



## FEATURES

- Direct-mount, control set unloader
- Used with 44, 47, 50, 60, 63 Series pumps
- Built-in bypass
- Sturdy steel and brass construction
- Adjustable locknut to control the maximum pressure
- Plastic adjustment knob (not pictured)

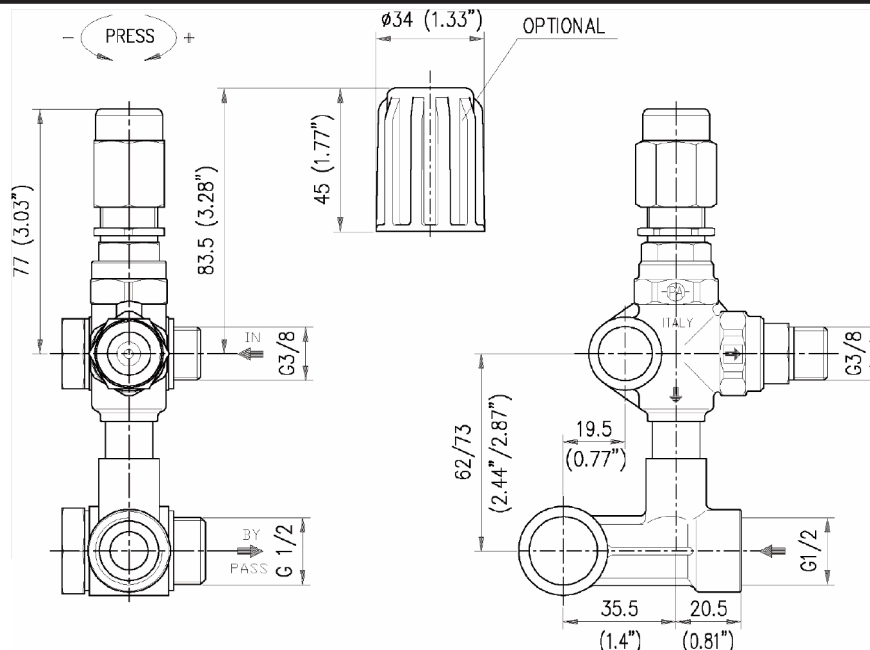
*General Pump recommends using a safety relief device in conjunction with this unloader valve when installed on a positive displacement pump. General Pump is not liable and assumes no responsibility when used in a customer's high pressure system.*

## SPECIFICATIONS

| Part Number                   | YVB35KDM                       | YVB35KDMI18 | YVB35KDMI21 |
|-------------------------------|--------------------------------|-------------|-------------|
| Max. Temperature              | 195° F <sup>1</sup>            |             |             |
| Max. Volume                   | 6.5 GPM                        |             |             |
| Rated Pressure                | 3,200 PSI                      |             |             |
| Minimum Adjustable Pressure   | 319 PSI                        |             |             |
| Maximum Discharge Pressure    | 3,650 PSI                      |             |             |
| Pressure Drop to Reset Bypass | 19% <sup>2</sup>               |             |             |
| Port Sizes:                   | Inlet                          | 1/2" BSP-F  |             |
|                               | Outlet                         | 3/8" BSP-M  |             |
| Injector                      | N/A                            | 1.8 mm      | 2.1 mm      |
| Overall Dimensions            | 5.9" x 3.0" x 1.75"            |             |             |
| Weight                        | 1.8 lbs.                       | 1.9 lbs.    |             |
| Materials                     | Brass, Stainless Steel, Buna-N |             |             |

<sup>1</sup> This unloader has been designed to operate at a continuous water temperature of 140°F. It can be operated for short periods at a maximum temperature of 195°F.  
<sup>2</sup> This is the pressure reduction necessary in comparison to the set up, in order that the valve brings back pressure in the circuit (% figures of the pressure set up).

