TYPE AA, AR
Bronze Body
Steam – Stainless Steel Trim (Max. 300 psig Inlet)
Air – Nylon Trim (Max. 600 psig Inlet)

TYPE IA, IR
Cast Iron Body
Steam – Stainless Steel Trim (Max. 250 psig Inlet)
Air – Nylon Trim (Max. 500 psig Inlet)

INTERNAL PILOT OPERATED PRESSURE REGULATORS

Installation, Operation, and Maintenance Instructions
NOTICE!

It is important to read these instructions before installing the regulator. No regulator will work satisfactorily if improperly installed.

**TYPE AA, AR, IA, IR**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
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<td>HAND WHEEL AND ADJUSTING SCREW</td>
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<td>2</td>
<td>HAND WHEEL</td>
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<td>3-4</td>
<td>SPRING ADJUSTING SCREW WITH NUT</td>
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<td>5</td>
<td>WING LOCK NUT</td>
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<td>6</td>
<td>TOP SPRING SEAT</td>
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<td>7</td>
<td>ADJUSTING SPRING CAP</td>
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<td>8</td>
<td>ADJUSTING SPRING</td>
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<td>9</td>
<td>ADJUSTING SPRING BOTTOM SEAT</td>
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<td>10</td>
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<td>11</td>
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<td>12</td>
<td>PILOT VALVE, SPRING &amp; CAGE (SS)</td>
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<tr>
<td>12-A</td>
<td>DITTO EXCEPT NYLON TRIM (AIR)</td>
</tr>
<tr>
<td>13</td>
<td>PILOT VALVE CAGE (SS)</td>
</tr>
<tr>
<td>13-A</td>
<td>DITTO EXCEPT NYLON TRIM (AIR)</td>
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<tr>
<td>14</td>
<td>PILOT VALVE (SS)</td>
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<tr>
<td>14-A</td>
<td>DITTO EXCEPT NYLON TRIM (AIR)</td>
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<td>15</td>
<td>PILOT VALVE SPRING</td>
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<td>18</td>
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<td>TOP CAP GUIDE PIN</td>
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<td>PISTON WITH RING (S)</td>
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<td>22</td>
<td>PISTON RING</td>
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<tr>
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<td>25</td>
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<td>26</td>
<td>MAIN VALVE (SS)</td>
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<td>26-A</td>
<td>DITTO EXCEPT NYLON PLUG FOR AIR</td>
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<tr>
<td>27</td>
<td>MAIN VALVE SPRING</td>
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<td>28</td>
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<tr>
<td>29</td>
<td>BOTTOM CAP</td>
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<td>30</td>
<td>LUBRICATING SCREW</td>
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<tr>
<td>31</td>
<td>SEAT WRENCH (MAIN VALVE)</td>
</tr>
</tbody>
</table>

Recommended spare parts for steam: Part No. 11, 12, 18, 21, 23, 25 26, 27, 28. Substitute Parts 12-A and 26-A if regulator is used for air service.
Renewable Parts

Identification of Internal Working Parts:

DIAPHRAGM No. 11
MAIN VALVE No. 26
MAIN VALVE SPRING No. 27
PISTON WITH RING No. 21
CYLINDER LINER No. 23
UNIT PILOT VALVE No. 12
ADJUSTING SPRING No. 8
MAIN VALVE SEAT No. 25

CROSS SECTION OF TYPE AA AND IA REGULATING VALVE SHOWING RELATION OF COMPONENT PARTS. TOP CAP AND BOTTOM CAP GASKETS NOT SHOWN.
**WARNING**

Before installation or servicing this product, note the following:

- All work must be performed by qualified personnel trained in the installation, maintenance of products in steam and air systems.

- Turn off steam or air supply before installing or servicing the regulator. Pressure in the system around the pressure regulator must be zero.

- To prevent serious burns, wear heat resistant gloves when opening and closing steam valves or handling hot equipment.

After installation, during startup or when the regulator is in service… if steam or air vents from the pressure regulator to atmosphere, immediately take the regulator out of service to avoid a hazardous condition.

**INSTALLATION**

1. Figure 1 shows a common piping hookup and is recommended for use as a guide for installing the AR or IR pressure regulator with remote sensing line. The remote sensing line should pitch downward (1/4” per 4 foot minimum) away from the valve to drain all condensate. Install a needle valve in the remote sensing line to dampen the signal.

