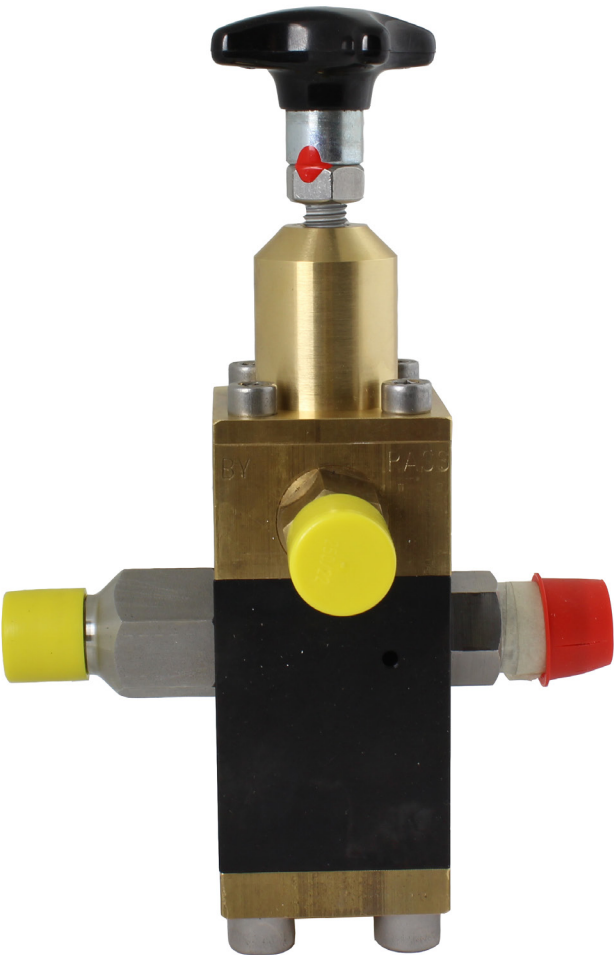


# Series 22675

## Industrial Flow Actuated Unloader



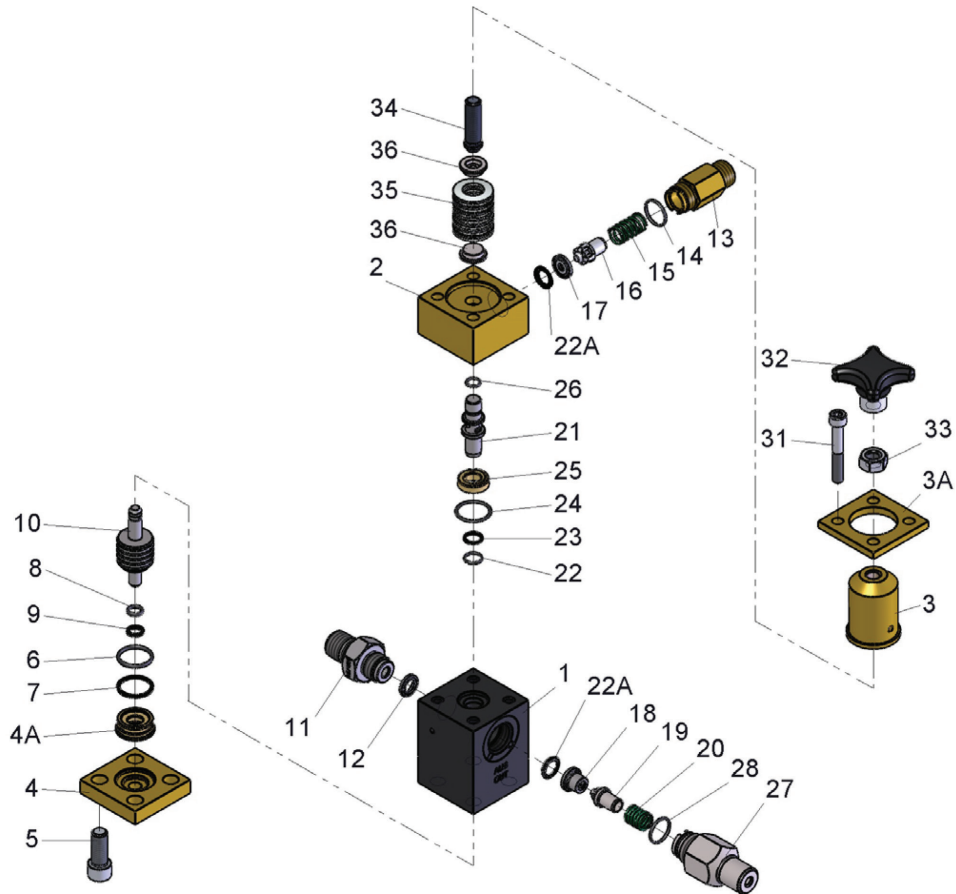
### Construction Characteristics

- Compact Size
- Special Brass Casing
- Stainless Steel and Brass Inner Parts

### Operating Specifications

	<u>U.S.</u>	<u>Metric</u>
Maximum Flow .....	13.2 GPM	50 L/min
Minimum Flow .....	1.32 GPM	5 L/min
Pressure .....	725-15,000 PSI	50-1000 Bar
Maximum Temp .....	140 °F	60 °C
Weight .....	9.7 lbs.	4.4 Kg
Inlet/Discharge Port (22675-M24) .....	M24 X 1.5	
Inlet/Discharge Port (22675-F26) .....	F26 X 1.5	
Inlet/Discharge Port (22675-08-08) .....	1/2" MNPT	
Inlet (22675-M24-08) .....	M24	
Discharge (22675-M24-08).....	1/2" MNPT	
Bypass.....	1/2" BSP	

## 22675 Series Exploded View, Parts List, and Kits



ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	04558	Housing	1	19	04075 <sup>+</sup>	Valve Cone	1
2	06787	Bypass Casing	1	20	04076 <sup>+</sup>	Pressure Spring	1
3	04064	Spring Guide	1	21	22716	Bypass Valve Body	1
3A	06778	Flange	1	22	22727 <sup>*+</sup>	O-Ring	1
4	04065	Cover	1	22A	04261 <sup>*+</sup>	Seal Edge Ring	2
4A	04066	Centering Sleeve	1	23	04077 <sup>*</sup>	Support Ring	1
5	05642	Hexagon Socket Screw	4	24	07212 <sup>*</sup>	O-Ring	1
6	07035 <sup>*</sup>	O-Ring	1	25	06784	Centering Disc	1
7	04067 <sup>*</sup>	Support Ring	1	26	05812 <sup>*</sup>	O-Ring	1
8	22704 <sup>*</sup>	O-Ring	1	27	04559	Discharge Fitting	
