

0-800 psi Carbide Seat Fluid Pressure Regulator

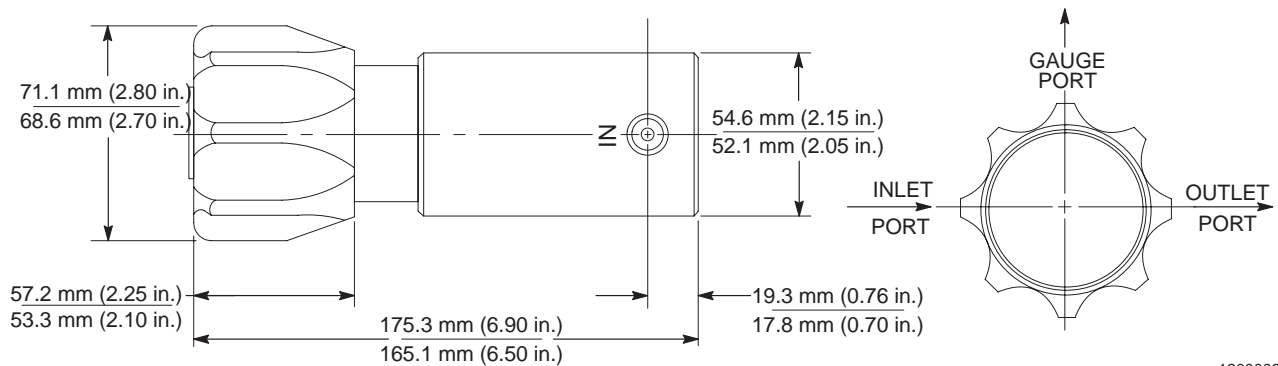
Description

The Nordson 0-800 psi carbide seat fluid pressure regulator is designed for use with general liquid coatings. The regulator body is constructed of stainless steel with a nickel-plated brass bonnet. It is a non-venting model that regulates the fluid pressure flow out of high pressure pumps.

NOTE: Use the standard Viton O-rings with Toluene, Xylene, and Butysol. Replace the Viton O-rings with Ethylene Propylene O-rings for use with Acetone or MEK. Refer to *Carbide Needle and Seat Service Kit* on page 8 for ordering information.

Specifications

Maximum Inlet Pressure:	689.66 bar (10,000 psi)
Output Pressure Range:	0-55 bar (0-800 psi)
Inlet and Outlet Ports:	1/4-in. NPT
Weight:	2.26 kg (5 lb)
Dimensions:	See Figure 1



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Figure 1 Regulator Dimensions

Repair



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.



WARNING: System or material pressurized. Relieve pressure. Failure to observe this warning may result in serious injury or death.

Disassembly

See [Figure 2](#).

1. Pry off the button plug (1) from the top of the hand knob (4) and label (3) using a flat-head screwdriver.
2. Using external snap-ring pliers, remove the retaining ring (2) from the adjusting screw (9). Remove the hand knob.
3. Place the regulator body (29) in a vise and tighten. Unscrew the bonnet (5) using a $1\frac{5}{8}$ -in. open-end wrench. Remove the load spring (13) and the spring pad (14) from the regulator body.
4. Using a 3-mm hex-key, unscrew the set screw (12) that secures the adjusting screw assembly (9 through 11) within the bonnet. Remove the adjusting screw assembly, washers (6, 8), and thrust bearing (7). The washers and thrust bearing may stick to the bonnet.
5. Remove the piston assembly (15 through 18) and the pin (20) from the regulator body.
6. Using a $\frac{1}{2}$ -in. socket wrench, unscrew the valve assembly (21 through 28) from the regulator body.

Repairing the Valve

NOTE: Be careful not to mar the surface of the valve body. Use a smooth-jawed vise or pliers with the teeth covered with a soft cloth to prevent scratching the valve body.