   Figure 2 is a guide for installing the AA or IA pressure regulator which does not require a remote sensing line. The reduced pressure is internally sensed.

2. Blow out all piping to eliminate any foreign matter such as rust and welding slag.

3. Install valve in vertical position at highest point on a horizontal line with arrow on side of body pointing in direction of flow, and with adjusting screw released. Leave space above and below regulator to allow removal of top and bottom caps for servicing.

4. All mains and risers must be dripped with steam traps to remove condensate from the system.

5. Install a Keckley strainer ahead of the regulator and the steam traps.

6. Gate valves should be installed ahead of the strainer and the regulator to provide for possible future service to the regulator.

7. To provide for steam flow to the system during maintenance of the regulator, install a bypass line (with same size pipe as regulator) around the regulator. Use a globe valve in the bypass line.

8. The downstream piping should be at least on size larger than the regulator to eliminate restriction of flow and turbulence to the system. It is not uncommon for the inlet and outlet piping to be larger than the regulator's pipe size.

9. For service convenience, it is recommended a blow-down valve be installed on strainers.
TYPICAL INSTALLATIONS

Figure 1  Type AR or Type IR  (For reduced pressure below 40 psig)

Figure 2  Type AA or Type IA  (For reduced pressure above 40 psig)

NOTE: A MINIMUM PRESSURE DIFFERENTIAL (between inlet and outlet) OF 15 PSIG IS REQUIRED FOR PROPER OPERATION OF REGULATOR.
1. Make sure the inlet gate valve is closed, then open the outlet gate valve and all drain valves. Allow system to completely drain. Check bypass globe valve to make sure it is tightly closed.

2. Release any tension on the adjusting spring by unscrewing the handwheel and lock nut counter clockwise.

3. Crack open the inlet gate valve to the regulator. Open only enough to allow steam into section; do not allow pressure to build up.
   **Caution:** if drain valves are open to atmosphere, hearing protection may be required.

4. Turn handwheel clockwise a few turns to compress adjusting spring.

5. Allow system to stabilize. Open the inlet gate valve slightly more and start closing the drain valves. A little more pressure will build up on inlet to regulate which will allow regulator to open and steam should begin to flow.

6. Open inlet gate valve wider. Allow system to stabilize and pressure to build slightly.

7. After system is hot and drain valves are blowing steam (indication that all condensate has been removed), close the drain valves.

8. Continue to open the inlet to the regulator until the valve is about half open. If there are no problems, open the inlet gate valve fully.

9. To set the reduced pressure, slowly turn the handwheel clockwise to increase tension on the adjusting spring. Turn until the desired pressure is reached, while watching pressure gauge at the outlet side. Fasten the locknut tightly on the adjusting screw. The regulator is now set to maintain reduced pressure.

10. Note: To decrease the downstream pressure, turn the handwheel counter clockwise.

11. Both inlet and outlet gate valves should be fully open.

**WARNING**

Service is required if the regulator vents steam/air or a leak develops in the system. Failure to take the regulator out of service immediately may create a hazardous condition.

**TROUBLESHOOTING**

**PROBLEM: REDUCED SET PRESSURE FALLS OFF**

**POSSIBLE CAUSE AND SOLUTION**

1. **LOW INLET PRESSURE**
   Low inlet pressure reduces valve capacity. Some possible causes of low pressure are: inlet or outlet gate valves partially closed, clogged strainer, low boiler output, and obstruction upstream.
   **SOLUTION:** locate reason for low pressure and correct.
2. HANDWHEEL AND LOCKNUT ALTERED
   SOLUTION: Reset to desired reduced set pressure.

3. REGULATOR UNDERSIZED
   SOLUTION: Check the valve capacity against the load; if insufficient, increase valve size.

4. PIPING RESTRICTING FLOW
   Inlet or outlet piping too small or overloaded by other steam demand.
   SOLUTION: Increase piping size.

5. BYPASS LINE VALVE OPEN
   SOLUTION: Close the valve.

6. HANDWHEEL AND LOCKNUT ALTERED
   SOLUTION: Reset to desired reduced set pressure.

7. REMOTE SENSING LINE
   Line not connected (Type AR and IR only) or if connected, needle valve in line is closed.
   SOLUTION: Connect remote sensing line and open needle valve.

