

## Flow Sensitive Unloader



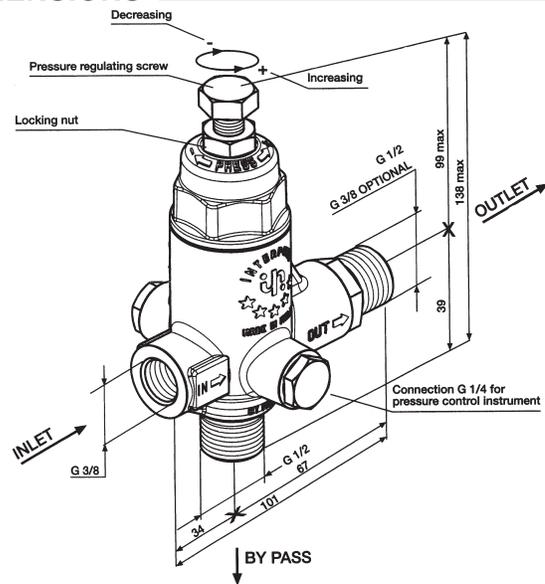
### FEATURES

- **Compact** - Low profile saves space
- **Dual Auxiliary Ports** - Allows for easy installation of pressure operated accessories
- **Reliability** - No discharge checkvalve means higher reliability and less maintenance.
- **High Operating Temperature** - to 165° F

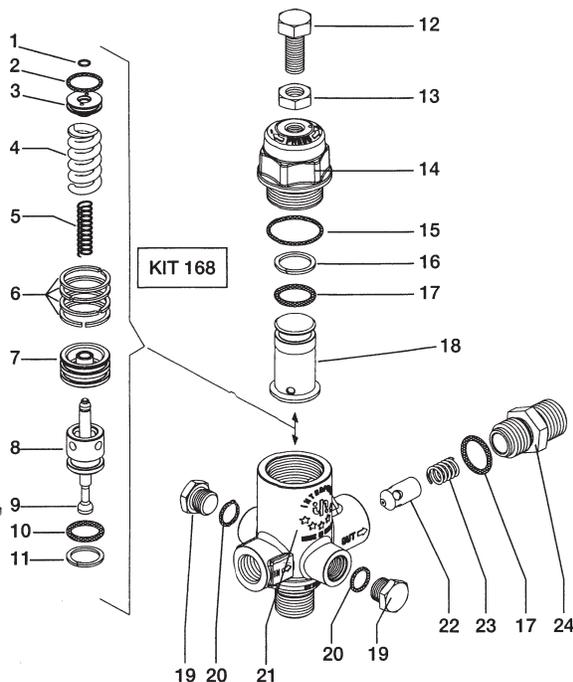
### SPECIFICATIONS

<b>Part Number</b>	<b>ZK1</b>	
<b>Maximum Pressure</b>	3600 PSI	
<b>Maximum Flow</b>	2.4 - 10.8 GPM	
<b>Temperature</b>	165 °F	
<b>Port Sizes:</b>	<b>Inlet</b>	3/8" G-F
	<b>Discharge</b>	1/2" G-F
	<b>Bypass</b>	1/2" G-M
<b>Dimensions</b>	5.4" x 4.0"	
<b>Shipping Weight</b>	2.3 lbs	
<b>Materials</b>	Brass, Stainless, Buna-N	