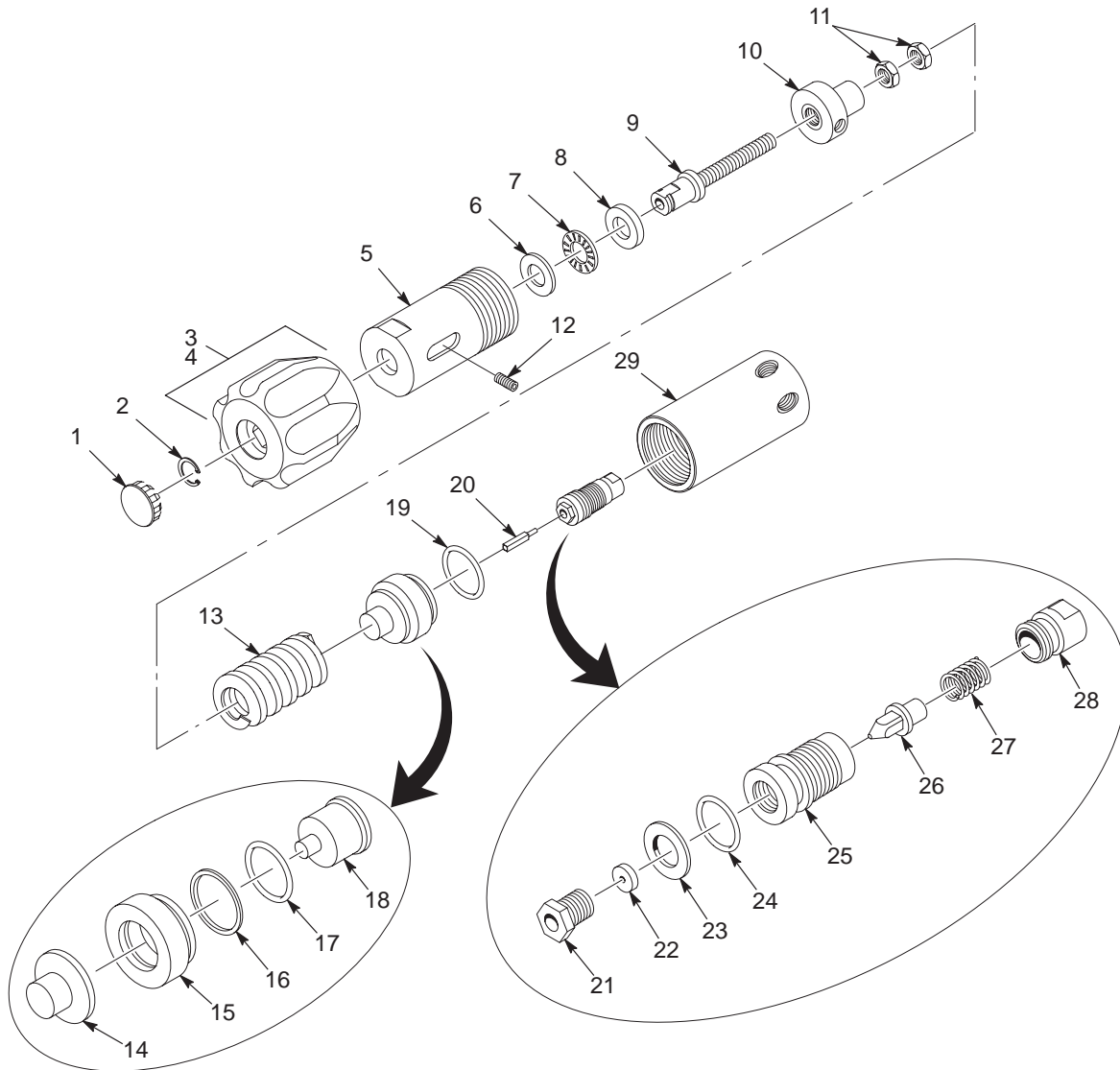
See [Figure 2](#).

1. Unscrew the seat retainer:
 - Either place the shoulders of the valve body (25) (where the O-rings and plastic snap ring are located) into a vise or use the supplied wrench.
 - The seat retainer (21) has left-hand threads. Unscrew the seat.

2. Unscrew the spring retainer (28) from the bottom of the valve body. Remove the spring (27) and main valve (26).

NOTE: If replacing the seat: Apply pipe adhesive to the concave face of the seat. Make sure that the seat is installed concave face down into the valve body.

3. Replace the main valve or carbide seat (22), if necessary. Screw the spring retainer, spring, and main valve into the valve body until finger tight.
4. Screw the seat retainer into the valve body counterclockwise. Tighten the seat retainer to 19.8-22.6 N•m (175-200 in.-lb).
5. Remove the O-ring (24) and the back-up ring (23) from the valve body. Install a new, lubricated O-ring and back-up ring on the valve body.