8. REGULATOR OVERSIZED
   SOLUTION: Check the valve capacity against the load; if excess is large, install smaller valve.

9. DIRT IN REGULATOR
   Pilot valve, main valve, cylinder liner and piston can trap dirt.
   SOLUTION: Disassemble and clean with hot detergent water and dry thoroughly.

10. INSTALLATION OF UNIT PILOT VALVE
    SOLUTION: Check pilot valve stem length. Stem should touch bottom of diaphragm, but not hold the pilot valve open until compressed by the adjusting spring.

WARNING
(Servicing internal parts of the regulator)

Turn off steam or air supply lines to the regulator that could pressurize any of the valve chambers. Use caution when disassembling the regulator due to possible pressure in a chamber and/or hot condensate. Failure to do so may result in a hazardous condition.

PROBLEM: REDUCED SET PRESSURE CLIMBS OR OVERRIDES

POSSIBLE CAUSE AND SOLUTION

5. BYPASS LINE VALVE OPEN
   SOLUTION: Close the valve.

6. HANDWHEEL AND LOCKNUT ALTERED
   SOLUTION: Reset to desired reduced set pressure.

7. REMOTE SENSING LINE
   Line not connected (Type AR and IR only) or if connected, needle valve in line is closed.
   SOLUTION: Connect remote sensing line and open needle valve.

8. REGULATOR OVERSIZED
   SOLUTION: Check the valve capacity against the load; if excess is large, install smaller valve.

9. DIRT IN REGULATOR
   Pilot valve, main valve, cylinder liner and piston can trap dirt.
   SOLUTION: Disassemble and clean with hot detergent water and dry thoroughly.

10. INSTALLATION OF UNIT PILOT VALVE
    SOLUTION: Check pilot valve stem length. Stem should touch bottom of diaphragm, but not hold the pilot valve open until compressed by the adjusting spring.

PROBLEM: REDUCED SET PRESSURE IS ERRATIC

POSSIBLE CAUSE AND SOLUTION

1. REGULATOR OVERSIZED
   SOLUTION: Check the valve capacity against the load; if excess is large, install smaller valve.
2. CONDENSATE IN REGULATOR  
   SOLUTION: Install steam traps to remove condensate. If Type AR or IR with remote sensing line is installed, pitch sensing line downward at a rate of 1/4" per 4 feet to drain all condensate.

3. DIRTY PILOT VALVE OR PISTON  
   SOLUTION: Disassemble and clean with hot detergent water and dry thoroughly.

4. PISTON STICKING IN CYLINDER  
   Occasionally, the cylinder wall may become scored, causing slight piston sticking.  
   SOLUTION: Replace worn parts.

MAINTENANCE

The type AA/AR, IA/IR internal pilot regulators will provide longer life and satisfactory performance if they are checked and maintained regularly. For regular maintenance, inspect the installation at least twice a year.

A large percentage of regulator difficulties are the result of condensate or sediment causing friction in moving parts or preventing main valves or pilot valves from seating. The installation of steam traps and Keckley strainers will keep regulators free of dirt and scale and result in better performance.

After the system has been operational for a few days check for:

1. LEAKAGE AT ANY JOINT  
   Do not allow a leak to continue; tighten bolts if required.

2. PROPER CONTROL OF PRESSURE  
   If pressure is at the original set condition, the system should be functioning properly. An additional check is to alter the set conditions slightly, if the system responds to the change, it is controlling.

3. DIRT BUILDUP AT STRAINERS  
   Blow down Keckley strainers; if the system is excessively dirty, this step may need to be done more often.

WARNING

Service is required if the regulator vents steam/air or a leak develops in the system. Failure to take the regulator out of service immediately may create a hazardous condition.
INSTALLATION OPERATING AND MAINTENANCE INSTRUCTIONS

TYPE 700 WATER PRESSURE REGULATOR

APPLICATION: Water, air, gas, steam or other fluids not injurious to valve materials. Not for Steam. Tight closing.

