



## 230 Micro Pump: Fixed Output Rebuild Instructions

Pump part number: 231-000-411

Rebuild kit part number: 231-000-411R



How-To Video

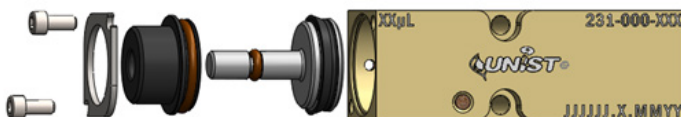
[youtube.com/watch?v=VTsuk7C1dEU](https://www.youtube.com/watch?v=VTsuk7C1dEU)

### Tools Needed:

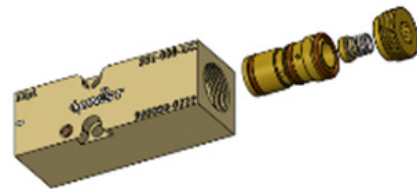
- 1/4" hex key
- 3/32" hex key
- 7/64" hex key
- 8mm or 5/16" nut driver
- Needle nose pliers
- Torque wrench
- Small pick
- Molykote 55 or equivalent assembly grease
- Clean and flat work surface

*Item numbers in these instructions refer to the drawings found on the back of this sheet.*

1. If necessary, remove the pump from the pump stack using a 7/64" hex key.
2. With a 3/32" hex key, remove the two screws (item 20) that hold the air cap to the pump body.
3. Remove the air cap assembly (items 16, 17, 18 & 19), metering pin (item 15), and metering pin return spring (item 14) from the air side of the pump.
4. Place the air cap (items 17 & 18) and retainer (item 19) on a clean surface. The metering pin and metering pin return spring can be discarded.



5. Disassemble the fluid side of the pump. Using a 1/4" hex key, remove the brass plug (item 12) from the fluid side.
6. Then remove the check seal body, spring, pump inserts, and all the seals. (items 2-11).



7. Depending on how long the pump has been in service, either tap the pump body on a smooth surface or push the inserts out from the opposite side. Take care not to scratch or deform the internal pump bore.
8. All seals and internal components taken out of the fluid section are discarded (items 2-11).
9. Ensure that the internal bore of the pump block is cleaned so debris doesn't interfere with performance after reassembly.
10. To reassemble, start by laying out all the rebuild kit components.
11. Insert the brass washer (item 2) into the fluid side of the pump body and ensure its seated flat on the internal shelf.
12. Ensure there is a light coat of grease on the -012 O-ring (item 3). Then place it on top of the washer and ensure it sits flat on the washer. Using the 8mm or 5/16" nut driver, gently press the O-ring squarely to the bottom of the bore.
13. The -007 X-ring (item 4) should be installed in the counter bore of the fluid inlet insert (item 5). Apply a light coat of grease to the X-ring prior to installing.
14. The fluid inlet insert (item 5) is installed into the pump body with the -007 X-ring (item 4) facing the washer and front O-ring, so the sealing surfaces meet when the stack is compressed.

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15. Ensure there is an -012 O-ring (item 3) and .156" ID U-cup (item 8) on the fluid displacement chamber (item 7) and apply a light coat of grease before installation.
16. Install the displacement chamber into the pump body with the U-cup seal facing the inlet insert.
17. Ensure the outlet check valve body is assembled with the flat check seal (item 11) into the brass housing (item 9). Install that housing into the bore with the seal facing toward the inside of the pump.
18. Install the outlet check valve spring (item 10) over the nub on the outlet check valve body (item 9).
19. Lightly grease the -013 O-ring (item 6) and install it on the chamfer of the displacement chamber (item 7) so it will seal against the brass plug (item 12).
20. Thread the brass plug (item 12) back into the pump body but do not fully tighten it.
21. This rebuild also replaces the air piston (item 16) in the air cap (items 17 & 18).
22. Pull the air piston (item 16) out of the air cap and discard it.
23. Clean the bore inside the air cap with a lint free rag.
24. Ensure the U-Cup and O-Ring on the new air piston (item 16) are lightly greased.
25. Use a twisting motion to install the new piston into the air cap (items 17 & 18).
26. Insert the metering pin return spring (item 14) into the air bore.
27. Apply a light coat of grease to the metering pin (item 15) on the smaller-diameter shaft. Insert the metering pin into the metering pin return spring (item 14), then slowly press the metering pin so it engages the inserts below.
28. Set the rebuilt air cap assembly (items 16, 17, 18 & 19) back on the pump. Install the two screws (item 20) and evenly tighten them to 6-in-lbs [.68Nm] pounds using a 3/32" hex key.
29. Flip the pump back over and slowly depress the air piston on the pump several times to align the metering pin with the fluid inlet and displacement chamber inserts.
30. While holding the air piston in, torque the brass plug (item 12) to 75 in-lbs [8.5 Nm] using a 1/4" hex key.
31. Replace the three O-Rings on the pump manifold block with the three remaining -007 O-Rings from the rebuild kit.



32. Reinstall the pump onto the manifold.

If you prefer to install a new pump or have any questions about the rebuild, Unist lubricants, or anything else you might need, feel free to contact Unist—we're always happy to help.

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