Disassembly Instructions - Wet, Stone Polisher

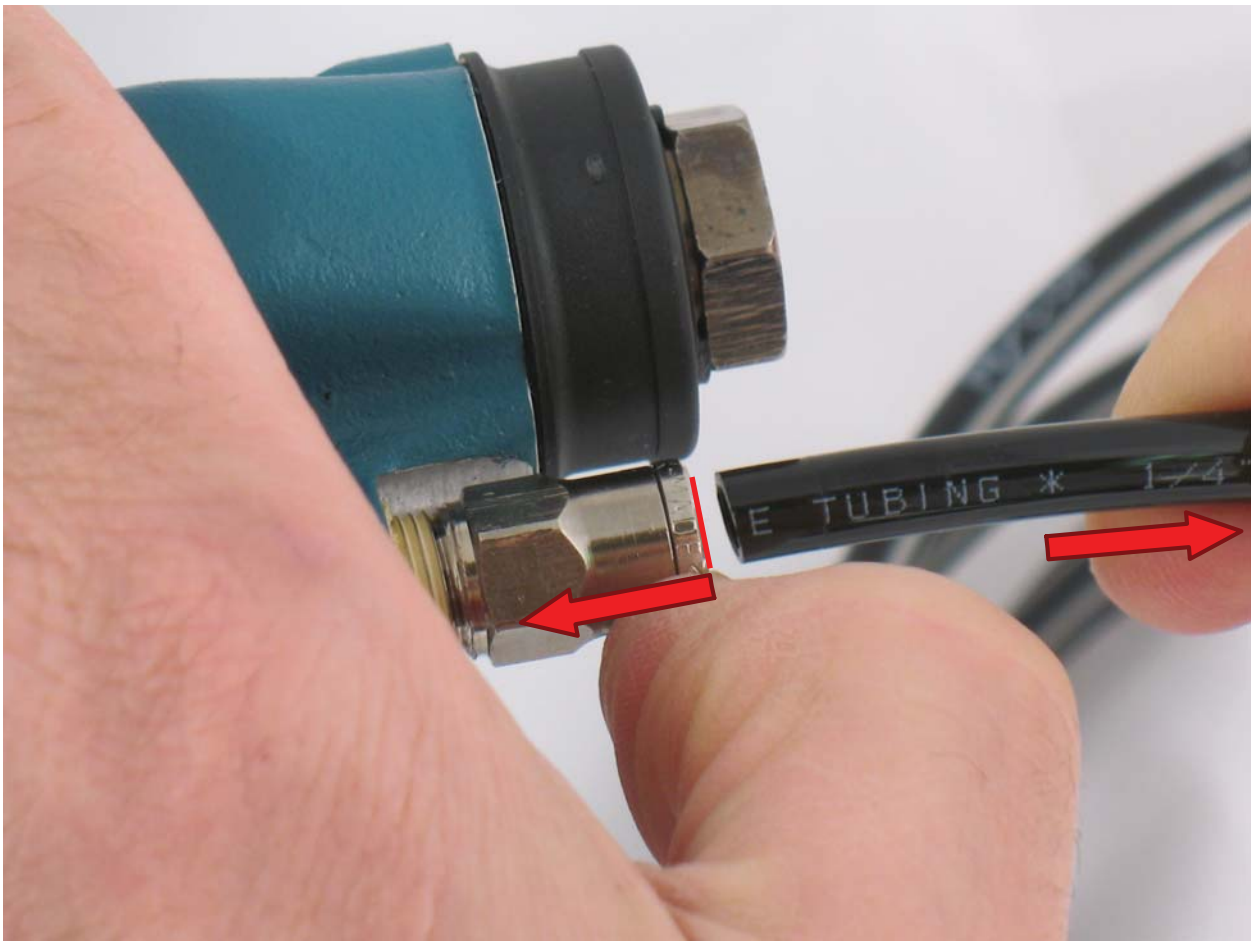
Model: 51520

Important: Use these instructions along with tool parts page or manual.

