

Photograph for guidance only—appearance may vary

Unloader Valve

Brass with NBR seals

Model 39439.ENPT

SPECIFICATIONS

Flow rate - maximum	30	L/min
Flow rate - minimum	10	L/min
Set Pressure - maximum	220	bar
Set Pressure - minimum	22	Bar
Max. Liquid Temp. (Intermittent)	90	ºC
Max. Liquid Temp. (Continuous)	60	ºC
Inlet ports (1) size	3/8”	BSPF
Outlet ports (1) size	3/8”	BSPF
Pump Inlet connecter (1) size	1/2”	NPTM
Pump Outlet connecter (1) size	3/8”	NPTM
Weight	940	g
Product Dimensions L x W x H	19 x 9 x 5	cm

FEATURES

- Pressure Regulating Unloader Valve for use with Cat Pumps high-pressure positive displacement pumps.
- Commonly used with trigger gun, lance and spray nozzle in high-pressure cleaning and wash-down applications.
- When trigger gun is closed, back-pressure-wave moves valve into full-open position to bypass full pump flow at low pressure, reducing wear, noise and energy consumption when pump is ‘idling’.
- By-passes surplus flow back to the inlet of the pump.
- Regulates operating pressure to maximise cleaning performance
- Protects pump and system from over-pressure damage.
- Pump speed is maintained when trigger is closed, ready for immediate return to full flow rate and working pressure when trigger is squeezed.

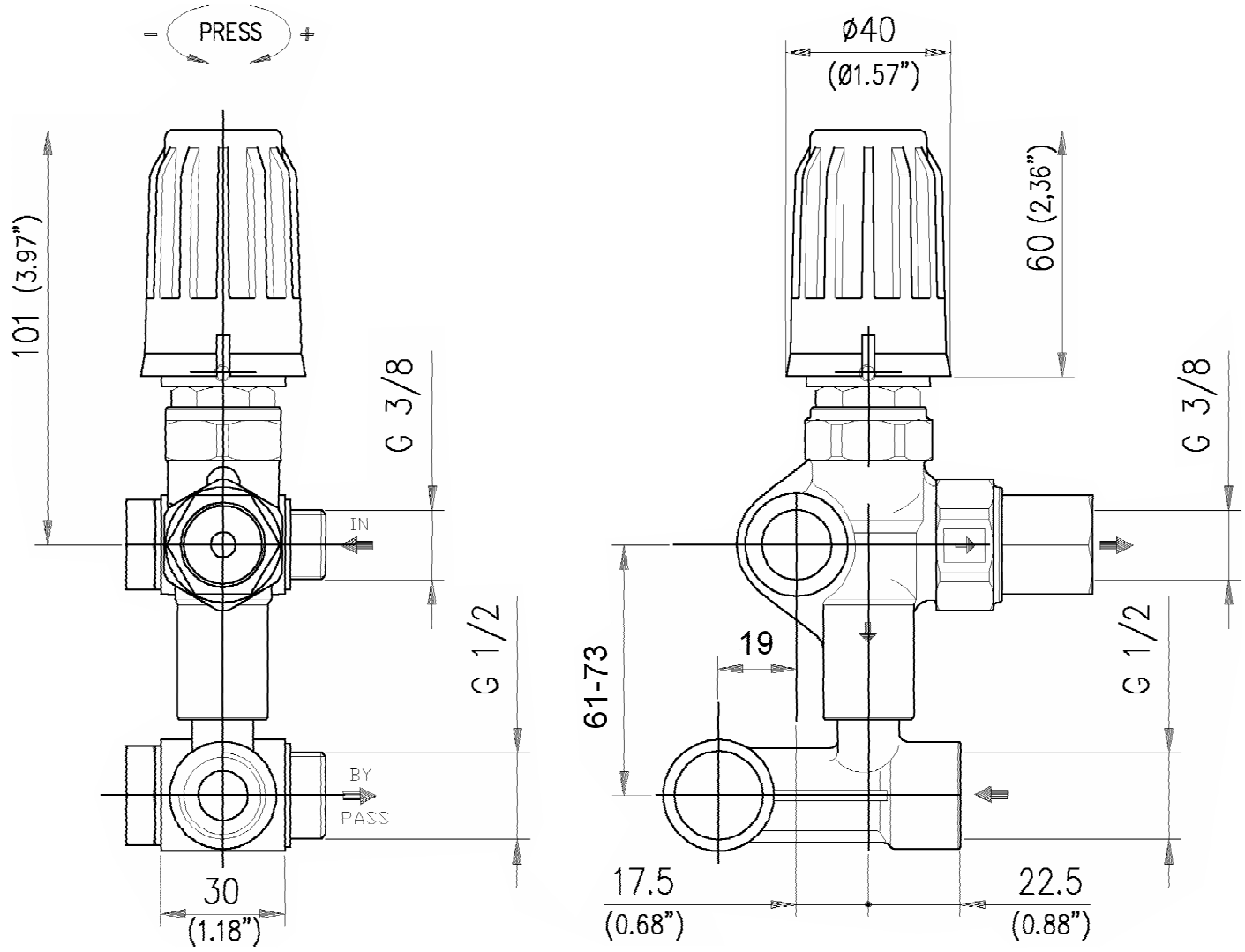
APPLICATIONS

- Pressure washing
- Vehicle cleaning
- Fits directly to CAT PUMPS models 3CP and 5CP

