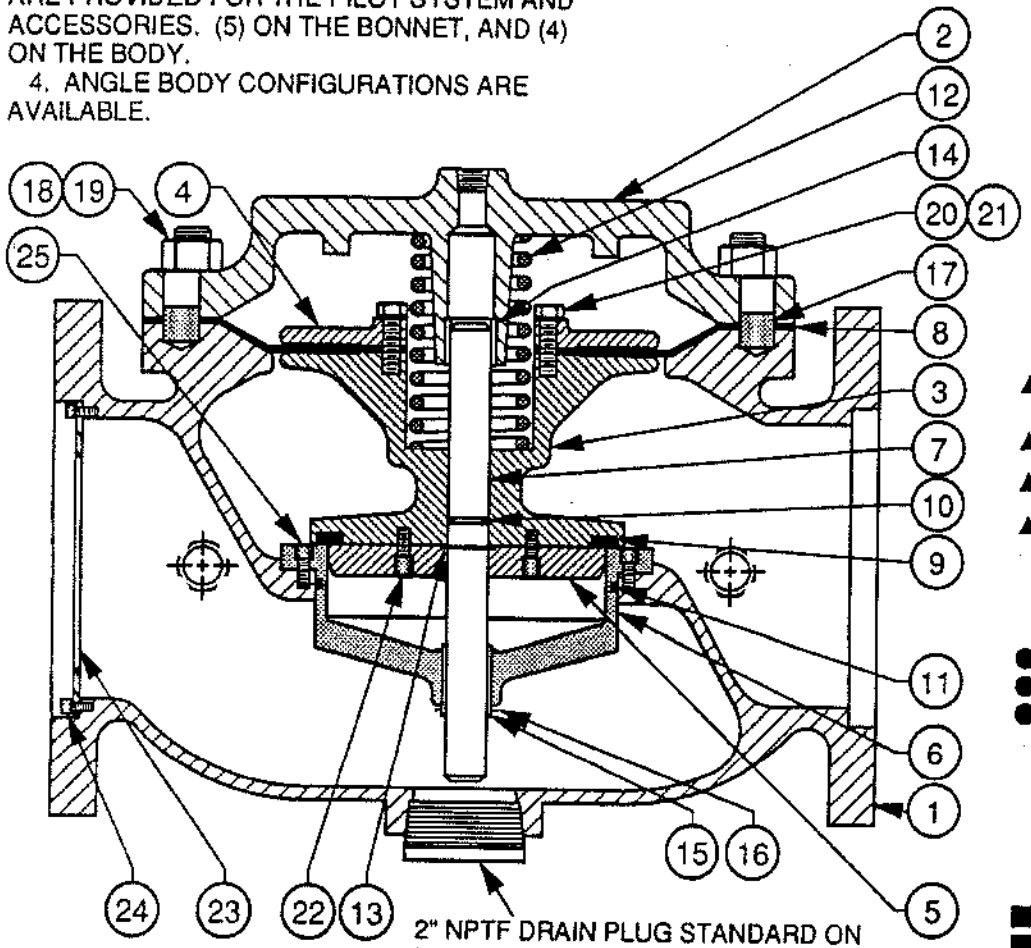
## 4" BASIC VALVE ASSEMBLY

| SIZE | DRAWING NUMBER | REV |
|---|---|---|
| A | 4400 | |

NOTES:
● 1. USED WHEN STN STL SEAT RING IS FURNISHED.
■ 2. USED ON RATE-OF-FLOW CONTROL VALVE ONLY.
3. TOTAL OF (9) 3/8" NPTF PIPE TAPS ARE PROVIDED FOR THE PILOT SYSTEM AND ACCESSORIES. (5) ON THE BONNET, AND (4) ON THE BODY.
4. ANGLE BODY CONFIGURATIONS ARE AVAILABLE.

