

How to Assemble Model 360 Lubricated

Model 360 Lubricated Assembly

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**TOOLS:**

- 101 Tool Kit (1)
- Non-Marring Hammer (1)
- Flat Head Screwdriver (1)
- Long Nose Pliers (1)
- O'Ring Lubricant (1)

Food Grade, Non Petroleum Based

- Anti Seize (1)

Food Grade

- Inch Pound Torque Wrench (1)
- 7/16 Nut Driver (1)
- 7/16 Deep Socket (1)
- Foot Pound Torque Wrench (1)
- 3/8 Nut Driver (1)
- 3/8 Deep Socket (1)
- 3/8 Socket Extention (1)
- 1/2in x 3/8in Socket Adaptor (1)
- Arbor Press (1)
- Strap Wrench (1)
- 1-1/4 Inch Wrench (1)
- Food Grade Gear Oil (1)

**PARTS:**

- 601-3S Gearbox (1)
- 602-CS Gearbox Cover (1)
- 603-3S Inlet Stem QD (1)
- 604-AS Tee Housing (1)
- 605-S Nozzle Housing-Dual Clutch (1)
- 606-CS Name Plate (1)
- 607-S Nozzle (2)
- 608 Stream Straightener (2)
- 609-3S Stator-Standard (1)
- 610-S Rotor-Standard (1)
- 611-3B Rotor Shaft Seal Housing (1)
- 613-S Final Shaft Bearing Retainer (1)
- 615-C Idler Shaft (1)
- 616-SA-D Final Shaft & Pinion Assembly (1)
- 617-S Tee Housing Bevel Gear (1)
- 618-S Nozzle Housing Bevel Gear (1)
- 619 Bevel Gear Snap Ring (1)
- 620-SC Ring Gear (1)
- 621 Ring Gear Retaining Ring (1)
- 622-A Rotor Shaft Assembly (1)
- 623-SS Idler Gear Upper (3)
- 623-ASZ Idler Gear Lower (2)
- 623-W Idler Gear Thrust Washer (2)
- 624-SS Final Shaft Drive Gear (1)
- 626-A Rotor Shaft Thrust Bearing (1)

Oilite

- 627 Idler Shaft Upper Bearing (1)

Oilite

- 628 Idler Shaft Lower Bearing (1)

Oilite

- 629-A Final Shaft Upper Bearing (1)

Oilite

- 630 Final Shaft Lower Bearing (1)

Oilite

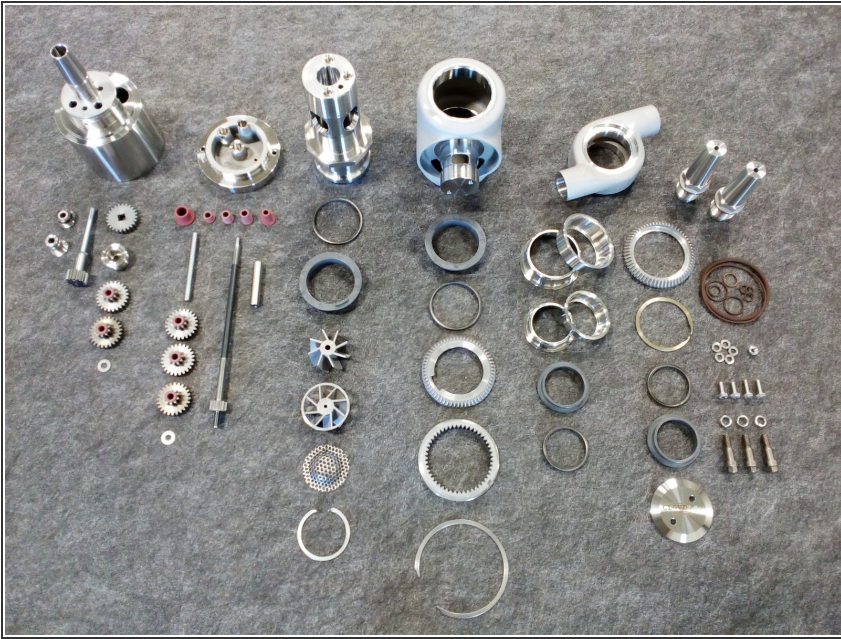
- 631 Tee Housing Bearing (2)