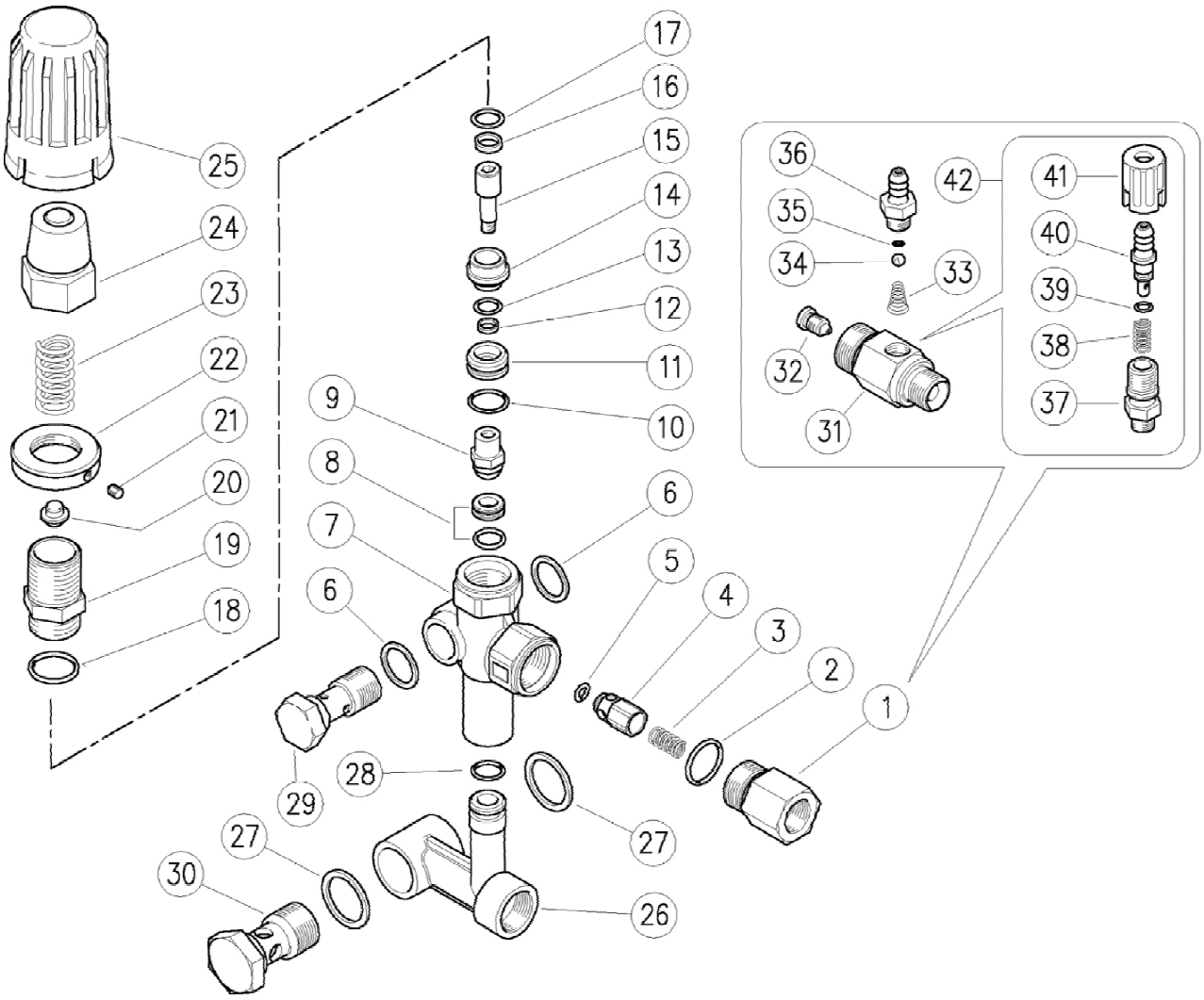
SELECTIONS

Select the correct Unloader Valve to suit the system flow rate and working pressure. Operation below the minimum rated flow of the Unloader Valve will cause the valve to cycle. Operation above the maximum rated flow of the Unloader Valve will cause premature valve wear and will prevent the desired working pressure from being maintained.

