Integra® Manually Operated Diaphragm Valves

½" Orifice, 2-way, Multi-turn Designs

REPAIR INSTRUCTIONS

For models:

201-38, 201-39, 201-40, 201-41, 201-42, 201-41-SI, 201-41-SO, 201-42-SI, 201-42-SO, 201-38-01, 201-39-01, 201-40-01, 201-41-01, 201-42-01, 201-41-SI-01, 201-41-SO-01, 201-42-SI-01, 201-42-SO-01

REPAIR PROCEDURE – DISASSEMBLY

1. Begin disassembly by referring to Figure 1.
2. Remove the two screws (P1) on top of the handle (P8) with a screwdriver (S1). Discard screws.
3. Remove the handle (P8) by pulling up on it.
4. Remove the stop nut (P2) by rotating it counter-clockwise, then discard it.
5. Remove the collar halves (P9) by inserting a screwdriver (S1) into the slot and separating them as shown in Figure 2.
6. Remove the panel mount nut (P10).
7. Remove the outer cap (P11) with the outer cap wrench (T1) by turning it slowly counter-clockwise.
8. Remove and discard the thrust washer (P3) and O-ring (P4).
9. Remove the inner cap (P12).
10. Remove and discard the thrust washer (P5).
11. Remove the actuator nut (P6) by rotating it clockwise. Discard this part.
12. Use the retainer nut adaptor (T2) and an adjustable wrench (S2) to remove the retainer nut (P13). See Figure 3.
13. Remove the diaphragm/retainer/stem assembly (P7) by pulling up on it. Discard this assembly.

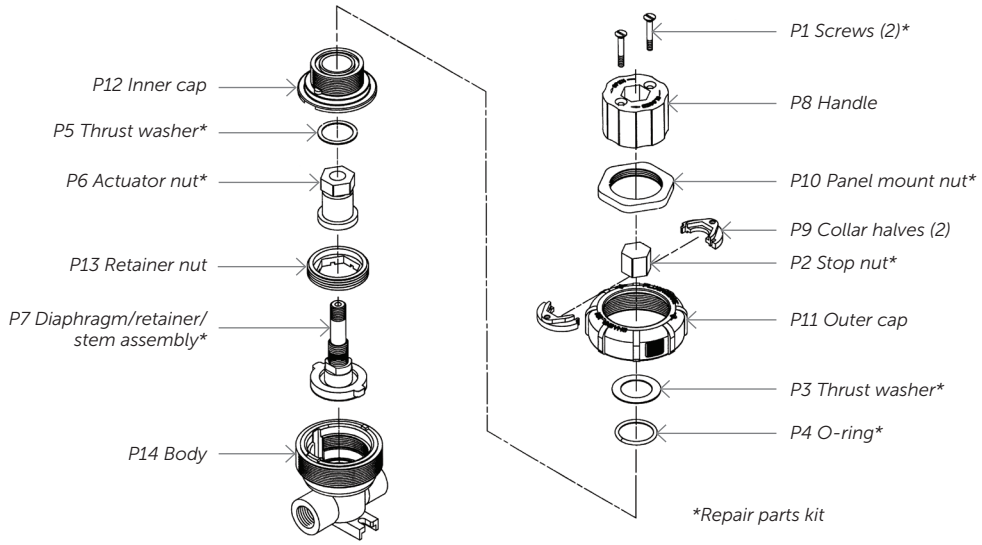


Figure 1.

REPAIR PROCEDURE – ASSEMBLY

1. Before beginning assembly, clean the internal body surfaces (P14) and the parts not supplied in the kit with isopropyl alcohol (S3).
2. Begin assembly by making sure the O-ring between the diaphragm and retainer is evenly in place. Snap O-ring pre-set tool (P15) on stem (see Figure 4). Then position the diaphragm/retainer/stem assembly (P7) into the body (P14), lining up the tabs on the retainer with the slots on the body (P14).
3. Thread the retainer nut (P13) into the body (P14) until the retainer nut (P13) just contacts the retainer. See Figure 3.
4. With the retainer nut adaptor (T2) tighten the hex portion of the adaptor to 5.65 N•m (50 in•lb) using the torque wrench (S4) and 1⅛" crow's foot (S5). Discard O-ring pre-set tool (P15).
5. Thread the actuator nut (P6) onto the stem until it bottoms out.
6. Place the thrust washer (P5) onto the actuator nut.
7. Place the inner cap (P12) onto the valve body, aligning the bosses on the body with the slots in the cap.
8. Install the outer cap (P11) and slowly torque to 13.5 N•m (120 in•lb) using the torque wrench (S4), 1⅛" crow's foot (S5) and outer cap wrench (T1).
9. Turn actuator nut (P6) clockwise until it contacts the inner cap (P12).
10. Place O-ring (P4) and thrust washer (P3) into the groove on the inner cap (P12).
11. Install collar halves (P9) onto the stem as shown in Figure 5.
12. Thread on the panel mount nut (P10).
13. Set up valve so that 552 kPa (80 psi) can be applied to the outlet port.
14. Place the handle (P8) onto the actuator nut (P6) and slowly close the valve until a seal is just made. Remove the valve handle without disturbing the stem position, and turn the stop nut (P2) clockwise until it first contacts the actuator nut (P6). Then turn the stop nut (P2) counterclockwise less than ⅙ of a turn so the hex on the actuator nut (P6) first lines up with the hex on the stop nut (P2).
15. Install the handle (P8) so that the holes in the handle line up with the holes in the collar halves (P9).
16. Insert two screws (P1).
17. Proceed to test the valve.

