

DATA SHEET

PRESSURE REGULATOR



Stainless Steel **7366**
Model:



SPECIFICATIONS

	U.S.	Metric
Flow Range	1–12 gpm	3.78–45.4 lpm
Pressure Range	3000–6000 psi	207–414 bar
Maximum Temperature	180° F	82° C
Inlet Port	½" NPT(F)	½" NPT(F)
Bypass Port	¾" NPT(F)	¾" NPT(F)
Weight	6.2 lbs	2.8 kg
Dimensions	9.09 x 3.43 x 2.38"	231 x 87 x 60.45 mm

FEATURES

- Maintains full pressure while running in idle for quick return to system pressure.
- Offers pump protection against pressure fluctuations and system changes.
- Minimum pressure fluctuations with the alternating use of multiple guns and nozzles.
- Top adjusting handle and locking nut secures exact pressure setting.
- Uses external moving parts.
- Stainless Steel internal parts increase durability and compatibility.
- Standard FPM elastomers promote compatibility with many liquids and temperatures up to 240° F.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system

SELECTION

This pressure regulator is designed for systems with single or multiple pumps, solenoid (gate) valves, nozzles, standard or "weep" guns.

Note: For multiple-pump systems, it is best to use a pressure regulator, not a pressure-sensitive regulating unloader.

This regulator should meet both the desired system flow (combined nozzle flow rate requirement) and the desired system pressure.

Note: Operation below the minimum rated flow of the regulator flows of the regulator may cause cycling and premature regulator wear, and preventing achievement of the desired system pressure.

INSTALLATION

This regulator can operate properly mounted in any direction. However, it is preferred to keep the plumbing to a minimum and the adjusting cap easily accessible. The best mounting location is directly on the pump discharge manifold head or in the discharge line using a tee fitting.

The inlet connection is located on the side and is a 1/2" NPT(F) port. Plumb into this port for the discharge flow from the pump.

The bypass connection is a 3/4" NPT(F) port located on the bottom. Bypass fluid is directed out of this port and can be routed to a reservoir or a drain.

OPERATION

This pressure regulator maintains system pressure in the discharge line and at the pump head when the trigger gun or solenoid (gate) valve is closed, or the nozzles are clogged, thus bypassing all unrequired flow. Squeezing the trigger gun or opening the solenoid (gate) valve allows for a quick return to system pressure.

PRESSURE ADJUSTMENT

Note: Pressure is not set at the factory.

1. Setting and adjusting the regulator pressure must be done while the system is running.
2. Start the system with the regulator backed off to the lowest pressure setting (counterclockwise).
3. Increase the regulator pressure setting by turning the pressure adjusting handle clockwise.
4. Squeeze the trigger and read the pressure on the gauge at the pump.

Note: Do not read the pressure at the gun or nozzle.

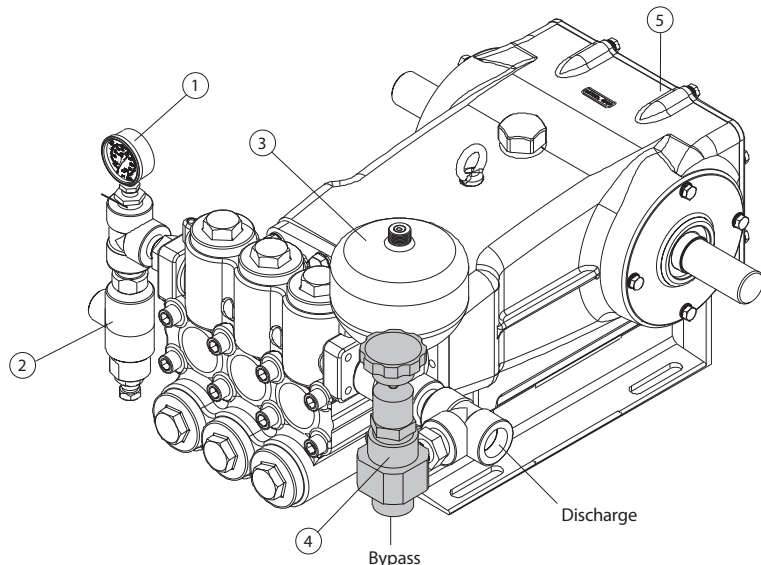
5. If more pressure is desired, release the trigger, turn adjusting handle one-quarter turn in a clockwise direction.
6. Squeeze the trigger and read the pressure.
7. Repeat this process until desired system pressure is attained.
8. Stop turning the adjusting handle and thread lock nut down towards the upper body of the regulator to lock it in place.

