

VZ LIFTER™ MINI

Mini Lifter SOP

Document ID: MINISOP-2025

Last Revision Date: February 17, 2025

Version: Revision 1

Document Owner: AJ Prieto

VZ Lifter™ Mini

Table of Contents

VZ LIFTER™ MINI 1

1. REQUIRED ASSEMBLY AREA..... 3

1.1 METAL OR WOOD WORK BENCH 3

1.2 VICE WITH APPROPRIATE JAWS 3

2. REQUIRED TOOLS AND PPE 4

3. SPECIALTY TOOLS..... 5

3.1 RISER JIG 5

4. OTHER REQUIRED MATERIALS..... 6

4.1 OTHER MATERIALS 6

5. PARTS REQUIRED..... 7

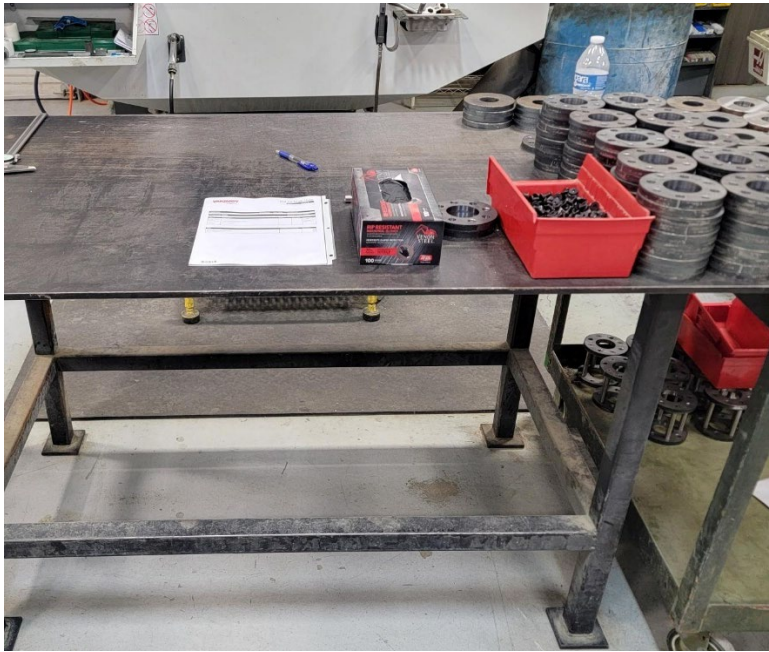
5.1 PARTS LIST 7

5.2 PARTS DIAGRAMS..... 8

6. ASSEMBLY PROCEDURE 10

1. REQUIRED ASSEMBLY AREA

1.1 METAL OR WOOD WORK BENCH



1.2 VICE WITH APPROPRIATE JAWS



2. REQUIRED TOOLS AND PPE



3. SPECIALTY TOOLS

3.1 RISER JIG

Contact Odessa machine shop to order.



4. OTHER REQUIRED MATERIALS

4.1 OTHER MATERIALS

Lucas Red N Tacky Grease/ Loctite Red and Blue/Anti-seize compound/Carburetor cleaner/Permatex gasket maker.