9	04068 <sup>*</sup>	Support Ring	1			(22675-08-08/22675-M24-08)	1
10	04069	Piston Rod	1	27	04264	Discharge Fitting (22675-M24)	1
11	04070	Inlet Fitting		27	04265	Discharge Fitting (22675-F26)	1
		(22675-M24/22675-M24-08)	1	28	06487 <sup>+</sup>	O-Ring	1
11	04071	Inlet Fitting (22675-F26)	1	31	08339	Hexagon Socket Screw	4
11	03396	Inlet Fitting (22675-08-08)	1	32	22721	Hand Wheel	1
12	04230 <sup>*</sup>	Border Seal Ring	1	33	07158	Hexagon Nut	1
13	04072	Bypass Valve Plug	1	34	06786	Threaded Stud	1
14	07913 <sup>+</sup>	O-Ring	1	35	16154	Plate Spring	14
15	04073 <sup>+</sup>	Bypass Valve Spring	1	36	22720	Bearing Part	2
16	22711 <sup>+</sup>	Valve Cone	1				
17	22726 <sup>+</sup>	Bypass Throttle	1	*	09733	Seal Repair Kit	
18	04074 <sup>+</sup>	Discharge Throttle	1	+	09734	Valve Cone Repair Kit	

## 22675 Series Operation and Repair Instructions

### Operation

- The valve functions both as a relief (unloader) and proportional pressure control valve.
- Variable operating pressure is set via the hand wheel (32).
- When spray gun is closed, the valve switches to bypass and the discharge line remains at a pressure of 116-160 PSI (8-11 bar).
- When the gun is opened, the adjusted operating pressure is built up almost instantly; this increases safety and ease of use.
- If the adjusted operating pressure is exceeded, the valve works as a proportional pressure relief valve by releasing excess water build-up over the bypass.