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Figure 2 Regulator Exploded View

- | | | |
|--------------------|---------------------|---------------------|
| 1. Button plug | 11. Hex nuts | 21. Seat retainer |
| 2. Retaining ring | 12. Set screw | 22. Carbide seat |
| 3. Label | 13. Load spring | 23. Back-up ring |
| 4. Hand knob | 14. Spring pad | 24. O-ring |
| 5. Bonnet | 15. Back-up adapter | 25. Valve body |
| 6. Thin washer | 16. Back-up ring | 26. Main valve |
| 7. Thrust bearing | 17. O-ring | 27. Spring |
| 8. Thick washer | 18. Piston | 28. Spring retainer |
| 9. Adjusting screw | 19. O-ring | 29. Regulator body |
| 10. Spring cap | 20. Pin | |

Repairing the Piston

See [Figure 2](#).

1. If not already removed, remove the spring pad (14) from the piston assembly (15 through 18).
2. Pull the piston (18) out of the back-up adapter (15).
3. Remove both O-rings (17, 19) and the back-up ring (16). Install a new back-up ring in the back-up adapter. Lubricate and install new O-rings in the back-up adapter and on the bottom rim of the back-up adapter.
4. Push the piston through the back-up adapter until it snaps into place.
5. Install the spring pad on the piston assembly.

Repairing the Adjusting Screw

See [Figure 2](#).

Typically, you do not need to disassemble the adjusting screw assembly (9 through 11). Be sure that the threads of the screw (9) are well lubricated and that the two hex nuts (11) are tightened against each other. If they are not tight, they could vibrate loose during operation. To tighten the nuts, follow these steps:

1. Turn the top nut clockwise.
2. Turn the bottom nut counterclockwise until it is no more than 2.5 cm (1 in.) from the bottom of the adjusting screw (9) threads.
3. Tighten the top nut against the bottom nut.

Assembly

See [Figure 2](#).

1. Screw the valve assembly (21 through 28) into the regulator body (29) and tighten to 11.3-12.4 N•m (100-110 in.-lb).

NOTE: Do not over-tighten the valve assembly. You might loosen the left-threaded seat retainer (21).

2. Set the pin (20) in the seat retainer.
3. Insert the spring pad (14) and piston assembly (15 through 18) into the regulator body (29).
4. Lubricate the thrust bearing (7) and washers (6, 8) and install them on the adjusting screw (9).
5. Insert the adjusting screw assembly (9 through 11), washers (6, 8), and thrust bearing (7) into the bonnet (5).
6. Align the threaded hole of the spring cap (10) to the opening in the bonnet. Tighten the set screw (12).
7. Set the load spring (13) on the spring pad (14).
8. Install the bonnet to the regulator body.
9. Place the regulator body (29) into a vise and tighten the bonnet to 67.8 N•m (50 ft-lb).
10. Place the hand knob (4) and label (3) over the adjusting screw (9). Install a new retaining ring (2). Install the button plug (1).

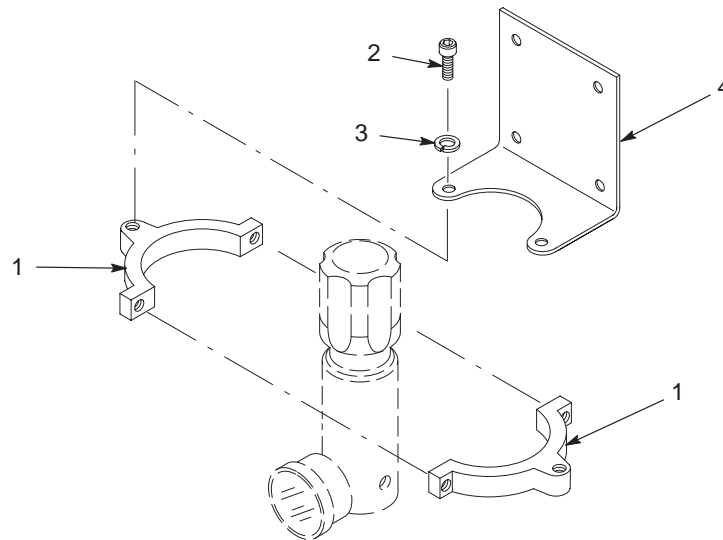
Parts

The following parts lists provide ordering information for the regulator. Contact your Nordson Corporation representative if you need assistance.