PRESSURE AND TEMPERATURE LIMITS:

<table>
<thead>
<tr>
<th>Body</th>
<th>Air-Water</th>
<th>Reduced Pressure Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronze or Cast Iron, Scrd.</td>
<td>300 psi – 150 ° F</td>
<td>8 – 30 psi</td>
</tr>
<tr>
<td>Cast Iron, 125# Flanged</td>
<td>200 psi – 150 ° F</td>
<td>28 – 50 psi</td>
</tr>
<tr>
<td>Cast Iron, 250# Flanged</td>
<td>300 psi – 150 ° F</td>
<td>45 – 75 psi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70 – 100 psi</td>
</tr>
</tbody>
</table>

INSTALLATION:
Clean dirt, etc. out of pipe. Install in any position – preferred arrangement is in horizontal line with diaphragm above and by-pass valve installed to permit easy removal. If valve is two or more sizes smaller than pipe, install in by-pass line to reduce strains on valve. Flow through valve should agree with markings on valve. Check diaphragm bolts – tighten moderately and uniformly if leaking.

START-UP:
Open outlet valve fully; open inlet valve gradually allowing time for outlet line to fill. Adjust spring compression for desired reduced pressure.

TROUBLES AND REMEDIES:
Partially closed outlet valve may cause poor regulation – open fully. Sticking or failure to close usually caused by dirt, etc., on seat. Try cleaning seat by blowing off low pressure water. If necessary, dismantle valve and clean thoroughly. If valve leaks excessively, composition disc or leather cup or both may need replacing. Diaphragm is composed of rubber with fabric insert and it is the same diameter as the bolt circle in cover flanges. To replace diaphragm remove cap over adjusting screw. Carefully measure distance from top of adjusting screw to lock-nut, loosen lock-nut, back out screw to relieve tension on spring, remove spring housing, mushroom diaphragm plate and old diaphragm. Clean flanges thoroughly and install new diaphragm. Replace plates, spring, and push diaphragm down into chamber as far as possible (this should bulge diaphragm sufficiently to allow edge to clear bolt holes in flange). Reinstall spring housing and bolt flanges together moderately and uniformly. Bolts must not pierce or notch edge of diaphragm. Screw adjusting screw back to original position. Replace adjusting screw nut and cap.

MAINTENANCE:
Operation and adjustment of valve should be checked at regular intervals. Complete Assembly Drawing AL-66011 available on request.
DIAPHRAGM REPLACEMENT

TYPE 700 WATER PRESSURE REGULATOR

Step 1. Loosen Adjusting Screw Nut (#24).

Step 2. Loosen Tension on Adjusting Screw (#23) by turning counter clockwise.

Step 3. Carefully loosen Housing Bolts (#21). Remove two bolts, one across from the other. Insert the long screws provided and tighten nuts. Remove all the other Housing Bolts. Slowly loosen long screw nuts. This will relieve all the tension inside Spring Housing. Remove both long screws.

Step 4. Remove Bottom Cap (#10).

Step 5. Hold Stem Nut with wrench and on opposite side of valve, hold Mushroom with pliers. Turn wrench counter clockwise until Mushroom (#17) is unscrewed.

Step 6. Remove Diaphragm (#16).
INSTALLATION AND OPERATION INSTRUCTIONS
No. 701 WATER PRESSURE REDUCING VALVE

BILL OF MATERIALS: (1) Type 701 main valve, (1) Type 100 pilot valve, (1) needle valve.

PRE-INSTALLATION: Flush out the pipes thoroughly before installing the No. 701 valve. Note: Trouble with new valves often results from pipe scale, pipe thread dope, and other dirt left in the pipe.

POSITION IN LINE: The valve is adapted for use only in the horizontal position and must be installed with the cylinder above the seat to allow gravity to assist in the valve closing.

DIRECTION OF FLOW must be in accordance with the arrow or inlet markings on the valve bodies. Inlet pressure is under the seat disc.

PILOT VALVE: This is a single seated reducing valve with a spring loaded diaphragm that is operated by the reduced pressure and adjusted to throttle the flow through the small control pipe. The pilot valve closes when the reduced pressure rises above the set point. The pilot valve may be installed with the diaphragm above or below the pipeline. The No. 100 pilot valve has a needle point main valve.

RESTRICTING NEEDLE VALVE: This is the needle point valve supplied with the No. 701. Note: Do not use a standard globe or gate valve as these valves cannot be precisely adjusted.

