# Instruction Manual

# CVS Type 630 HP Regulators and Relief Valves


**Figure 1: CVS Type 630HP Regulator**

## Introduction

Please note: These regulators and relief valves must be installed, operated and maintained in accordance with CVS instructions and all applicable federal, provincial, state and local codes, laws, rules, and regulations.

The CVS 630 HP Series consists of a high pressure reducing regulator, and Type CVS 630R relief valve. These regulators and relief valves are furnished in either spring-loaded or pressure-loaded construction with 1 or 2 inch NPT screwed end connections.

Pressure loaded Type 630 HP regulators are normally furnished without a main regulator spring and use a Bellofram 7360 or a Bellofram P39 regulator.

Pressure loaded Type 630R relief valves are furnished with a light rate relief valve spring and use a Bellofram 7360 or a Bellofram P39 regulator.

## Installation

After uncrating the regulator or relief valve, inspect it for shipping damage. Be certain the body cavity and seat ring are free from any foreign material. Also be certain that connecting pipelines are free of loose pipe scale.

The regulator or relief valve may be installed in any position, but direction of flow through the body must be as indicated by the flow direction arrow on nameplate.

Note that in diagrams in this manual, regulator flow direction is opposite relief valve flow direction.

Protect the regulator or relief valve against damage from vehicles and other external sources. The temperature capability of the 630 HP Series regulator and relief valves with standard construction materials is –20 to +150°F.

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## Vents

Spring-loaded constructions have a screened vent assembly (Key 24) installed in the ¼" NPT spring case vent opening. If a remote vent is required, remove the vent assembly and install a remote vent line.

Pressure loaded constructions have a bleed orifice fitting (Key 38) installed in an extra outlet connection of the loading regulator. The function of this fitting is to bleed loading pressure during operation of the regulator or relief valve.

> **Warning:** The bleed orifice fitting continuously vents a small amount of gas. If the regulator or relief valve is located where accumulation of the vented gas will create an explosion hazard, install a remote vent line to carry the vented gas to a safe area. The bleed orifice is furnished with a ¼" NPT screened opening; remove the screen and install remote vent line.

All remote vent lines must have as large an inside diameter as possible. The vent line should be as short as possible with a minimum number of bends and elbows. Protect all vent openings against entrance of rain, snow or any other foreign material that may plug the vent or affect operation of the regulator or relief valve. Inspect all vent openings periodically to be sure they are not plugged.

## Overpressure Protection

As is the case with most regulators, the Type 630 HP spring-loaded and pressure-loaded regulators have outlet pressure ratings that are lower than the inlet pressure ratings. Overpressure protection must be provided if the actual inlet pressure can exceed the outlet pressure rating. Overpressure protection may also be required for the loading regulator and main regulator spring case of pressure loaded regulators and relief valves.

Refer to the following tables to determine pressure ratings:

1. Spring loaded Type 630 HP regulators
   1.1. Inlet pressure and pressure drop (Table 1)
   1.2. Outlet pressure (Table 2)
2. Pressure loaded Type 630 HP regulators
   2.1. Main regulator inlet pressure and pressure drop (Table 1)
   2.2. Loading pressure and outlet pressure (Table 3)
3. Spring loaded Type 630R relief valve pressure (Table 4)
4. Pressure loaded Type 630R relief valve pressures (Table 5)

> **WARNING:** Over pressuring any portion of this equipment may cause damage to regular parts, leaks in the regulator or personal injury due to bursting of pressure-containing parts or explosion of accumulated gas.

To prevent overpressure, provide an appropriate overpressure protection device to ensure that none of the limits listed in tables 1 through 5 will be exceeded.

Regulator or relief valve operation below the limits specified in tables 1 through 5 does not preclude the possibility of damage from external sources or from debris in the gas line. Inspect the regulator for damage following any over pressuring condition.

## Loading Regulator Supply Pressure

Use a clean, dry gas as supply pressure for the loading regulator of pressure loaded regulators or relief valves. Connect the supply to the ¼" NPT inlet connection of the loading regulator. The supply pressure may be obtained from the upstream piping, but be certain adequate overpressure protection is provided for the loading regulator and for the spring case of the main regulator or relief valve.

**Table 1: Maximum Inlet Pressures and Pressure Drops for CVS Type 630 HP Regulators**

| | 1/8" & 3/16" Port Diameter | 1/4" Port Diameter | 3/8" Port Diameter | 1/2" Port Diameter |
|---|---|---|---|---|
| Max. Allowable Inlet Pressure, (PSIG) | 1500[+] | 1500[+] | 1000[+] | 750[+] |
| Max. Allowable Pressure Drop, [++] (PSIG) | 1500 | 1000 | 500 | 250 |

Does not apply to loading regulator of pressure-loaded Type 630 HP.
+ Inlet pressure must not exceed the sum of the actual outlet pressure setting and the maximum allowable pressure drop. For example, with an outlet pressure setting of 200 psig and a 3/8" port dia. (maximum allowable pressure drop of 500 psig), the maximum allowable inlet pressure is 700 psig.
++ Nitrile valve discs are normally furnished for pressure drops to 200 psi. For better erosion resistance, nylon valve discs are normally furnished for higher-pressure drops.
Some erosion of valve discs occurs at all pressure drops due to solid particles in the flow stream. The rate of erosion is higher with large amounts of impurities in the flow stream and with higher pressure drops. Valve discs and other regulator parts must be inspected periodically for erosion and damage and must be replaced as necessary.