Mounting Bracket

See Figure 3.

Item	Part	Description	Quantity	Note
—	243537	MOUNTING, fluid regulator	1	
1	145393	• BRACKET, mounting, back pressure regulator	1	
2	981208	• SCREW, hex, 1/4-20 x 0.625 in., zinc	2	
3	983140	• WASHER, lock, e, split, 0.250 in.	2	
4	1009071	• BRACKET, regulator, diaphragm	1	



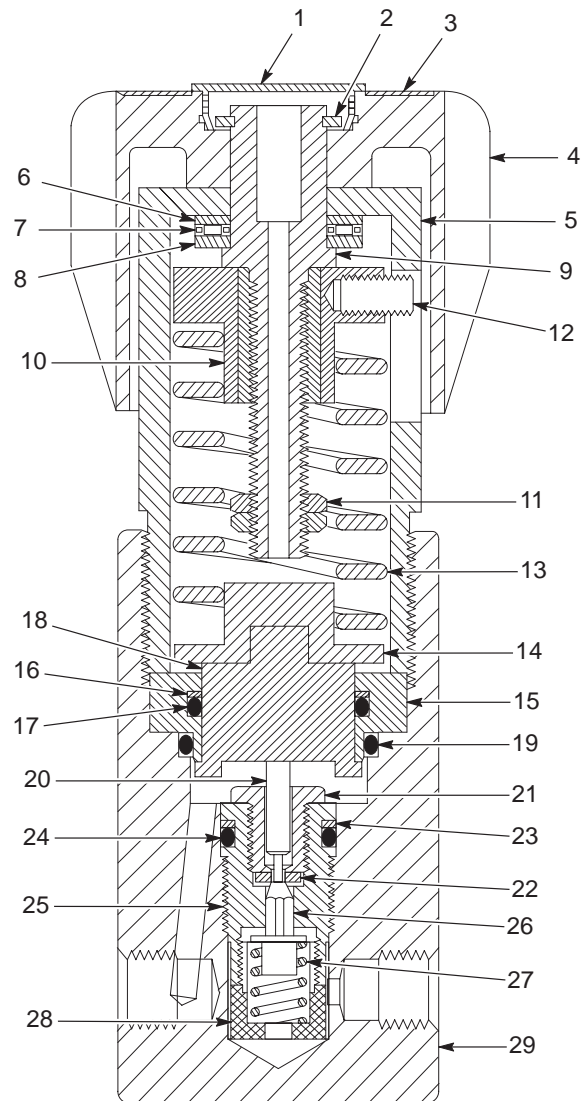
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Figure 3 Regulator Mounting Bracket

Regulator

See Figure 4.

Item	Part	Description	Quantity	Note
—	1010775	REGULATOR, pressure, fluid, 0-800 psi, carbide seat	1	
1	900768	• BUTTON PLUG, 1.000 in.	1	
2	986106	• RETAINING RING, ext., 62, basic	1	
3	145354	• LABEL, hand knob, increase/decrease	1	
4	145355	• KNOB, hand, regulator	1	
5	145356	• BONNET, regulator	1	
6	983030	• WASHER, thrust, thin, pressure regulator	1	
7	145357	• BEARING, thrust	1	
8	983031	• WASHER, thrust, thick, pressure regulator	1	
9	981486	• SCREW, adjusting, non-venting	1	
10	145408	• CAP, spring, regulator	1	
11	342294	• NUT, hex, jam, $\frac{3}{8}$ -24, left-hand thread	2	
12	227414	• SCREW, socket, set $\frac{1}{4}$ -20 x 0.50 in., flat, zinc	1	
13	1010157	• SPRING, compression, 0-800 psi	1	
14	145407	• PAD, spring, hard seat/soft seat	1	
15	145410	• ADAPTER, back-up, hard seat/soft seat	1	
16	954120	• BACK-UP RING, single, 1.00-in. ID	1	A
17	941203	• O-RING, Viton, black, 1.000 x 1.188 in.	1	A
18	145359	• PISTON, regulator, hard seat/soft seat	1	
19	941225	• O-RING, Viton, black, 1.125 x 1.313 in.	1	A
20	109439	• PIN, seat	1	
21	145361	• RETAINER, seat, soft seat regulator	1	
22	-----	• SEAT	1	A
23	954043	• BACK-UP RING	1	A
24	941136	• O-RING, Viton, black, 0.562 x 0.750 in.	1	A
25	145362	• BODY, valve, soft seat regulator	1	
26	-----	• VALVE, main	1	A
27	987040	• SPRING, compression, 0.630 x 0.290 OD x 0.034 in.	1	
28	145372	• RETAINER, spring, soft seat regulator	1	
29	145360	• BODY, ported, soft seat regulator	1	
NS	901940	WRENCH, rebuild, main valve	1	
NOTE A: These parts are included in the Carbide Needle and Seat Kit, part 324784.				
NS: Not Shown				