Notice:

- Shut off air supply and depress throttle lever to deplete air.
- Disconnect tool from air supply hose.
- Shut off water supply faucet and disconnect.
- Remove all accessories (abrasive product, backup disc, and flanges) from tool.

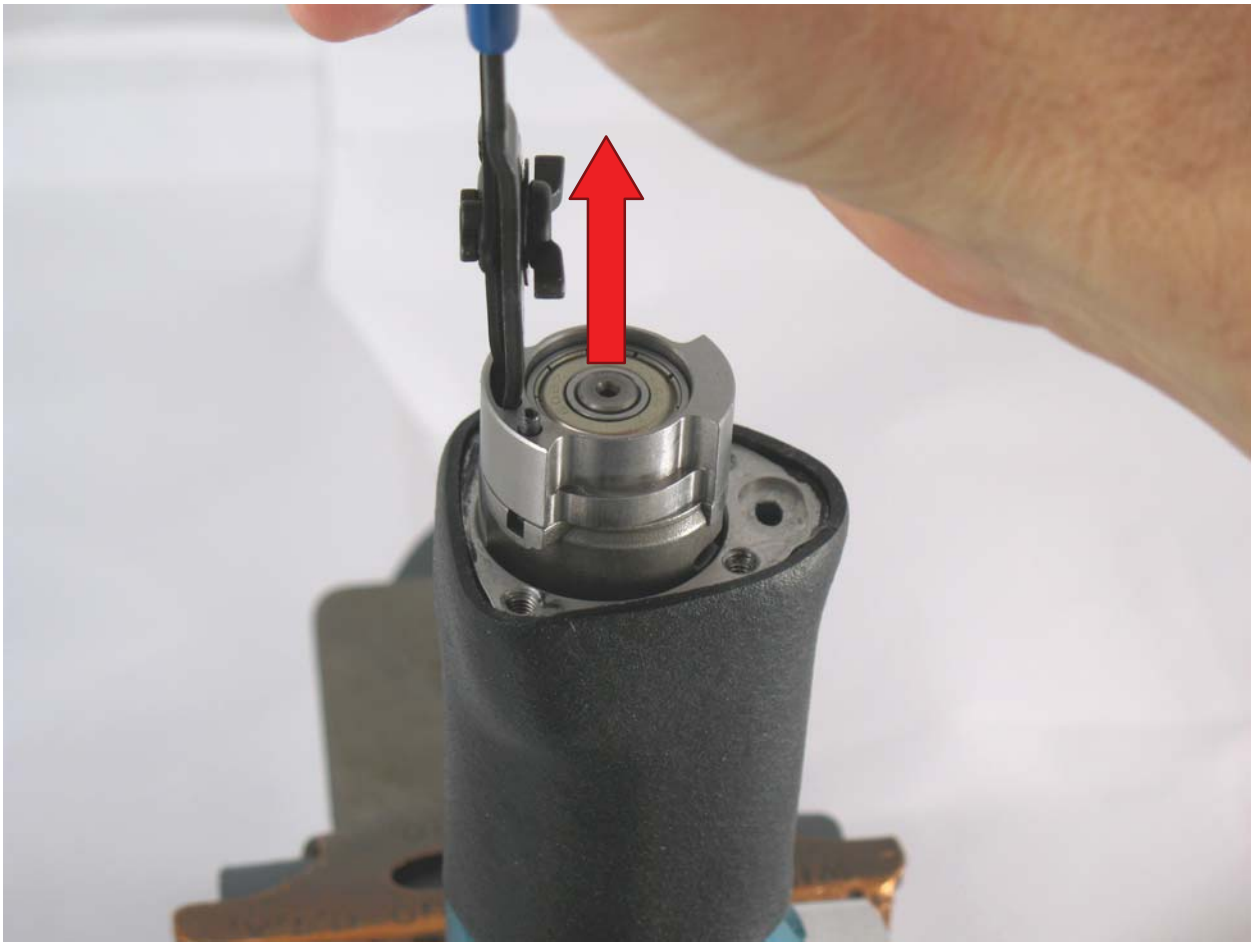
Motor Disassembly:



