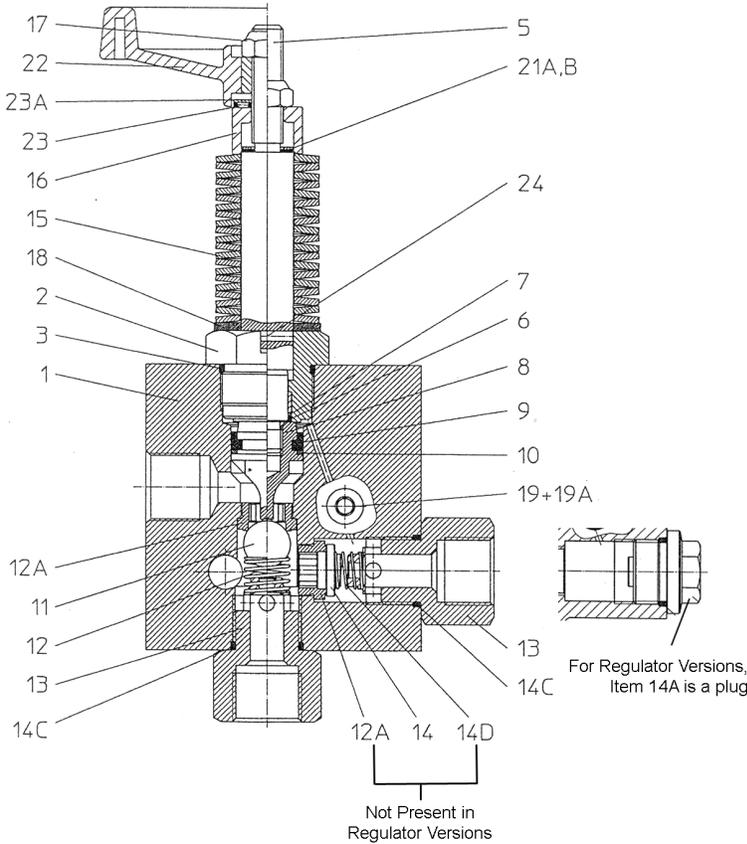


**Models**  
**22971C-40/22971CR-40**  
**22973C-40/22973CR-40**

**Unloader/Regulator,**  
**303 Stainless Steel**



**SPECIFICATIONS:**

**Maximum Pressure:**  
 1740 PSI (22971C-40/22971CR-40)  
 4060 PSI (22973C-40/22973CR-40)

**Maximum Flow:**  
 35.7 GPM (22971C-40/22971CR-40)  
 26.4 GPM (22973C-40/22973CR-40)

**Minimum Flow:** 2.1 GPM

**Maximum Temperature:** 160 °F

**Inlet Port:** 3/4" BSP

**Outlet Port:** 3/4" BSP

**Bypass:** 3/4" BSP

**22971C-40/22973C-40 = Unloader**  
**22971CR-40/22973CR-40 = Regulator**

*When ordering handwheel versions add "H" to model number*

| Item | Part #     | Description                       | Qty. | Item | Part #     | Description                                | Qty. |
|------|------------|-----------------------------------|------|------|------------|--|------|
| 1    | 12232-0400 | Valve Body                        | 1    | 14D  | 06017-0100 | Spring, Outlet Valve (22971C-40/22973C-40) | 1    |
| 2    | 06960      | Guide Plug Assembly               | 1    | 15   | 12218      | Spring, Yellow (22971C-40/22971CR-40)      | 21   |
| 3    | 07332      | O-Ring                            | 1    | 15   | 08512      | Spring, Orange (22973C-40/22973CR-40)      | 19   |
| 5    | 12242-0400 | Piston Rod                        | 1    | 16   | 12245      | Spacer Sleeve                              | 1    |
| 6    | 07853      | O-Ring, Valve Stem                | 1    | 17   | 12246      | Self-Locking Hexagon Nut                   | 1    |
| 7    | 06961      | Support Ring                      | 1    | 18   | 12223      | Washer, Spring                             | 1    |
| 8    | 12206-0400 | Piston                            | 1    | 19   | 07423-0400 | Plug                                       | 4    |
| 9    | 05005      | Cup, 28mm                         | 1    | 19A  | 07755-0100 | Gasket, Steel                              | 4    |
| 10   | 05015      | Backup ring, 28mm                 | 1    | 21A  | 06821      | Spacer Disc, 0.5 mm                        | 1    |
| 11   | 12207-0400 | Ball                              | 1    | 21B  | 06822      | Spacer Disc, 1.0 mm                        | 3    |
| 12   | 12216      | Valve Spring                      | 1    | 22   | 06774      | Spoked Handwheel ("H" versions)            | 1    |
| 12A  | 12208-0100 | Seat (22971C-40/22973C-40)        | 2    | 23   | 06775      | Axial Needle Bearing ("H" versions)        | 1    |
| 12A  | 12208-0100 | Seat (22971CR-40/22973CR-40)      | 1    | 23A  | 06776      | Disc ("H" versions)                        | 1    |
| 13   | 12243-0400 | Fitting (22971C-40/22973C-40)     | 2    | 24   | 12247      | Serrated Pin                               | 1    |
| 13   | 12243-0400 | Fitting (22971CR-40/22973CR-40)   | 1    |      |            |  |      |
| 14   | 12244-0400 | Valve Plate (22971C-40/22973C-40) | 1    |      |            |  |      |
