DATA SHEET
PRESSURE RELIEF VALVE

The Pumps with Nine Lives

Brass Model: **39228, 39389**



SPECIFICATIONS	U.S. Measure	Metric Measure
Model 39389		
Adjustable Pressure min.	218 psi	15 bar
Rated Pressure max.	2176 psi	150 bar
Permissible Pressure max.	2466 psi	170 bar
Weight	0.77 lbs.	0.35 kg
Model 39228		
Adjustable Pressure min.	218 psi	22 bar
Rated Pressure max.	2176 psi	220 bar
Permissible Pressure max.	2466 psi	250 bar
Weight	0.77 lbs.	0.36 kg

COMMON SPECIFICATIONS	U.S.	Metric
Flow Rate max.	6.34 gpm	24 lpm
Max. Liquid Temperature*	140° F	60° C
Can withstand for short periods at a maximum temperature of 90°C (194°F).		
Inlet (1)	G 3/8" (F)	G 3/8" (F)
Bypass (1)	G 3/8" (F)	G 3/8" (F)
Dimensions	0.99 x 3.67"	25.3 x 93 mm

*The valve is designed for continuous use at 60 °C (140 °F).
Can withstand for short periods at a maximum temperature of 90 °C (194 °F).

FEATURES

- Pressure relief valve for use with Cat Pumps high-pressure positive displacement pumps.
- Commonly used as a secondary pressure protection device in conjunction with a pressure regulator valve or regulating unloader valve.
- By-passes pump flow in the event of a component or system failure, or user error.
- Can also be used as a primary pressure regulator valve.
- This is **not** a safety valve according to PED.

APPLICATIONS

- High pressure cleaning
- Vehicle cleaning
- Central cleaning systems
- Air humidification systems

INSTALLATION GUIDELINES FOR UNLOADER VALVES

⚠ **It is the user's responsibility to carry out the necessary risk assessment and ensure that a suitable secondary protective device is fitted, such as a Pressure Relief Valve, to assure pump protection e.g. should the Unloader Valve malfunction.**

Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

SELECTION

Typically the valve will need to be set 15% above the desired system working pressure.

The pressure relief valve must be selected to match the maximum flow and working pressure of the pump and system.

INSTALLATION AS RELIEF VALVE

This relief valve can be installed in any position.

It must be fitted as close as possible to the pump, with no other valves or components e.g. isolator valve in line.

In multiple pump installations, fit one relief valve on each pump. Plumbing to and from the relief valve should be the same size or larger than the size of the valve ports.

The bypass from this valve must not be restricted and should discharge safely, but where it can be monitored or observed.
Bypass flow from a relief valve indicates a fault condition and must be investigated immediately

INSTALLATION AS PRESSURE REGULATOR

This regulator valve can be installed in any position.

In multiple pump installations, fit only one regulator valve per installation. Plumbing to and from the regulator valve should be the same size or larger than the size of the valve ports.

Bypass installation can be done as follows:

Bypass back to the receiver tank or to the sewer:
The bypass line should be routed without restriction back to the receiver (i.e. the vented receiver tank) or to the sewer at a suitable point.

Bypass back into the inlet side of the pump:
This is not recommended as it may cause temperature rise and premature seal wear. However, if this type of installation cannot be avoided, the bypass should be fed far enough away from the inlet connection (=> approx. 20 x diameter of the inlet connection) and opposite the inlet.

PRESSURE ADJUSTMENT AS RELIEF VALVE

Before starting the pump, fully loosen the adjustment nut or cap anti-clockwise.

Open all guns to permit full flow and start the pump to purge the system of air.

Close all guns whilst pump is running.

Turn the adjustment nut or cap clockwise only until the required working pressure is shown on the pressure gauge.

Typically this should be 10% above the system intended working pressure but must not exceed the safe pressure of any of the system components.

Do not exceed the maximum working pressure of the pump as this may damage the pump, drive motor or engine.

Tighten the locking nut (if provided) on the adjustment nut or cap to secure the adjustments made to the valve.

PRESSURE ADJUSTMENT AS PRESSURE REGULATOR

First set the valve as described on the left.

Fully loosen the adjustment nut or cap anti– clockwise.

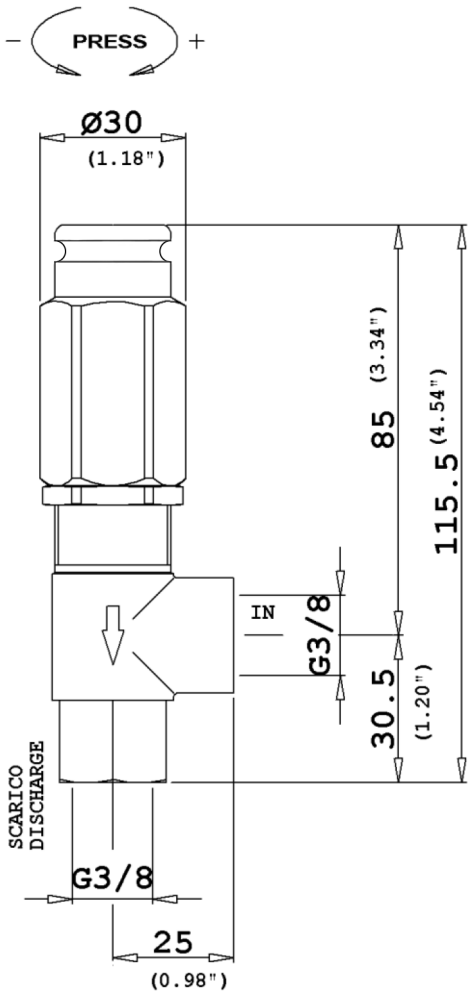
Start pump to purge the system of air, then close all valves, trigger guns etc. whilst pump is running to divert full pump flow through the regulator valve.