1. Push against collar of **96227** Fitting and pull **95579** Water Line tubing from fitting.

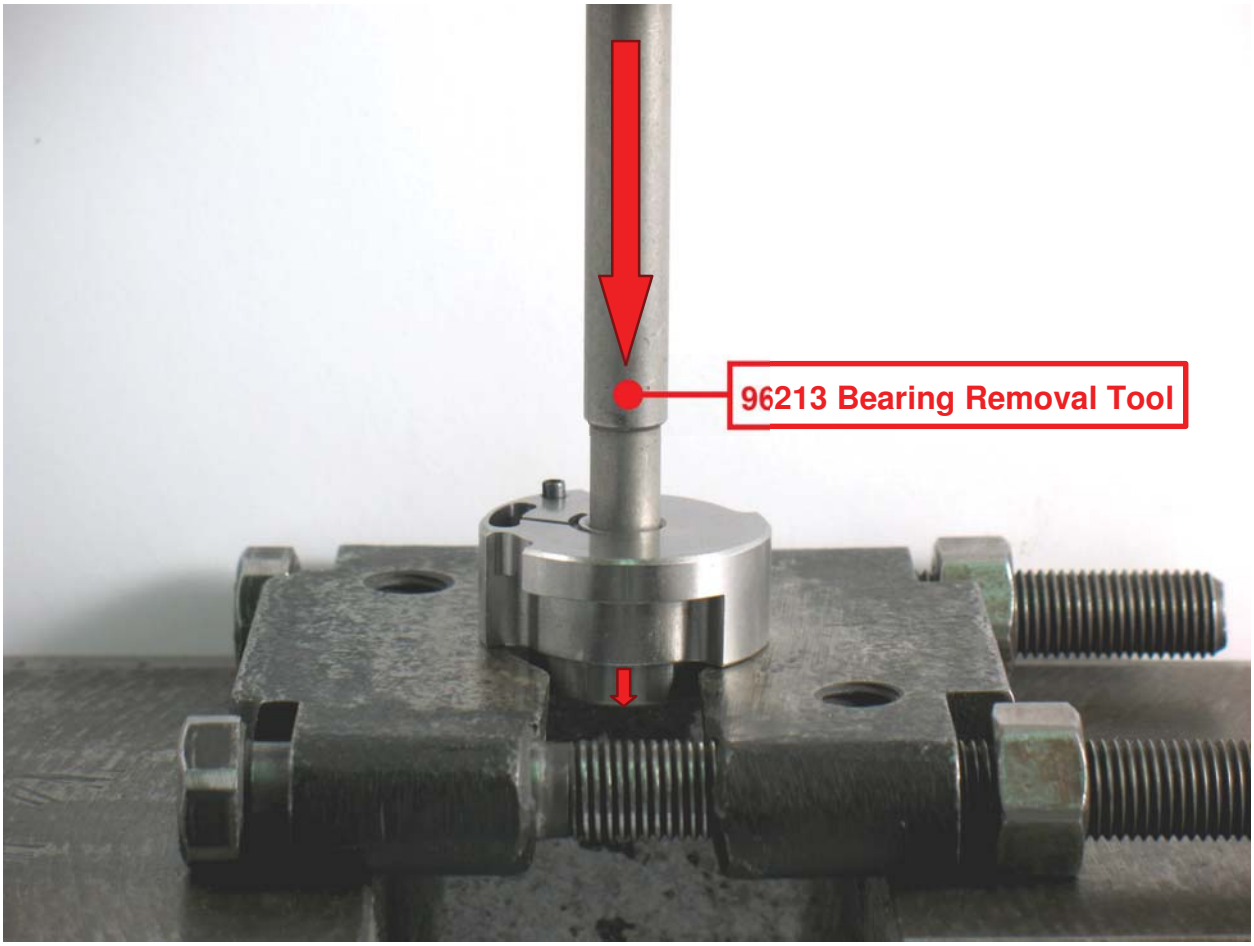
2. Install **95492** Screws (5/16"-18 SHC) in two handle bosses on housing.