- 632 Tee Housing Bearing Cup (2)

633 Nozzle Housing Bearing Cup (2)

- 633 Nozzle Housing Bearing (2)
- 634 Nozzle Housing Bearing Cup (2)
- 635-TG Tee Housing Seal (2)
- 636-TG Nozzle Housing Seal (2)
- 637-BV Clutch O-Ring (1)
- 639-V 611-3B, 660-3A O-Ring (3)
- 640-V 613 O-Ring (1)
- 641-3V Gearbox Screw O-Ring (3)
- 641-TG Rotor Shaft Seal (3)
- 642-3V Gearbox Stem O-Ring (1)
- 643-ATG Final Shaft Seal (1)
- 644-V Gearbox Cover O-Ring (1)
- 645-3 Stator Retaining Ring (1)
- 646-AS Gearbox Cover Bolt (2)
- 647-S Lockwasher (5)
- 648-AS Name Plate Bolt (2)
- 650-3 Gearbox Bolt (3)
- 652-3 Gearbox Bolt Lockwasher (3)
- 654-S Rotor Retaining Nut (1)
- 655-A Rotor Shaft Spacer (1)
- 659-3 Seal Housing Spacer (1)
- 660-3A Center Carbide Bearing (1)
- 660-DX Upper Carbide Bearing (1)
- 662-V 660-D, 660-DX O-Ring (1)
- 664 Strainer (1)

Step 1 — How to Assemble Model 360 Lubricated



- Collect Model 360, Lubricated, Parts

Step 2



- Install Tee Housing Bearing [631](#) to Inlet Stem [603](#).
 - ⓘ Seat Bearing [631](#) snugly.
- Seat Tee Housing Seal [635-TG](#) adjacent to Bearing [631](#).
 - ⓘ Be sure spring is facing up.

Step 3



- Install Tee Housing Bearing Cup [632](#) to Tee Housing [604](#).
 - ⓘ Use Cloud T3 tool.
 - ⚠ Lubricate cups.
 - ⚠ Be sure to seat cups completely.
- Repeat for bottom side.

Step 4



- Install Tee Housing [604](#) to Stem [603](#).
 - ⚠ Be sure to seat Tee Housing completely.
- Install Tee Housing Seal [635-TG](#) between cup and stem.
 - ⚠ Install spring side down.
- Install Tee Housing Bearing [631](#) above Tee Housing Seal [635-TG](#).
- Install Tee Housing Bevel Gear [617-S](#) onto Bearing [631](#) matching notch to lug.
- Install Ring Gear [620-SC](#) matching notch to lug on Tee Housing [604](#).
- Install Ring Gear Retaining Ring [621](#).

Step 5



- Install Gearbox Stem O-Ring [642-3](#).
- Install [641-TG](#) seal into [660-DX](#), spring side facing up.
- Install O-Ring [662-](#) to Bearing [660-DX](#).
- Install Bearing [660-DX](#) into Gearbox [601-3S](#) nose.

⚠ Lubricate all O-Rings.