FEELER PIPE: A small pipe or copper tube connection extends from the diaphragm chamber of the No. 100 pilot valve to a selected control point in the reduced pressure pipe. This control point should be installed in the side or top of the pipe (never in the bottom) and be more than 4 feet from the outlet of the No. 701 main valve and/or the nearest valve or fitting.

The 1/4" feeler pipe and 3/8" control pipe should connect into the large low pressure pipe at separate points so that the pressure applied to the diaphragm will be the true reduced pressure, unaffected by the variations in flow through the control pipe.

BY-PASS: A suggested by-pass arrangement is shown in the above drawing.

STARTING IN OPERATION: When the piping is completed, adjust the needle valve to approximately 1/2 turn open. Open the low-pressure valve completely. Open the high-pressure (supply) valve very gradually allowing time for the system to fill and to avoid water hammer. Provide a small amount of flow by opening a faucet in the low-pressure system.

If the reduced pressure goes to high, lessen the spring compression in the pilot valve. After the reduced pressure reaches the desired set point and maintains the reduced pressure, you may open the supply valves fully.

Close the faucet. If no water is being used in the system and there is no pipe leakage (dead end condition) the reduced pressure may rise, as only a few drops of leakage through the No. 701 will produce full inlet pressure in a dead end liquid system. If this high pressure during no flow is objectionable, a small relief valve on the low pressure system is recommended.

If the needle valve is opened farther the pilot valve will open similarly. This will produce a slightly lower reduced pressure and more variation in reduced pressure between minimum and maximum flow. The No. 701 will respond a little more quickly to changes in demand.

If the needle valve is closed more, the regulation will be closer, the valve action will be slightly slower, and the reduced pressure somewhat higher.

Phone 1-800-532-5539  1-847-674-8422  FAX 847-674-2106
O.C. Keckley Company  ·  3400 Cleveland Street  ·  P.O. Box 67  ·  Skokie, IL 60076
INSTALLATION – INSTRUCTIONS

TYPE 11A
PRESSURE REDUCING VALVE

250 lb. Cast Iron Body
Single Seat – Tight Closing
Steam, Air, Water, Oil Service

Service:
The KECKLEY 11A Pressure Reducing Valve is full ported, tight closing with a composition disc, easily changed or renewed. It will maintain to a constant reduced pressure on a multitude of general industrial applications where capacity and compactness are desired.

Operation:
Reduced pressure under the diaphragm balances the spring loading and positions the disc. Changes in reduced pressure opens or closes the valve tending to keep the reduced pressure constant. Adjustment for reduced pressure is accomplished by compressing the diaphragm spring. See chart for reduced pressure ranges obtained per spring and valve size.

Construction:
The Type 11A, sizes ⅜” to 2” has a 250 lb. Cast iron body. Available trim is bronze or stainless steel. For steam service, the valve is supplied with phosphor bronze diaphragm and teflon valve disc. For air or liquid service, the valve is standard with a rubber diaphragm and neoprene valve disc.

The spring case is of one piece construction with a hex shaped flange using 6 bolts providing easy removal and maximum safety.

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>#1 Spring</th>
<th>#2 Spring</th>
<th>#3 Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>⅜” – ½”</td>
<td>5-25 lb.</td>
<td>25-50 lb.</td>
<td>50-100 lb.</td>
</tr>
<tr>
<td>¾” – 1”</td>
<td>5-20 lb.</td>
<td>20-45 lb.</td>
<td>45-75 lb.</td>
</tr>
<tr>
<td>1 ¼” – 1 ½”</td>
<td>5-15 lb.</td>
<td>15-40 lb.</td>
<td>30-60 lb.</td>
</tr>
<tr>
<td>2”</td>
<td>5-15 lb.</td>
<td>15-30 lb.</td>
<td>30-50 lb.</td>
</tr>
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</table>

DIMENSIONS – WEIGHTS (approximate)