- Fasten **95492** Screws in vise to hold tool with **51546** Valve Body pointing up.
- Use a 3 mm hex key to remove **96296**, **95916** Screws along with **01211** Lock Washers. Turn counterclockwise.
- Carefully remove valve body assembly, spacers, gaskets and o-rings.
- Set aside and save parts.



3. Remove motor form housing.

4. Fasten **96346** Bearing Separator (2") around **01028** Cylinder.
- Place assembly in **96232** Arbor Press (#2) with pinion pointing down.
- Use a Ø 1/4" drive punch to push **02373** Rotor out of **02649** Bearing.



5. **NOTICE:** In the same way, use bearing separator, arbor press and **96213** Bearing Removal Tool, to remove **02649** Bearing from **01732** Rear Bearing Plate.
   - Save parts.

6. Fasten **02373** Rotor in vise with aluminum or bronze jaws, with pinion pointing up.

- Use an adjustable hook spanner wrench to remove **51513** Pinion Gear. Turn counterclockwise.
- Remove front bearing, plate, spacer and shims.

Motor disassembly completed.

Clean and inspect parts for wear or damage. Save and reuse good parts.

Right Angle Gear Disassembly:

1. Install **95492** Screws (5/16"-18 SHC) in two handle bosses on housing.
   - Fasten **51545** Housing in vise with spindle pointing up.
   - Use a ***HEAT GUN*** to warm housing.
   - Use an adjustable pin spanner wrench to remove **51551** Spindle Retainer. Turn clockwise. **Left Hand Thread**.

2. Loosen vise and remove housing.
- Remove **96584** O-Ring.
- Remove spindle and bevel gear assembly.
- Remove **98243** Wave Spring.

3. Fasten **96346** Bearing Separator (2") under **02057** Bearing.
- Place assembly in **96232** Arbor Press (#2) with threaded end of spindle pointing down.
- Use a Ø 3/16" drive punch to push spindle out of **02057** Bearing.
- **NOTICE:** In the same way, use bearing separator and arbor press to remove **51514** Gear and **02685** Bearing.
- **IMPORTANT:** Inspect **95913** Seals and **51550** Spindle. Replace worn parts!
- **NOTICE:** Loctite #380 is used to retain **95913** Seals in **51551** Spindle Retainer. Acetone can be used to soften adhesive and remove seals. **SEE: Right Angle Gear Assembly.**

Right angle gear disassembly completed.

Clean and inspect all parts for wear or damage. Only reuse good parts.

Notice: To disassemble and assemble muffler and valve components, refer to parts page or tool manual and follow exploded view instructions.

Assembly Instructions - Wet, Stone Polisher

Motor Assembly:

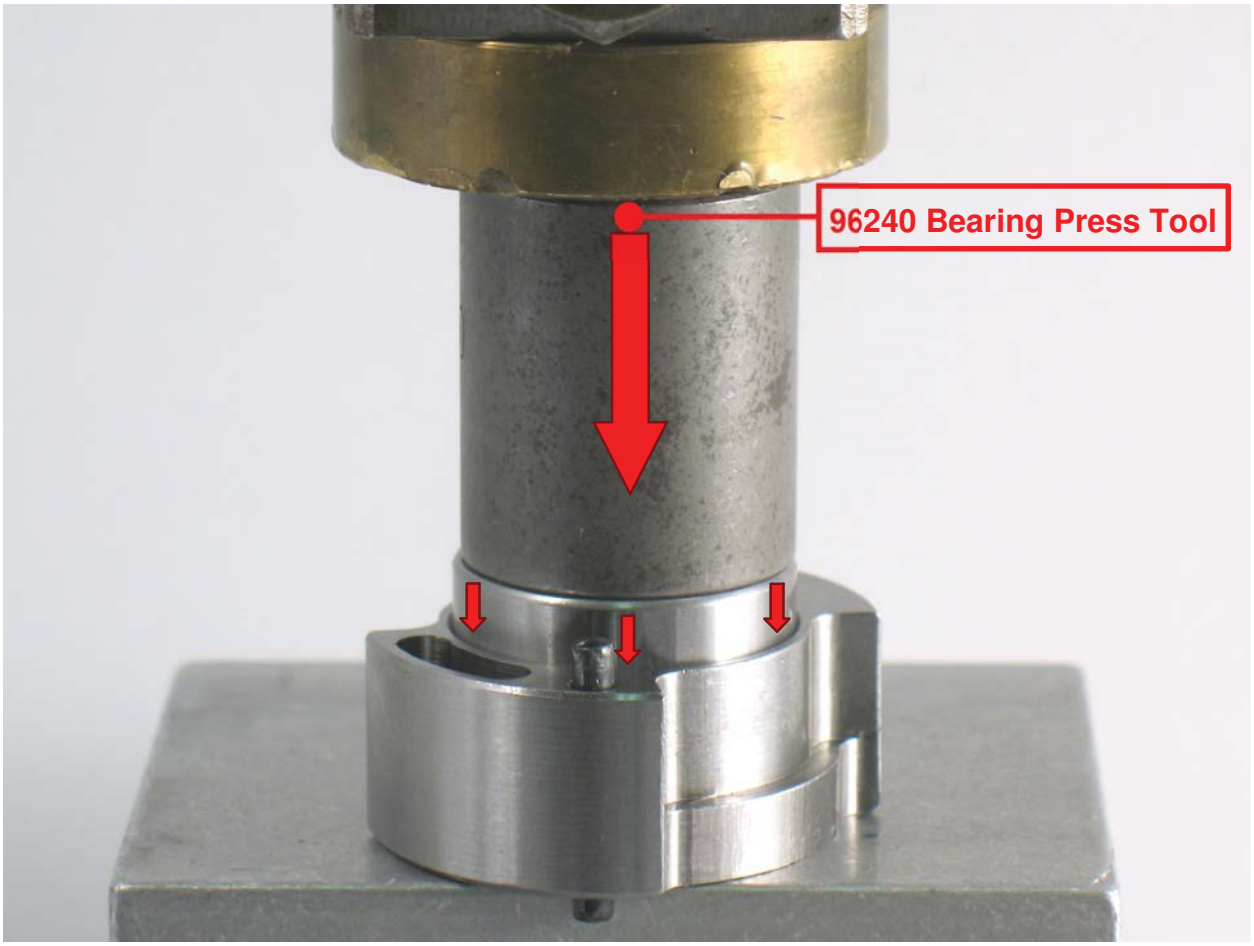
1. Install **01010** Spacer onto rotor.
   - Install .003" (~0.08 mm) shim thickness into **02375** Front Bearing Plate.
   - Install **01007** Bearing into front bearing plate.
   - Install bearing and plate onto rotor.

2. Install **51513** Pinion Gear hand tight.

- Place end of pinion gear against a solid surface. Push down on front bearing plate.
- Use a .001" (~0.03 mm) thick feeler gauge to check clearance between rotor and plate.
- **Notice:** Clearance should be .001"-.0015" (~0.03-0.04 mm). If rotor/plate clearance needs further adjustment, repeat steps 1 and 2. Remove or add shims as necessary.

3. Fasten **02373** Rotor in vise with aluminum or bronze jaws.
- Use an adjustable hook spanner wrench to tighten **51513** Pinion Gear.
- Torque to 17 N•m/~150 lbs. in.

