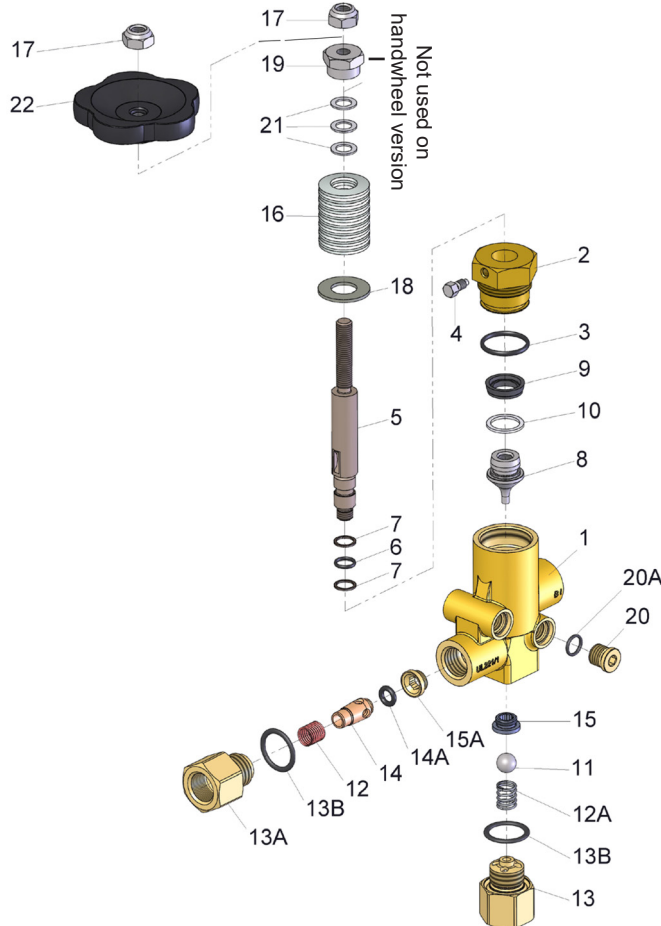


Models

Unloader/Regulator

22910A-22913A / 22910AR-22913AR



OPERATING CONDITIONS

Maximum Flow: 13.2 GPM (50 L/min)
Minimum Flow: 1.3 GPM (5.0 L/min)
Max. Temp: 160 °F (70 °C)
Inlet Port: 1/2" FNPT
Outlet Port: 1/2" FNPT
Bypass: 1/2" BSP

| Pressure Range | | | |
|----------------|----------|--------|--------------|
| Model | PSI | Bar | Spring Color |
| 22910A | 360-800 | 25-55 | Silver |
| 22911A | 360-1450 | 25-100 | Yellow |
| 22912A | 360-2000 | 25-140 | Red |
| 22913A | 725-3000 | 50-200 | Orange |

Spare Parts List

| Item | Part # | Description | Qty. |
|-------|--------|-------------------------------|--------|
| 1 | 12112 | Valve Body | 1 |
| 2 | 12003 | Guide Plug | 1 |
| 3** | 12004 | O-ring, Valve Cap | 1 |
| 4 | 12005 | Set Screw with Journal | 1 |
| 5 | 12016 | Piston Rod | 1 |
| 6** | 11507 | O-ring, Valve Stem | 1 |
| 7** | 11508 | Back-up ring, Valve Stem | 2 |
| 8 | 12015 | Piston Body | 1 |
| 9** | 04006 | Cup (23mm) | 1 |
| 10** | 04018 | Back-up ring, Piston | 1 |
| 11† | 12089 | Ball, Inlet | 1 |
| 12† | 12090 | Spring, Outlet Valve | 1 |
| 12A† | 12011 | Spring, Inlet | 1 |
| 13 | 12111 | Inlet Adapter | 1 |
| 13A | 12091 | Spring Retainer, Outlet Valve | 1 |
| 13B** | 12092 | O-ring, Spring Retainer | 2 |
| 14† | 12093 | Outlet Valve | 1 |
| 14A** | 12094 | O-ring, Outlet Valve | 1 |
| 15† | 12095 | Seat, Inlet Valve (S.S.) | 1 |
| 15A† | 12096 | Seat, Outlet Valve (Brass) | 1 |
| 16 | 22829 | Spring, Silver, 1.5mm | 17 |
| 16 | 22830 | Spring, Yellow, 1.5mm | 14 |
| 16 | 22831Y | Spring, Yellow, 1.75mm | 3 |
| 16 | 22831 | Spring, Red, 1.75mm | 17 |
| 16 | 22835 | Spring, Orange, 2mm | 15 |
| 17 | 12021 | Self-Locking Nut | 1 |
| 19 | 12022 | Adjusting Nut | 1 |
| | | (except handwheel versions) | 1 |
| 20 | 06685 | Plug, 1/4" | 4 |
| 20A** | 12017 | O-ring, Plug | 4 |
| 21 | 06686 | Spacer Disc, 1.0 mm | max. 5 |
| 22 | 06430 | Handwheel (optional) | 1 |
| * | 12099 | Seal Repair Kit | |
| + | 09530 | Complete Repair Kit | |

The bottom three springs are the same thickness as p/n 22831, but all the springs are painted yellow.

