

# Models

## 22109 - Unloader

## 22109R - Regulator

## Pressure Actuated Unloader/Regulator

### Parts List

| Item | Part # | Description              | Quantity |
|------|--------|--------------------------|----------|
| 1    | 05548  | Piston Holder            | 1        |
| 2    | 05549  | O-Ring                   | 1        |
| 3    | 05550  | Spring (22109 only)      | 1        |
| 4    | 05551  | Check Valve (22109 only) | 1        |
| 5    | 05552  | O-Ring (22109 only)      | 2        |
| 5    | 05552  | O-Ring (22109R)          | 1        |
| 6    | 05553  | Housing                  | 1        |
| 7    | 05554  | O-Ring                   | 1        |
| 8    | 05555  | Seat                     | 1        |
| 9    | 05556  | Shutter                  | 1        |
| 10   | 05557  | O-Ring                   | 1        |
| 11   | 05558  | Bushing                  | 1        |
| 12   | 05559  | Back-Up Ring             | 1        |
| 13   | 05560  | O-Ring                   | 1        |
| 14   | 05561  | Bushing                  | 1        |
| 15   | 05562  | O-Ring                   | 1        |
| 16   | 05563  | Back-Up Ring             | 1        |
| 17   | 05564  | Piston                   | 1        |
| 18   | 05565  | Ball                     | 1        |
| 19   | 05566  | Piston Holder            | 1        |
| 20   | 05567  | Ball Holder              | 1        |
| 21   | 05568  | Spring                   | 1        |
| 22   | 05569  | Spring                   | 1        |
| 23   | 05570  | Spring Holder            | 1        |
| 24   | 05571  | Screw Plug               | 1        |
| 25   | 05572  | Nut                      | 1        |
| 26   | 05573  | Screw                    | 1        |

| Repair Kit# | Includes Item Numbers:            |
|-------------|-----------------------------------|
| 09642       | 2, 5, 7, 8, 9, 10, 12, 13, 15, 16 |

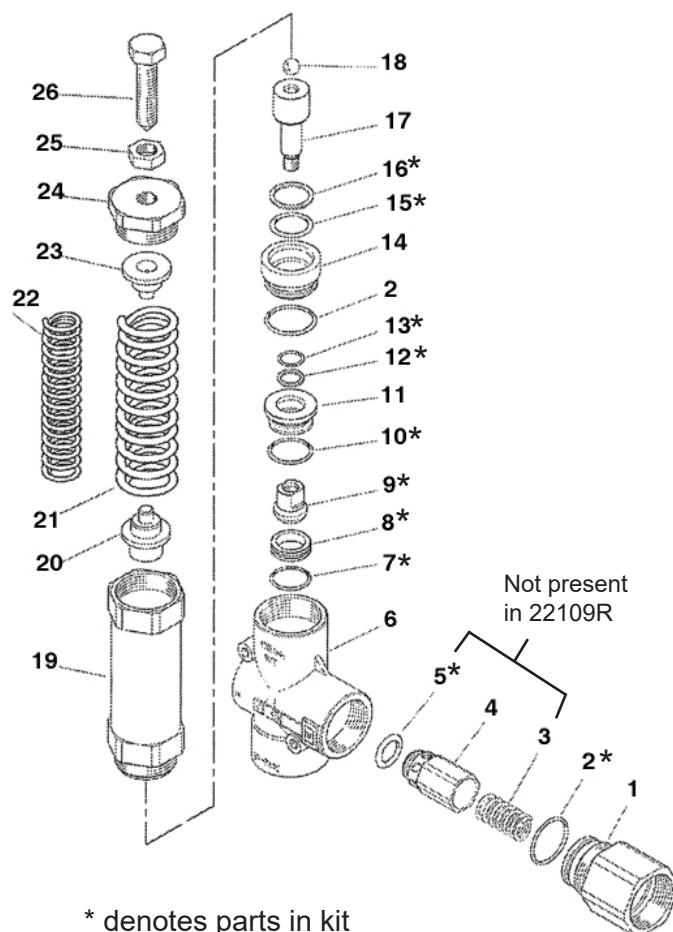
### Operating Conditions

|                        |                            |
|------------------------|----------------------------|
| Maximum Flow:          | 120 GPM (450 l/m)          |
| Operating Pressure:    | 4,350 PSI (300 bar)        |
| Maximum Pressure:      | 4,800 PSI (330 bar)        |
| Operating Temperature: | 140° F (60° C)             |
| Maximum Temperature:   | 194° F (90° C)             |
|                        | (For short intervals only) |
| Inlet Port:            | 1-1/4" FBSP                |
| Outlet Port:           | 1-1/4" FBSP                |
| By-Pass:               | 1-1/2" FBSP                |
| Weight:                | 13.3 lbs (6.0 kg)          |

**Note:** Always remember to generously lubricate all moving parts with a light weight oil for easy reassembly and to give the moving parts protection when "running in" the unloader.

- For use with high flow rates.
- Special steel spring with superior mechanical features, to maintain calibration settings for longer periods.
- Check valve specifically designed to prevent jamming.
- Screw / locknut adjustment to set max. pressure levels.
- Dynamic seals with O-ring and sliding gasket.
- Fixing screw slots.