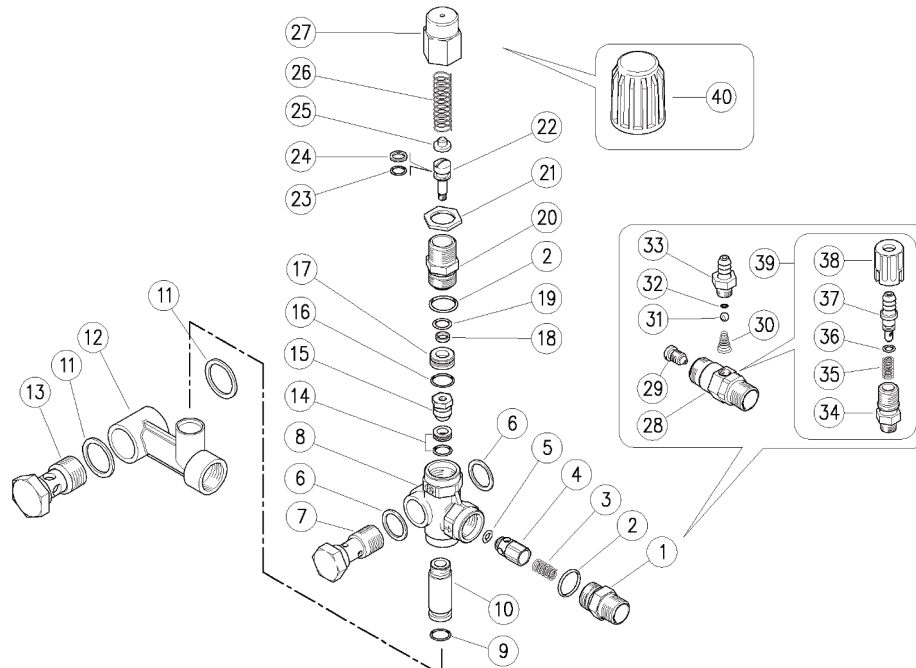
## DIMENSIONS



Ref 300991 Rev. A  
02-16



**PARTS LIST**



| ITEM | PART #    | DESCRIPTION                                 | QTY | ITEM | PART #    | DESCRIPTION                        | QTY |
|------|-----------|---|-----|------|-----------|------------------------------------|-----|
| 1    | Y60190231 | Shutter Coupling, 1/8M, Brass               | 1   | 22   | Y60033199 | Piston, M18 x 1, Brass             | 1   |
| 2*   | 701016    | O-ring, 1.78 x 5.6                          | 2   | 23*  | 701011    | O-ring, 1.78 x 7.66, Buna-N        | 1   |
| 3    | Y60086751 | Spring, 0.5 x 6.5 x 22mm, SST               | 1   | 24*  | Y10400800 | Back-up Ring, Opn, 8 x 11 1.2 mm   | 1   |
| 4    | Y60065999 | Shutter Pin, Brass, + O-ring                | 1   | 25   | Y60031061 | Spring Guide, Zinc                 | 1   |
| 5*   | Y10312500 | O-ring, 2.5 x 4                             | 1   | 26   | Y60086261 | Spring, 3.0 X 12.6 X 41 mm, Zinc   | 1   |
| 6    | Y14410000 | Washer, Seal, 3/8 BSP                       | 2   | 27   | Y60030431 | Valve Regulating Knob (Optional)   | 1   |
| 7    | Y60080700 | Pierced Delivery Screw, 3/8 BSP, Brass      | 1   | 28   | Y21005731 | Injector Housing                   | 1   |
| 8    | Y60086135 | Valve Housing, Brass                        | 1   | 29   | Y21005451 | Nozzle, M6 x1, 2.1 mm, SST         | 1   |
| 9    | Y10310996 | O-ring, 2.4 x10.3 mm                        | 1   | 30   | Y21016051 | Tapered Spring, SST                | 1   |
| 10   | Y60085331 | Manifold Fitting, 150x42 mm                 | 1   | 31   | Y14742001 | Ball, 7/32", SST                   | 1   |
| 11   | Y14410100 | Washer, Seal, 1/2 BSP                       | 2   | 32   | 701501    | O-ring, 1.78 x 5.28 mm, Viton      | 1   |
| 12   | Y60085135 | Valve, Manifold, 1/2 F BSPO-ring, 1.78x7.66 | 1   | 33   | Y21000331 | Hose Barb, 8-12x1 mm, Brass        | 1   |
| 13   | Y60080431 | Pierced Screw, 1/2 BSP, 36.5 mm, Brass      | 1   | 34   | Y21017661 | Coupling, M12 x 1-1/14 BSP, Brass  | 1   |
| 14*  | Y60087220 | Seat, 7.5 mm + O-ring                       | 1   | 35   | Y21015851 | Spring, 0.8 x 7 x 15 mm, SST       | 1   |
| 15*  | Y60087121 | Rest, M5, Brass + Ball, 118/32, SST         | 1   | 36   | 701008V   | O-ring, 1.78 x 4.48 mmn Viton      | 1   |
| 16*  | 701014    | O-ring, 1.78 x 12.42 mm                     | 1   | 37   | Y21045599 | Hose Barb, d. 8 mm, Brass + O-ring | 1   |
| 17   | Y60086331 | Spacer Ring, 6.2 x 16 x 6, Brass            | 1   | 38   | Y21017184 | Injector Knob, 1/4F BSP, Black     | 1   |
| 18*  | Y10400600 | Back-up Ring, 8.6 x 6 x 1.2                 | 1   | 39   | Y21010000 | Regulator + Hose Barb              | 1   |
| 19*  | Y10305101 | O-ring, 1.78 x 6.07 mm                      | 1   | 40   | Y60031584 | Valve Regulating Knob              | 1   |
| 20   | Y30030331 | Piston Holder, Brass                        | 1   |      |           |                                    |     |
| 21   | Y60031731 | Locknut, M18 x 1, Brass                     | 1   |      |           |                                    |     |
|      |           |   |     | *    | Y60190624 | Repair Kit                         |     |

