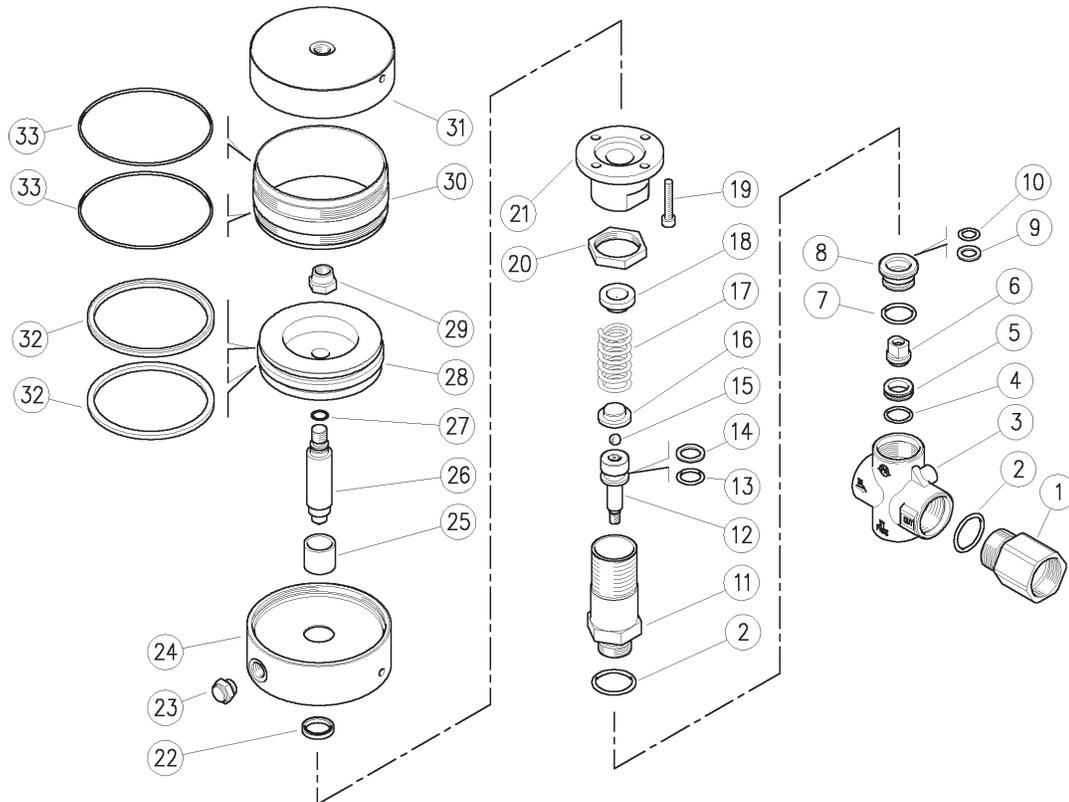


# Model 22090P

# Pneumatic Pressure Actuated Unloaders

Operating Conditions	U.S.....	Metric
Maximum Flow:	53 GPM.....	200 L/min
Maximum Pressure:	2200 PSI.....	150 bar
Minimum Pressure:	220 PSI*.....	15 bar*
Maximum Temperature:	195 °F*.....	90 °C*
Inlet Port:	.....	1" FBSP
Outlet Port:	.....	1" FBSP
By-Pass:	.....	1" FBSP
Weight:	8.8 lbs.....	4.0 kg

\*The valve has been designed for a continuous use at a water temperature of 140 °F (60 °C). For short periods, it can be used at a maximum temperature of 195 °F (90 °C).



## Parts List

Item	Part#	Description	Quantity	Item	Part#	Description	Quantity
1	03066	Inlet Fitting	1	19	03070	Screw	4
2*	08712	O-Ring	2	20	03071	Lock Ring	1
3	03067	Housing	1	21	03072	Piston Holder	1
4*	08719	O-Ring	1	22 <sup>+</sup>	03073	Stem Seal	1
5*	08718	Seat	1	23	03074	Pneumatic Filter	1
6*	08717	Shutter Pin	1	24	03075	Valve Head	1
7*	08716	O-Ring	1	25 <sup>+</sup>	03076	Bushing	1
8	04105	Reduction Bushing	1	26	03077	Piston	1
9*	08714	Back-up Ring	1	27 <sup>+</sup>	03078	O-Ring	1
10*	04106	O-Ring	1	28	03079	Piston	1
11	03068	Spring Holder	1	29	03080	Hexagon Nut	1
12	08708	Piston	1	30	03081	Jacket	1
13*	08710	O-Ring	1	31	03082	Valve Bottom	1
14*	08709	Back-up Ring	1	32 <sup>+</sup>	03083	Piston Seal	2
15	08727	Ball	1	33 <sup>+</sup>	03084	O-Ring	2
16	08726	Spring Guide Spacer	1		*09182P	Repair Kit	
17	08725	Spring	1		+09182P-1	Repair Kit	
18	03069	Spring Guide Spacer	1				

# Instructions

## **DESCRIPTION**

The valve has an inlet fitting, an outlet fitting and a bypass fitting with 1" FBSP thread. A pneumatic connection is fitted to the valve with a ¼" FBSP fitting.