Step 6



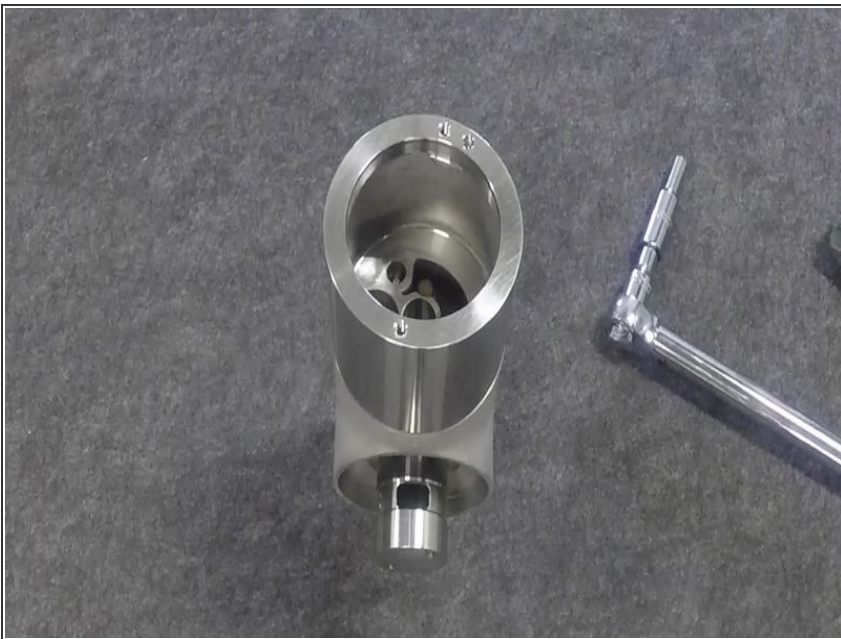
- Install Gearbox [601-3S](#) nose to center of Inlet Stem [603-3S](#).
- ⚠ Align lug on Gearbox to pocket on Bevel Gear.
- ⚠ Be sure Gearbox is seated completely.
- ⚠ Screw holes on Stem must align with screw holes on Gearbox.

Step 7



- Install (3) Gearbox Bolts [650-3](#) with Gearbox Bolt Lockwashers [652-3](#).
 - ⓘ Tighten with 3/8 nut driver.
 - ⚠ Apply anti-seize to bolt threads.

Step 8



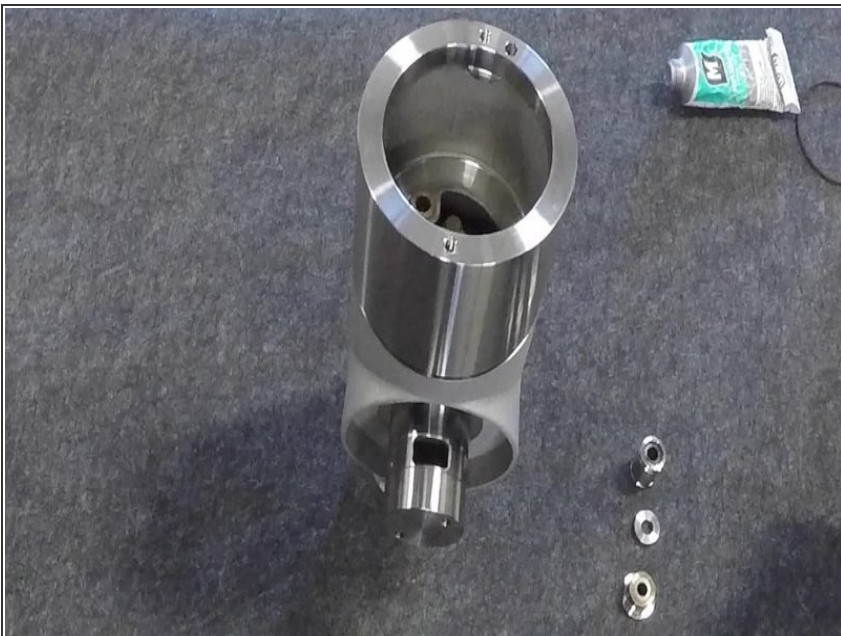
- Torque Gearbox Bolts [650-3](#) to 30 foot-pounds.