▲ = RECOMMENDED SPARE PARTS (INCLUDED IN REPAIR KITS)

| | |
|---|---|
| BUNA-N KIT | PN 904003 |
| VITON KIT | PN 904103 |
| EPDM KIT | PN 904403 |




| ITEM | PART NO | QTY | DESCRIPTION | | MATERIAL |
|---|---|---|---|---|---|
| 1 | 301003<br>301303<br>301503<br>301733 | 1 | BODY, 150#<br>(301135 B61 BZ) | 301603<br>301703<br>BODY, 300# | DUCT IRON<br>STEEL<br>ALUMINUM<br>STN STL |
| 2 | 303015<br>303315<br>303515 | 1 | BONNET | (303703 STN STL)<br>(303135 B61 BZ) | DUCT IRON<br>STEEL<br>ALUMINUM |
| 3 | 305015<br>305515 | 1 | SPOOL | (305703 STN STL)<br>(305137 B61 BZ) | DUCT IRON<br>ALUMINUM |
| 4 | 307003<br>307503 | 1 | DIAPHRAGM PLATE | (307703 STN STL)<br>(307135 B61 BZ) | DUCT IRON<br>ALUMINUM |
| 5 | 309015<br>309515 | 1 | SEAT RETAINER | (309703 STN STL)<br>(309135 B61 BZ) | DUCT IRON<br>ALUMINUM |
| 6 | 311114<br>311714 | 1 | SEAT RING | (311153 B61 BZ) | B62 BRONZE<br>STN STL |
| 7 | 313741<br>313041 | 1 | STEM | (313057 MONEL) | STN STL<br>STN STL/DELRIN |
| ▲ 8 | 690046<br>690146 | 1 | DIAPHRAGM | (690054 EPDM) | BUNA-N/NYLON<br>VITON/NYLON |
| ▲ 9 | 690503<br>691503 | 1 | SEAT DISC | (690527 EPDM) | BUNA-N<br>VITON |
| ▲ 10 | 610115 | 1 | O-RING (611115 VIT) (614115 EP) | | BUNA-N |
| ▲ 11 | 610259<br>611259 | 1 | O-RING | (614259 EPDM) | BUNA-N<br>VITON |
| 12 | 650705 | 1 | SPRING | | STN STL |
| 13 | 630711 | 1 | SNAP RING | | STN STL |
| ● 14 | 510115<br>300051 | 1 | UPPER BUSHING | | BRONZE<br>TEFLON |
| ● 15 | 300059 | 1 | LOWER BUSHING | | TEFLON |
| ● 16 | 630723 | 2 | SNAP RING | | STN STL |
| 17 | 300708 | 2 | DOWEL PIN | | STN STL |
| 18 | 300033 | 12 | STUD (300760 STN STL) | | ZINC PL STL |
| 19 | 590005 | 12 | NUT (590705 STN STL) | | ZINC PL STL |
| 20 | 531702 | 8 | HEX HD CAPSCREW | | STN STL |
| 21 | 685701 | 8 | LOCKWASHER | | STN STL |
| 22 | 530706 | 4 | SKT HD CAPSCREW | | STN STL |
| ■ 23 | 306703 | 1 | ORIFICE PLATE, STD BORE | | STN STL |
| ■ 24 | 530702 | 4 | SKT HD CAPSCREW | | STN STL |
| 25 | 530701 | 6 | SKT HD CAPSCREW | | STN STL |

| CHG | E.C. NO. | DATE | BY |
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REVISIONS

REF DWG NO'S

MATERIAL

TOLERANCES

UNLESS NOTED
FRACTIONAL ±1/64
DECIMAL ±.005
MACH. FINISH 125√
ANGULAR ±1/2°

NO. REQ'D

DRAWN BY RON

DATE 4-29-96

SCALE 25%

CHKD. BY

DATE

OCV Control Valves TULSA, OKLAHOMA U.S.A.

