

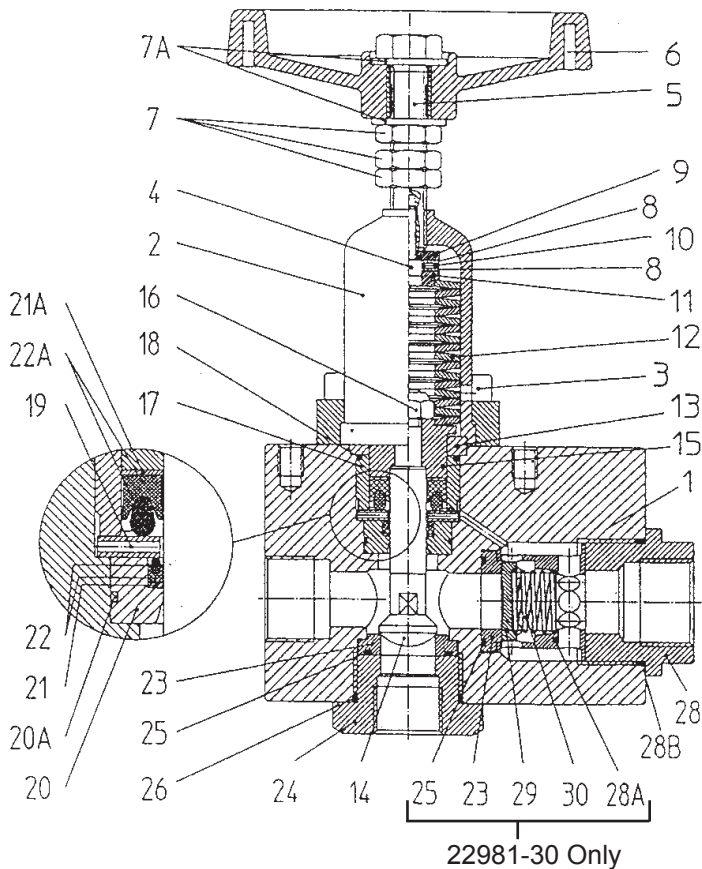
# Models

## 22981-30

## 22981R-30

# Industrial Unloader/Regulator

## (High Flow)



22981-30 = Unloader, 303 S.S.  
22981R-30 = Regulator, 303 S.S.

### Operating Specifications:

Maximum Pressure:	2200 PSI (152 bar)
Minimum Pressure:	580 PSI (40 bar)
Maximum Flow:	66 GPM (250 L/m)
Minimum Flow:	2.1 GPM (8 L/m)
Maximum Temperature:	190° F (88° C)
Inlet Port:	1" BSP
Outlet Port:	1" BSP
Bypass:	3/4" BSP
Weight:	15.4 lbs. (7 kg)

### Repair Kits:

#### Unloader Repair Kit

09578-30 (22981-30)

#### Parts Included:

14, 15, 16, 18, 20A, 21, 21A, 22, 22A, 23, 25, 26, 28B, 29, 30

#### Regulator Repair Kit

09750-30 (22981R-30)

#### Parts Included:

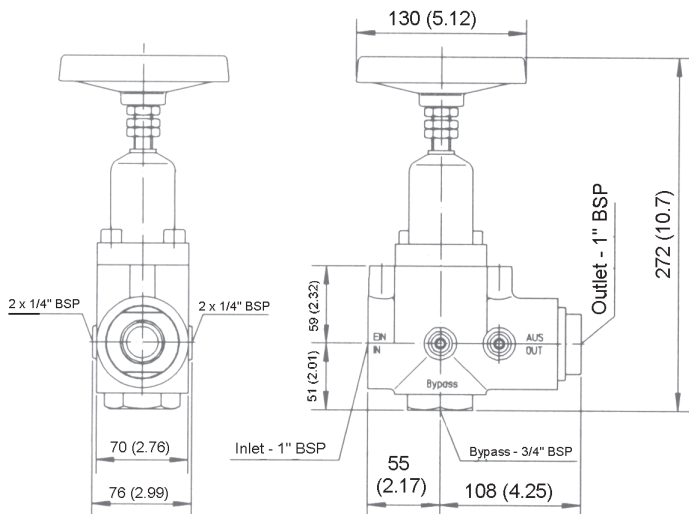
14, 15, 16, 18, 20A, 21, 21A, 22, 22A, 23, 25, 26, 28B

