



## High Pressure Pressure Regulator

**Model 7720**

### FEATURES

- Compact, flow-through design with bottom by-pass port for easy installation.
- Conical piston and seat provide a consistently smooth flow that extends piston seat life and compensates for pressure spikes.
- Low by-pass allows 95% use of system output.
- Stainless steel internal parts and lower body FPM elastomers for durability and compatibility.
- Top adjusting nut for easy setting and adjustment of system pressure.

### SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow Range .....	0.5 to 10.0 gpm	(1.9 to 38 lpm)
Pressure Range.....	2000-10,000 psi	(138-689 bar)
Maximum Temperature .....	180°F	(82°C)
Inlet/Outlet Ports.....	1/4" NPTF	(1/4" NPTF)
By-Pass Port.....	3/8" NPTF	(3/8" NPTF)
Weight.....	2.85 Lbs	(1.29 kg)
Dimensions.....	5.82 x 2.25 x 1.63" (147.8 x 57.2 x 41.4 mm)	

#### ⚠ 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.

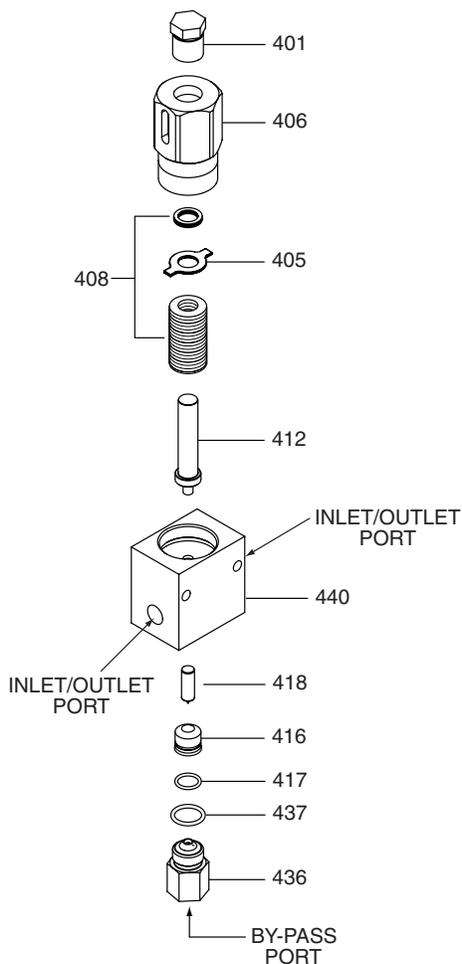
Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at [www.catpumps.com/cautions-warnings](http://www.catpumps.com/cautions-warnings) or can be requested directly from CAT PUMPS.

#### WARRANTY

View the Limited Warranty on-line at [www.catpumps.com/warranty](http://www.catpumps.com/warranty).

Approximate Pressure Reading at Gauge	Gauge Between Pump/Regulator	Gauge Between Regulator/Gun-Nozzle-Valve
System in operation (gun open)	system pressure	system pressure
System in by-pass (all guns, valves closed)	200-300 PSI above system pressure	200-300 PSI above system pressure

## EXPLODED VIEW



## PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
401	30758	BB R	Nut, Adjusting	1
405	34491	STL	Washer, Anti-Rotation	1
406	30260	STNP	Body, Upper	1
408	76710	STL	Spring Set	1
412	31386	STL R	Stem, Piston	1
416	31444	UHMW	Seal, Packing	1
417	31474	FPM	O-Ring, Seal Packing - 90D	1
418	31410	SSB R	Piston, Conical	1
436	31478	SSB R	Seat, Conical	1
437	31491	FPM	O-Ring, Seat - 90D	1
440	31394	SS R	Body, Lower	1
468	31440	FPM	Kit, Seal & O-Ring (Incls: 416, 417, 437)	1

*Italics are optional items.* R Components with RoHS Directive.  
 Material Codes (Not Part of Part No.): BB=Brass FPM=Fluorocarbon  
 SS=316SS SSB=316SS Condition B STL=Steel STNP=Steel/Nickel Plated  
 UHMW=Ultra High Molecular Weight Polyethylene

## SERVICING

### Disassembly

1. Disconnect by-pass, inlet and outlet plumbing from regulator.
2. Remove regulator from pump.
3. Secure lower body of regulator in a vise with adjusting nut facing up.
4. Remove upper body by unthreading from lower body.
5. Remove spring set, anti-rotation washer and piston stem from upper body.
6. Remove lower body from vise and reposition in vise with by-pass port facing up.
7. Remove conical seat with o-ring from lower body.

**NOTICE:** Exercise extreme caution to avoid contact and damage to the tapered surfaces of the conical seat.

8. Remove packing seal and piston from lower body.

**NOTICE:** Exercise extreme caution to avoid contact and damage to outside diameter and sharp tip of conical piston.

**Note:** With the regulator completely disassembled, inspect sealing area where the conical seat and packing seal makes contact within the lower body of the regulator for grooves, pitting and wear. If damage is found, stop the repair and replace with new lower body or complete new regulator. If not, proceed with reassembly.

### Reassembly

1. Place lower regulator body in a vise with the by-pass port facing up.
2. Lubricate and install o-ring and piston onto outside diameter of packing seal.
3. Insert piston into packing seal with contour facing same direction as V on seal.
4. Insert packing seal with o-ring and piston down into lower regulator body with tapered surface facing down.
5. Carefully press piston in until it stops.
6. Lubricate and install o-ring onto conical seat.
7. Thread conical seat with o-ring into lower body.
8. Remove lower body from vise and reposition into vise with by-pass port facing down and larger threaded hole facing up.
9. Place spring set onto piston stem.
10. Place anti-rotation washer on top of spring set, then place flat washers on top of anti-rotation washer. Align tabs on washer with slots on the upper body.
11. Set upper body assembly onto lower body.
12. Re-install regulator onto pump.
13. Reconnect outlet, inlet and by-pass plumbing to regulator.
14. Reset regulator to system pressure by turning adjusting nut clockwise in small increments until desired pressure is reached.



### CAT PUMPS

1681 - 94TH LANE N.E. MINNEAPOLIS, MN 55449-4324  
 PHONE (763) 780-5440 — FAX (763) 780-2958  
 e-mail: techsupport@catpumps.com  
 www.catpumps.com