## Table 2: Outlet Pressure Limits for Spring-Loaded CVS Type 630 HP Regulators

| | Low-Pressure Regulator | | | | High-Pressure Regulator | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Outlet Pressure range | 3 to 10 psig | 8 to 20 psig | 17 to 30 psig | 27 to 40 psig | 27 to 50 psig | 46 to 95 psig | 90 to 150 psig | 150 to 200 psig | 200 to 275 psig | 275 to 500 psig |
| Spring Part Number | CVS0W 0192 27022 | CVS0W 0191 27022 | CVS0W 0190 27022 | CVS0Y 0664 000A2 | CVS0W 0192 27022 | CVS0W 0191 27022 | CVS0W 0190 27022 | CVS0Y 0664 000A2 | CVS1J 1469 27142 | CVS1K 3709 27082 |
| Maximum Operating Outlet Pressure, PSIG | 10 | 20 | 30 | 40 | 50 | 95 | 150 | 200 | 275 | 500 |
| Max. Outlet Pressure Over Pressure Setting[1], PSIG | 20 | | 20[2] | Ltd. By Max. emr Outlet Pr. | 200 | | | | | 200[3] |
| Max. Emergency Outlet (Casing) Pressure, PSIG | 45 | | | | 550 | | | | | |

1. Damage to internal parts of the regulator may occur if outlet pressure exceeds the actual pressure setting by amounts greater than shown in this row.
2. For outlet pressure settings to 25 psig only. For pressure settings over 25 psig, outlet pressure is limited by max. emergency outlet pressure of 45 psig.
3. For outlet pressure settings to 350 psig only. For pressure settings over 350 psig, outlet pressure is limited by max. emergency outlet pressure of 550 psig.
4. Leakage or bursting of pressure-containing parts may occur if outlet pressure exceeds these values.

## Table 3: Loading Pressure and Outlet Pressure Limits for Spring-Loaded CVS Type 630 HP Regulators

| | Low-Pressure Regulator | | High-Pressure Regulator | |
|---|---|---|---|---|
| Loading Regulator Type | Bellofram 7360 | Bellofram P39 | Bellofram 7360 | Bellofram P39 |
| Max, Inlet Pressure to loading regulator, psig | 250 | 6000 | 250 | 6000 |
| Outlet Pressure Ranges,[2] psig | 0 to 30<br>0 to 60 | 0 to 225 | 0 to 120 | 50 to 225<br>200 to 500 |
| Max. Operating Outlet Pressure,[2] psig | 60 | | 100 | 500 |
| Max. Main Regulator Outlet Pressure Overpressure Setting,[3] psig | 20[4] | | 200 | 200[5] |
| Max. Emergency Outlet (Casing) Pressure of Loading Regulator,[6] psig | 70[7] | | 110 | 550 |
| Max. Emergency Outlet (Casing) Pressure of Main Regulator,[6] psig | 70 | | 600 | |

1. Limited to this value by maximum inlet pressure to Type 630 HP
2. Applies to both loading regulator and main regulator.
3. Damage to internal parts of the regulator may occur if outlet pressure exceeds the actual pressure setting by amounts greater than those shown in this row. Loss of loading pressure to main regulator diaphragm will reduce outlet pressure settings in proportion to the loss in loading pressure.
4. For pressure settings to 46 psig. For higher-pressure settings, outlet pressure is limited by max. emergency outlet pressure of 66 psig.
5. For pressure settings to 350 psig. For higher-pressure settings, outlet pressure is limited by max. emergency outlet pressure of 550 psig.
6. Leakage or bursting of pressure-containing parts may occur if outlet pressure exceeds these values.
7. Limited to this value by maximum emergency loading pressure of main regulator.

## Table 4: Relief Valve Pressure Limits for Spring-Loaded CVS Type 630R Regulators

| | Low Pressure Relief Valve | | | | | High Pressure Relief Valve | | | |
|---|---|---|---|---|---|---|---|---|---|
| Max. Allowable Inlet Pressure, psig | Relief Pressure Setting Plus Maximum Allowable Buildup of 25 psig | | | | | Relief Pressure Setting Plus Maximum Allowable Buildup of 250 psig | | | |
| Max. Emergency Inlet (Casing) Pressure,*psig | 75 | | | | | 550 | | | |
| Relief Pressure Settings (psig) | 3 to 8 | 6 to 17 | 15 to 22 | 20 to 35 | 27 to 50 | 30 to 70 | 50 to 95 | 75 to 175 | 150 to 250 |
| Spring Part Number | CVS0W 0192 27022 | CVS0W 0191 27022 | CVS0W 0190 27022 | CVS0Y 0664 000A2 | CVS1J 1469 27142 | CVS0W 0191 27022 | CVS0W 0190 27022 | CVS0Y 0664 000A2 | CVS1J 1469 27142 |

Leakage or bursting of pressure-contained parts may occur if inlet pressure exceeds these values