<table>
<thead>
<tr>
<th>Size</th>
<th>⅜” - ⅝”</th>
<th>⅝”</th>
<th>⅞”</th>
<th>1”</th>
<th>1 ¼”</th>
<th>1 ½”</th>
<th>2”</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>4 ½</td>
<td>5 ⅛</td>
<td>5 ¾</td>
<td>6 ⅝</td>
<td>6 ⅞</td>
<td>7 ¼</td>
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<tr>
<td>D</td>
<td>6</td>
<td>8</td>
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<td>9</td>
<td>9</td>
<td>9</td>
<td>9 ⅛</td>
</tr>
<tr>
<td>B</td>
<td>6 ⅛</td>
<td>8 ⅞</td>
<td>8 ⅞</td>
<td>9 ⅞</td>
<td>9 ⅛</td>
<td>9 ⅛</td>
<td>9 ⅛</td>
</tr>
<tr>
<td>C</td>
<td>2 ⅛</td>
<td>2 ¼</td>
<td>2 ¾</td>
<td>2 ¾</td>
<td>2 ¾</td>
<td>3 ⅛</td>
<td>3 ⅛</td>
</tr>
<tr>
<td>Port Area</td>
<td>⅜”</td>
<td>⅜</td>
<td>1</td>
<td>1 ½</td>
<td>1 ½</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>12</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>38</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>
INSTALLATION - INSTRUCTIONS

TYPE 10 PRESSURE REDUCING VALVE

APPLICATION: Water, oil, gas

PRESSURE AND TEMPERATURE LIMITS:
The Type 10 Pressure Reducing Valve with bronze body and trim, single seated, composition disc, is suitable for a maximum inlet pressure of 150 psi and minimum reduced pressure of 5 psi.

INSTALLATION:
1. Blow out all piping to eliminate any foreign matter such as rust and welding slag in line.
2. Install the globe valve and Keckley Strainer ahead of the Type 10 Reducing Valve. (Globe valve will allow for service of the Type 10 valve if required. Strainer will prevent foreign material from passing through the Type 10 Reducing Valve and into downstream piping.)
3. Install the Type 10 Pressure Reducing Valve with the arrow cast on the body pointing downstream.
4. Install globe valve also in downstream piping to isolate the Type 10 Reducing Valve for service if required.
5. A reduced pressure gauge should be installed downstream of the Type 10 valve to insure proper setting of reduced pressure.

START-UP:
1. Gradually open the upstream globe valve allowing media to pass downstream.
2. Turn the adjusting screw on the Type 10 Reducing Valve to increase the reduced pressure, and counter clockwise to reduce it.
3. Once the desired reduced pressure is obtained, tighten the lock-nut on the adjusting screw.
4. Finally, make sure the upstream and downstream globe valves are fully open so flow will not be restricted.

REPLACEMENT PARTS:
Please refer to Drawing #15952-A which covers the assembly and parts list of the Type 10 Pressure Reducing Valve.
INSTALLATION – INSTRUCTIONS

TYPE D
PRESSURE REDUCING VALVE
200 lb. Bronze Body, Stainless Steel Trim
Single Seat – Tight Closing
Steam, Air Service

This pressure reducing regulator is a direct-acting spring-loaded valve, designed with a large diaphragm, and effective working area to secure sensitive control and more accurate regulation of reduced pressure, and is recommended for small systems where a tight closing valve is required to prevent the pressure on the system from building up.

APPLICATION:
Controlling steam pressure to stills, kettles, sterilizers, presses, washers and many others for both air and steam.

CONSTRUCTION:
These regulators are made with bronze body and stainless steel valve, seat and spring. A metal diaphragm is used for steam service. A rubber diaphragm with fabric insert is used for air service. The advantage of this regulator is that it is compact and light in weight, simply constructed, easily adjusted, economical and accurate for small systems where a tight closing valve is required.

OPERATION:
This regulator is normally held open by the spring tension, and the steam or air enters diaphragm chamber through the port on delivery side of valve, the pressure under the diaphragm forcing the diaphragm upward against tension of spring, causing main valve to close, forming a balance between the delivery pressure and the tension of the adjusting spring. The reverse or indirect action is very simple and has few moving parts. Adjustment is easily made with common tools. Turning the adjusting screw into the top cap increases the reduced pressure. Capacity of this valve is approximately one-third the pipe line of any given size. The Type D Valve is a high quality valve and can be recommended for light exacting service.

