

FEATURES

- Provisions for Panel Mounting
- Suitable for Industrial use
- Single bypass port
- Extremely reliable
- Easy maintenance

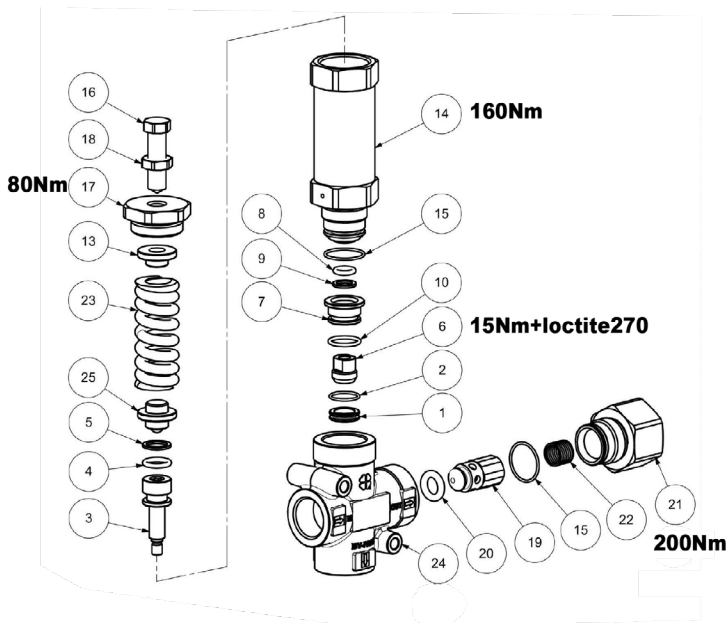


SPECIFICATIONS

Part Number	ZH2820	
Min -Max Volume	5.28 - 52.8 GPM	
Max Operating Pressure	4,500 PSI	
Max Temperature	185° F	
Port Sizes	Inlet:	1" NPT-F
	Outlet:	1" NPT-F
	Bypass:	1" NPT-F
Dimensions	10.1" x 5.07" x 2.17"	
Weight	4.4 lbs.	

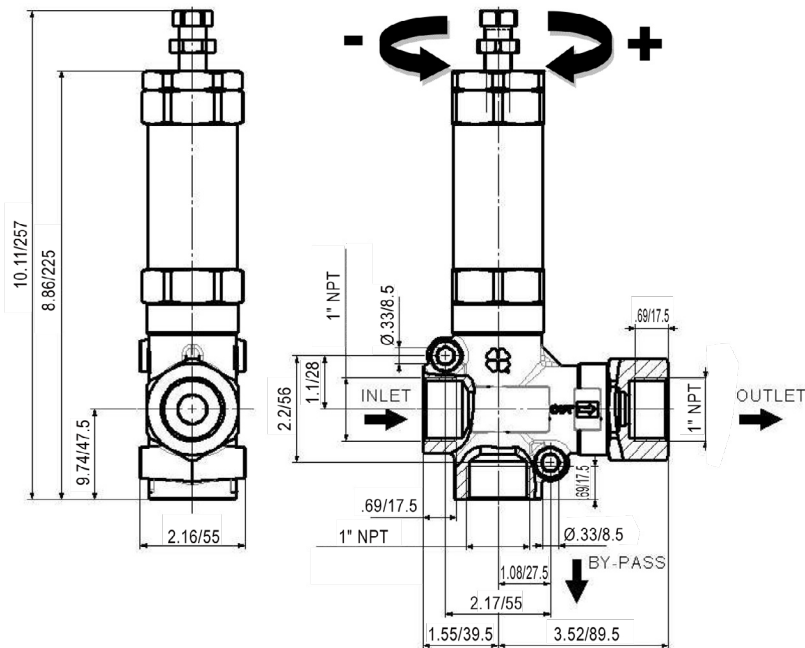
General Pump recommends using a safety relief device in conjunction with this unloader valve when installed on a positive displacement pump. General Pump is not liable and assumes no responsibility when used in a customer's high pressure system.

PARTS LIST



No.	Part No.	Description	Qty.
1*	36354556	Seat, Ø16	1
2*	90359800	O-ring, Ø 20.35 x 1.78	1
3	36354456	Piston	1
4*	90403500	O-ring, Ø 15.47 x 3.53	1
5*	90509150	Anti-extrusion ring, 15.8 x 22 x 2	1
6*	36354756	Valve	1
7	36353760	Reduction bushing	1
8*	90403100	O-ring, Ø 10.69 x 3.53	1
9*	90507350	Anti-extrusion ring, 12 x 18.2 x 2	1
10*	90384700	O-ring, Ø 20.24 x 2.62	1
13	36354360	Spring Guide	1
14	36354970	Piston Housing	1
15*	90360800	O-ring, Ø 28.3 x 1.78	2
16	36354666	Regulating screw, M14	1
17	36353970	Plug, top	1
18	92249300	Nut, M14 x 7	1
19	36353870	Check valve	1
20*	90472000	O-ring, Ø 12.07 x 5.34	1
21	36354170	Fitting	1
22	94745800	Spring, Ø 16.7 x 29.0, Inox	1
23	94757500	Spring, Ø 26.0 x 83.0	1
24	36353641	Body	1
25	36606801	Spring guide, complete	1
*	F2484	Repair Kit, ZH2820	