### Service and Adjustment

**Adjustment work is to be carried out by qualified personnel only.**

The valves are detensioned for transport and storage purposes. The operating pressure within the scope of zero to max. pressure is set at our works via the hand wheel and secured by fixing nut (33) against the hand wheel (32). Both parts are sealed against readjustment.

### Assembly into the Unit

1. The connecting branches (inlet 11, outlet 27) are screwed into the valve casing at 100 ft.-lbs. (135 Nm). To avoid these branches being over tensioned on the valve casing side, the hexagons must be counter held when fitting the respective hose to its connecting branch (11,27).

2. The connection to the bypass valve plug (13) requires securing the plug so that it is not overly tightened..

### To Adjust Pressure

1. If the unloader is going to be set at a low operating pressure proceed as follows: with the pump running and spray gun open (if more than one gun is used, all need to be open), the spring pack is tensioned by turning the hand wheel (32) until the required pressure is reached or until no more water flows through the bypass.
2. Screw nut (33) to spring guide (3). Then screw down hand wheel and lock in position with hexagon nut (33). If the nozzle hole corresponds exactly to the flow rate and pressure of the pump, no water should run through the bypass after full operating pressure has been reached.

**Important!** If, after reaching the maximum pump pressure, the complete flow cannot go through the nozzle because the hole is too small, on no account is the unloader valve to be adjusted above the maximum pump operating pressure. The bypass must then remain partially open. In such cases it is always best to use correctly sized nozzles.

3. The additionally required safety valve between the pump and unloader valve must always be set higher than the unloader valve. Pressure peaks from the pump must not activate the safety valve. Safety valve activation will cause the unloader to switch irregularly.

## 22675 Series Operation and Repair Instructions



Photo 1



Photo 2



Photo 3



Photo 4

Remove hexagon socket screws (31) (Photo 1). Pull flange (3A), spring guide (3) together with handwheel (32) and threaded screw (34) along with bearing parts (36) and plate spring pack (35) up and off (Photo 2/ Photo 3/Photo 4).

## 22675 Series Operation and Repair Instructions

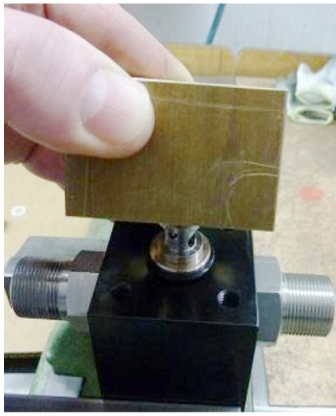


Photo 5

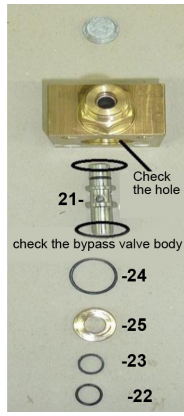


Photo 6



Photo 7



Photo 8

Lift bypass casing (2) together with bypass valve body (21) up and off (Photo 5). Take centring disc (25) and seals out of casing (1). Check the bore surface in the bypass casing and on the bypass valve body (21) for damage (Photo 6). The sealing edge on the opening of the bypass valve body (towards the piston) must be free of all damage (Photo 6). Replace o-rings (22, 24, 26) and support ring (23). Coat new ones lightly with grease before fitting. Fit centring disc (25) with the groove side facing up. Flip casing (1). Remove hexagon socket screws (5) and take off cover (4) (Photo 7/ Photo 8).