**INSTRUCTIONS**

**SELECTION**

This product is to be used with clean water which can contain the addition of normal detergents. For use involving different or corrosive liquids, contact the General Pump Customer Service Department. Appropriate filtration should be installed when using water that may contain any sort of debris. Choose the valve appropriate for the system rated pressure, maximum flow rate and maximum temperature. In any case, the pressure of the machine should not exceed the permissible pressure rate imprinted on the valve.

**INSTALLATION**

On a system that produces hot water, this accessory must be fitted upstream of the heat generator. On a system that generates hot water, it is advisable to fit in accessories that limit the accidental increase of fluid temperature.

**ALWAYS INSTALL A SAFETY VALVE**

It is recommended to use a nozzle with a size that, at gun opened, allows to discharge from the valve bypass at least 5% of the flow supplied by the pump in order to obtain a constant pressure value, and an easy adjustment and to avoid troublesome pressure spikes at gun closure.

If the nozzle wears out, the working pressure decreases. To reset the pressure back to work level, it is necessary to replace the worn nozzle. When a new nozzle is fitted, re-setting of the system to its original working pressure is necessary.

**INSTRUCTIONS (cont.)****DISCHARGE SYSTEM AND WATER ADDUCTION**

We recommend to fit the valve with the bypass discharge returned to a tank. It is advisable that the tank be fitted with baffles to reduce eventual turbulence and air bubbles generated by the emission of the bypass flow which could be harmful for the pump. With elevated flow or near to the maximum flow of the valve, the installation with a recirculation of bypass direct to the pump could cause potential pressure spikes 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 screw/knob. The operation is easier if the correct nozzle has been chosen (see paragraph "installation"). When screwing the screw/knob a consequent pressure increase must be matched. If, before reaching the desired pressure, there is no pressure increase when screwing the screw/knob, do not force but check the correct riation nozzle/flow rate - pressure and, if necessary, fit a nozzle with a smaller size.

**TROUBLESHOOTING**

| <b>PROBLEMS</b>                          | <b>PROBABLE CAUSES</b>   | <b>SOLUTIONS</b>  |
|--|--|---|
| Frequent Unloader Cycles                 | Damaged check valve o-ring<br>Leaking connections<br>Restricted bypass                                   | Replace<br>Check and renew<br>Clean or adapt                                      |
| Unloader does not come up to pressure    | Unloader not properly sized<br>Piston O-rings worn out<br>Debris between seat and shutter<br>Worn nozzle | Change spring or type of valve<br>Replace<br>Clean the seat<br>Replace            |
| Excessive pressure spikes                | There is not a minimum of 5% flow in bypass<br>Excessive flow in bypass<br>Spring totally compressed     | Reset<br>Change type of valve ar adjust passages<br>Loosen knob and change nozzle |
| Unloader does not bypass at low pressure | Jammed check valve<br>Check valve O-ring worn<br>Debris in check valve                                   | Clean or replace<br>Replace<br>Clean  |

**MAINTENANCE**

Maintenance must be carried out by Qualified Technicians.

**STANDARD:** Every 400 working hours (10,000 cycles), check and lubricate the seals with water resistant grease.

**SPECIAL:** Every 800 working hours (20,000 cycles), check the wear of the seals and internal parts and, if necessary, replace with original General Pump parts taking care during installation and to lubricate with water resistant grease.

**The manufacturer is not responsible for damage as a result of incorrect fitting and maintenance.**