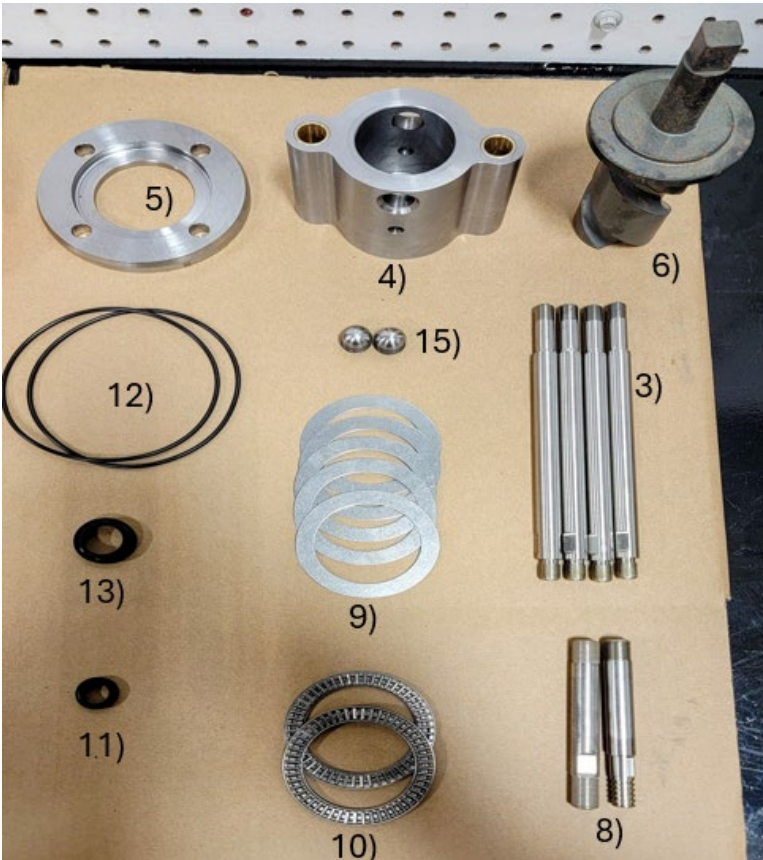
5. PARTS REQUIRED

5.1 PARTS LIST

Parts	Qty per lifter
1) DUST COVER	1
2) BASE MOUNTING PLATE	1
3) GUIDE SHAFT RODS	4
4) RISER	1
5) BEARING SUPPORT FLANGE	1
6) ROTARY SHAFT	1
7) VZ Top Adapter spool	1
8) PULL SHAFT	1
9) LOAD WASHER-5909K56	5
10) NEEDLE BEARING-5909K43	2
11) 1/2 ROD WIPER-9403K55	1
12) O RING-9452K176	2
13) 3/4 rod wiper-94003K58	1
14) 3/8-24 serrated flange nuts	4
15) radius set screws-91375A812	2
16) grease zert-1095K42	1
17) Metal VZ Tag	1
18) 3/8 Hex head screws x 1 inch and washers	4

5.2 PARTS DIAGRAMS





6. ASSEMBLY PROCEDURE

Mini Lifter Assembly Procedure

Steps

1. Retap both sides of the base mounting plate with 3/8- 24 Tap. All eight holes four on top and four on the bottom.
2. Install ½ inch Rod Wipe in the base mounting plate inside the grooved bore. Use a flathead screwdriver to install.
3. Install Oil Resistant O-Ring on the outside of the mounting base where there is a groove.
4. Grab mini lifter base and put Red Loctite in the four 3/8-24 threaded holes.
5. Grab four of the Mini lifter Guide shaft rods. Locate the two flats on the side of the guide shaft rod. This end of the shaft is where you will put Red Loctite on the threads. Proceed to Screw the Rods in the tapped holes, then use a 10MM wrench to tighten them down.
6. Put generous amount of Red Grease on all four of the Guide Shaft Rods. Set this assembly to the side for now.
7. Grab the Mini Riser. Grab two 5/8-18 radius Set Screws and screw them into the side of the riser until you can see threads. Then proceed to coat the Threads in Red Loctite. Rotate 180 degrees and proceed to lay down more Red Loctite. Back the screws out and install fixture JIG. Once fixture JIG is in the riser, screw both set screws in until they both touch fixture JIG. Then back off ¼ turn on both set screws. Pull fixture JIG out and set aside.
8. Grab the dial Calipers and measure the width of the set screws points. This measurement should be 1.150-1.165. If it does not then adjust the 5/8-18 radius set screws until you hit the correct measurement.
9. Grab the Mini Rotary Shaft and do a drop test into the riser. If the Rotary shaft falls right in you are good to go. Pull Rotary Shaft out and set it to the side.
10. Grab the Riser and put a generous amount of Anti-Seize compound inside the bore of the riser.
11. Grab riser and install it through the guide shaft rods.
12. Grab the assembly and apply a generous amount of red grease on all four sides of the riser.

13. Grab the Mini Dust cover and install grease zert with a 8mm wrench into the small pilot hole. Tighten grease zert but do not overtighten.
14. Grab dust cover and slide it over guide shaft rods and riser.
15. Grab the Load Bearing flange and slide it onto the guide shaft rods.
16. Grab a small amount of Red Grease and apply to the edges of the Load Bearing Flange.
17. Grab Oil Resistant O-Ring and stretch it out. Place it on the outside edge of the load Bearing Flange.
18. Grab 1 load washer, 1 needle bearing and 1 load washer, coat all three items in red grease. In this order place all three parts into Load Bearing Flange groove.
19. Grab the Rotary shaft and locate the spiral groove end and put a generous amount Anti-Seize compound on it.
20. Set the Rotary Shaft on top of the three parts you just installed on line 18.
21. Grab 1 load washer, 1 needle bearing and 2 load washers, coat all four items in red grease. In this order place all four parts onto Rotary Shaft Shoulder Lip.
22. Grab Top adapter spool and install the 3/4 rod wipe into the groove at the top of the spool.
23. Apply grease into the Bore of the top adapter spool.
24. Grab Top adapter spool, and put it over the Rotary Shaft, and align the guide shaft rods with the holes on the Top adapter spool.
25. You can use a Rubber mallet if needed, to get the Spool down into position.
26. Grab four serrated 3/8-24 Flange nuts and put Blue Loctite inside of the threads and screw them onto the guide shafts rods that are sticking out the top of the adaptor spool.
27. Tighten all four of the serrated 3/8-24 flange nuts down with a 9/16 ratchet wrench, in a criss cross pattern to insure all four sides are evenly tightened. Make sure they are tight, don't overtighten the flange nuts.

28. Grab a 9/16 wrench and place it on top of the square Rotary Shaft. Stroke the lifter with the wrench in your hand to open and close the lifter. Do this for about 10 strokes. You should feel some pressure, but it should open and close.
29. The lifter will settle at this point. You will need to retighten all four serrated 3/8-24 flange nuts, and make sure the lifter can open and close properly. You should feel some pressure, but it should open and close.
30. Install Pull shaft to the bottom of the lifter base center hole. Notice the pull shaft has two flats on the end. This end will remain outside of the riser. Use rubber mallet to hit the pull shaft flushed against the riser. Screw in and tightened with 10mm wrench.