DATA SHEET
REGULATING UNLOADER

The Pumps with Nine Lives

Brass Models: **39635.R, 39640.R**

also as pressure regulator



Model 39640.R Shown

SPECIFICATIONS	U.S. Measure	Metric Measure
Model 39635.R		
Flow Rate max.	21.2 gpm	80 lpm
Adjustable Pressure min.	406 psi	28 bar
Rated Pressure max.	2321 psi	160 bar
Permissible Pressure max.	2611 psi	180 bar
Weight	2.47 lbs.	1.12 kg
Spring, Colour	white	white
Model 39640.R		
Flow Rate max.	21.2 gpm	80 lpm
Adjustable Pressure min.	406 psi	28 bar
Rated Pressure max.	4061 psi	280 bar
Permissible Pressure max.	4496 psi	310 bar
Weight	2.54 lbs.	1.15 kg
Spring, Colour	blue	blue

COMMON SPECIFICATIONS	U.S.	Metric
Max. Liquid Temperature*	140° F	60° C
Can withstand for short periods at a maximum temperature of 90°C (194°F).		
Inlet	G 1/2" (F)	G 1/2" (F)
Discharge	G 1/2" (F)	G 1/2" (F)
Bypass	G 1/2" (F)	G 1/2" (F)
Dimensions	3.96 x 1.85 x 7.57"	100.5 x 47 x 192.2 mm

*The valve is designed for continuous use at 60°C (1 40°F).
Can withstand for short periods at a maximum temperature of 90°C (194°F).

FEATURES

- Regulating unloader 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 source, or to pump inlet.
- 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

- High pressure cleaning
- Vehicle cleaning
- Central cleaning 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

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.

INSTALLATION

This Unloader Valve can be installed in any position.

Keep the pipework as simple as possible and make sure that the adjusting screw or cap is always easily accessible. Plumbing to and from the unloader 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.

TROUBLESHOOTING

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
- Motor speed too low
- Slipping drive belts
- Pump seals or valves worn

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.

Close all guns whilst pump is running.

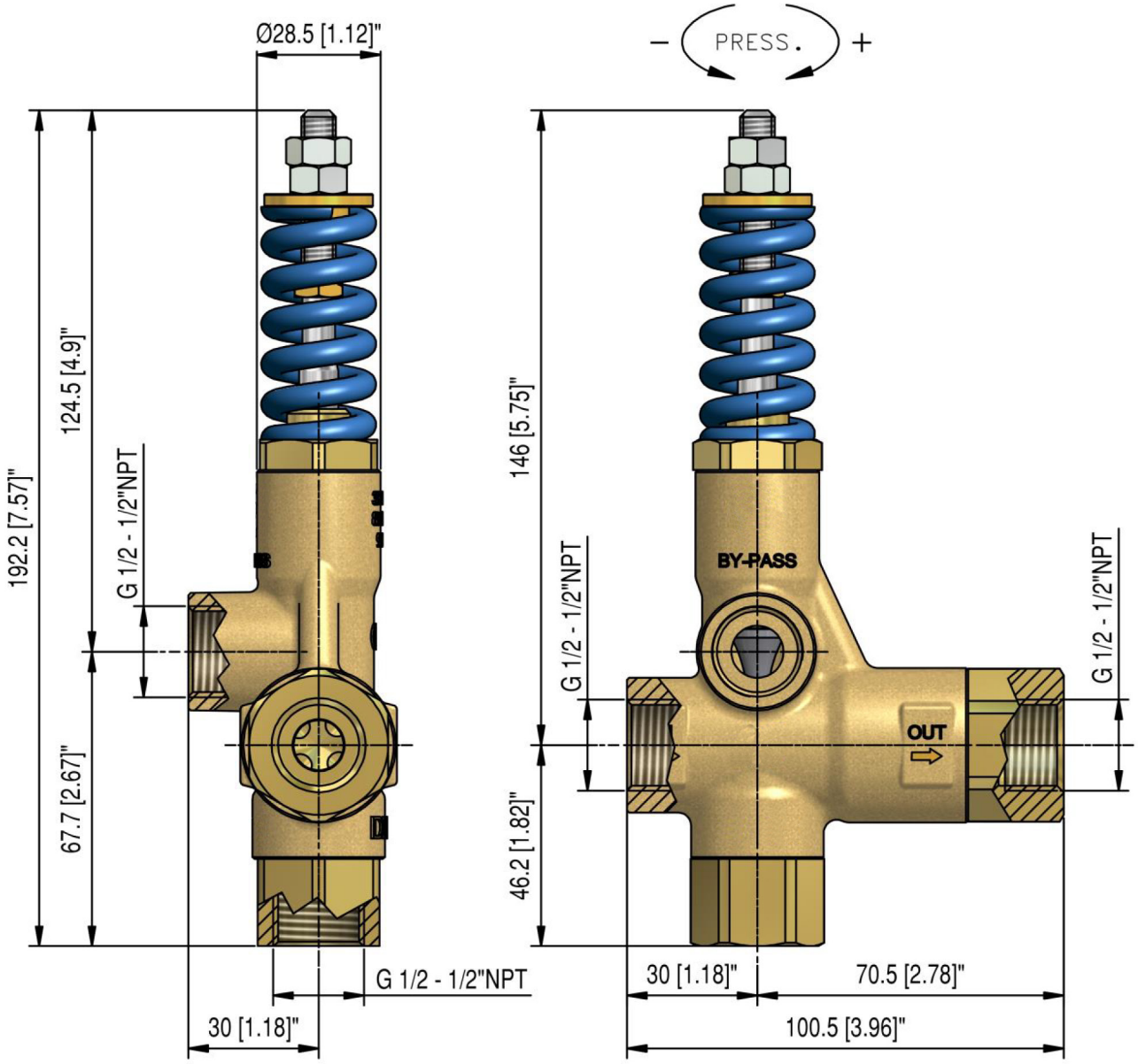
Turn the Unloader Valve adjustment nut or cap clockwise only until the required working pressure is shown on the pressure gauge.

