Rebuild Kit Replacement Instructions

Unist 2-drop MV Pump

For a video walking you through this procedure please visit **unist.com/rebuildmv**
Item numbers in these instructions refer to the drawings found on the back of this sheet.

1) Disconnect output hoses from the injector pump block. The pump will either have a coaxial or single line output. Follow the procedures below depending on how the pump is equipped.

   a. Coaxial Hose:

   Disconnect the coaxial hose from the injector pump block. The coaxial hose has an inner 1/8" OD fluid line that is connected to a barbed fitting on the pump. For a video walking you through this procedure please visit **unist.com/coax**

   b. Single Line Output:

   Unscrew the fitting attached to the outlet of the injector pump block that the output hose attaches to.

2) Remove the stainless steel 8-32 x 1/4" button socket head cap screw (item 6) adjustment knob retainer from the left side of the injector pump block.

3) Remove the stainless steel 8-32 x 1/4" button socket head cap screw (item 6), detent spring (item 8), and .125" diameter stainless steel ball (item 7) from the front of the injector pump block. (**Note:** some pump variants may have the detent ball, spring, and screw on the back of the pump) It may be easiest to remove the spring and ball with a strong magnet after the button socket head cap screw has been removed.

4) Unscrew the adjustment knob (item 5) all the way out (counterclockwise) and remove from the injector pump block. The pump piston (item 9) should also come out with the adjustment knob.

5) Remove the metering pin assembly (item 16/17) and piston return spring (item 11) from inside the injector pump block.

6) Unscrew the threaded insert retainer (item 2) counterclockwise from the injector pump block using a 3/8" hex key.

7) Remove the upper (item 13) and lower metering pin inserts (item 12) from the injector pump block. Depending on how long the pump has been in service and what fluids have been run through it this can be accomplished by either banging the left side of the injector pump block against a hard smooth surface or by gently pushing on the outlet check valve housing (item 14) from the outlet side of the pump to force the parts out. (**Note:** some pump variants have the outlet check valve housing features machined into the block and do not have a separate outlet check valve housing)

8) Verify that there are no O-rings left in the injector pump block. Take special note to check for the O-ring (item 23/25) installed under the outlet check valve housing (item 14) as well as the O-ring (item 18) installed under the threaded insert retainer (item 2). (**Note:** some pump variants have the outlet check valve housing features machined into the block and do not have a separate outlet check valve housing)

9) Clean any debris from the inside of the injector pump block to ensure contaminants do not interfere with pump performance upon re-assembly.

10) Remove the pump piston from the adjustment knob and clean any debris or grease from the .250" bore in the adjustment knob. Remove the O-ring (item 18) from the groove on the outside diameter of the adjustment knob.

11) Lightly grease* and insert one O-ring (item 23/25) into the bottom of the bore of the injector pump block. (**Note:** for pumps without a separate outlet check valve housing, ignore steps 11 and 12 and proceed to step 13)

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12) Insert the check valve housing (item 14) into the bottom of the bore over the O-ring (item 23/25) in the orientation shown in the pump exploded view.

13) Lightly grease* and insert one O-ring (item 23/25) over the top of the check valve housing or check valve bore machined into the pump block.

14) Install the check valve spring (item 10) into the bore in the check valve housing as shown.

15) Ensure that an O-ring (item 21/26) is installed onto the check seal body (item 15) and insert into the injector pump block in the orientation shown. Take care to ensure that the proper 007 size O-ring (.145" ID) is installed onto the check seal body. Note that the check seal body has a post that fits down inside the check valve spring.

16) Install an O-ring (item 20/24) into the counterbore on the lower metering pin insert (item 12). Lightly grease* the O-ring and insert the lower metering pin insert into the injector pump block in the orientation shown.

17) Install an O-ring (item 20/24) into the counterbore and an O-ring (item 23/25) into the groove on the upper metering pin insert (item 13). Lightly grease both O-rings and insert the upper metering pin insert into the injector pump block in the orientation shown.