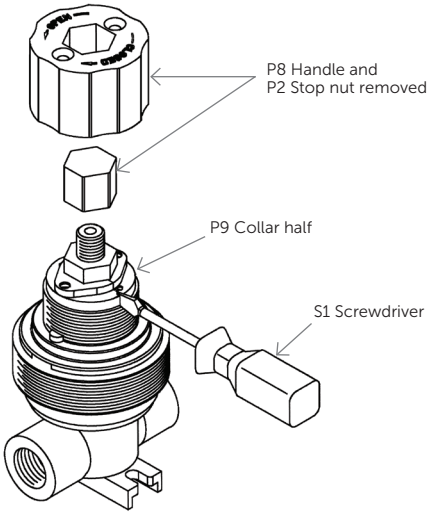


Figure 2.

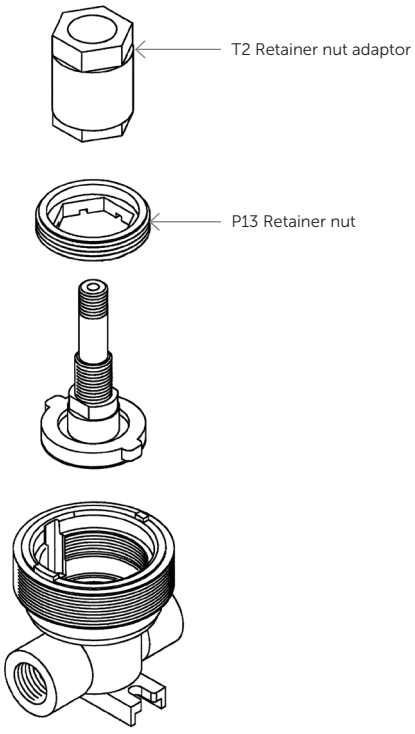
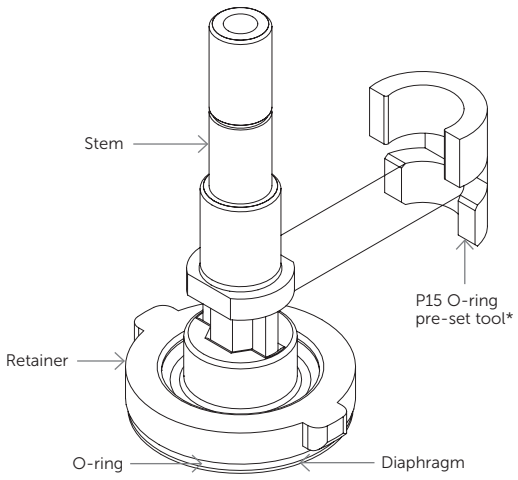


Figure 3.

P7 Diaphragm/Retainer/Stem Assembly



**Repair parts kit*

Figure 4.

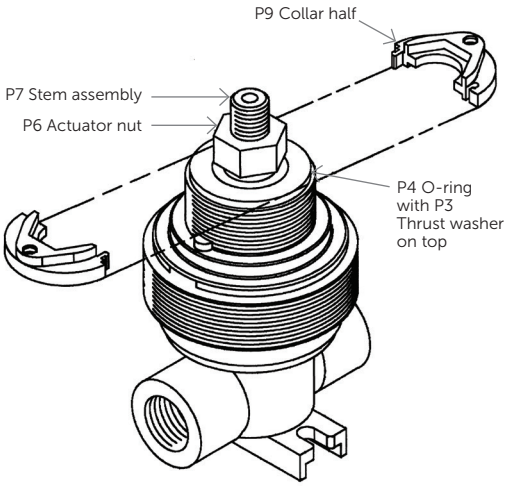


Figure 5.

Repair Parts Kit

(See part numbers listed below)

ITEM	DESCRIPTION	QUANTITY
P1	Screw	2
P2	Stop nut	1
P3	Thrust washer	1
P4	O-ring	1
P5	Thrust washer	1
P6	Actuator nut	1
P7	Diaphragm/retainer/ stem assembly	1
P15	O-ring pre-set tool	1

Repair Tool Kit

(Part number 213-103-01)

ITEM	DESCRIPTION
T1	Outer cap wrench
T2	Retainer nut adaptor

Customer Supplied Items

ITEM	DESCRIPTION
S1	Screwdriver
S2	Adjustable wrench
S3	Isopropyl alcohol
S4	Torque wrench 22 N•m (200 in•lb) scale
S5	1⅛" Crow's foot

ORDERING INFORMATION

All of the following valves use repair parts kit part number 201-74.

Valve part number	
201-38	201-42-01
201-39	201-41-SI
201-40	201-41-SO
201-41	201-42-SI
201-42	201-42-SO
201-38-01	201-41-SI-01
201-39-01	201-41-SO-01
201-40-01	201-42-SI-01
201-41-01	201-42-SO-01

TESTING

The valve must be tested in the following ways:

Outlet to Inlet Leakage

With 552 kPa (80 psi) air pressure applied to the outlet and the valve fully closed, no leakage at the inlet should be seen when the inlet port is submerged in water. If leakage occurs, back off the stop an additional ⅙ turn. If this does not correct the leakage, disassemble and inspect the valve seat for a defect.

External Media Leakage

With the inlet plugged with a taped plug or Flaretek® fitting cap, apply 552 kPa (80 psi) air pressure to the outlet. No leakage should be observed from around the outer cap.

FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit entegris.com and select the Contact Us link to find the customer service center nearest you.

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