**Table 5: Relief Valve Pressure Limits for Pressure-Loaded CVS Type 630R Regulators**

| | Low Pressure Relief Valve | High Pressure Relief Valve | |
|---|---|---|---|
| Loading Regulator Type | Bellofram 7360 | Bellowfram 7360 | Bellofram P39 |
| Max. Allowable Inlet Pressure to Relief Valve, PSIG | Relief pressure setting plus maximum Allowable buildup of 25 psig | Relief pressure setting plus maximum Allowable buildup of 250 psig | |
| Max. Emergency Inlet (Casing) Pressure * of Relief Valve, PSIG | 75 | 550 | 550 |
| Max. Allowable Inlet Pressure to Loading Regulator, PSIG | 75+ | 250 | 550+ |
| Relief Pressure Settings, PSIG | 10 to 20 or 20 to 50 | 50 to 100 | 100 to 225 |
| Max. Emergency Outlet (Casing) Pressure * of Loading Regulator, PSIG | 75++ | 110 | 250 |

* Leakage or bursting of pressure-contained parts may occur if pressure exceeds these values.
\+ Limited to this value by maximum emergency inlet pressure of relief valve.
++ Limited to this value by maximum emergency loading pressure of Type 630R

# Putting Unit in Service

Use pressure gauges to monitor pressure during startup.

1. For pressure loaded constructions, turn on supply pressure to loading regulator.
2. Slowly open upstream shutoff valve.
3. Slowly open the downstream shutoff valve.
4. Check all connections for leaks.
5. If indicated by the monitoring pressure gauges, make final spring adjustments per the "Adjustment" section.

# Adjustment

The range of allowable pressure settings is marked on the nameplate. If a pressure setting beyond the nameplate range is required, substitute an appropriate spring in the relief valve or loading regulator. Be sure to change the nameplate to indicate the new pressure range.

Some pressure ratings are dependent upon the actual outlet pressure settings being used. For example, with a Type 630 HP regulator, outlet pressure must not exceed the setting by more than 20 psig (200 psig for high-pressure constructions), or damage to internal regulator parts may occur. However, with some higher-pressure ranges, the setting plus 20 psig (200 psig for high-pressure constructions) exceeds the maximum emergency outlet (casing) pressure. In these cases, outlet pressure must be limited by the maximum emergency outlet (casing) pressure. Before increasing the setting, refer to table 2 through 5 (as appropriate). Review the pressure limits for the spring range being used, and be certain that the new pressure setting will not result in an overpressure condition. Always use a pressure gauge to monitor pressure when making adjustments.

## Spring Loaded Regulators and Relief Valves

1. Loosen locknut (Key 22)
2. Rotate the adjusting screw (Key 23) clockwise to increase the setting or counter clockwise to decrease the setting.
3. Tighten locknut.

## Pressure Loaded Regulators and Relief Valves

1. Loosen the locknut found on the loading regulator adjusting screw.
2. Rotate the loading regulator adjusting screw clockwise to increase the setting or counterclockwise to decrease the setting.
3. Tighten locknut.

## Taking out of Service

Isolate the regulator or relief valve from all pressure. For pressure loaded constructions, shut off supply pressure to loading regulator.

Cautiously vent all pressure from the regulator or relief valve before performing any service on the unit.

# Maintenance

> **WARNING:** To avoid personal injury and equipment damage, isolate the regulator or relief valve from all pressure. Cautiously release pressure from the regulator or relief valve before attempting disassembly.

Due to normal wear that may occur in regulators and relief valves, parts such as the valve disc, seat ring and diaphragm must be inspected periodically and replaced as necessary. The frequency of inspection and replacement depends upon the severity of service conditions or federal and provincial laws. Normal wear of the seat ring and valve disc is accelerated with high-pressure drops and with large amounts of impurities in the flow stream. Instructions are given below for replacing the seat ring, valve disc and diaphragm. These instructions may also be used for disassembly required for inspection and replacement of other parts.

If the loading regulator of pressure-loaded constructions requires maintenance, disconnect the supply pressure line (and bleed orifice vent line if one is present) and unscrew the loading regulator from its mounting nipple. Refer to the separate instruction manual for maintenance information.

## Seat Ring and Valve Disc:

> **Note:** With some piping systems it may be possible to omit step 1 below by removing four cap screws (Key 7) and spreading the body (Key 1) and adaptor (Key 6) far enough apart to allow removal of the seat ring (Key 4) and Type 630 HP valve disc (Key 3) or Type 630R valve seat O-ring (Key 32). However, take care to avoid pinching fingers between body and adapter.

1. Disconnect piping from Adapter (Key 6). Remove four cap screws (Key 7) and adapter.
2. Remove seat ring (Key 4) and gaskets (Key 5).
3. To remove Type 630 HP valve disc (Key 3) OR Type 630R valve seat O-ring (Key 32), first disconnect remote vent pipe (if one is used). For pressure loaded constructions, disconnect loading regulator supply line.
4. Unscrew the two cap screws that secure the diaphragm adaptor (Key 11) to body (Key 1); remove diaphragm adaptor and attach spring case (Key 21).
5. Remove valve carrier assembly (Key 2) from body.
6. To replace seating surface:
   6.1. For Type 630 HP, use a ¾" socket wrench to remove and re-install valve disc and holder assembly (Key 3).
   6.2. For Type 630R, unscrew machine screw (key31) and remove O-ring washer and O-ring (Key 28 and 32) from O-ring holder (Key 3). When reassembling, apply a good quality gasket shellac to the machine screw thread.
7. Use new seat ring gaskets (Key 5) and body gasket (Key 8) when reassembling. Insert valve carrier assembly (Key 2) into the body before re-installing the diaphragm adaptor.
8. The spring case (Key 21) must point away from the adaptor (Key 6) on Type 630 HP regulators. On Type 630R relief valves, the spring case must face the same direction as the adaptor (Key 6). Be certain the lever (Key 10) engages the valve carrier.