DIMENSIONS



SELECTION AND OPERATION

GENERAL INFORMATION

The ZH2820 is a manually adjustable, pressure operated device which, according to its setting, limits the pump/system pressure by conveying the excess of water to the by-pass. Moreover, when the outlet flow is blocked, this device totally releases the flow - and keeps under pressure the portion of the system following the valve, while it sets the pressure to zero in the portion of the system preceding the valve.

TORQUE

To ensure the tightness of the fittings used to connect the valve to the system, use a metal washer with a rubber ring or insert an appropriate sealing on the thread and tighten to a torque of 200 Nm.

INSTRUCTIONS FOR CALIBRATION

The positions mentioned in the following instructions refer those shown in the parts diagram on page 1:

1. Connect the valve to the water system and follow these steps.
2. Loosen the adjustment screw, pos. 16, in order to completely release the spring
3. Open the gun or the water control device and start the system. Make sure that the air contained in it is fully ejected.
4. Keeping the gun or the water control device open, start adjusting the pressure by screwing down the screw, pos. 16. Alternate the adjusting operations with a few openings and closings of the gun or of the control device. When the desired pressure has been reached, open and close the gun/control device a few times again in order to stabilize the various components (seals, springs etc.). Check the pressure valve again and correct if necessary.
5. Lock the screw, pos. 16, by tightening the nut, pos. 18.
6. In order to obtain working pressures lower than the maximum set pressure, loosen the nut, pos. 18, and turn the screw, pos. 16, counter-clockwise.



IMPORTANT: During use, never exceed the maximum values of pressure, flow rate and temperature as stated in this document and/or indicated on the valve.

INSTALLATION

This valve, on a system that produces hot water, must be fitted upstream from the source of heat. On a system that generates hot water, it is advisable to use accessories that limit the accidental increase of fluid temperature. **Always install a safety valve.** We recommend the use of a nozzle with flow rate which allows a regular discharge from the valve bypass of at least 5% of the flow supplied by the pump. In order to achieve a constant pressure and easy adjustment. If the nozzle wears out, the pressure decreases. To reset pressure back to working level, it is necessary to replace the worn nozzle. When a new nozzle is fitted, resetting of the system to its original working pressure is required.

DISCHARGE SYSTEM AND WATER ADDUCTION

The bypass discharge can be sent back to the pump intake or returned into a tank; in such cases it is advisable that the tank be fitted with baffles to reduce eventual turbulence and air bubbles which could be harmful to the pump.

PRESSURE ADJUSTMENT/CALIBRATION

The desired working pressure must be adjusted with the system running and the gun opened. Adjust the pressure by screwing or unscrewing the adjustment knob. The operation is easier if the correct nozzle has been chosen (see above). When screwing the adjustment nut a consequent pressure increase must be matched. If, before reaching the desired pressure, there is no pressure increase, **DO NOT FORCE.** Rather, check the correct ratio of nozzle/flow rate - pressure and, if necessary, replace with a smaller size nozzle.

MAINTENANCE

STANDARD: every 400 working hours, check and lubricate the seals with water resistant grease.

SPECIAL: every 800 working hours, check the wear of the seals and internal parts and, if necessary, replace with original GP parts taking care, during installation, to lubricate with water resistant grease.

The manufacturer is not to be considered responsible for damage as a result from incorrect fitting and maintenance.

TROUBLESHOOTING

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Frequent valve recycles	<ul style="list-style-type: none">• Damaged check valve O-ring• Leaking connections• Restricted bypass or too small diameter of the bypass hose	<ul style="list-style-type: none">• Replace• Check or renew• Clean or adapt passage diameter
Valve does not reach pressure	<ul style="list-style-type: none">• Piston O-rings worn out• Debris between seat and shutter• Seat worn out• Nozzle worn out• Incorrect choice of nozzle	<ul style="list-style-type: none">• Replace• Clean the seat• Replace• Replace• Fit with smaller nozzle
High pressure peaks at gun closure	<ul style="list-style-type: none">• There is not a minimum of 5% of total flow discharged in bypass• Excessive flow in bypass• Adjustment with spring totally compressed	<ul style="list-style-type: none">• Reset Correctly• Change type of valve or adjust passages• Loosen adjustment screw and eventually fit with smaller nozzle
Valve does not discharge at low pressure at gun closure	<ul style="list-style-type: none">• Jammed check valve• Debris on check valve	<ul style="list-style-type: none">• Clean or replace• Clean

WARNING: High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices properly could result in personal injury or damage to pump or property. GP does not assume any liability or responsibility for the operation of the user's high pressure system.