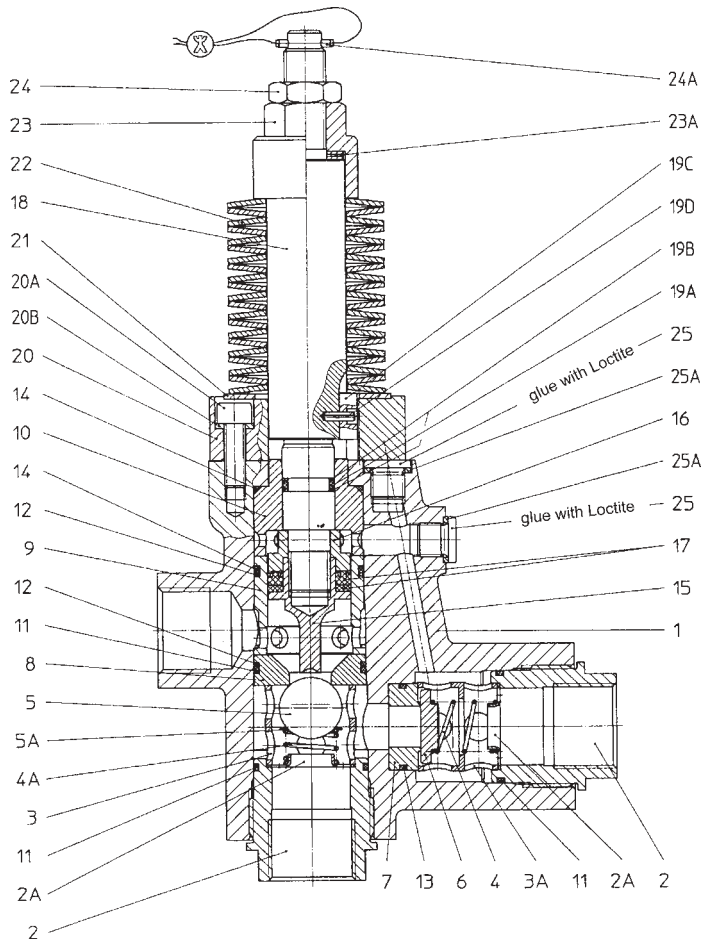


# Models

# Adjustable Unloader

## 22948, 22949, 22950 Series



Item	Part #	Description	Quantity
1	06730	Casing	1
2	12042	Tension Plug	2
2A	12043	Spring Tension Disc	2
3	12281	Retainer, Valve	1
3A	06732	Retainer, Discharge Valve	1
4	12045	Spring, Discharge Valve	1
4A	12118	Spring, Inlet valve	1
5	12046-0100	Ball Valve, Inlet ( <b>22948</b> )	1
5	12047-0100	Ball Valve, Inlet ( <b>22949 &amp; 22950</b> )	1
5A	05357	Spacer Disc	1
6	06733	Valve, Discharge	1
7	12282	Valve Seat, Discharge	1
8	06734	Valve Seat, Inlet ( <b>22948</b> )	1
8	06745	Valve Seat, Inlet ( <b>22949</b> )	1
8	06746	Valve Seat, Inlet ( <b>22950</b> )	1
9	12053	Cylinder	1
10	12054	Guide	1
11	06577	O-Ring	3
12	12056	Support Ring	2
13	06735	O-Ring, Discharge Valve Seat	1
14	06736	O-Ring	2
15	12059	Piston	1
16	12284	Spacer	1
17	12283	Packing	1
18	06737	Valve Stem	1
19A	22618	O-Ring, Valve Stem	1
19B	12064	Spacer, Valve Stem	2
19C	12065	Key	1
19D	12066	Tension Sleeve	1
20	12067	Support Ring	1
20A	06738	Allen Screw	4
20B	01011-0400	Washer, Spring	4
21	12070	Disc	1
22	12071	Spring, Yellow ( <b>22948</b> )	19*
22	12072	Spring, Red ( <b>22949</b> )	19*
22	12073	Spring, Orange ( <b>22950</b> )	19*
23	12074	Nut, Adjusting	1
23A+	06739	Spacer Disc, 0.2m	1
23B+	06740	Spacer Disc, 0.5mm	2
23C+	06741	Spacer Disc, 1.0mm	2
23D+	06742	Spacer Disc, 5mm	1
24	06743	Nut, Locking	1
24A	06744	Tension Pin	1
25	07423-0100	Plug, 1/4"	6
25A	07161	Washer	6

### Repair Kits

Unloader	Kit Number	Parts included:
22948/22949/22950	09619	11,12,13,14,17,19A,19D
22949 & 22950	12082	4,4A,5,6,11,12,13,14,17,19A,19B,19D
22948	12081	4,4A,5,6,11,12,13,14,17,19A,19B,19D

### Construction Characteristics

- Compact in size
- Interchangeable Valve Bodies
- Connection for pressure gauge, pressure switch and flow indicator

\* May not be present. Quantity may vary.