## Diaphragm

1. Relieve spring compression as follows:
   1.1 For spring loaded constructions, loosen locknut (Key 22). Turn the adjusting screw (Key 23) counterclockwise until spring compression is relieved.
   1.2 For pressure loaded Type 630R relief valves (and for pressure loaded Type 630 HP regulators that have been furnished with a spring), turn cap screw (Key 23) counterclockwise until spring compression is relieved.
2. Disconnect remote vent line (if one is present).
3. For pressure loaded constructions, disconnect the supply line from the loading regulator (Key 25).
4. Remove spring case (Key 21) by unscrewing cap screws and nuts (Key 14).
5. Remove diaphragm (Key 13) and attached parts from lever assembly (Key 10).
6. Unscrew cap screw (Key 18) from connector head assembly (Key 12) and disassemble the diaphragm assembly.
7. Install new diaphragm. Note that low-pressure constructions use a diaphragm plate (Key 16) on the spring case side of the diaphragm. Low pressure, pressure loaded constructions use a diaphragm plate on each side of the diaphragm plate gasket (Key 33) with each plate. Install new gaskets when replacing diaphragm.
8. When reassembling, be certain that the diaphragm connector is engaged on the lever.

9. To ensure proper slack in the diaphragm:
   9.1 For constructions using a spring, tighten the spring case cap screws finger tight only. Compress the spring slightly with the adjusting screw (or cap screw for pressure loaded constructions); then complete the tightening of spring case cap screws and nuts.
   9.2 For constructions without a spring, tighten spring case cap screws finger tight only. Remove cap screw (Key 23). Insert a rod in the spring case and push on the assembly to take up the slack; then complete the tightening of the spring case cap screws. Re-install cap screw (Key 23) in spring case.

## Nameplate Information

When corresponding with your CVS Controls representative about this device, state the model number, pressure range and all other pertinent information found on the nameplate (Key 29). When ordering replacement parts, also specify the complete part number of each part required.