Photo 9



Photo 10

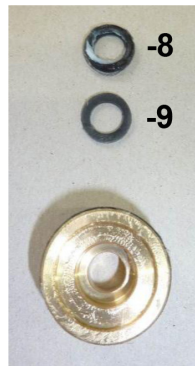


Photo 11



Photo 12



Photo 13

Pull centring sleeve (4A) out of the casing (Photo 9/ Photo 10). Examine o-ring (9) and support ring (8) and replace where necessary (Photo 11). Take piston (10) out of the casing (Photo 12). Examine piston surface, particularly the seal contact areas and the top sealing area (towards the bypass valve body) (Photo 13). Also examine surfaces in the casing and carefully remove any deposits (old emery cloth grain). Check that bores in the piston and casing are clean and unobstructed. Lightly coat new o-rings and support rings with grease before fitting.



## 22675 Series Operation and Repair Instructions



Photo 14



Photo 15



Photo 16

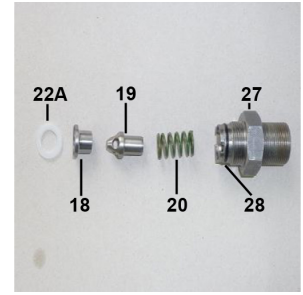


Photo 17

**Important!** The restrictors (18, 17) in the connecting branch (27) and bypass valve plug (13) are tensioned by springs (20, 15) and can suddenly jump out. Beware of this danger. Remove the connecting branch (27) (Photo 14). Using a screwdriver, lever out restrictor (18) over the side slits in the connecting branch (27) (Photo 16). Examine surfaces of valve cone (19) and restrictor (18) and replace if necessary (Photo 17).



Photo 18



Photo 19



Photo 20



Photo 21

Press the parts into the connecting branch (Photo 18). Position the seal edge ring (22A) in groove (18) using silicone grease. Grease the new o-ring (28) lightly (Photo 19). Tighten connecting branch (27) to 99 ft. lbs. (135 Nm) (Photo 20/ Photo 21).



Photo 22

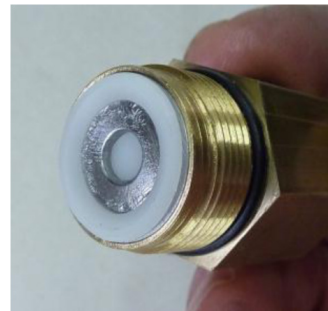


Photo 23

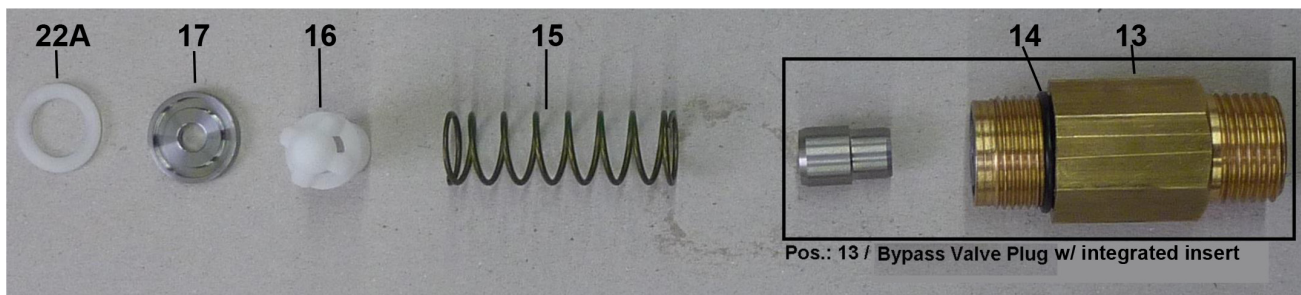


Photo 24

Remove bypass valve plug (13) (Photo 22). Using a small bolt max  $\varnothing$  8 mm, press restrictor (17) and valve cone (16) out of the bypass valve plug from the outlet side (Photo 23). Examine surfaces (Photo 23/ Photo 24). Continue as described for (27). Position the seal edge ring (22A) in groove (18) using silicone grease. Grease the new o-ring (28) lightly (Photo 19). Tighten connecting branch (27) at 99 ft.-lbs (135 Nm) (Photo 20/ Photo 21).