Note: A minimum of 5% of the flow through the regulator should bypass for proper regulator performance. If the entire regulator flow pumps through the nozzle (zero-bypass), the valve can easily be set for pressure higher than the desired pressure, causing a malfunction or premature wear.

NOTICE A secondary pressure relief device (i.e., pop-off valve) should be used along with this pressure regulator. The final adjustment for the relief valve should relieve at 200 psi above the system operating pressure.

TYPICAL REGULATOR INSTALLATION

1. Pressure Gauge
2. Relief Valve
(Secondary Pressure Relief Device)
3. Pulsation Dampener
4. **Pressure Regulator**
(Primary Pressure Regulating Device)
5. Triplex Plunger Pump



SERVICING

Disassembly

1. Disconnect bypass and inlet plumbing from the regulator.
2. Remove regulator from the pump.
3. Secure lower body of regulator in a vise with adjusting handle facing up.
4. Remove adjusting handle and screw from the upper body.
5. Remove upper body by unthreading from the lower body.
6. Remove first spring retainer, spring and second spring retainer from lower body.
7. Remove the lower body from the vise.
8. Place the lower body upside down on a flat surface with the bypass port facing up. Grasp lower body and gently tap against a flat surface. The piston guide and the ball will fall out.
9. Grasp lower body and gently tap against a flat surface to remove the piston insert, piston and spring.
10. Separate piston and spring from piston insert.
11. Place lower body with bypass port facing up on the flat surface. Using a tool with the same diameter as the seat, drive out the seat.

NOTICE Exercise extreme caution to avoid contact and damage to the inside diameter of the piston insert, lower body sealing areas and seat. Also, take care to avoid contact and damage to the outside diameter of the piston insert, piston and seat.

Note: With the regulator completely disassembled, inspect sealing area where the seat and piston insert make contact within the regulator's lower body for grooves, pitting and wear. If damage is found, stop the repair and replace it with new a lower body or completely new regulator. If not, proceed with reassembly.

Reassembly

1. Place lower body with bypass port facing down on a flat surface.
2. Lubricate outside diameter of seat. Press seat into the lower body with the small-diameter surface facing down. Ensure seat lip rests squarely on the lower body surface.
3. Lubricate and install backup ring and O-rings onto the outer diameter of the piston insert and into inside diameter of the piston insert. Press piston insert with small diameter down into lower body.
4. Install the ball and then spring onto the seat.
5. Lubricate and install O-rings onto outside the diameter of piston.
6. Place piston over spring.
7. Place piston guide on top of the piston. Insert the ball into center hole of the piston guide.
8. Place first spring retainer with stepped side facing up onto the piston guide.
9. Install spring onto the first spring retainer and then place second spring retainer on spring with stepped side facing down.
10. To install the upper body onto the lower body, align the hole in the upper body with the internal parts and use a screwdriver to support them during assembly.
11. Thread in adjusting handle with the screw through the hole in the upper body.
12. Reinstall the regulator onto the pump.
13. Reconnect the bypass and inlet plumbing to regulator.
14. Proceed to PRESSURE ADJUSTMENT.