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Figure 4 Regulator Parts

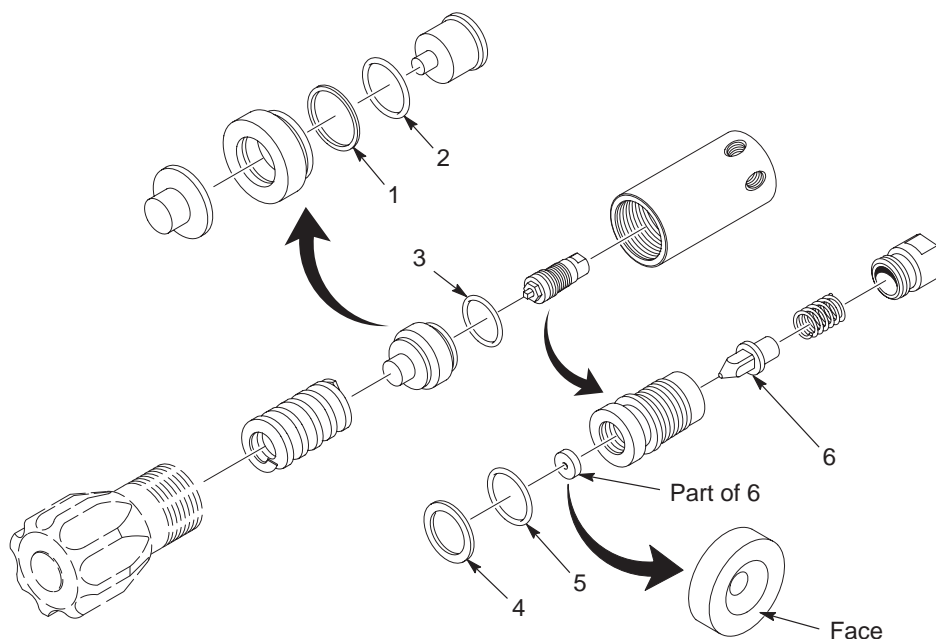
Carbide Needle and Seat Service Kit

The carbide needle and seat kit also includes both Viton O-rings for Toluene, Tylene, and Butysol applications and Ethylene Propylene O-rings for Acetone and MEK applications.

See Figure 5.

Item	Part	Description	Quantity	Note
—	324784	SERVICE KIT, regulator, needle and seat, carbide	1	
1	954120	• BACK-UP RING, single, 1.00-in. ID	1	
2	941203	• O-RING, Viton, black, 1.000 x 1.188 in.	1	A
2	941202	• O-RING, EPR, 1.000 x 1.188 x 0.094 in.	1	B
3	941225	• O-RING, Viton, black, 1.125 x 1.313 in.	1	A
3	941223	• O-RING, EPR, 1.125 x 1.313 x 0.094 in.	1	B
4	954043	• BACK-UP RING	1	
5	941136	• O-RING, Viton, black, 0.562 x 0.750 in.	1	A
5	941135	• O-RING, EPR, 0.562 x 0.750 x 0.094 in.	1	B
6	-----	• NEEDLE AND SEAT, regulator	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	AR	

NOTE A: Use Viton O-rings with waterborne materials.
 B: Use EPR O-rings with solventborne materials.
 AR: As Required
 NS: Not Shown



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Figure 5 Carbide Needle and Seat Service Kit

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