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

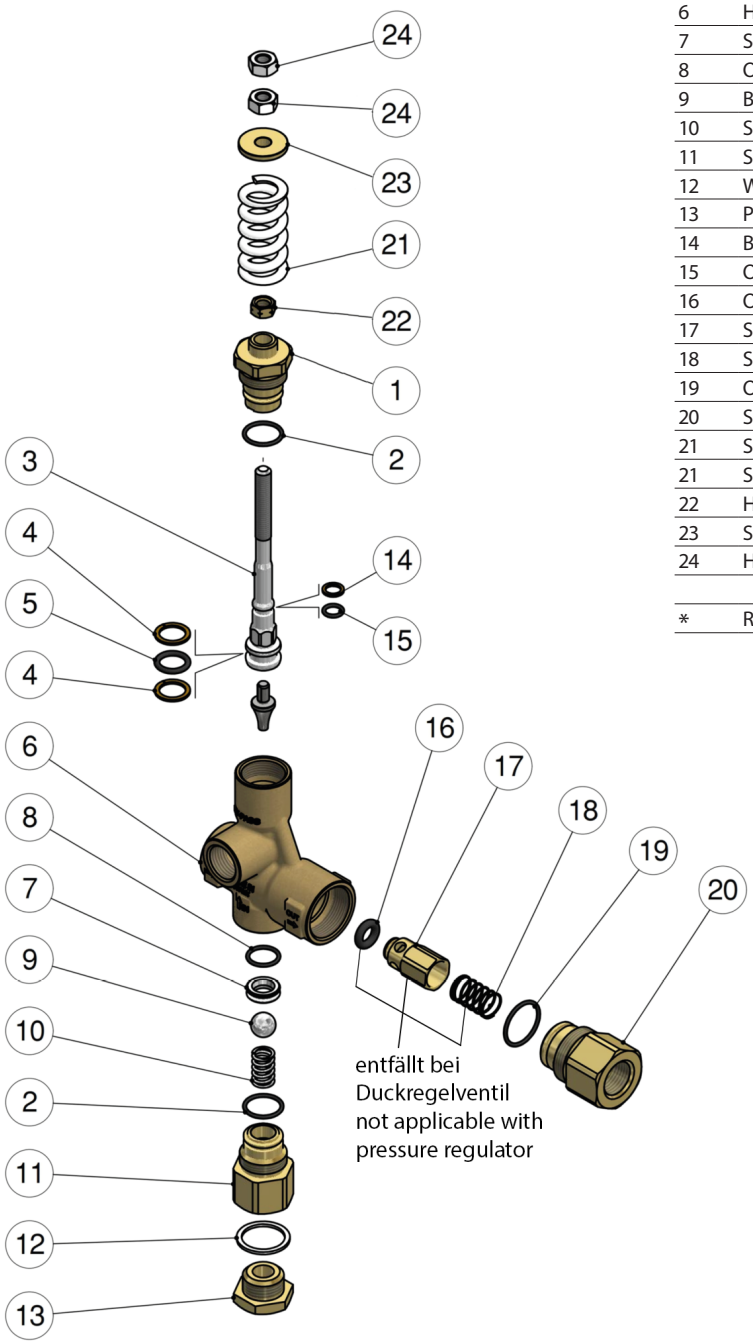
Tighten the locking nut to secure the setting.

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.

DIMENSIONAL DRAWING



EXPLODED VIEW



PARTS LIST

ITEM	DESCRIPTION	QTY	*
1	Piston holder, brass	1	
2	O-Ring, 1,78x17,17 mm	2	X
3	Valve piston, SS	1	
4	Back-up ring, 18x13,5x1,2 mm	2	X
5	O-Ring, 2,62x13,1 mm	1	X
6	Housing,, brass	1	
7	Seat, 10 mm, SS	1	X
8	O-Ring, 1,78x14 mm	1	X
9	Ball, 1/2", SS	1	X
10	Spring, 2x29x9,9 mm, SS	1	
11	Suction coupl., G 1/2" IG, brass	1	
12	Washer, 22x27x1,5 m, Alu.	1	
13	Plug G 1/2", brass	1	
14	Back-up ring, 8x11x1,2 mm	1	X
15	O-Ring, 1,78x7,66 mm	1	X
16	O-Ring, 4x8 mm	1	X
17	Shutter pin, brass	1	
18	Spring, 0,8x13,3x27 mm, SS	1	
19	O-Ring, 1,78x21,95 mm	1	X
20	Shutter coupl., G 1/2" IG, brass	1	
21	Spring, 5x25x50 mm, white, (39635.R)	1	
21	Spring, 5,7x26x53 mm, blue, (39640.R)	1	
22	Hex. nut, M8	1	
23	Spring holder ring, brass	1	
24	Hex. nut, M8	2	
*	Repair kit	1	

⚠ 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.