### Specifications

Unloader	Max. Pressure PSI (Bar)	Max. Flow GPM (L/min)	Min. Pressure PSI (Bar)	Min. Flow GPM (L/min)	Max. Temp. °F ( °C)
22948	1600 (110)	60 (227)	600 (40)	2 (7.5)	160 (70)
22949	3200 (220)	32 (121)	1600 (110)	2 (7.5)	160 (70)
22950	5800 (400)	16 (61)	3200 (220)	2 (7.5)	160 (70)

## Operation

The whole discharge must be guided through the valve. Should the actual operating pressure exceed the adjusted operating pressure, the valve then acts as a pressure regulator. The valve switches to pressure-free bypass operation when the spray gun shuts off and the spray pressure between gun and valve remains idle.

The valve can be operated together with several spray guns. It is also possible to connect several pumps to one common discharge line.

## Service and Adjustment

Re-servicing and adjusting work is only to be carried out by skilled tradesmen.

## Safety Instructions

**Important!** Observe direction of flow. The bypass must under no circumstances be closed or fitted with any shut-off device.

### To Renew Piston Rod Seals and Sleeves

Unscrew nuts (24+23). Remove spring pack (22). With a 6mm allen wrench, unscrew the 4 inner hexagon screws (20A) and remove spring support (20). Remove woodruff key (19C) and remove inlet tensioning plug (2). Remove spring (4A), ball (5) and spacer disc (5A). Push out piston rod (18) downwards together with inner parts (8, and 9). Remove piston body (15) with a size 19 wrench and pull piston rod out of guide case (10). Cut out worn seals and replace. Then carefully clip O-ring (19A) and support rings (19B) onto the piston rod. Note order of installation. Re-install guide sleeve (10) and spacer (16). Put the packing on the piston rod. Check casing (1) surfaces and inner parts for dirt or damage as this will cause the seals to wear out quickly. Check O-rings (11&14) and support rings (12) and replace as necessary. Remount piston body to piston rod with Loctite 648. Re-assemble in reverse order. Grease all parts lightly with Silicone before reinstalling.

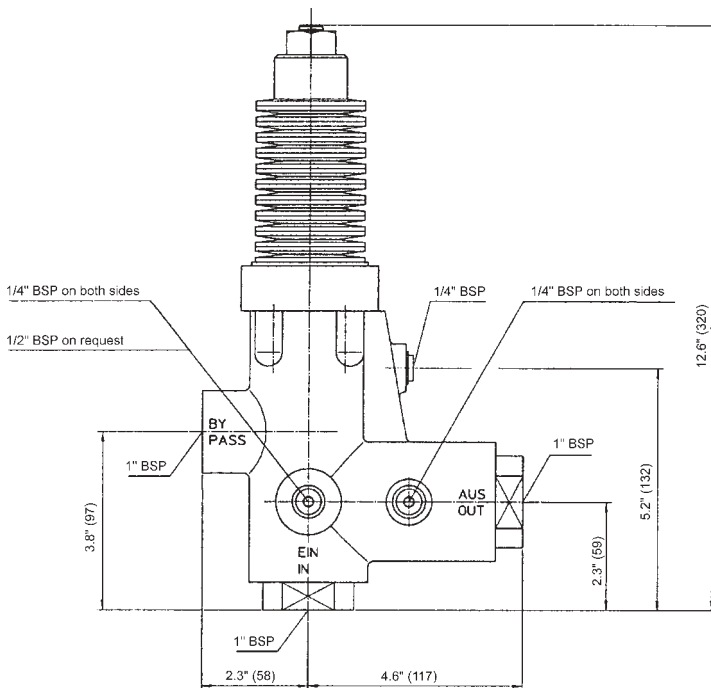
### To Check and Replace Valves

Remove the plugs (2) and check whether the balls (5) or valve plate (6) are worn out. Remove valve seats (8, 7) with clipping pliers and check surfaces for damage. Check O-rings (11) and replace as necessary.

### To Adjust Pressure

1. Open valve so that it is completely tension-free, i. e. loosen nut (24) and adjusting nut (23) so that the piston rod can be moved by hand.
2. Spring pack is tensioned by adjusting nut (23) while the pump is running and with open gun (if more than one gun is used, all have to be open) until required operating pressure is attained and no more water runs out on the bypass side. Then lock nut (24) to adjusting nut (23). If the nozzle hole corresponds exactly to the flow-rate and pressure of the pump, no more water will run out over the bypass after the required pressure has been attained.

If the nozzle hole is too small and the whole output won't go through the nozzle after the max. pump pressure has been reached, on no account is the valve to be adjusted higher than the max. operating pressure of the pump. In this case, the bypass should be partially left open. It is however, advisable to install suitable nozzles.



Troubleshooting Guide		
Problem	Cause	Remedy
Valve switches repeatedly when gun is closed	Leaky gun	Repair gun
	Leaky pressure pipe	Seal pressure pipe
	Leaky sleeve	Replace O-rings.
	Worn out kick-back valve body	Replace kick-back valve body or o-ring or examine valve seat.
	Leaky seal (12,14)	Renew seal
Leaky piston rod	Defective O-Ring / support ring	Replace piston rod seals and examine surfaces in guide plug
Leaky bypass at nominal pressure	Nozzle too small, too much water	Install larger nozzle
	Worn out bypass valve	Examine and renew as necessary, ball (5) and bypass valve body (8)
Pressure Gauge shows high pressure peaks when shutting off gun	Valve set too high above operating pressure	Turn back adjusting nut (23) and hexagon nut (24)
	Dirty Valve	Clean valve (removing lime deposits, etc. Grease parts before reinstalling.



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