# 6" BASIC VALVE

| SIZE | DRAWING NUMBER | REV. |
|---|---|---|
| A | 6190 | B |

NOTES:

●1. USED WHEN STN STL SEAT RING IS FURNISHED.

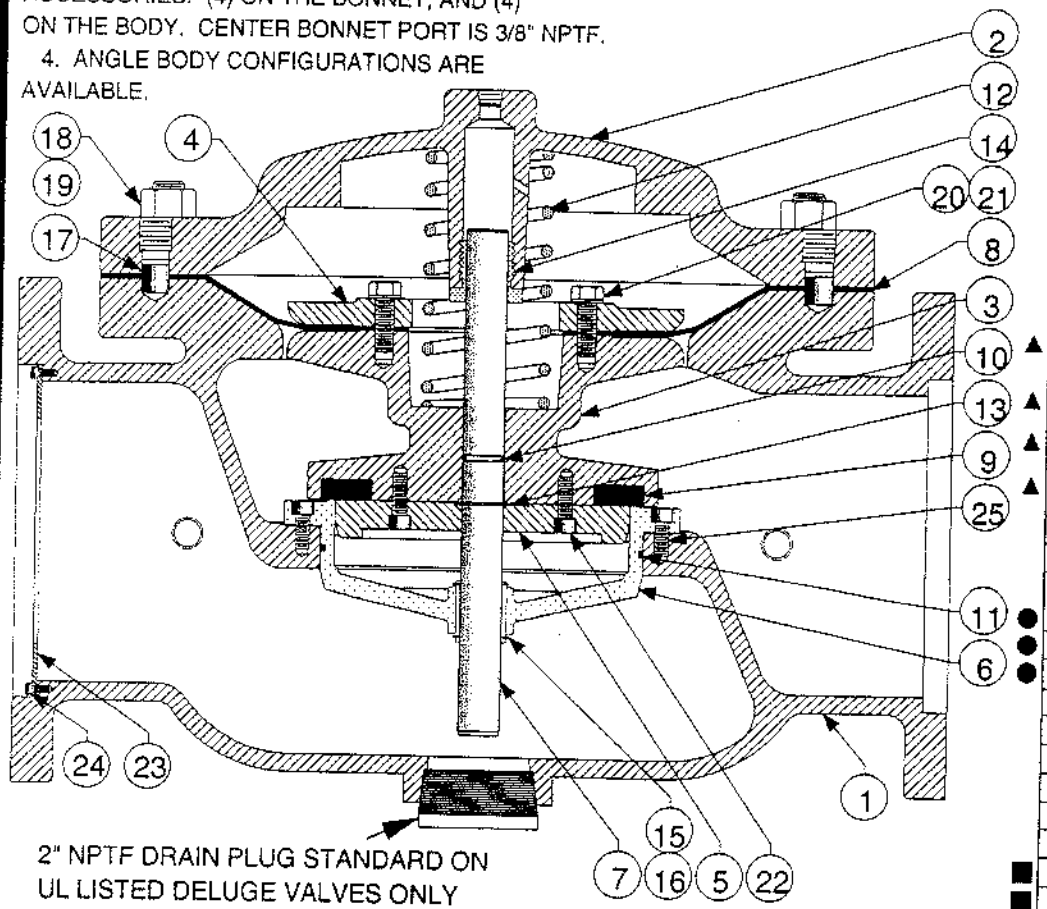
■2. USED ON RATE-OF-FLOW CONTROL VALVE ONLY.

3. TOTAL OF (8) 1/2" NPTF PIPE TAPS ARE PROVIDED FOR THE PILOT SYSTEM AND ACCESSORIES. (4) ON THE BONNET, AND (4) ON THE BODY. CENTER BONNET PORT IS 3/8" NPTF.

