

Rebuild Kit Replacement Instructions

Unist 230 Pump 40 μ L Part Number 231-000-401

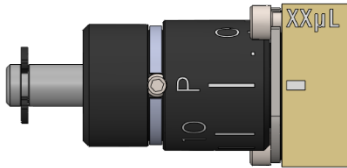
Item numbers in these instructions refer to the drawings found on the back of this sheet.

If any seals are not adequately greased Molykote 55 or equivalent is recommended.

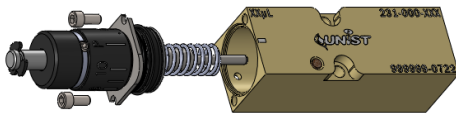
Tools Needed:

- 1/4" hex key
- 3/32" hex key
- 7/64" hex key
- A clean surface

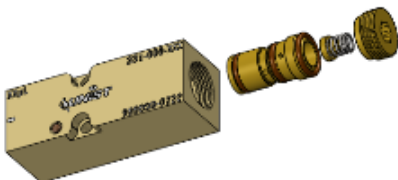
1. If necessary, remove the pump from the pump stack using a 7/64" hex key.
2. Record the current pump position and then adjust the pump to the prime position.



3. Remove the two bolts (item 16) that hold the adjustment knob to the pump body using an 3/32" hex key.
4. Remove adjustment knob (item 15), metering pin (item 14), and spring (item 13) from the air side. Set on a clean surface.



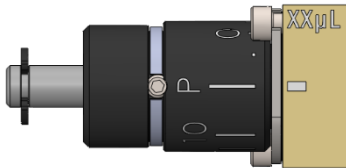
5. Use the 1/4" hex key to remove the brass plug (item 12) from the fluid side (bottom) of the pump.
6. Remove the check seal, spring, pump inserts and all seals (items 2-11). Depending how long the pump has been in service and what fluids have been ran through the pump this can be accomplished by either banging



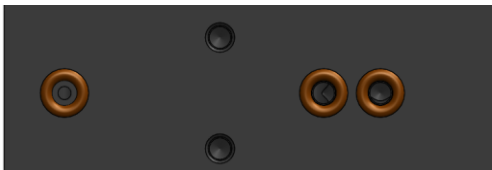
the bottom of the pump body on a hard smooth surface or pushing on the inserts from the opposite side to force the parts out.

7. Discard all old seals and internal pump components. Clean any debris from the inside of the pump block to ensure contaminants do not interfere with pump performance upon re-assembly.
8. Drop the brass washer (item 2) into the fluid side of the pump body. Ensure it sits flat on the internal shelf
9. Ensure there is a light coat of grease on the -012 O-ring (item 3) and drop it on top of the washer. Ensure it sits flat on the washer.
10. The -005 X-ring (item 4) should be in the counter bore of the fluid inlet insert (item 5). Ensure this is assembled and lightly greased.
11. Insert the fluid inlet insert (item 5) into the pump body with the -005 X-ring (item 4) facing the washer.
12. Ensure there is an -012 O-ring (item 3) and -005 O-ring (item 6) installed on the fluid displacement chamber (item 7) and they are lightly greased. Install this assembly with the -005 O-ring facing the other insert.
13. Ensure the outlet check valve is assembled with the flat check seal (item 8) and the brass housing (item 9). Install this assembled with the seal facing the inside of the pump.
14. Install the outlet check valve spring (item 10) around the nub on the outlet check valve housing (item 9)

15. Ensure the -013 O-ring (item 11) is lightly greased and install on the chamfer of the displacement chamber (item 7)
16. Install and tighten the brass plug (item 12) to 75 in-lbs [8.5 Nm]
17. If replacing the air piston, refer to page 3 “Replacing the Air Piston” before moving to the next step.
18. Flip the pump over and install the metering pin return spring (item 13) and metering pin (item 14). Ensure the metering pin has a light coat of grease around the smaller diameter shaft.



19. Install adjustment knob (item 15) making sure the P is lined up with the mark on the pump body.
20. Tighten screws (item 16) to 6 in-lbs using 3/32” hex key
21. Replace the 3 O-rings on the pump manifold block with the 3 -007 O-rings that were shipped with the rebuild kit.