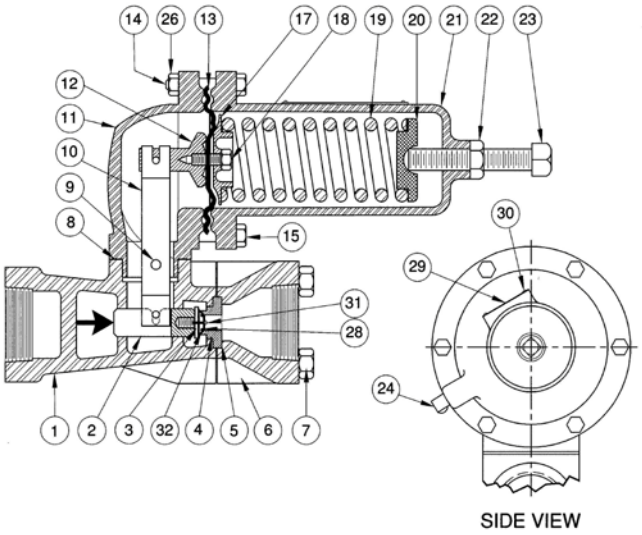


**Figure 1: Spring-Loaded CVS Type 630R Relief Valve**
**High Pressure Connection**

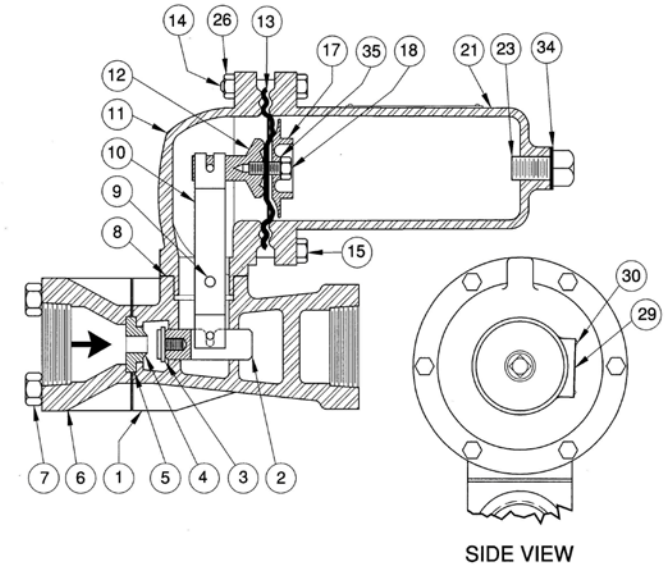


**Figure 2: Pressure-Loaded CVS Type 630 Regulator**
**High Pressure Connection**

# Parts Reference

| Key | Description | |
|---|---|---|
| 1 | Body | |
| 2 | Valve Carrier | |
| 3* | Type 630R | O-Ring Holder |
| | Type 630* | Valve Disc Assembly |
| 4 | Seat Ring | |
| 5 | Gasket (2 required) | |
| 6 | Inlet Adaptor, Steel | |
| 7 | Cap Screw, Steel (4 required) | |
| 8* | Gasket | |
| 9 | Pin, SST | |
| 10 | Lever Assembly | |
| 11 | Diaphragm Adaptor | |
| 12 | Connector Head Assembly | |
| 13* | Diaphragm, Neoprene | |
| 14 | Cap Screw, Steel | |
| 15 | Cap Screw, Steel | |
| 16 | Diaphragm Plate, Steel Cd. Pl. | |
| 17 | Lower Spring Seat | |
| 18 | Cap Screw, Steel Pl. | |
| 19 | Spring | |
| 20 | Upper Seat Ring, Zinc | |
| 21 | Spring Case | |
| 22 | Hex Nut, Steel Cd. Pl | |
| 23 | Adjusting Screw, Steel | |
| 24 | Vent Assembly (Spring Loaded Only) | |
| 25 | Loading (Pressure Loaded Only) | |
| 26 | Hex Nut, Steel Cd. Pl. | |
| 27 | Cap Screw, Steel Pl. | |
| 28 | O-Ring Washer (Pressure Loaded Only) | |
| 29 | Nameplate | |
| 30 | Drive Screw, SST | |
| 31 | Machine Screw (CVS Type 630R Only) | |
| 32 | O-Ring | |
| 33 | Head Gasket (Pressure Loaded Only) | |
| 34 | Gasket (Pressure Loaded Only) | |
| 35 | Gasket (Pressure Loaded Only) | |
| 36 | Pipe Nipple (Pressure Loaded Only) | |
| 37 | Street Elbow | |
| 38 | Bleed Orifice Assembly (Pressure Loaded Only) | |