4. ANGLE BODY CONFIGURATIONS ARE AVAILABLE.

▲ = RECOMMENDED SPARE PARTS (INCLUDED IN REPAIR KITS)

| | |
|---|---|
| BUNA-N KIT | PN 904084 |
| VITON KIT | PN 904184 |
| EPDM KIT | PN 904484 |




2" NPTF DRAIN PLUG STANDARD ON UL LISTED DELUGE VALVES ONLY

| ITEM | PART NO | QTY | DESCRIPTION | | MATERIAL |
|---|---|---|---|---|---|
| 1 | 301084<br>301384<br>301584 | 1 | BODY, 150# | 301684<br>301784<br>BODY, 300# | DUCT IRON<br>STEEL<br>ALUMINUM |
| 2 | 303084<br>303384<br>303584 | 1 | BONNET | | DUCT IRON<br>STEEL<br>ALUMINUM |
| 3 | 305084<br>305584 | 1 | SPOOL | | DUCT IRON<br>ALUMINUM |
| 4 | 307084<br>307584 | 1 | DIAPHRAGM PLATE | | DUCT IRON<br>ALUMINUM |
| 5 | 309084<br>309584 | 1 | SEAT RETAINER | | DUCT IRON<br>ALUMINUM |
| 6 | 311184<br>311784 | 1 | SEAT RING | | BRONZE<br>STN STL |
| 7 | 313784<br>313084 | 1 | STEM | (313085 MONEL) | STN STL<br>STN STL/DLRN |
| 8 | 690084<br>690184 | 1 | DIAPHRAGM | | BUNA-N/NYLN<br>VITON/NYLN |
| 9 | 690584<br>691584 | 1 | SEAT DISC | | BUNA-N<br>VITON |
| 10 | 610119 | 1 | O-RING (611119 VIT) (614119 EP) | | BUNA-N |
| 11 | 610268<br>611268 | 1 | O-RING | (614268 EPDM) | BUNA-N<br>VITON |
| 12 | 650784 | 1 | SPRING | | STN STL |
| 13 | 630723 | 1 | SNAP RING | | STN STL |
| 14 | 300284<br>300285 | 1 | UPPER BUSHING | | BRONZE<br>TEFLON |
| 15 | 300074 | 1 | LOWER BUSHING | | TEFLON |
| 16 | 630713 | 2 | SNAP RING | | STN STL |
| 17 | 300708 | 2 | DOWEL PIN | | STN STL |
| 18 | 300464 | 12 | STUD (300864 STN STL) | | ZINC PL STL |
| 19 | 590010 | 12 | NUT (590707 STN STL) | | ZINC PL STL |
| 20 | 531704 | 8 | HEX HD CAPSCREW | | STN STL |
| 21 | 685703 | 8 | LOCKWASHER | | STN STL |
| 22 | 530718 | 8 | SKT HD CAPSCREW | | STN STL |
| 23 | 306704 | 1 | ORIFICE PLATE, STD BORE | | STN STL |
| 24 | 530702 | 4 | SKT HD CAPSCREW | | STN STL |
| 25 | 530711 | 8 | SKT HD CAPSCREW | | STN STL |