4. Apply **95842** Dynabrade Air Lube or equivalent to **01185** Vanes.
- Install vanes into rotor.



5. Use ***RAISED OUTSIDE DIAMETER*** of **96240** Bearing Press Tool to install **02649** Bearing into **01732** Rear Bearing Plate.

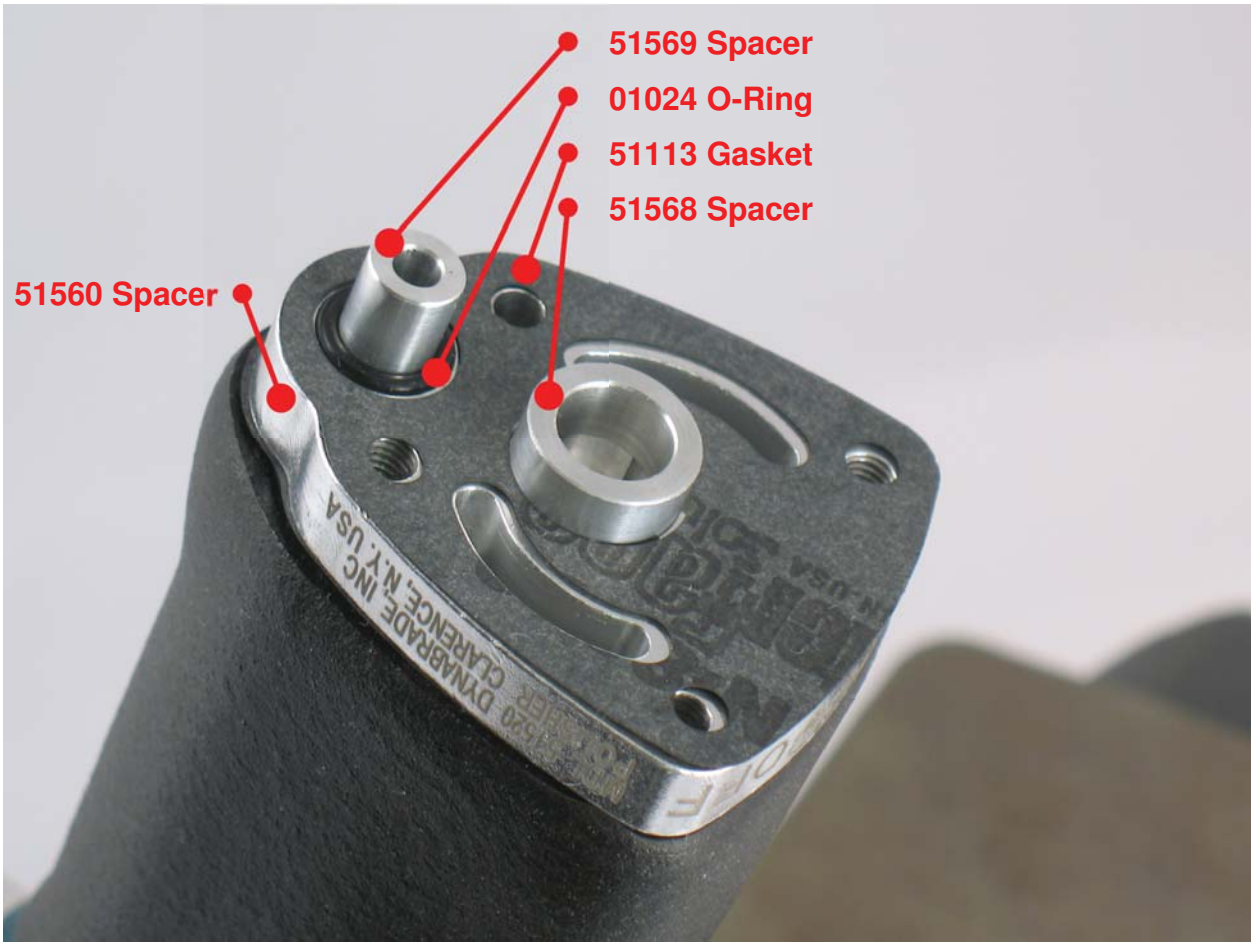
6. Use ***RAISED INSIDE DIAMETER*** **of 96240** Bearing Press Tool and arbor press to install **02649** Bearing and rear bearing plate onto rotor.