† When ordering handwheel, add "H" at the end of the unloader/regulator number.

| Item No. | Thread | Torque Amount | Lubrication |
|--------------------|----------|----------------------|-----------------|
| 2 | M33x1.5 | 18 ft.-lbs. (25 Nm) | |
| 3 / 6 / 7 / 9 / 10 | | | Silicone grease |
| 8 | M10 | | Loctite 243 |
| 15 / 15A | 1/4" BSP | 132 in.-lbs. (15 Nm) | Loctite 270 |
| 13 / 13A | 1/2" BSP | 18 ft.-lbs. (25 Nm) | |
| 13B / 14A / 20A | | | Gear Oil |
| 20 | 1/4" BSP | 71 in.-lbs. (8 Nm) | |

Fields of application

The fields of application of these unloader types correspond to the specifications in the assembly instructions Giant Industries Unloader.

Ambient conditions

Ambient temperature: 41°F (5°C) < T Amb. < 86°F (30°C)

Safety Instructions

Observe direction of flow. The bypass must under no circumstances be closed or fitted with any shut-off device. Continuous bypass operation without releasing the water can cause the liquid to heat up which in turn could damage the unit and endanger persons.

Possible preventive measures:

- 1.) Limit the bypass duration with a maximum temperature of 160°F (70°C); the duration is to be calculated by the operator and in conjunction with the operating conditions.
- 2.) Use fittings (e.g. thermal relief valve on water inlet) to avoid heat increase.

Installation / Putting into Operation

Bypass line

The bypass line must be laid in a flow-favourable way.

The cross-section of the bypass line must at least correspond to the outlet cross-section of the valve.

| Outlet (G+NPT) | 1/4 | 1/2 | 3/4 | 1 |
|----------------|-----|-----|-----|----|
| Min. ø (mm) | 8 | 8 | 15 | 17 |

Installation and Adjustment of Pressure

Adjusting Pressure UL221 (H)

1. Valve should be tension-free, i.e. loosen nut (17) and adjusting nut (19) so that the piston rod can be moved manually.
 2. Spring set and adjusting nut (19) - as well as nut (17) on spiral spring design - are to be tensioned while pump is running and with open gun (in case of more guns, all have to be open) until required operating pressure is reached and no more water runs out on bypass side.
- If the nozzle hole is suited to the exact flow rate and pump pressure, water should not run via the bypass when required operating pressure is reached.
- If the nozzle hole is too small to allow all the fluid to run through the hole after the required operating pressure has been reached, on no account is the valve to be adjusted higher than the maximum operating pressure of the pump. In this case, the bypass is to be left partially open. It is therefore advisable to have suitable nozzles installed. The spacer discs (21, 21A) which are under the adjusting nut (19) are there to keep the adjusted pressure within limits. These discs are not to be removed. Valves are NOT SET when delivered. They become

a SAFETY COMPONENT only after adjustment on the machine by trained personnel.

Operation

For informations, see assembly instructions Giant Industries

Maintenance and Servicing

For the type of thread locker used and the required tightening torques, observe the table in the exploded view.

Special tools required

No special tools are required for assembly.

Renewal of Piston Seals

Screw guide plug (2) out of valve body (1) and remove hexagon screw (4). Remove piston body (8) by removing with aluminium pliers or tongs (do not use a hard tool). Cut out worn seals.

Carefully slide O-ring (6) and support rings (7) onto piston rod. Note order of installation.

Clip sleeve support ring (10) and sleeve (9) onto piston body. Check valve body surfaces and guide plugs (dirt or damage wear seals out quickly).

Fasten piston body onto piston rod with Loctite 270. Grease all parts lightly with Silicone before reinstalling.

To Check Valves

Remove plug (13A) and check whether kick-back valve taper (14) or kick-back valve plate (14) and kick-back valve body (15A) are worn out. Check O-ring (14A) for damage.

Remove bypass valve plug (13) and examine ball (11) and bypass valve body (15) for damage. Valve seats can be screwed out with an inside hexagon key (size 8).

If the bypass valve seat (15) is worn, the ball (11) must be impressed carefully against the sealing edges of the valve body.

Glue in new valve seats with Loctite 270. Allow to dry for 60 minutes before putting into operation.

If required, supplementary assembly instructions can be requested from the manufacturer Giant Industries

Spare Parts

When ordering spare parts, please specify unloader type, unloader number, year of manufacture, and spare parts code no.

This data can be found on the nameplate and in the spare parts list.

Malfunctions / Remedy

For informations, see assembly instructions Giant Industries.

Materials Used

| | |
|--------------|----------------------------|
| Casing: | Special Brass |
| Piston Body: | AISI 431 |
| Piston Rod: | AISI 303 |
| Valves: | High-Grade Stainless Steel |
| Seals: | Nitrile Fabric |
| O-Rings: | Nitrile |



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

GIANT
Performance Under Pressure

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| DEFECT | CAUSE | REMEDY |
|--|--|--|
| Valve switches repeatedly when gun is closed. | Leaky gun. | Repair gun. |
| | Leaky pressure pipe. | Seal pressure pipe. |
| | Leaky cup. | Change cup (9). |
| | Worn out kick-back valve seat or O-ring. | Change kick-back valve seat (15A) and O-Ring (14A). Examine valve seat. |
| Leaky piston rod. | Defective O-Ring/ support Ring. | Change piston rod seals (6,7) and examine surface of guide plugs. |
| Leaky bypass at nominal pressure. | Nozzle too small, too much water. | Install larger nozzle. |
| | Worn out bypass valve ball. | Examine and change as necessary, ball (11), and bypass valve seat (15). |
| Pressure gauge shows high pressure fluctuations when shutting off gun. | Valve set too high above operating pressure. | Turn back adjusting nut (19) and hexagon nut (17). |
| | Dirty valve. | Clean valve (removing lime deposits etc.) Grease parts before reinstalling. |