**NOTE:** Contact Giant Industries before using any liquid other than clean, fresh water.

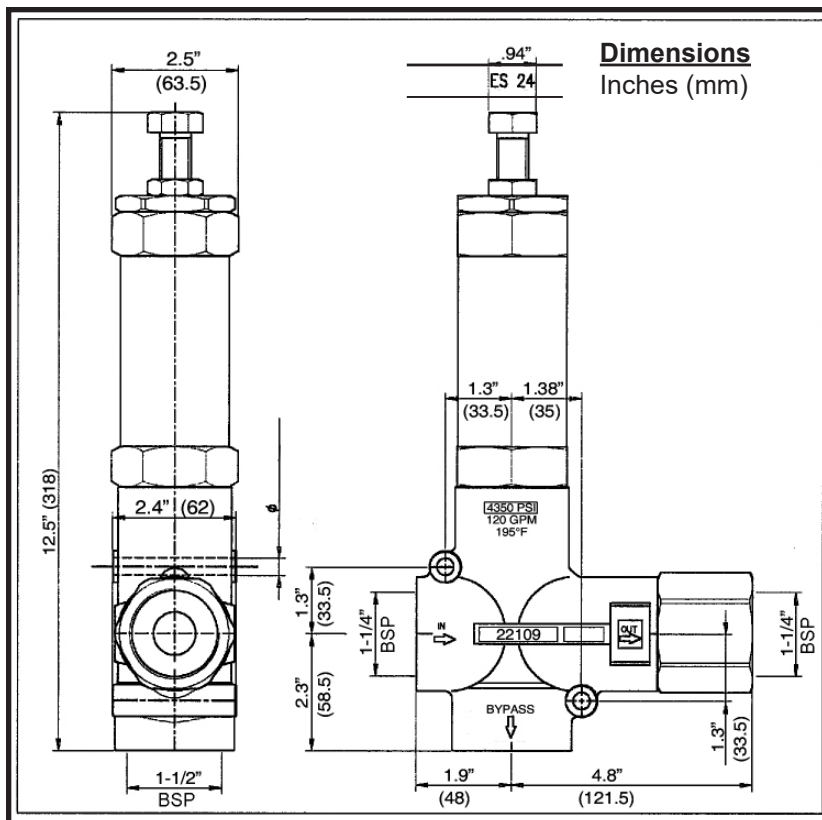


\* denotes parts in kit

Subject to change without notice.

**GIANT**  
Performance Under Pressure

**Giant Industries, Inc.**  
900 N. Westwood Ave.  
Toledo, Ohio 43607  
419-531-4600 Phone  
419-531-6836 Fax  
www.giantpumps.com  
© Copyright 2014 Giant Industries, Inc.



## INSTRUCTIONS

### Selection

This unloader is to be use with clean, fresh water, or water containing minimal additives, i.e. ordinary detergents. Appropriate filtration should be installed when using fluid mixtures. When choosing the proper unloader, consider the running data of the system. In no case should the pressure, flow or temperature exceed the permissable ratings of the unit.

### Installation

On a hot water machine, the valve must be placed ahead of the heating unit. The use of accessories to limit the accidental increase of temperature is necessary.

### ALWAYS INSTALL A SAFETY VALVE TO PROTECT THE PRESSURIZED OUTLET.

Select the correct nozzle size to allow a regular discharge into bypass of, at least, 5% of the total flow rate of the system. This will allow for a constant pressure setting and prevent pressure spikes at shut-off which could damage the system. As the nozzle wears out the pressure drops. When replacing the nozzle, reset the pressure to the original level.

### OPERATION

The valve regulates the maximum system pressure with a piston which acts on a cone that, normally positioned, closes the bypass opening. A check valve prevents water from re-entering the discharge on shut-off.

All adjustments should be made while the system is in operation and the nozzle is working.

**IMPORTANT:** The nut (item 25) must never be removed as it is a mechanical safety device that limits the maximum pressure and prevents serious damage to people and equipment.

### MAINTENANCE

All maintenance must be carried out by qualified personnel only.

### SCHEDULE:

Every 400 hours of operation (approximately 10,000 cycles) check and lubricate seals with waterproof grease.

At 800 hours of operation (approximately 20,000 cycles) check the condition of the seals and other internal components.

If required, replace worn items with spare parts from Giant Industries. Before installing new parts, be sure to lubricate with a light coating of grease.

**IMPORTANT:** After the replacement of any parts, be sure that the re-assembly of the valve is correct. Before starting the system, all conditions are to be reset to starting levels, making sure to set the nut (item 25) with thread locking liquid.

**Giant Industries is not liable for damages which result from improper maintenance or incorrect fittings.**

| TROUBLESHOOTING                             |  |   |
|---|--|---|
| PROBLEM                                     | PROBABLE CAUSE(S)  | SOLUTION(S)   |
| Valve cycles frequently                     | Check valve o-ring worn.<br>Fittings leaking.<br>Bypass blocked or throttled.  | Replace.<br>Check and restore.<br>Clean or adjust.                                      |
| Valve does not reach desired pressure level | Piston seals worn out.<br>Debris lodged between valve seat and shutter.<br>Nozzle worn out.  | Replace.<br>Clean up valve seat and/or shutter.<br>Replace                              |
| Pressure spikes                             | Less than 5% of total flow discharged to bypass.<br>Excessive flow rate in bypass.<br>Adjustment made with spring completely compressed. | Reset.<br>Choose different valve or adjust passages.<br>Loosen knob and replace nozzle. |
| Valve does not bypass at low pressure       | Jammed check valve.<br>Check valve o-ring worn out.<br>Debris on check valve.  | Clean or replace.<br>Replace<br>Clean   |



**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)