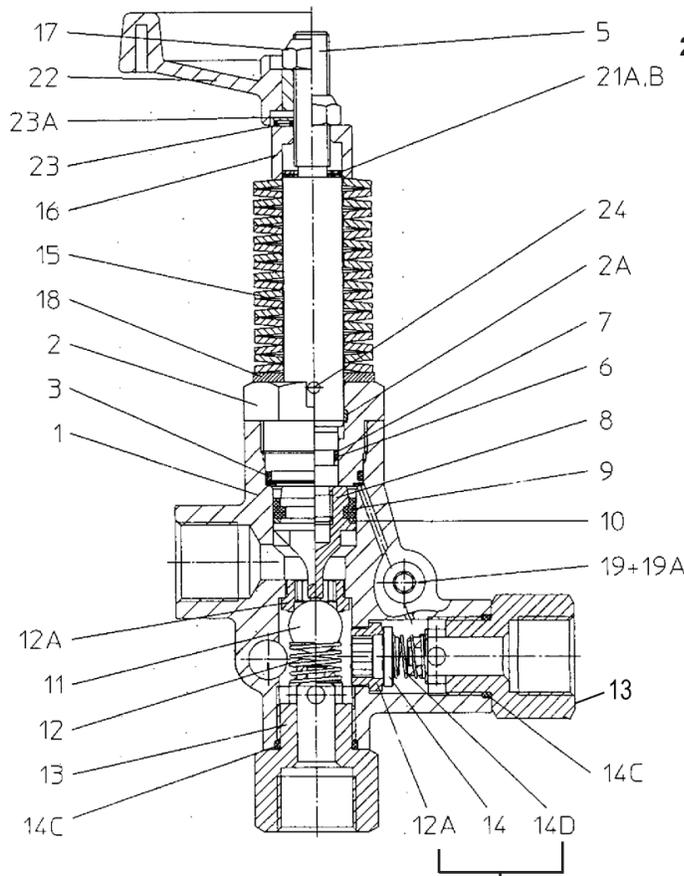


# Models

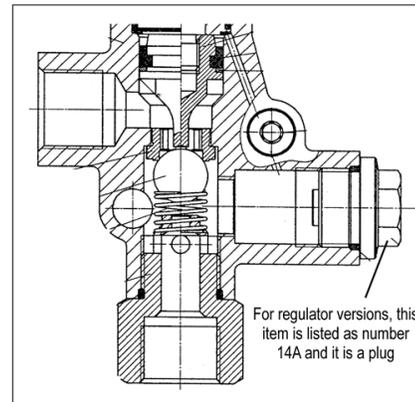
22971C-01/22971CR-01/  
22973C-01/22973CR-01  
22974-01/22974CR-01

# Unloader/Regulator, Viton Versions



22971C-01/22973C-01/22974-01 = Unloader  
22971CR-01/22973CR-01/22974CR-01 = Regulator

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



Not present in 22971CR and 22973CR

Item	Part #	Description	Quantity	Item	Part #	Description	Quantity
1	12232	Valve Body	1	14D+	06017-0100	Spring, Outlet Valve (unloader versions)	1
2	12240	Guide Plug	1	15	12218	Spring, Yellow (22971C)	21
2A	12241	Guide Ring	1	15	12220	Spring, Orange (22973C)	19
3	12057-0001	O-Ring, Viton	1	15	04284	Spring, Silver (22974)	23
5	12242	Piston Rod	1	16	12245	Spacer Sleeve	1
6	12204-0001	O-Ring, Viton, Valve Stem	1	17	12246	Self-Locking Hexagon Nut	1
7	12205	Backup Ring, Valve Stem	1	18	12223	Washer, Spring	1
8	12206	Piston	1	19	06685	Plug	4
9	05005-0010	Cup, 28mm, Viton	1	19A	11057-0001	O-Ring, Viton, Plug	4
10	05015	Backup ring, 28mm	1	21A	06821	Spacer Disc, 0.5 mm	1
11	12207	Ball	1	21B	06822*	Spacer Disc, 1.0 mm	3
12	12216	Valve Spring	1	22	06774	Spoked Handwheel ("H" versions)	1
12A	12208	Seat (unloader versions)	2	23	06775	Axial Needle Bearing ("H" versions)	1
12A	12208	Seat (regulator versions)	1	23A	06776	Disc ("H" versions)	1
13	12243	Fitting (unloader versions)	2	24	12247	Serrated Pin	1
13	12243	Fitting (regulator versions)	1				
14+	12244	Valve Plate	1				
14A	06820	Discharge Plug (regulator versions)	1				
14C	07035-0001	O-Ring, Viton	2				

+ Not present in regulator version  
\* May not be present

**Repair Kit: Part Number 09461-01** Parts Included: 2A, 3, 6, 7, 9, 10, 11, 12, 12A, 14, 14C, 14D, 19A

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**SPECIFICATIONS:**

<b>Pressure Range:</b>	<b>U.S.</b>	<b>Metric</b>
<b>(22971C Series):</b> .....	580-1740 PSI.....	(40-120 Bar)
<b>(22973C Series):</b> .....	580-4060 PSI.....	(40-280 Bar)
<b>(22974 Series):</b> .....	362-580 PSI.....	(25-40 Bar)
 <b>Maximum Flow:</b>		
<b>(22971C/22974 Series):</b> .....	35.7 GPM.....	(135 LPM)
<b>(22973C Series):</b> .....	26.4 GPM.....	(99 LPM)
 <b>Minimum Flow:</b> .....		
.....	2.1 GPM.....	(8 LPM)
<b>Maximum Temp.:</b> .....		
.....	160 °F .....	(70 °C)
<b>Inlet Port:</b> .....	.....	3/4" FNPT
<b>Outlet Port:</b> .....	.....	3/4" FNPT
<b>Bypass:</b> .....	.....	3/4" BSP

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**INSTALLATION OF 22971C(R), 22973C(R), AND 22974(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.

Silver Springs: 22974 Series  
Yellow Springs: 22971C Series  
Orange Springs 22973C Series

**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.



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**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)

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