Step 9



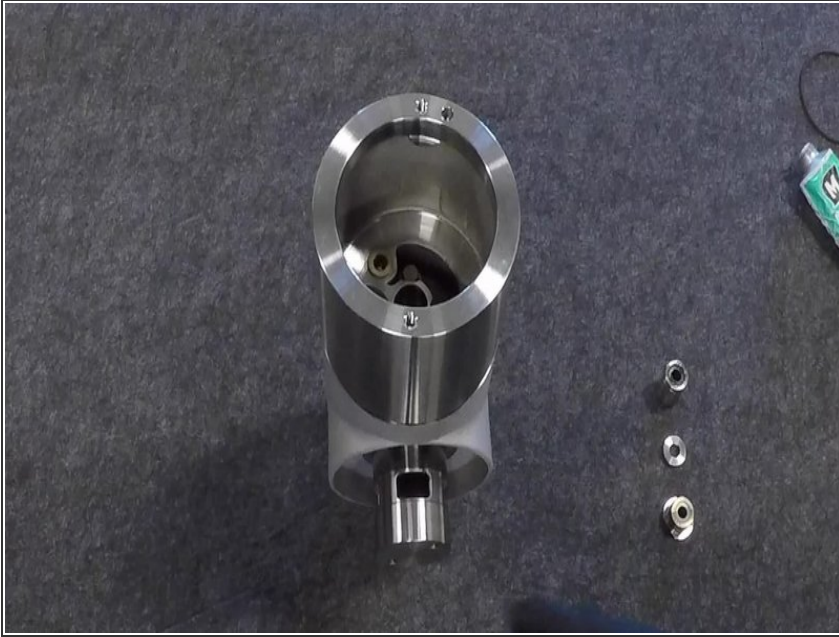
- Use T5 tool to install Idler Shaft Bearing [627](#) to Gearbox [601](#).
- ⓘ Bearing [627](#) is the smallest Oilite bearing.

Step 10



- Install (2) Rotor Shaft Seals [641-TG](#) to ends of Rotor Shaft Seal Housing [611-3B](#).
- Install (3) O-rings [639-V](#) to Bearing [660-DX](#) and Rotor Shaft Seal [611-3B](#)..
- ⓘ Lubricate O-Ring [639](#).

Step 11



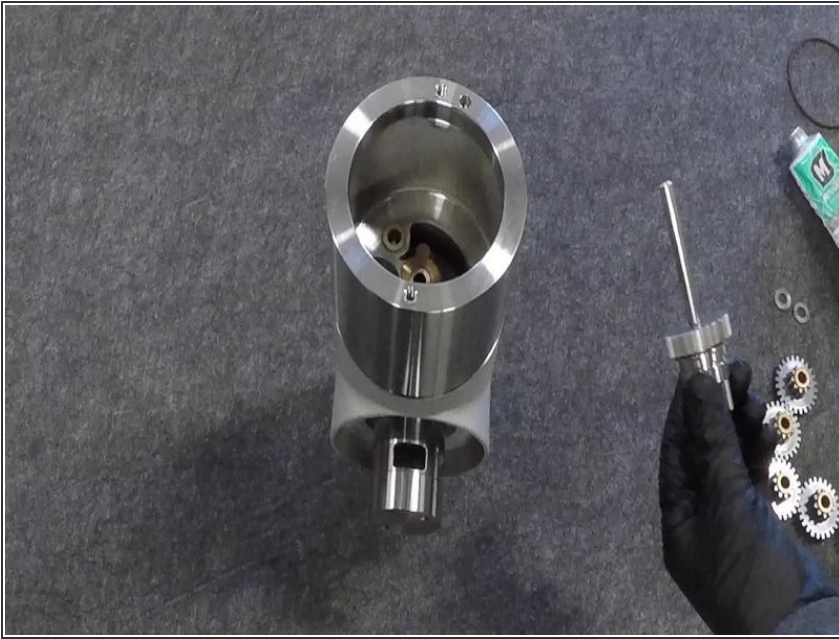
- Install Seal Housing Spacer [659-3](#) to center nose of Gearbox.
- Install Rotor Shaft Seal Housing [611-3B](#).
- Use T5 tool to install O-Ring [660-3A](#) flush.
- Flat side of O-Ring [660-3A](#) must face the largest hole.

Step 12



- Install Seal [643-ATG](#) to Bearing Retainer [613-S](#)
- ⓘ Be sure spring is facing up toward bearing [629-A](#)
- Install Bearing [629-A](#) to Bearing Retainer [613-S](#).
- Install Bearing Retainer [613-S](#) to Final Shaft & Pinion Assembly [616-SA-D](#).
- Press Drive Gear [624-SS](#) onto the [616-SA-D](#) locking in the [613-S](#).
- ⚠ Be sure to line up square on [616-SA-D](#) with square on [624-SS](#). Seat gear completely onto Shaft [616-SA-D](#) shaft.