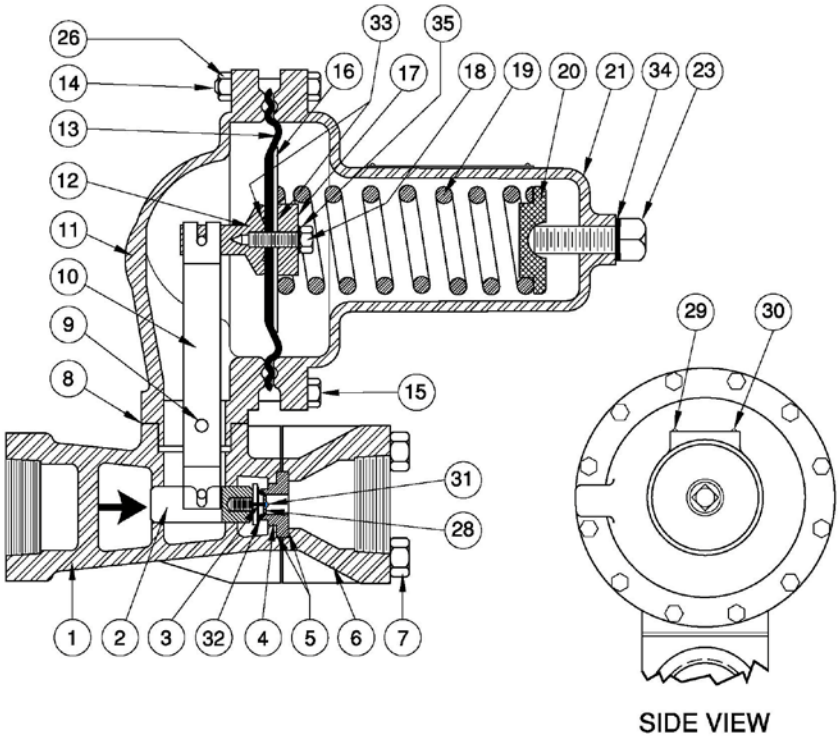


**Figure 3: Spring-Loaded CVS Type 630R Relief Valve**
**Low Pressure Connection**

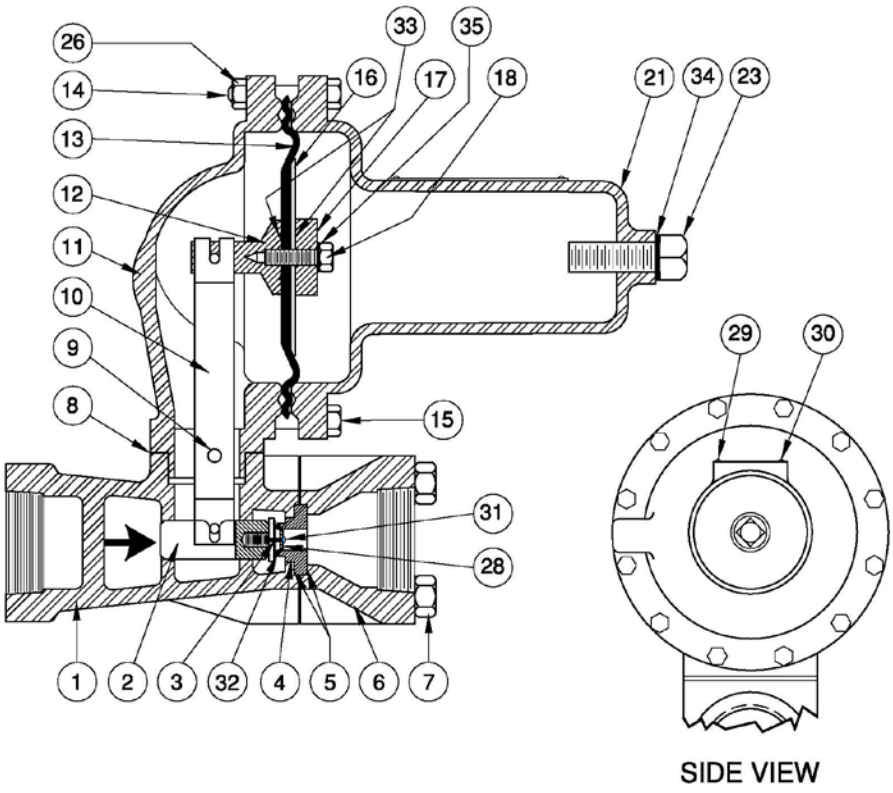


**Figure 4: Pressure-Loaded CVS Type 630R Relief Valve**
**Low Pressure Connection**

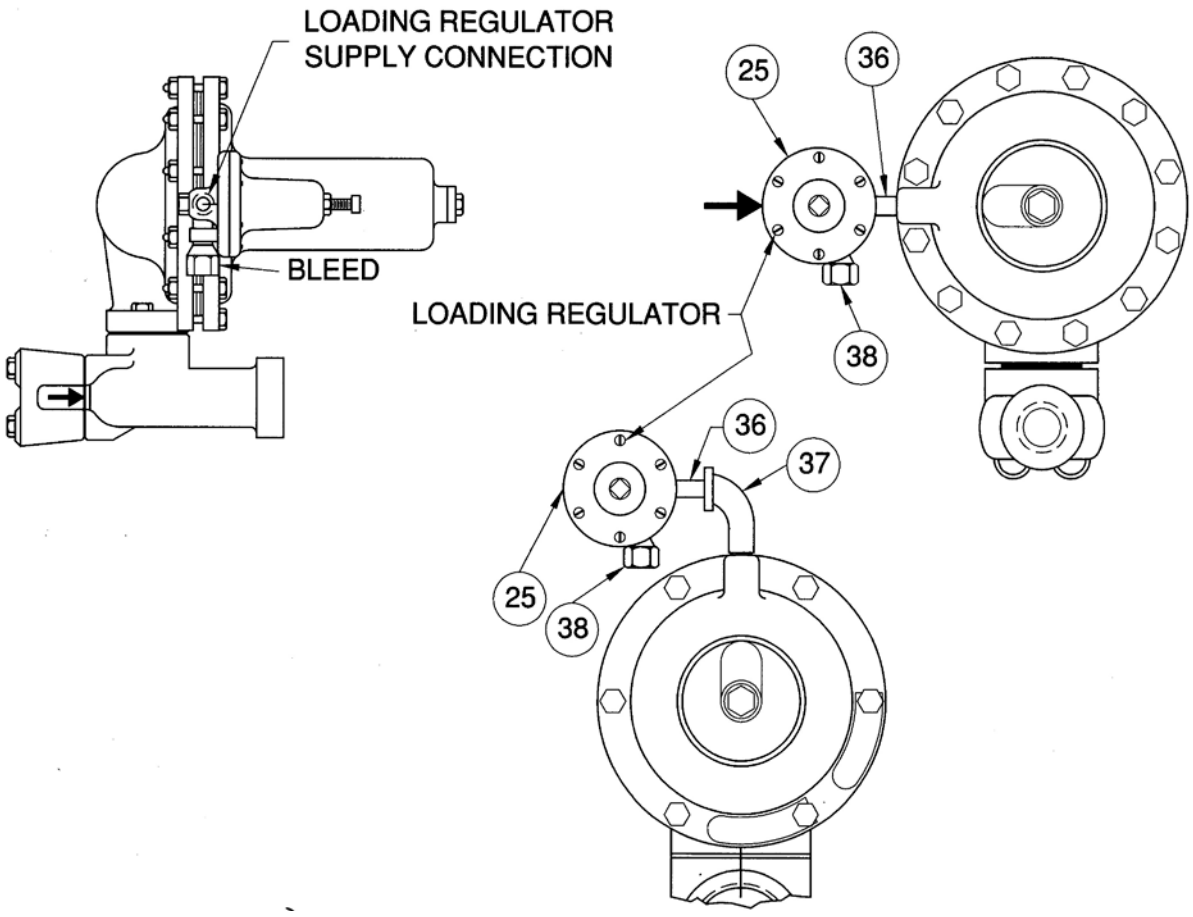


**Figure 5: Pressure-Loaded CVS Type 630 Regulator**
**Low Pressure Connection**

# CVS Type 630 HP Regulators and Relief Valves

## Parts List

| Key No. | Description | | | Part # |
|---|---|---|---|---|
| 1 | Body | 1" Cast Iron w/ brass pitot tube | | CVS0W0209000A2 |
| | | 1" Cast Iron w/ SST pitot tube | | CVS0W0209X0012 |
| | | 1" Steel w/ brass pitot tube | | CVS2N6990000A2 |
| | | 1" Steel w/ SST pitot tube | | CVS2N6990X0012 |
| | | 2" Cast Iron w/brass pitot tube | | CVS0W021519012 |
| | | 2" Steel w/ SST pitot tube | | CVS2N699122012 |
| 2 | Valve Carrier | Brass | | CVS0W018614022 |
| | | SST | | CVS0W018635032 |
| 3 | O-Ring Holder, Type 630R | Brass | | CVS1D336014012 |
| | | SST | | CVS1D336035032 |
| | Valve Disc Assembly, Type 630 | Brass/Nitrile | | CVS1B4500000A2 |
| | | SST/Nitrile | | CVS1B4500000B2 |
| | | Brass/Nylon | | CVS1C1860000A2 |
| | | SST/Nylon | | CVS1C1860000B2 |
| | | Brass/TFE | | CVS1C1860000C2 |
| | | SST/TFE | | CVS1C1860000D2 |
| 4 | Seat Ring, Type 630 | Brass | 1/8" Port | CVS0Z040014012 |
| | | | 3/16" Port | CVS1B219514102 |
| | | | 1/4" Port | CVS0W018314012 |
| | | | 3/8" Port | CVS0W018214012 |
| | | | 1/2" Port | CVS0W018114012 |
| | | SST | 1/8" Port | CVS1K416635032 |
| | | | 3/16" Port | CVS1K416535032 |
| | | | 1/4" Port | CVS1K416435032 |
| | | | 3/8" Port | CVS1K416335032 |
| | | | 1/2" Port | CVS1K416235032 |
| | Seat Ring, Type 630R | Brass | 1/2" Port | CVS1B735014012 |