## **SELECTION**

This product is to be utilized with clean fresh water; however small concentrations of detergents are acceptable. If other liquids or corrosive fluids are needed, contact the Giant Technical department. Appropriate filtration should be installed when using unclean liquids. Make sure that the valve is appropriately sized with regards to rated pressure, maximum flow and maximum temperature of the system. In any case, no machine overpressure is to exceed the permissible pressure imprinted on the valve.

## **FUNCTION**

The valve regulates the maximum pressure of the system altering the flow discharged by the bypass. The adjustment is carried out by changing, through means of a piston, the position of a shutter that partially closes the bypass opening.

## **INSTALLATION**

This product is bound to be incorporated on a finished machine. This accessory, on a machine that produces hot water must be fitted upstream to the heat generator. On a system that generates hot water, install safety devices that limit the accidental increase of fluid temperature. Refer to Giant's web site for an installation diagram of this valve.

## **ALWAYS INSTALL A SAFETY VALVE IN THE CIRCUIT.**

The pneumatic connection has to be fed with dry air and lubricated to the maximum pressure of 145 PSI (10 bar – 1 Mpa). It is recommended to use a nozzle with a flow rate, that at gun opening, permits to discharge regularly from the bypass of the valve at least 5% of the flow supplied by the pump. This helps to ensure that the pressure remains constant, ease of adjustment and helps avoid troublesome pressure spikes (when the gun is closed). If the nozzle wears out, the working pressure drops. To revive the working pressure, change the worn out nozzle. Upon installation of a new nozzle, re-adjust the system to the original working pressure.

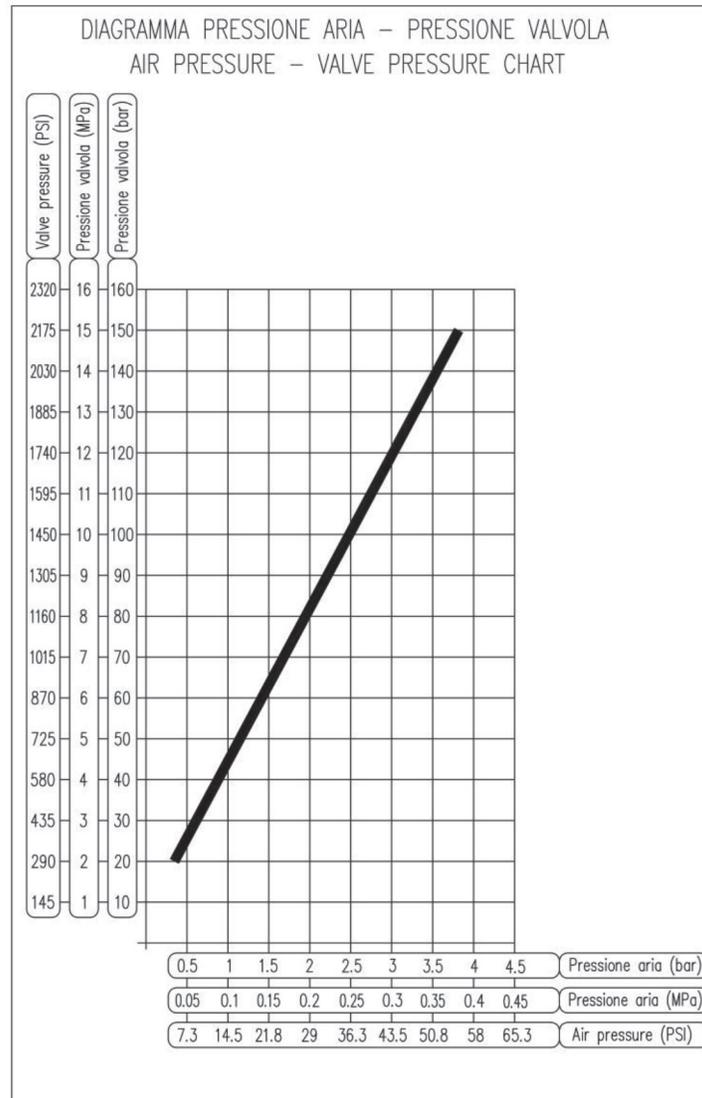
## **DISCHARGE SYSTEM AND PIPEWORK**

We recommend to fit the valve with the bypass plumbed to a tank. It is advisable that the tank be fitted with baffles to reduce turbulence and air bubbles generated by the emission of the bypass flow. With elevated flow or near to the maximum flow of the valve, the installation of a bypass hose/pipe directly to the pump could cause potential pressure spikes; this might harm the pump.

## **PRESSURE ADJUSTMENT/SETTING**

The adjustment has to be made with the system under pressure and the gun open and with the air feed pressure at 58 PSI (4 bar– 0.4 MPa).