## Spare Parts List

Item	Part #	Description	Qty.
1	13245-0400	Casing	1
2	06880	Spring Guide	1
3	07381	Inner Hexagon Screw	4
4	08503	Inner Hexagon Screw	1
5	08504	Stud Bolt	1
6	08505	Hand Wheel	1
7	08506	Hexagon Nut	3
7A	08882	Disc	2
8	08507	Disc	2
9	08508	Bearing Cover	1
10	12323	Axial Bearing	1
11	08510	Bearing Cover	1
12	08512	Spring Plate	16
13	13246	Centering Disc	1
14	13247	Piston	1
15	05256	Seal Support	1
16	12021	Hexagon Nut	1
17	13249	Cylinder	1
18	13012	O-Ring	1
19	05257	Spacer Ring	1

Item	Part#	Description	Qty.
20	05258	Seal Adapter	1
20A	07281	O-Ring	1
21	07840	Support Ring	1
21A	13253	Support Ring	1
22	13254	Seal Pack	1
22A	13255	Seal Pack	1
23	13256	Valve Seat, 22981-30	2
23	13256	Valve Seat, 22981R-30	1
24	13257	Bypass Valve Plug	1
25	12057	O-Ring, 22981-30	2
25	12057	O-Ring, 22981R-30	1
26	12055	O-Ring	1
28	13258	Kick-Back Valve Plug	1
28A	13259-0100	Kick Back Valve Plug, 22981-30	1
28B	07653	O-Ring	1
29	13260	Valve Plate, 22981-30	1
30	07750	Valve Spring, 22981-30	1
31	07423-0100	Stop Plug (not shown)	4
32	07755-0100	Steel Washer (not shown)	4

## 22981/22981R/22981R-30 DIMENSIONS - INCHES (mm)



### TO CHECK AND REPLACE VALVES

Screw out plugs (24 & 28) and check whether the ball (29) underneath or the piston (14) is worn out. Remove the valve seats (23) and check the surfaces for damage. Replace as necessary.

### TO ADJUST PRESSURE

The spring packing is pre-tensioned by means of the hand wheel (6) while the pump is running and the gun is open (in the case of more than one gun, all guns have to be open) until required operating pressure is reached. This must allow for a residue of at least 0.13 GPM to flow over the bypass. The spring packing is never to be tensioned high enough to completely seal up the bypass. The hexagon nut (7) is then to be locked to the spring guide (2).

If the nozzle hole is too small, on no account is the valve to be adjusted to an operating pressure higher than that of the pump. It is advisable in this case to install nozzles more suitable for this purpose.

## SERVICE AND ADJUSTMENT

Servicing and adjusting work is only to be carried out by a skilled tradesman.

### TO RENEW THE PISTON ROD SEALS AND SLEEVES

Relieve the spring pack by means of the hand wheel (6). Screw out the four inner hexagon screws (3). Remove the spring guide (2) along with the spring plates (12) and hand wheel. **CAUTION: The hexagon nuts (7) are not to be shifted from the set position. These are the locking nuts to retain the maximum adjusting pressure.** Note the sequence of the spring plates (12) for reassembling.

Push out complete piston assembly (13-22A) over the bypass. Hold piston (14) with size 10 spanner and screw off hexagon nut (16). Take seals and cylinder along with the seal supports off the piston, taking note of the sequence for reassembling.

Check inner cylinder surface and piston surface. Check seals and replace as necessary. Dirt or damage will cause seals to wear out quickly.

Grease all parts lightly with silicone before reinstalling. Tighten hexagon nut (16) to 36 ft.-lbs. (48.8 Nm).

Center bypass valve seat within casing and tighten to 184 ft.-lbs. (249 Nm) with valve plug (24).

## OPERATION

The whole discharge must be guided through the valve. Should the actual operating 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 with a number of spray guns ; furthermore, more than one pump can be connected to the pressure pipe.

Valves are pre-adjusted to the desired operating pressure; therefore, the actual operating pressure has always to be stated when ordering.

Defect	Cause	Remedy
Valve switches repeatedly when gun is closed	Leaky gun	Repair gun
	Leaky pressure pipe	Seal pressure pipe
	Leaky seal pack (22)	Renew seal pack
Worn out valve plate (29)	Worn out valve plate (29)	Check and replace as valve plate (23), and seat (23).
	Leaky O-Ring (18).	Renew O-Ring (18).
Pressure gauge shows high-pressure peaks when shutting off gun.	Valve set too high above operating pressure.	Turn back handwheel (6).
	Dirty valve.	Clean valve (removing deposits etc.). Grease parts before reinstalling.

**GIANT**  
Performance Under Pressure

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