| | | SST | 1/2" Port | CVS1B735035032 |
| 5 | Gasket (2 Req'd) | Copper, For Brass Trim | | CVS0W018415042 |
| | | Garlock | | CVS0W018404022 |
| 6 | Inlet Adaptor, Steel | 1-inch Body | | CVS1F479823022 |
| | | 2-inch Body | | CVS1F479923022 |
| 7 | Cap Screw, Steel (4 Req'd) | 1-inch Body | | CVS1A935924052 |
| | | 2-inch Body | | CVS1A353524052 |
| 8 | Gasket, Asbestos | | | CVS0W018704022 |
| 9 | Pin, SST | | | CVS0W018835072 |
| 10 | Lever Assembly | Low-Pressure | | CVS1B2891000A2 |
| | | High-Pressure | | CVS1B2890000A2 |
| 11 | Diaphragm Actuator | Low-Pressure | Cast Iron | CVS0W019719012 |
| | | | Steel | CVS2N698522012 |
| | | High-Pressure | Cast Iron | CVS0W019819012 |
| | | | Steel | CVS2N698722012 |
| 12 | Connector Head Assembly | Low-Pressure | Brass | CVS1C3000X0012 |
| | | | SST | CVS1C3000X0022 |
| | | High-Pressure | Brass | CVS1P8465000A2 |
| | | | SST | CVS1P8465000B2 |
| 13 | Diaphragm, Neoprene | Low-Pressure | | CVS0W020002192 |
| | | High-Pressure | | CVS0W019902192 |
| 14 | Cap Screw, Steel | Low-Pressure (10 Req'd) | | CVS1A352524052 |
| | | High-Pressure (4 Req'd) | | CVS1A352524052 |
| 15 | Cap Screw, Steel | Standard (2 Req'd) | | CVS1A352624052 |
| | | Wire Seal (1 of Each Req'd) | | CVS1R419124052 |
| | | | | CVS1A352624052 |
| 16 | Diaphragm Plate, Steel Cd. Pl. | 630 and 630R, Low-Pressure, Pressure-Loaded | | CVS1B136324052 |
| | | All Others | | CVS1A352524052 |
| 17 | Lower Spring Seat | Low-Pressure, Steel | | CVS0W020324102 |
| | | High-Pressure, Zinc | Pressure Range to 275 | CVS0W020144022 |
| | | | Pressure Range over 275 | CVS1K371044022 |
| 18 | Cap Screw, Steel Pl. | 630 and 630R, Low-Pressure, Pressure-Loaded | | CVS1B136324052 |
| | | All Others | | CVS1R817699012 |