| CHG | E.C. NO. | DATE | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

REVISIONS

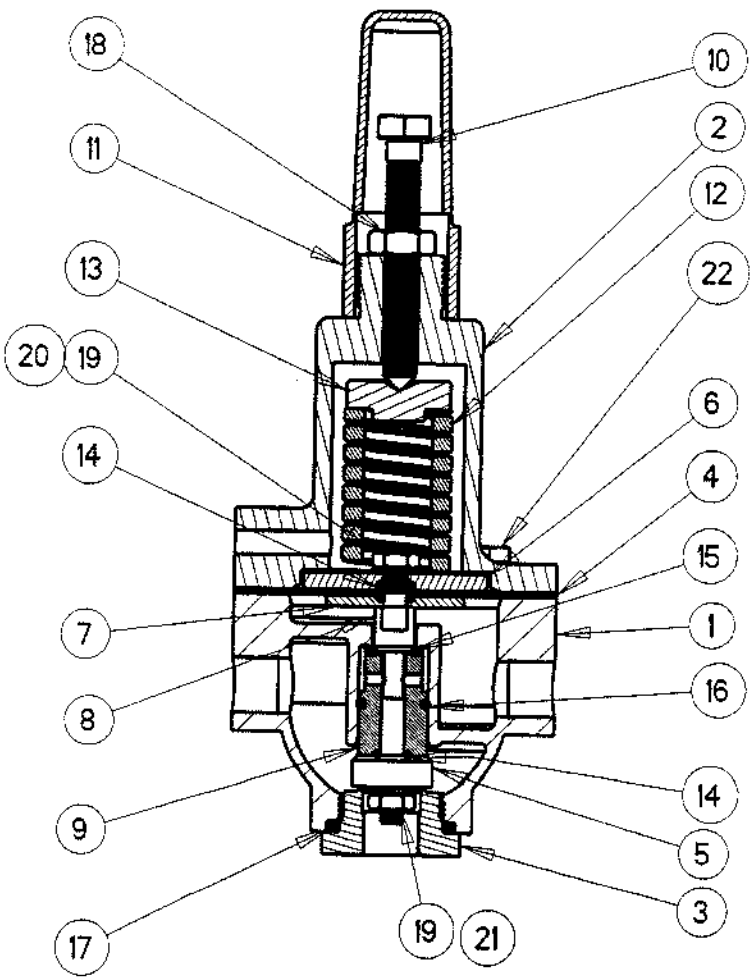
REF DWG NO'S

| MATERIAL | TOLERANCES |
|---|---|
| | N/A |
| NO. REQ'D | DRAWN BY: RON — DATE: 10-1-97 |
| SCALE 20% | CHKD. BY — DATE |

OCV Control Valves TULSA, OKLAHOMA U.S.A.

**8" BASIC VALVE**

| SIZE | DRAWING NUMBER | REV. |
|---|---|---|
| A | 3200 | A |




| ITEM | PART NO | QTY | DESCRIPTION | MATERIAL |
|---|---|---|---|---|
| 1 | 302123 | 1 | BODY | BRONZE |
| 2 | 304115 | 1 | BONNET | BRONZE |
| 3 | 320105 | 1 | ADAPTER | BRASS |
| 4 | 694025 | 1 | DIAPHRAGM | NYLON/BUNA-N |
| 5 | 310703 | 1 | SEAT PLUG | SS/BUNA-N |
| 6 | 308112 | 1 | UPPER DIAPHRAGM PLATE | BRASS |
| 7 | 308102 | 1 | LOWER DIAPHRAGM PLATE | BRASS |
| 8 | 314748 | 1 | STEM | STN. STEEL |
| 9 | 314749 | 1 | SLEEVE | STN. STEEL |
| 10 | 300700 | 1 | ADJUSTING SCREW | STN. STEEL |
| 11 | 692002 | 1 | CAP | BUTYRATE |
| 12 | 651000 | 1 | SPRING | CR-V STEEL |
| 13 | 300775 | 1 | SPRING RETAINER | STN. STEEL |
| 14 | 611010 | 3 | O-RING | VITON |
| 15 | 610110 | 1 | O-RING | BUNA-N |
| 16 | 610016 | 1 | O-RING | BUNA-N |
| 17 | 610216 | 1 | O-RING | BUNA-N |
| 18 | 590717 | 1 | JAM NUT | STN. STEEL |
| 19 | 590712 | 2 | HEX NUT | STN. STEEL |
| 20 | 685763 | 1 | SPRING LOCK WASHER | STN. STEEL |
| 21 | 685760 | 1 | SEAL WASHER | STN. STEEL |
| 22 | 531009 | 4 | HEX HD. CAPSCREW | STN. STEEL |