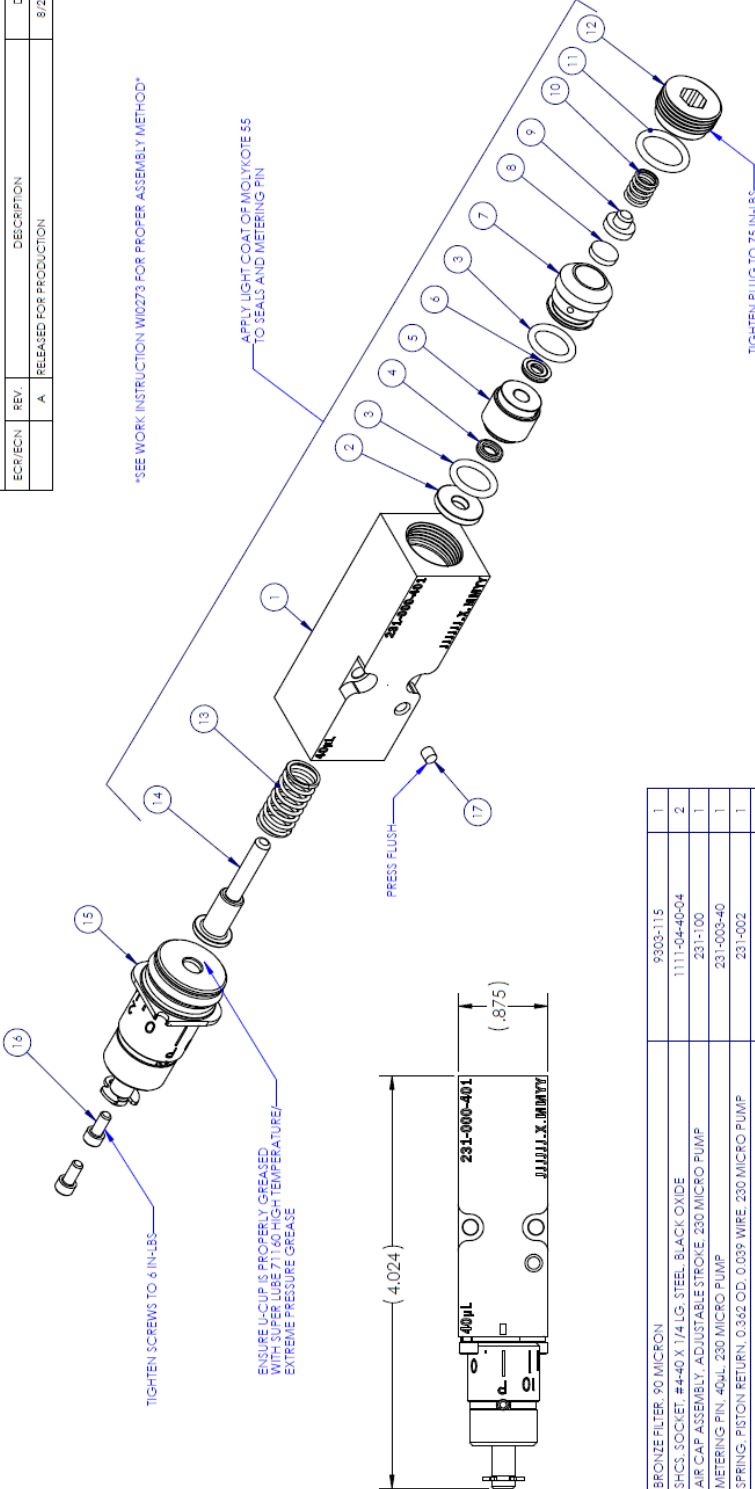
22. Reinstall the pump onto the manifold

Rebuild Kit Replacement Instructions

Unist 230 Pump 40 μ L Part Number 231-000-401

REVISIONS		DATE
REV.	DESCRIPTION	
A.	RELEASED FOR PRODUCTION	8/23/2022

SEE WORK INSTRUCTION W0273 FOR PROPER ASSEMBLY METHOD



DATE	05/13/2020
DRAWN BY:	JF
STATUS:	RELEASED
ITEM TYPE:	ASSEMBLY
DWG SIZE:	ANSI B (11X17)
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF UNIST, INC. ANY REPRODUCTION IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF UNIST, INC. IS PROHIBITED.	
TITLE:	PUMP ASSEMBLY, 40 μ L VITON, ADJUSTABLE OUTPUT, 230 MICRO PUMP
REV / DWG. NO.	A / 231-000-401
SCALE:	1:1 @ 3RD ANG
SHEET 1 OF 2	

ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
17	BRONZE FILTER, 50 MICRON	9303-115	1
16	3PCS. SOCKET, #4-40 X 1/4 LG. STEEL, BLACK OXIDE	1111-04-00-04	2
15	AIR CAP ASSEMBLY, ADJUSTABLE STROKE, 230 MICRO PUMP	231-100	1
14	METERING PIN, 40 μ L 230 MICRO PUMP	231-003-40	1
13	SPRING, PISTON RETURN, 0.342 OD, 0.039 WIRE, 230 MICRO PUMP	231-002	1
12	RETAINING PLUG, 230 MICRO PUMP	231-007	1
11	O-RING, ID .425 CS .070, VITON, BROWN	OR-013V75BN	1
10	SPRING, CHECK VALVE, METERING PUMP	9303-108	1
9	BODY, CHECK VALVE, INJECTOR PUMP	9303-107	1
8	CHECK SEAL, CHECK VALVE, VITON, INJECTOR PUMP	9303-112	1
7	PUMP INSERT DISPLACEMENT CHAMBER, 40 μ L 230 MICRO PUMP	231-006-40	1
6	U-CUP, STRAIGHT, 1/16 C/B X 5/32 ID X 9/32 OD, 75 DURO, BLACK, VITON	U4-0156-0281-002-V75BN	1
5	PUMP INSERT, FLUID INLET, 40 μ L 230 MICRO PUMP	231-005-40	1
4	X-RING, OD .281 CS .043, VITON, 75 DUROMETER, BLACK	XR-007V75BK	1
3	O-RING, ID .364 CS .070, VITON	P-012-V884-75	2
2	RETAINING WASHER, 40 μ L 230 MICRO PUMP	231-004-40	1
1	PUMP BODY, 230 MICRO PUMP	231-001	1

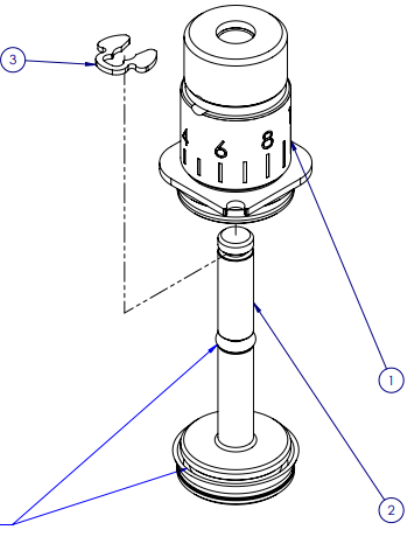
ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	PUMP BODY, 230 MICRO PUMP	231-001	1

Rebuild Kit Replacement Instructions

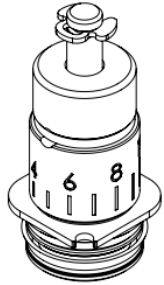
Unist 230 Pump 40 μ L Part Number 231-000-401

Replacing the Air Piston

1. Remove E-clip (item 3).
2. Remove the air piston (item 2) from the adjustment knob (item 1).
3. Clean the internal bore of the adjustment knob and discard the old air piston and any debris.
4. Ensure seals are lightly greased on new air piston and use a twisting motion to install it into the adjustment knob.
5. Re-install the e-clip. This can be achieved by pressing the e-clip into the groove using a hard surface.



ENSURE O-RING AND U-CUP ARE PROPERLY GREASED WITH SUPER LUBE 71160 HIGH TEMPERATURE/EXTREME PRESSURE GREASE



REVISIONS			
ECR/ECH	REV.	DESCRIPTION	DATE
	A	RELEASED FOR PRODUCTION	08/09/2022

DATE:	12/10/2021		
DRAWN BY:	JF		
STATUS:	RELEASED		
ITEM TYPE:	ASM		
DWG SIZE:		A10 B (11x17)	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGULAR: .015° ONE PLACE DECIMAL: .0100 TWO PLACE DECIMAL: .0015 THREE PLACE DECIMAL: .0005			PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF UNIST, INC. ANY REPRODUCTION IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF UNIST, INC. IS PROHIBITED.
TITLE:		AIR CAP ASSEMBLY, ADJUSTABLE STROKE, 230 MICRO PUMP	
REV	DWG. NO.	231-100	
A			
SCALE: 2:1		3RD ANG SHEET 1 OF 1	

ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
3	E-CLIP, 3/16" SHAFT, HEAVY DUTY	305272	1
2	AIR PISTON ASSEMBLY, ADJUSTABLE STROKE, 230 MICRO PUMP	231-110	1
1	ADJUSTMENT KNOB ASSEMBLY, 230 MICRO PUMP	231-120	1