## CVS Type 630 HP Regulators and Relief Valves
## Parts List cont'd

| Key No. | Description | | | Part # |
|---|---|---|---|---|
| 19 | Spring | | | See Following Table |
| 20 | Upper Spring Seat, Zinc | 630 Pressure Loaded | | None Required |
| | | 630 and 630R, and 630R Pressure-Loaded | Pressure Range to 275 | CVS0W019344022 |
| | | | Pressure Range over 275 | CVS1K371144022 |
| 21 | Spring Case | Low Pressure | Cast Iron | CVS3C780919042 |
| | | | Steel | CVS3N698122012 |
| | | High Pressure | Cast Iron | CVS3C780819042 |
| | | | Steel | CVS3N698322012 |
| 22 | Hex Nut, Steel Cd. Pl. | | | CVS1A352424122 |
| 23 | Adjusting Screw, Steel | | | See Following Table |
| 24 | Vent Assembly (Not Required for Pressure-Loaded Units) | | | CVSEMY602X1A12 |
| 25 | Loading Regulator (For Pressure-Loaded Only) | | | Type 67, 67H, 1301F or 1301G |
| 26 | Hex Nut, Steel Cd. Pl. | Low-Pressure (10 Req'd) | | CVS1A352724122 |
| | | High-Pressure (4 Req'd) | | CVS1A352724122 |
| 27 | Cap Screw, Steel Pl. (2 Req'd) (Not Shown) | | | CVS1A341827052 |
| 28 | O-Ring Washer (For Pressure-Loaded Units Only) | Brass | | CVS1D335914012 |
| | | SST | | CVS1D335935072 |
| 29 | Nameplate, Aluminum | Type 630 | | CVS1F749611032 |
| | | Type 630R | | CVS21A5495X012 |
| 30 | Drive Screw, SST (4 Req'd) | | | CVS1A368228982 |
| 31 | Machine Screw, Type 630R Only | Brass | | CVS1A682618992 |
| | | SST | | CVS1D336435042 |
| 32 | O-Ring | Nitrile | | CVS1D288806992 |
| | | TFE | | CVS1F581906522 |
| 33 | Head Gasket, Garlock (2 Req'd), (For Pressure-Loaded Units Only) | | | CVS1B192204022 |
| 34 | Gasket, Copper (For Pressure-Loaded Units Only) | | | CVS0Y008915042 |
| 35 | Gasket, Copper and Garlock (For Pressure-Loaded Units Only) | | | CVS1E275999212 |
| 36 | Pipe Nipple, Steel Galvanize Zn Pl (Pressure-Loaded Units Only) | | | CVS1B218826232 |
| 37 | Street Elbow, Malleable Iron (High-Pressure, Pressure-Loaded Units) | | | CVS1A913221992 |
| 38 | Bleed Orifice Assembly (Pressure-Loaded Only) | Low Pressure | 3-20 psig Loading Regulator Range | CVS1K8845X0012 |
| | | | 20-100 psig Loading Regulator Range | CVS1K8844X0012 |
| | | High-Pressure | | CVS1K8843X0012 |

## Key 23: Adjusting Screw, Steel

| Type | Spring | Use Adjusting Screw | For Wire Seal, Use Adjusting Screw |
|---|---|---|---|
| CVS 630 | CVS0W019227022 | CVS1A279128982 | CVS1R829928992 |
| | CVS0W019127022 | CVS1B212028982 | CVS1R830028992 |
| | CVS0W019027022 | CVS1A500528982 | CVS1R808528992 |
| | CVS0Y0664000A2 | CVS1A500528982 | CVS1R808528992 |
| | CVS1J146927142 | CVS1A500528982 | CVS1R808528992 |
| | CVS1K370927082 | CVS1A500528982 | CVS1R808528992 |
| | None * | CVS1C116227092 | --- |
| CVS 630R | CVS0W019227022 | CVS1A279128982 | CVS1R829928992 |
| | CVS0W019127022 | CVS1B212028982 | CVS1R830028992 |
| | CVS0W019027022 | CVS1A500528982 | CVS1R808528992 |
| | CVS0Y0664000A2 | CVS1D336628982 | CVS1R830128992 |
| | CVS1J146927142 | CVS1D336628982 | CVS1R830128992 |
| | CVS0W019227022* | CVS1E359024492 | --- |
| * Pressure-Loaded Construction | | | |

## Key 19: Regulator Spring, Steel

| Type | | Outlet (or Relief) Pressure Setting, PSIG | Spring Part Number | Spring Colour Code |
|---|---|---|---|---|
| Spring-Loaded Type 630 | Low-Pressure | 3 to 10 | CVS0W019227022 | Red Stripe |
| | | 8 to 20 | CVS0W019127022 | Olive Drab |
| | | 17 to 30 | CVS0W019027022 | Cadmium |
| | | 27 to 40 | CVS0Y0664000A2 | Green Stripe |
| | High-Pressure | 27 to 50 | CVS0W019227022 | Red Stripe |
| | | 46 to 95 | CVS0W019127022 | Olive Drab |
| | | 90 to 150 | CVS0W019027022 | Cadmium |
| | | 150 to 200 | CVS0Y0664000A2 | Green Stripe |
| | | 200 to 275 | CVS1J1469270142 | Blue Stripe |
| | | 275-500 | CVS1K370927082 | Yellow Stripe |
| Spring-Loaded Type 630R | Low-Pressure | 3 to 8 | CVS 0W019227022 | Red Stripe |
| | | 6 to 17 | CVS0W019127022 | Olive Stripe |
| | | 15 to 22 | CVS0W019027022 | Cadmium |
| | | 20 to 35 | CVS0Y0664000A2 | Green Stripe |
| | | 27 to 50 | CVS1J146927142 | Blue Stripe |
| | High-Pressure | 30 to 70 | CVS0W019127022 | Olive Drab |
| | | 50 to 95 | CVS0W019027022 | Cadmium |
| | | 75 to 175 | CVS0Y0664000A2 | Green Stripe |
| | | 150 to 250 | CVS1J146927142 | Blue Stripe |
| Pressure-Loaded Type 630 R | Low-Pressure | 10 to 20 or 20 to 50 | CVS0W019227022 | Red Stripe |
| | High-Pressure | 50 to 100 or 100 to 225 | CVS0W019227022 | Red Stripe |



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