Use an allenhead wrench to vary the pressure by screwing/unscrewing the attachment in which the connection head is fitted (pos 21). If the correct nozzle has been chosen, it is easy to achieve the desired pressure. When the attachment is tightened (pos 21), the pressure will increase; if, before reaching the desired value during tightening the pressure increase does not continue to increase, **do not continue to tighten**; instead verify the correct ratio nozzle/ flow pressure. Upon reaching the desired pressure, tighten the nut (pos 20). After setting the maximum pressure, **it is possible to vary the valve operating pressure by adjusting the air feed pressure**. By increasing air feed pressure, valve pressure will increase as well. To decrease valve pressure, it is necessary to reset air pressure and subsequently increase it again up to the desired pressure level. If the air feed is interrupted the complete circuit will go into low pressure.



**PROBLEMS AND SOLUTIONS**

<b>PROBLEMS</b>	<b>PROBABLE CAUSES</b>	<b>SOLUTIONS</b>
Valve cycles	<ul style="list-style-type: none"> <li>- Air inside the system</li> <li>- Worn out seals</li> <li>- Clogged bypass or diameter too small</li> </ul>	<ul style="list-style-type: none"> <li>- Flush out</li> <li>- Replace</li> <li>- Clean or widen passages</li> </ul>
The valve does not reach working pressure	<ul style="list-style-type: none"> <li>- Piston seals ruined</li> <li>- Presence of impurities between seat and shutter</li> <li>- Seat &amp; shutter worn out</li> <li>- Nozzle worn out</li> <li>- Incorrect choice of nozzle</li> <li>- Air shortage in pneumatic jack</li> <li>- Air pressure too low</li> <li>- Pneumatic jack seals worn out</li> </ul>	<ul style="list-style-type: none"> <li>- Replace</li> <li>- Clean seat</li> <li>- Replace</li> <li>- Replace</li> <li>- Fit nozzle with inferior flow factor</li> <li>- Open air compressed feed</li> <li>- Reset air pressure to circa 4 bar</li> <li>- Replace</li> </ul>
Pressure spikes	<ul style="list-style-type: none"> <li>- Minus min.5% of total flow in discharge</li> <li>- Clogged nozzle</li> </ul>	<ul style="list-style-type: none"> <li>- Re-adjust correctly</li> <li>- Clean or replace</li> </ul>

## MAINTENANCE

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

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

Maintenance has to be carried out by **Specialized Technicians**.

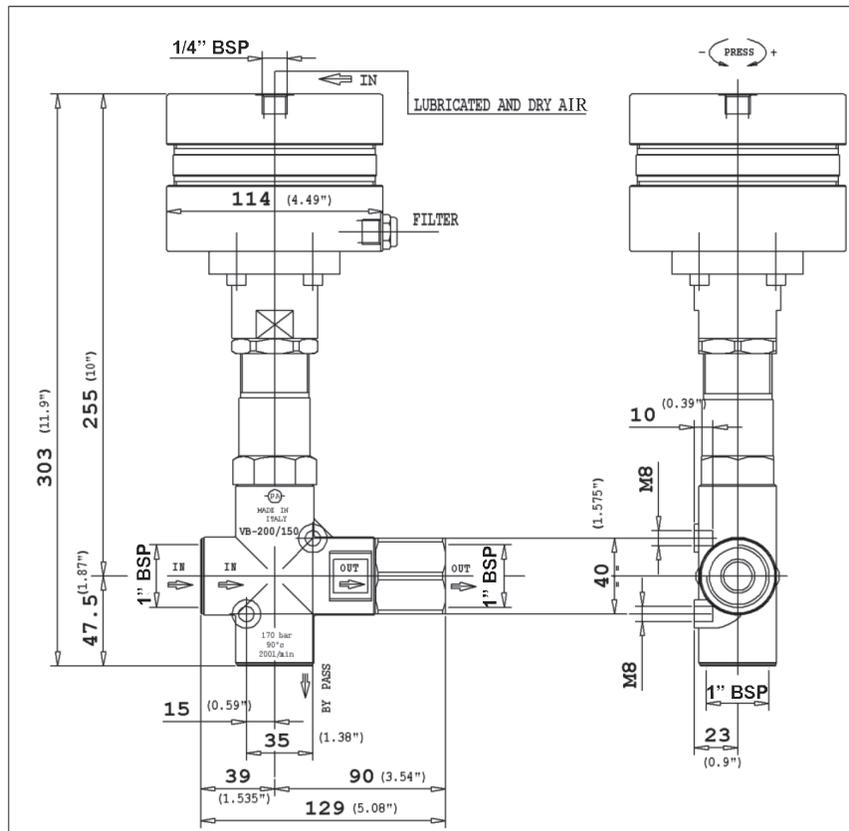
**The manufacturer is not to be considered responsible for damage as a result from incorrect fitting and maintenance**

For a correct utilization, follow the directions described in this manual and re-print them on the use and maintenance manual of the machine.

Make sure that you are given the **Original Conformity Declaration** for the accessory chosen. The present manual is valid for all unloader valves named **22090P**.

Technical data, descriptions and illustrations are indicative and liable to modification without notice.

### Dimensional Drawing - mm (Inches)



**WARNING:** This product might contain a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm.

For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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