18) Lightly grease* an O-ring (item 18) and insert it into the bore of the injector pump block. Ensure the O-ring (item 18) is fully seated at the bottom of the Ø.882 bore in the pump block.

19) Using a 3/8" hex key screw the threaded insert retainer (item 2) previously removed back into the injector pump block and torque to 72 in-lbs.

20) Insert the piston return spring (item 11) into the bore of the threaded insert retainer.

21) Lightly grease* the .188" diameter of the metering pin sub assembly (item 16/17) and insert it into the bores of the upper and lower metering pin inserts.

22) Lightly grease* and install an O-ring (item 18) into the groove on the outside diameter of the adjustment knob.

23) Insert the piston assembly (item 9) into the bore of the adjustment knob.

24) Screw the adjustment knob and piston sub assembly onto the threaded insert retainer previously installed in the injector pump block. Screw the adjustment knob until the "4" on the adjustment knob indicator decal lines up with the left face of the injector pump block.

25) Insert the .125" diameter stainless steel ball (item 7) and detent spring (item 8) into the detent bore in the injector pump block. Install a stainless steel 8-32 x 1/4" button socket head cap screw (item 6) into the detent bore to retain the stainless steel ball and detent spring and torque to 10 in-lbs.

26) Install a stainless steel 8-32 x 1/4" button socket head cap screw (item 6) into the injector pump block to retain the adjustment knob and torque to 10 in-lbs.

27) Replace the O-rings (item 23/22/25) in the counterbores in the top of the injector pump block.

28) Reinstall the coaxial hose or single line tubing and fitting to the injector pump block output port.

*** Use Molykote 55 O-Ring grease or equivalent**

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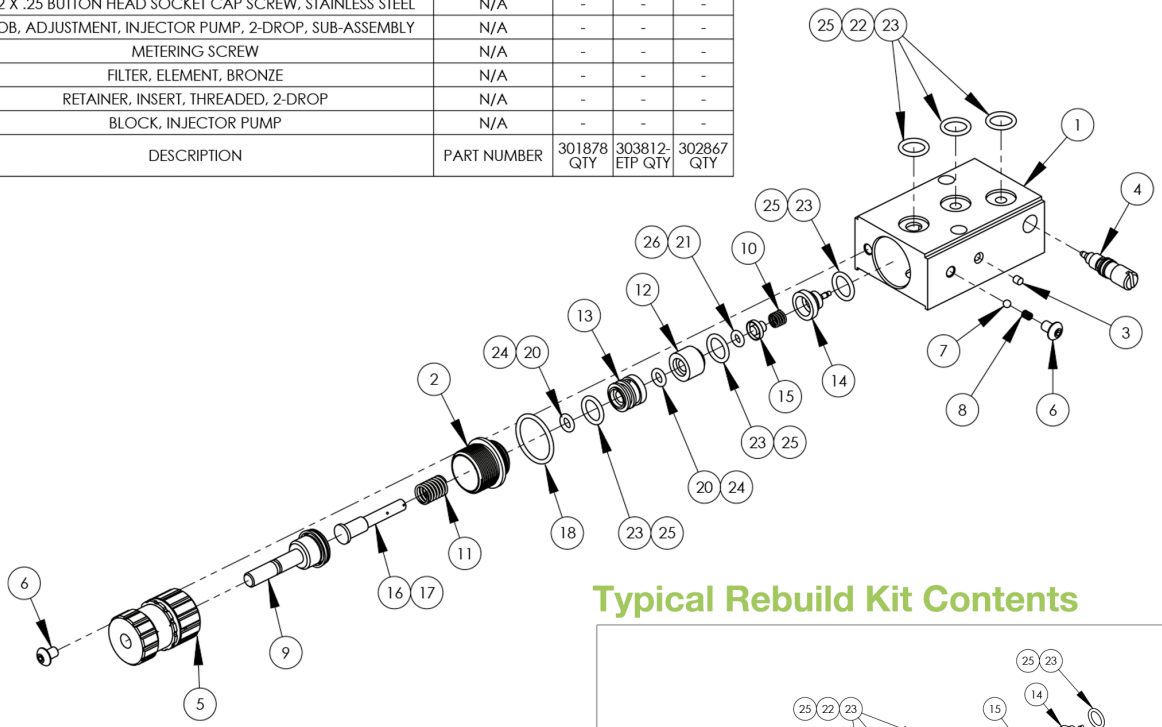
Rebuild & Seal Kit Replacement Instructions