Step 13



- Install O-Ring [640](#) to groove in Bearing Retainer [613-S](#).
- Install Idler Gear Upper [623-SS](#) to 616 assembly
- Install Idler Gear Lower [623-ASZ](#) to Idler Gear Upper [623-SS](#).
- Install Washer [623-W](#) to Idler Gear Lower [623-ASZ](#).

⚠ Be sure Idler Gear Upper [623-SS](#) and Idler Gear Lower [623-ASZ](#) are in the correct order.

Step 14



- Install Idler Gear Upper [623-SS](#) to Idler Shaft [615-C](#).
- Install Idler Gear Upper [623-SS](#) to Idler Gear Upper [623-SS](#).
- Install Idler Gear Lower [623-ASZ](#) to Idler Gear Upper [623-SS](#).
- Install Washer [623-W](#) to Idler Gear Lower [623-ASZ](#).

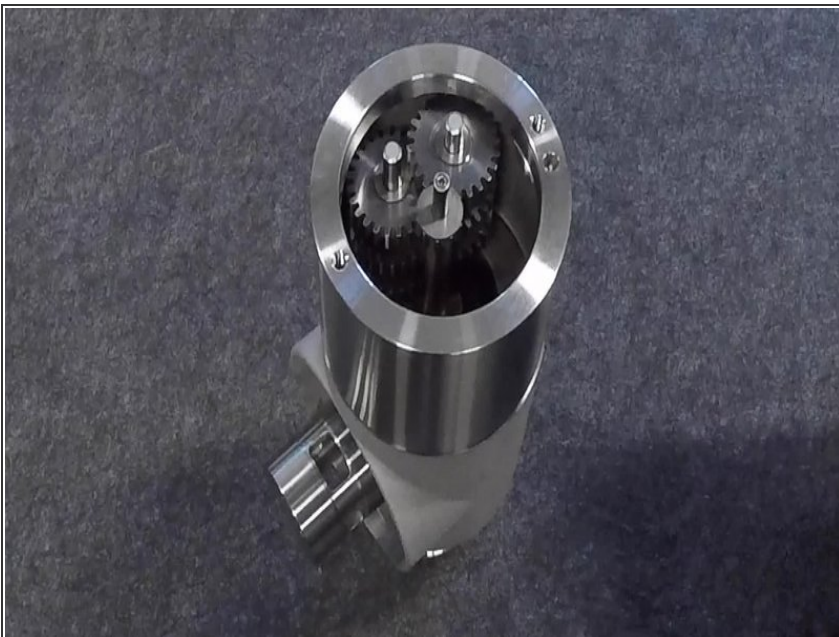
⚠ Be sure Idler Gear Upper [623-SS](#) and Idler Gear Lower [623-ASZ](#) are in the correct order.

Step 15



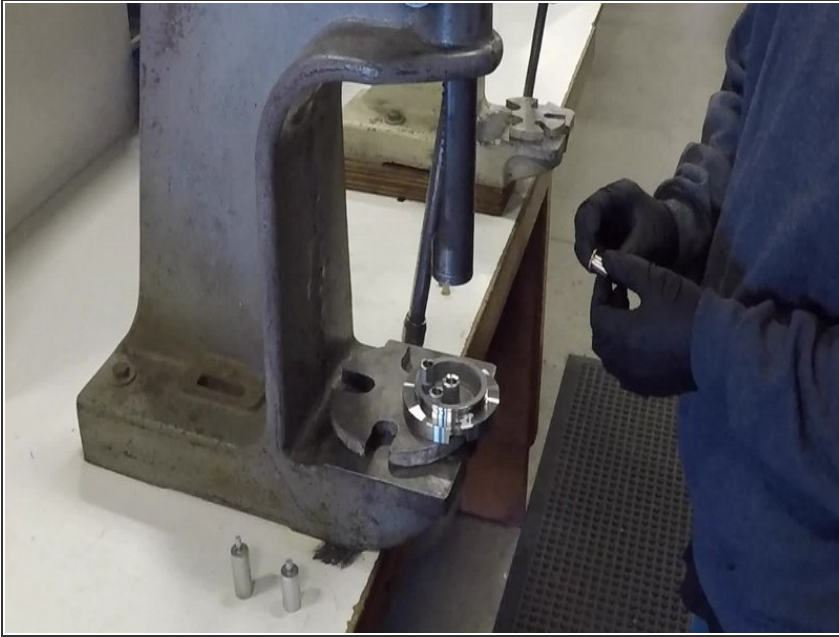
- Install Gear Assembly [616-SA-D](#) to round opening in Gearbox [601-3S](#).
⚠ Be sure assembly "Clicks" into place.
- Install Gear Assembly [615](#) adjacent to Gear Assembly [616-SA-D](#) with gears staggered.
 - ⓘ Shaft [615-C](#) will slide into Bearing [627](#).
- Install Spacer [655-A](#) to A-Shaft [622](#) and install A-Shaft [622](#) into [660-3A](#).
 - ⓘ Make sure gear teeth are engaged.