| 14A  | 13150-0100 | Plug (22971CR-40/22973CR-40)      | 1    |      |            |  |      |
| 14C  | 07035      | O-Ring                            | 2    |      |            |  |      |

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**Repair Kit - # 09461-40**

**Parts Included:** 3, 6, 7, 9, 10, 11, 12, 12A, 14, 14C, and 14D

**Repair Kit - # 09461R-40**

**Parts Included:** 3, 6, 7, 9, 10, 11, 12, 12A, and 14C

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## INSTALLATION OF 22971C-40(R) AND 22973C-40(R) UNLOADERS/REGULATORS

- 1) The unloader is to be positioned on the discharge side of the pumping unit.
- 2) The bottom port (inlet) receives the pump discharge.
- 3) The side port (outlet) is the pressure outlet. Make sure all side ports are tightened securely.
- 4) The backside port (bypass) redirects the pumped media when the pressure outlet is closed.
- 5) The proper sized bypass line can be directed to a holding tank, to atmosphere, or back to the pump inlet.

**NOTE:** Bypass lines returning to the pump inlet should be equipped with a thermal relief valve to prevent excessive heat buildup in the bypass line that can damage the pumping system during periods of prolonged bypass.

- 6) If a pulsation dampener (accumulator) is used in your pumping system, the pulsation dampener (accumulator) must be positioned on the downstream side of the unloader. **REMEMBER:** IMPROPER PLACEMENT OF THE PULSATION DAMPENER (ACCUMULATOR) CAN AFFECT THE UNLOAD CAPACITY OF THE UNLOADER AND CAN LEAD TO SEVERE SYSTEM DAMAGE AND POSSIBLE BODILY INJURY.

**CAUTION:** A properly sized pressure gauge must be used when attempting to adjust the unloader to its pressure setting. Position the gauge between the pump and the unloader.

- 7) Select the proper spring assembly for your unloader. All spring ratings are based on the maximum operating pressure of the unloaders.

Yellow Springs: 22971C-40/22971CR-40

Orange Springs 22973C-40/22973CR-40

**NOTE:** Cracking pressures at which the unloader is activated can rise 300-400 PSI over the rated operating pressures depending on your system.

- 8) Always adjust the unloader springs to the system pressure with the system open. Before adjusting, be sure that the spray nozzle orifice is properly sized for the volume and pressure you desire and then fine tune the unloader.

**CAUTION:** NEVER USE THE UNLOADER TO COMPENSATE FOR A WORN NOZZLE AS YOU RISK BOTTOMING-OUT THE UNLOADER, WHICH CAN CAUSE THE UNLOADER TO MALFUNCTION AND LEAD TO SEVERE SYSTEM DAMAGE AND POSSIBLE BODILY INJURY.

- 9) Giant Industries, Inc. strongly recommends the use of a pop-off valve positioned downstream of the unloader as a safety backup in case of unloader malfunction.



**WARNING:** This product might contain a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm.  
For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**GIANT**  
Performance Under Pressure

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