TROUBLESHOOTING

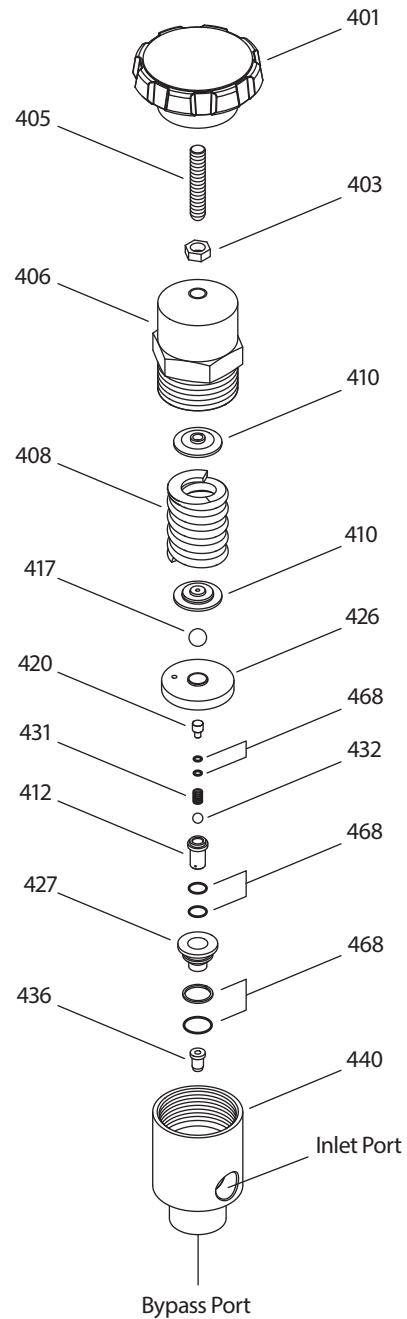
Problems	Probable Cause	Solution
Excessive pressure fluctuations	<ul style="list-style-type: none"> • Too little flow for valve specifications • Air in system, poor connections • Inlet seals in pump worn • O-ring in gun worn 	<ul style="list-style-type: none"> • Replace with proper valve • Check connection, tighten • Replace with seal kit • Replace O-ring in gun
System will not build up to pressure	<ul style="list-style-type: none"> • Nozzle worn • Improper nozzle size for system specifications • Foreign material trapped in seat 	<ul style="list-style-type: none"> • Replace nozzle • Change nozzle to proper size • Clean out debris
Pressure drop	<ul style="list-style-type: none"> • Nozzle worn • Piston and seat in regulator worn • Air in system, poor connections • Insufficient flow to pump • Filter clogged 	<ul style="list-style-type: none"> • Replace nozzle • Replace piston and seat • Check connection, tighten • Increase flow to pump • Check and clean regularly
Pressure spikes while in bypass	<ul style="list-style-type: none"> • Minimum bypass of 10% not present • Excessive pressure adjustment made for worn nozzle 	<ul style="list-style-type: none"> • Back-off adjusting handle and reset • Replace nozzle, reset system pressure
Leakage from regulator vent hole	<ul style="list-style-type: none"> • O-ring around piston worn or piston retainer scored 	<ul style="list-style-type: none"> • Service with O-ring kit

PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
401	30948	NYR	Handle, Adjusting	1
403	30933	S	Nut, Lock	1
405	30932	S	Adjuster, Pressure	1
406	—	STNP	Body, Upper	1
408	32353	STL R	Spring	1
410	34289	BB R	Retainer, Spring	2
412	76472	SS	Piston	1
417	34031	SSSS	Ball, Retainer	1
420	76473	SS	Spacer, Ball	1
426	34033	BB	Guide, Piston	1
427	76474	SS	Insert, Piston	1
431	34000	SS	Spring, Piston	1
432	34001	SSSS	Ball, Seat	1
436	32103	SS	Seat	1
440	—	SS	Body, Lower Hex	1
468	32141	FPM R	Kit, O-Ring	1

Italics are optional items. R Components comply with RoHS Directive.
Material Codes (Not Part of Part Number): BB=Brass FPM=Fluorocarbon
NY=Nylon STNP=Steel/Nickel Plated S=304SS SS=316SS
SSSS=440SS STL=Steel

EXPLODED VIEW



⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. 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/dynamic-literature/cautions-and-warnings or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty online at www.catpumps.com/literature/cat-pumps-limited-warranty