DIMENSIONS -- WEIGHTS (approximate)

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼&quot; - 1&quot;</td>
<td>3 ³/₈</td>
<td>8 ⁷/₁₆</td>
<td>1 ³/₈</td>
<td>9</td>
</tr>
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</table>

MAXIMUM CAPACITIES

<table>
<thead>
<tr>
<th>Inlet Pressure</th>
<th>Outlet Pressure</th>
<th>Pounds of Saturated Steam Per Hour</th>
<th>Cubic Feet of Air Per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>½&quot;</td>
<td>¾&quot;</td>
</tr>
<tr>
<td>25</td>
<td>5 to 15</td>
<td>6.7</td>
<td>8.7</td>
</tr>
<tr>
<td>50</td>
<td>5 to 30</td>
<td>10.8</td>
<td>13.5</td>
</tr>
<tr>
<td>75</td>
<td>5 to 45</td>
<td>15</td>
<td>19.7</td>
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<td>75</td>
<td>55</td>
<td>12.5</td>
<td>16.8</td>
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<tr>
<td>100</td>
<td>5 to 55</td>
<td>19.7</td>
<td>26.8</td>
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<tr>
<td>100</td>
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<tr>
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<td>5 to 80</td>
<td>28</td>
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<td>26</td>
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<tr>
<td>200</td>
<td>5 to 105</td>
<td>36</td>
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O.C. KECKLEY COMPANY • 3400 CLEVELAND STREET • P.O. BOX 67 • SKOKIE, ILLINOIS 60076 • 1-800-KECKLEY
INSTALLATION MAY BE MADE IN A HORIZONTAL LINE WITH THE DIAPHRAGM AND/OR PISTON ABOVE OR BELOW THE LINE OR IN A VERTICAL LINE, WITH THE STEM LOCATED IN A HORIZONTAL PLANE.

CONTROL PRESSURE IS PIPED TO THE DIAPHRAGM AND/OR PISTON FROM THE REDUCED PRESSURE LINE ABOUT 10 ft. AHEAD OF THE REGULATOR WHERE AN EQUALIZED PRESSURE IS MAINTAINED WHERE STEAM IS THE MEDIA, THE CONTROL PRESSURE LINE SHOULD BE SO LOCATED AS TO FORM A CONDENSATE DROP TO SEAL THE DIAPHRAGM AND PROTECT IT FROM THE HEAT OF THE STEAM.

A NEEDLE VALVE INSTALLED ON THIS LINE WILL CUSHION THE ACTION OF THE MAIN VALVE.
INSTRUCTION BULLETIN
Type 114 and Type 119 Diaphragm Relief Valves

GENERAL DESCRIPTION
The Type 114 is designed for dependable control of pressure reduction on applications where absolutely

tight shut-off is not required. It will maintain reduced pressure ranges from 5# to 200#. Several different sizes

topworks are required to cover this range, each adjustable over part of the range.

INSTALLATION
The Type 114 and 119 regulating valves may be installed in a horizontal line with topworks either above or

below the pipe line. The direction of flow must be as shown by the arrow or inlet markings on the valve body.

Drawing #25114-A shows the suggested installation arrangement.

Any piping connected to the valve should be tested for leaks and loose connections. Be sure all lines are

clear and free from obstructions.

It is recommended that a strainer be installed in the line ahead of the valve.

VALVE PACKING
Special precautions should be taken in tightening the packing gland nut. This may seem to be only finger

tight, but it has been tightened enough to hold the pressure under actual working conditions as specified.

Excess tightening of this nut will increase the stem friction and prevent the valve from operating properly.

To REPACK THE VALVE, unscrew the packing gland nut and lift up the gland. Remove old packing and

insert one length of new packing. Do not add new packing to packing already in the packing gland.

DIAPHRAGM REMOVAL
Turn adjusting nut until tension is off of the spring. Loosen and remove diaphragm cover. Remove existing

diaphragm. Install new diaphragm and reassemble. Tighten adjusting screw to desired reduced pressure.

WHEN ORDERING PARTS
Serial numbers are stamped on a small name tag attached to the topworks assembly. When ordering parts,

this number and the size and type of valve must be furnished in order that the factory may properly furnish

the exact material needed.

GENERAL DATA
All valves have been tested and inspected before shipping. The valve has been adjusted to the relief

pressure specified by the customer. Use caution in tightening the packing nut, as the nut was tightened at the

factory to hold pressure for which the valve was ordered. When used on steam service, the diaphragm must

be protected with a water seal to protect it from high steam temperatures.