Now turn the adjustment nut or cap clockwise until the desired system pressure is reached.
Make sure that the permissible maximum pressure is not exceeded for any of the built-in components.

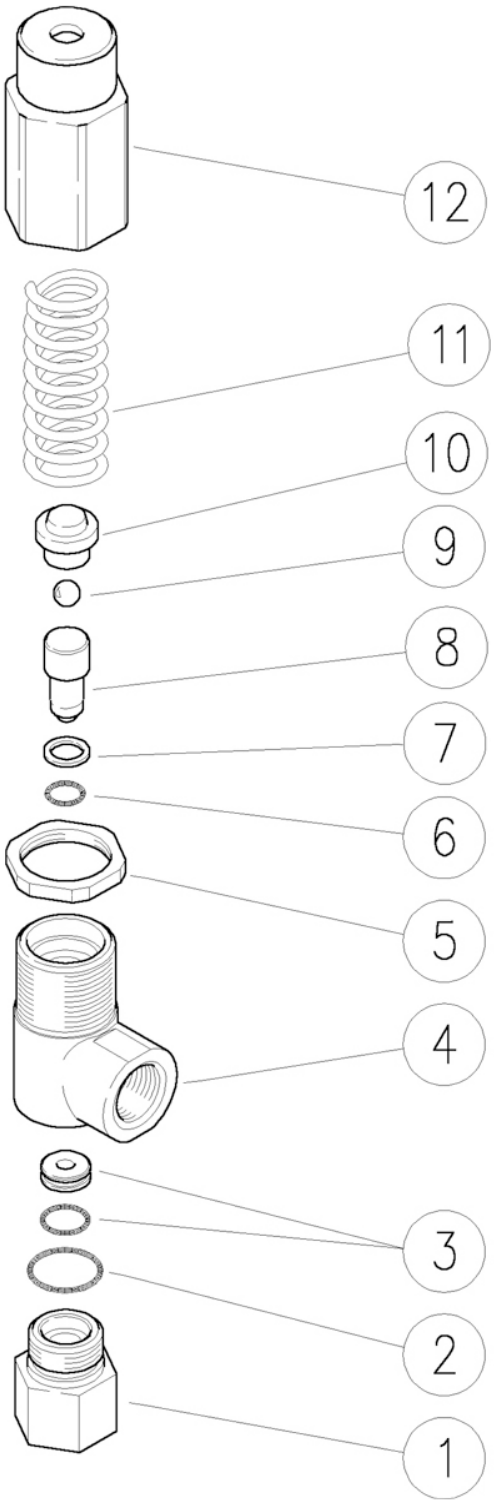
Do not exceed the maximum working pressure of the pump as this may damage the pump, drive motor or engine.

Tighten the locking nut (if provided) on the adjustment nut or cap and/or attach a suitable seal (e.g. lead seal, color marking) to secure and mark the adjustment made on the valve.

DIMENSIONAL DRAWING



EXPLODED VIEW



PARTS LIST

ITEM	DESCRIPTION	QTY	*
1	Bypass coupling G 3/8" female, brass	1	
2	O-Ring, 1,78 x 15,6 mm	1	X
3	Seat, 4,4 mm + O-Ring, 1 mm NBR85	1	X
4	Housing G 3/8" female, brass	1	
5	Ring nut, M24 x 1,25, brass	1	
6	O-Ring, 1,78 x 7,66 mm	1	X
7	Back-up ring, 8 x 11 x 1,2 mm	1	X
8	Piston + Ball, 7/32" SS	1	
9	Ball, 1/4" SS	1	
10	Ball holding piston, brass	1	
11	Spring 4 x 14,5 x 53 mm, zinc plated.	1	
12	Valve regulating knob, M24, brass	1	
*	Kit, Spare parts	1	

TROUBLESHOOTING

If the operating pressure falls over a period of time, do not re-adjust the valve to compensate.
Check the following:

- Too many guns in use at one time
- Incorrect nozzle size fitted
- Nozzle(s) worn
- Motor speed too low
- Slipping drive belts
- Pump seals or valves worn

⚠ CAUTIONS AND WARNINGS

All 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 could result in personal injury or damage to pump or property. Cat Pumps does not assume any liability or responsibility for the operation of a customer's high pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.de or can be requested directly from CAT PUMPS.