| CHG | ECN | DATE | BY |
|---|---|---|---|
| E | | | |
| D | | | |
| C | | | |
| B | | | |
| A | | | |

REVISIONS

REF DWG NO'S

MATERIAL

NO. REQ'D

SCALE 50%

TOLERANCES

UNLESS NOTED
.XX ±.015
.XXX ±.005
ANGULAR ±0.5°
MACH. FINISH 125

| DRAWN BY | DATE |
|---|---|
| SDJ | 07-24-06 |
| CHKD BY | DATE |
| | |

# OCV Control Valves

TULSA OKLAHOMA USA

## 3-WAY REDUCING/RELIEF PILOT

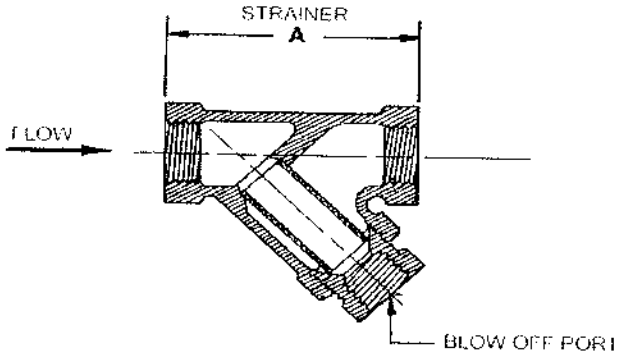
| SIZE | DRAWING NUMBER | REV |
|---|---|---|
| A | 1390 | |

## DESCRIPTION

MODEL 159 Y-STRAINER
The 159 Y Strainer installs in the inlet piping of the pilot system and protects the pilot system from solid contaminants in the line fluid. It is the standard strainer for water service valves.

## MODEL 159 Y-STRAINER MATRIX

| MATERIAL | PART NUMBER | INLET/OUTLET (NPT) | BLOW OFF PORT (NP) | A | STD MESH | USED ON VALVE SIZE |
|---|---|---|---|---|---|---|
| Bronze | 660100 | 3/8 | 3/8 | 2 11/16 | 24 | 1 ¼"-6" |
| Bronze | 660101 | 1/2 | 3/8 | 2 5/8 | 24 | 8"-10" |
| Bronze | 660102 | 3/4 | 3/8 | 3 5/16 | 24 | 12"-16" |
| Stn Steel | 660700 | 3/8 | 1/4 | 2 1/2 | 20 | 1 ¼"-6" |
| Stn. Steel | 660701 | 1/2 | 1/4 | 2 1/2 | 20 | 8"-10" |
| Stn. Steel | 660702 | 3/4 | 1/4 | 3 1/8 | 20 | 12"-16" |




## MATERIALS

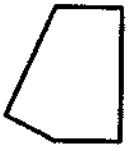
Bronze ASTM B62
Optional mesh sizes: 50, 100

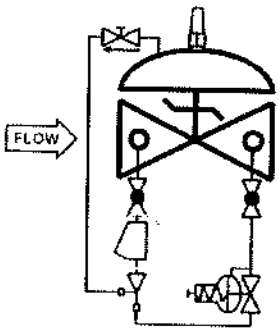
Stainless Steel CF8 M (316)
Optional mesh sizes: 60, 80, 100

Screens are stainless steel

## SCHEMATIC SYMBOL

The Model 159 Y-Strainer is shown on OCV Valve Schematics as.






EXAMPLE: Shown here on a MODEL 127-3 Pressure Reducing Valve

## MAINTENANCE

Routine cleaning and checking of the Y-Strainer will aid in keeping the control valve functioning properly. Pilot system isolation ball valves are supplied on valves equipped with the Model 159 Y-Strainer. These allow flushing of the screen through the blow off port or removal of the screen itself for manual cleaning.

TOLL FREE 1.888.628.8258 phone: (918)627.1942 fax: (918)622.8916 7400 East 42nd Place, Tulsa, OK 74145
email: sales@controlvalves.com website: www.controlvalves.com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