DIMENSIONAL DRAWING



EXPLODED VIEW



PARTS LIST

IT. Description QTY IT. DESCRIPTION QTY

		K1	
1	Delivery coupl, G3/8IG, brass		1
2	O-Ring 1,78x18,77 mm, Ni 85	X	1
3	Spring, 0,7x9x20 mm, SS		1
4	Shutter pin, brass + O-Ring, 3x6 mm		1
5	O-Ring, 3x6 mm	X	1
6	Sealing washer, G3/8		2
7	Valve housing, brass		1
8	Seat, 8mm + O-Ring 1,78mm NBR 85	X	1
9	Shutter pin,M6, brass +Kugel 13/32“ SS	X	1
10	O-Ring, 1,78x14 mm Ni 85	X	1
11	Spacer Ring, 7,3x18,5x12,7 mm, brass		1
12	Back-up-Rng, 7x9x2 mm	X	1
13	O-Ring, 1,78x8,74 mm	X	1
14	Spacer Ring, 7,3x18,5x12,7 mm, brass		1
15	Piston, M6, SS		1
16	Back-up-Ring, 11x13x2	X	1
17	O-Ring, 1,78x12,42 mm	X	1
18	O-Ring, 1,78x17,17 mm Ni 85	X	1
19	Piston holder, brass		1
20	Spring guide pin		1
21	Set screw, DIN914 M4x4 mm		1
22	Ring nut, M20x1, brass		1

		K1	
23	Spring, 3,4x13,8x48 mm z.pl.		1
24	Valve regulating insert, brass		1
25	Valve regulating knob, black		1
26	Manifold, G1/2IG, brass		1
27	Sealing washer, G1/2		2
28	O-Ring, 2,62x10,77 mm, Vi 70		1
29	Pierced screw,3/8NPTM 41,5mm,brass		1
30	Pierced screw,1/2NPTM 41,5mm,brass		1
31	Inject hous.,M22x1,5AG-G3/8AG, brass		1
32	Nozzle, M8x1 –2,1 mm		1
33	Tapered spring, SS. –Inject.		1
34	Ball, 7/32“, SS		1
35	O-Ring, 1,78x5,28 mm		1
36	Hose barb, brass		1
37	Coupling, M12x1-G1/4AG, brass		1
38	Spring, 0,8x7x15 mm, SS		1
39	O-Ring, 1,78x4,48 mm		1
40	Hose barb, brass + O-Ring		1
41	Inject. knob, G1/4IG black		1
42	Regulator + hose barb		1

K1	Spares kit, 39439			1

INSTALLATION GUIDELINES FOR **PRESSURE REGULATING UNLOADER VALVES**

CAT PUMPS high-pressure pumps are designed and manufactured to exceptionally high quality standards and have an unequalled reputation for reliability and long life. The most common cause of pump failure is not the pump itself, it is poor installation. A good pump will not perform well if it is badly installed. If in doubt, always ask for advice. This document does not over-rule specific instructions provided elsewhere.

⚠ **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.

⚠ **CAUTION – Take care to work safely in accordance with good practice. Ensure all installations meet all relevant safety rules, laws, directives, standards, regulations and codes of practice. All work must be carried out by competent people who are appropriately trained and qualified.**

Installation

This Unloader Valve may be mounted in any orientation.

Keep the pipework as simple as possible and the adjusting nut or cap easily accessible. Plumbing to and from the Unloader Valve should be equal to or larger than the size of the valve ports.

The bypass is going back to pump inlet.

Pressure Adjustment

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

Open all guns to permit full flow and start the pump to purge the system of air then close all guns whilst pump is running.

Turn the Unloader Valve adjustment nut or cap clockwise only until the required working pressure is shown on the pressure gauge. 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) to secure the setting.

If the intended working pressure cannot be reached, and further adjustment of the nut or cap does not increase the pressure shown on the gauge, do not turn any further. Instead, rotate the nut or cap anticlockwise until the pressure falls by approximately 10%. This is important, as the pump must not be run with the Unloader Valve set at the maximum achievable pressure. There must always be a small amount of flow through the bypass port. A bypass of at least 5% of the total pump flow is recommended even when all guns are open.

To check the amount of by-pass, you may wish to safely disconnect the bypass hose temporarily and observe or measure the bypass flow. A bypass of at least 5% of the total pump flow is recommended even when all guns are open. If this cannot be achieved, the Unloader Valve has been incorrectly specified or the downstream restriction is too low. The options are:

- Change Unloader Valve for correctly sized valve
- Fit smaller nozzle(s)
- Use fewer guns at any one time
- Install a larger CAT PUMPS high pressure pump or additional pumps

Trouble Shooting

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

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

technical Variation reserved, 17.10.2012 (JF)

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