Step 16



- Fill oil to top of gear assemblies.
⚠ Do not over fill!

Step 17



- Install Rotor Thrust Shaft [626-A](#) to center cylinder bore.
- Install Idler Shaft Lower Bearing [628](#) to midsize cylinder bore.
- Install Final Shaft Lower Bearing [630](#) to tallest cylinder bore.

Step 18



- Install Gearbox Cover O-Ring [644](#) to Gearbox Cover [602-CS](#).
- Install Gearbox cover [602-CS](#) to Gearbox [601-3S](#).
 - ⓘ Line up gear train shafts with Gearbox Cover bearings.
 - ⓘ Tighten Bolts [646-AS](#) with 7/16 nut driver. Torque to 100 inch pounds. (Bolts [646-AS](#) are the larger of the two bolt sets.)
 - ⓘ Use [647-s](#) lock washers.
 - ⓘ Lubricate O-Ring [644](#).

⚠ Do not disturb dowel pin!

Step 19



- Install Nozzle Housing Bearing Cups [634](#) to Dual Nozzle Carrier [605-S](#).
 - ⓘ Press using T3 tool.
 - ⚠ Lubricate cups.
- Repeat for opposite side.

Step 20



- Install Nozzles [607-S](#) to Nozzle Housing [605](#).
 - ⓘ Use food grade anti-seize on threads.
- Install Clutch O-Ring [637-B](#) to groove in Nozzle Housing [605](#).
- Install Nozzle Housing Bevel Gear [618-BS](#) over Clutch O-Ring [637](#).
- Install Bevel Gear Snap Ring [619](#).

Step 21



- Install Bearing [633](#) to Tee Housing [604](#).
 - ⚠ Be sure to align "dots" on Bearing [633](#) and Tee Housing [604](#).
 - ⚠ After Bearing [633](#) is seated, turn counter clockwise until it stops.
- Install Seal [636-TG](#) to Tee Housing [604](#) nose.
 - ⓘ Be sure Seal [636-TG](#) is flush to Bearing [633](#) with spring facing out.

Step 22



- Install Nozzle Housing [605-S](#) to Tee Housing [604-AS](#) .
 - ⚠ Be sure gears are meshed.

Step 23



- Install Nozzle Housing Seal [636-TG](#) spring facing in.
- Install Nozzle Housing Bearing [633](#) to Name Plate [606-CS](#).
 - ⓘ Be sure "dot" on Bearing [633](#) and "dot" on Name Plate [606-CS](#) are aligned.
- Tighten Bolts [648-AS](#) with torque wrench to 100 inch-pounds.
 - ⓘ Bolts [648-AS](#) are the smaller of the two bolt sets.
 - ⓘ Use [647-S](#) lock washers.

Step 24



- Install Rotor [610](#).
 - ☑ Lock using Lock washer [647-S](#) and Rotor Retaining Nut [654-S](#).
 - ☑ Hold Rotor [610](#) with needle nose pliers to tighten Rotor Retaining Nut [654-S](#) to 100 inch-pounds.
- Install Stator [609-3S](#).
- Install Strainer [664](#).
- Install Stator Retaining Ring [645-3](#).

Step 25



- Finished! **Good job!!**