## 22675 Series Operation and Repair Instructions



Photo 25

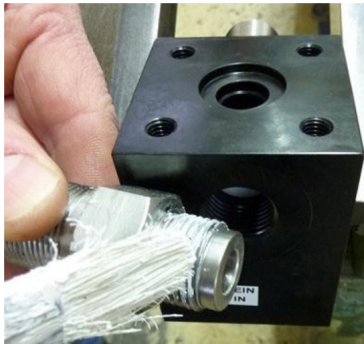


Photo 26



Photo 27

### Reassembly

Place the border seal ring (12) into the casing (1) (Photo 25). Coat the plug threads (11) with silicone grease and securely tighten (Photo 26/ Photo 27).



Photo 28



Photo 29

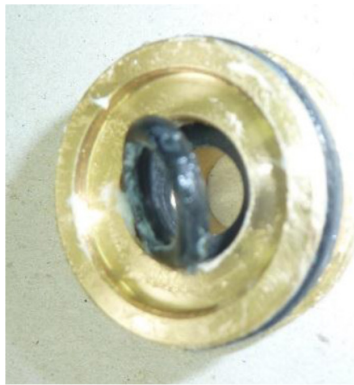


Photo 30



Photo 31

Lubricate the piston rod (10) with teflon grease (Photo 28) and fit it into the casing (1) carefully (Photo 29) and check if it works smoothly. Assemble support ring (9) and o-ring (8) in the centring sleeve (4A) and lubricate with silicone grease (Photo 30). The outer support ring (7) and o-ring (8) also need silicone grease. Put the support ring carefully on the piston rod and push it into the bore of the housing (1) (Photo 31)



Photo 32

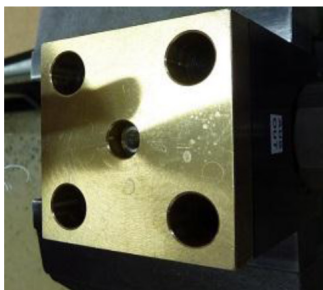


Photo 33



Photo 34



Photo 35

Put the cover (4) on the housing (1) and the sleeve (4A) (Photo 32) and align the cover (4) (Photo 33). Lubricate screws with grease (Photo 34) and tighten the screws (Photo 35).



## 22675 Series Operation and Repair Instructions



**Photo 36**



**Photo 37**



**Photo 38**



**Photo 39**

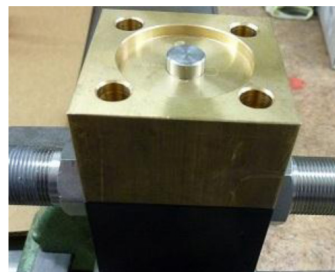
The mounted housing (1) must be inverted so that the open side is facing up (Photo 36). Insert the o-ring (22) and the support ring (23) into the bore (Photo 37). Lubricate with silicone grease (Photo 38). Insert the centering disc (25) into the housing (1) (Photo 39).



**Photo 40**



**Photo 41**



**Photo 42**



**Photo 43**

Lubricate bypass valve body (21) and o-ring (24) with silicone grease (Photo 40/ Photo 41). Put the bypass casing (2) on the casing (1) and align them (Photo 42). Lubricate the bearing part (36) with Teflon grease and put it on the bypass body (21) (Photo 43).



**Photo 44**



**Photo 45**



**Photo 46**

Place spring assembly (35) along with the bearing part (36) on the lower bearing part (36) (Photo 44). Put the spring guide (3) with threaded stud (34), hand wheel (32) and flange (3A) of the disc springs on the housing (Photo 45). Screw together (Photo 46). Tighten in a cross pattern.

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