### DIMENSIONS



### PARTS LIST



Item	Part Number	Description	Kit	Qty
1	90006000	Washer, SS	Kit 168	1
2	90359300	O-ring	Kit 168	1
3	36325770	Spring plate	Kit 168	1
4	94742500	Spring, major	Kit 168	1
5	94733700	Spring, minor	Kit 168	1
6	92772200	Seal rings	Kit 168	4
7	36325570	Piston	Kit 168	1
8	36325666	Valve Seat	Kit 168	1
9	36325466	Stem	Kit 168	1
10	90383500	O-ring	Kit 168	1
11	90509000	Anti-extrusion ring	Kit 168	1
12	99366300	Adjustment Screw		1
13	92236800	Lock nut		1
14	36325141	Upper body		1
15	90360600	O-ring		1
16	90510700	Anti-extrusion ring		1
17	90384100	O-ring		2
18	36325270	Seal Housing		1
19	98204100	Plug, 1/4"		2
20	90358500	O-ring		2
21	36325041	Main body		1
22	36325866	Discharge checkvalve		1
23	94737500	Spring		1
24	36325370	Discharge nipple 1/2"G-M		1
	36326970	Discharge nipple 3/8"G-M (Opt)		1

### APPLICATION

This product is to be used with clean, fresh water. For different or corrosive liquids, contact **GP Companies Inc.** technical support department. Appropriate filtration should be installed when used with liquids containing any solids. Select the proper unloader valve based on the nominal operating rating: system rated pressure, max flow and max temperature. **Under no circumstances should the pressure of the system exceed the maximum rated pressure of any component.**

### INSTALLATION

When installed on hot water cleaners, this valve is to be installed **before** the boiler. Installing safety devices which limit the accidental increase of the fluid temperature is required.

**Always** install a safety valve (pop-off) to protect the operator and system.

### UNLOADER ADJUSTMENT

#### READ AND UNDERSTAND THESE INSTRUCTIONS PRIOR TO USE

**DO NOT ATTEMPT TO ADJUST THE ZK1 WITHOUT A PRESSURE GAUGE INSTALLED ON THE SYSTEM!**

Choose the correct nozzle size, able to discharge regularly, on bypass, at least 5% of the total flow of the system in order to achieve a constant pressure, and avoid troublesome pressure spikes.

Prior to start-up set the **ZK1** unloader to it lowest pressure setting by turning the adjusting screw (item 12) **clockwise** until stop and make sure the system has an adequate water supply.

Follow pressure washer manufacturer's safety guidelines for start-up and start the washer.

Once running, cycle trigger gun open and closed four or five times to purge any remaining air and to make sure the **ZK1** unloader is functioning properly.

With the trigger gun open (spray mode) gradually increase the pressure by turning the adjusting screw (item 12) **counter-clockwise**, increasing pressure by increments **no greater than 200 psi** cycling the gun at each interval. If at any point the unloader does not unload properly, return the pressure to minimum and repeat adjusting sequence.

Once the system is brought up to rated pressure cycle the trigger gun four or five times to make sure it is functioning properly and set the jam nut (item 13).

Shut down the washer and restart and confirm the pressure setting.

### TROUBLESHOOTING

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Unloader cycles in spraying mode	<ul style="list-style-type: none"><li>• Restricted discharge</li><li>• Undersized spray tip</li><li>• Clogged chemical injector (if applicable)</li></ul>	<ul style="list-style-type: none"><li>• Correct source of restriction</li><li>• Replace with properly sized nozzle</li><li>• Clean / replace chemical injector</li></ul>
System does not come up to pressure	<ul style="list-style-type: none"><li>• Oversized spray tip</li><li>• Foreign material in nozzle</li><li>• Restricted discharge</li></ul>	<ul style="list-style-type: none"><li>• Replace with properly sized nozzle</li><li>• Clean / replace nozzle</li><li>• Correct source of restriction in discharge</li></ul>
Pressure spikes	<ul style="list-style-type: none"><li>• Unloader improperly adjusted</li><li>• Less than 5% flowage in bypass</li></ul>	<ul style="list-style-type: none"><li>• See instructions for adjusting unloader</li></ul>
Unloader does not unload properly	<ul style="list-style-type: none"><li>• Foreign material in unloader</li><li>• Pump starving for water</li><li>• Leaks in system</li></ul>	<ul style="list-style-type: none"><li>• Check filters and/or strainers. Clear unloader of debris</li><li>• Correct inlet conditions</li><li>• Correct leaks</li></ul>