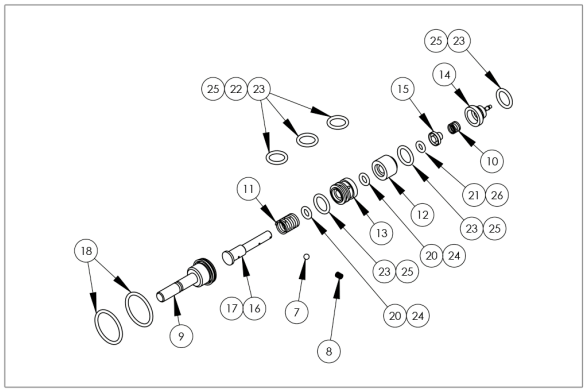
Unist 2-drop MV Pump

ITEM NO.	DESCRIPTION	PART NUMBER	301878 QTY	303812-ETP QTY	302867 QTY
26	O-RING, ID .145, CS .070, VITON ETP	304676-ETP	-	1	-
25	O-RING, ID .364, CS .070, VITON ETP	304600-ETP	-	6	-
24	O-RING, ID .176, CS .070, VITON ETP	304599-ETP	-	2	-
23	O-RING, ID .364, CS .070, VITON	2-012-V884-75	6	-	2
22	O-RING, ID .239, CS .070, VITON	2-010-V884-75	-	-	3
21	O-RING, ID .145, CS .070, VITON	2-007-V884-75	1	-	1
20	O-RING, ID .176, CS .070, VITON	2-008-V358-75	2	-	3
19	O-RING, ID .208, CS .070, 70 SHORE A DUROMETER	302494	-	-	1
18	O-RING, ID .739, CS .070, BUNA	2-018	2	2	2
17	METERING PIN, BALL CHECK VALVE, 2-DROP ASSEMBLY, VITON ETP	304561-ETP	-	1	-
16	METERING PIN, BALL CHECK VALVE, 2-DROP ASSEMBLY, VITON	301871	1	-	1
15	BODY, OUTLET CHECK SEAL	301849	1	1	1
14	HOUSING, CHECK VALVE, OUTLET	301848	1	1	-
13	INSERT, METERING PIN, UPPER, 2-DROP	301854	1	1	1
12	INSERT, METERING PIN, LOWER, 2-DROP	301852	1	1	1
11	SPRING, PISTON RETURN	301859	1	1	1
10	SPRING, OUTLET CHECK VALVE	301850	1	1	1
9	PISTON ASSEMBLY, INJECTOR PUMP	301872	1	1	1
8	SPRING, DETENT	301868	1	1	1
7	BALL BEARING, STAINLESS STEEL, 1/8 DIAMETER	71-2031-1	1	1	1
6	8-32 X .25 BUTTON HEAD SOCKET CAP SCREW, STAINLESS STEEL	N/A	-	-	-
5	KNOB, ADJUSTMENT, INJECTOR PUMP, 2-DROP, SUB-ASSEMBLY	N/A	-	-	-
4	METERING SCREW	N/A	-	-	-
3	FILTER, ELEMENT, BRONZE	N/A	-	-	-
2	RETAINER, INSERT, THREADED, 2-DROP	N/A	-	-	-
1	BLOCK, INJECTOR PUMP	N/A	-	-	-

Assembly picture for illustration purposes. Your pump may not look exactly as shown.



Typical Rebuild Kit Contents



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