- Carefully press bearing and plate down until plate **just touches cylinder**. This will produce a close fit between bearing plates and cylinder.

7. Use a ***HEAT GUN*** to warm and expand housing.

8. Use **51560** Spacer as a guide to position and install air motor.

9. Install **01024** O-Ring and **51552** Gasket.



10. Install **51560** Spacer, **51569** Spacer & **01024** O-Ring, **51113** Gasket & **51568** Spacer.

11. Install **51546** Valve Body assembly.

- Use 3 mm hex key to install **96296** & **95916** Screws with **01211** Lock Washers.
- Torque to 4.5 N•m/~40 lbs. in.

Important: Check operation of air motor.

- Connect tool air inlet, to an air supply that delivers a maximum of 90 PSIG (6.2 Bar) operating air pressure.
- If motor operates smooth and regular continue with right angle gear assembly.
- If motor does not operate or performance is erratic, disconnect tool and correct problem before continuing.

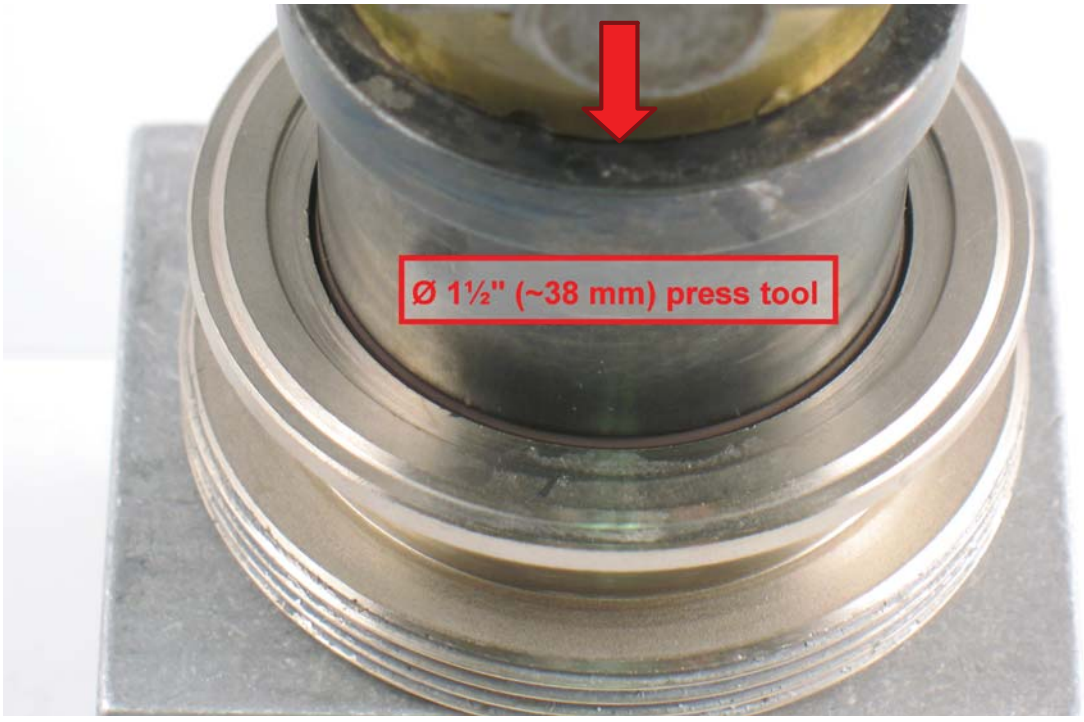
Motor assembly completed.

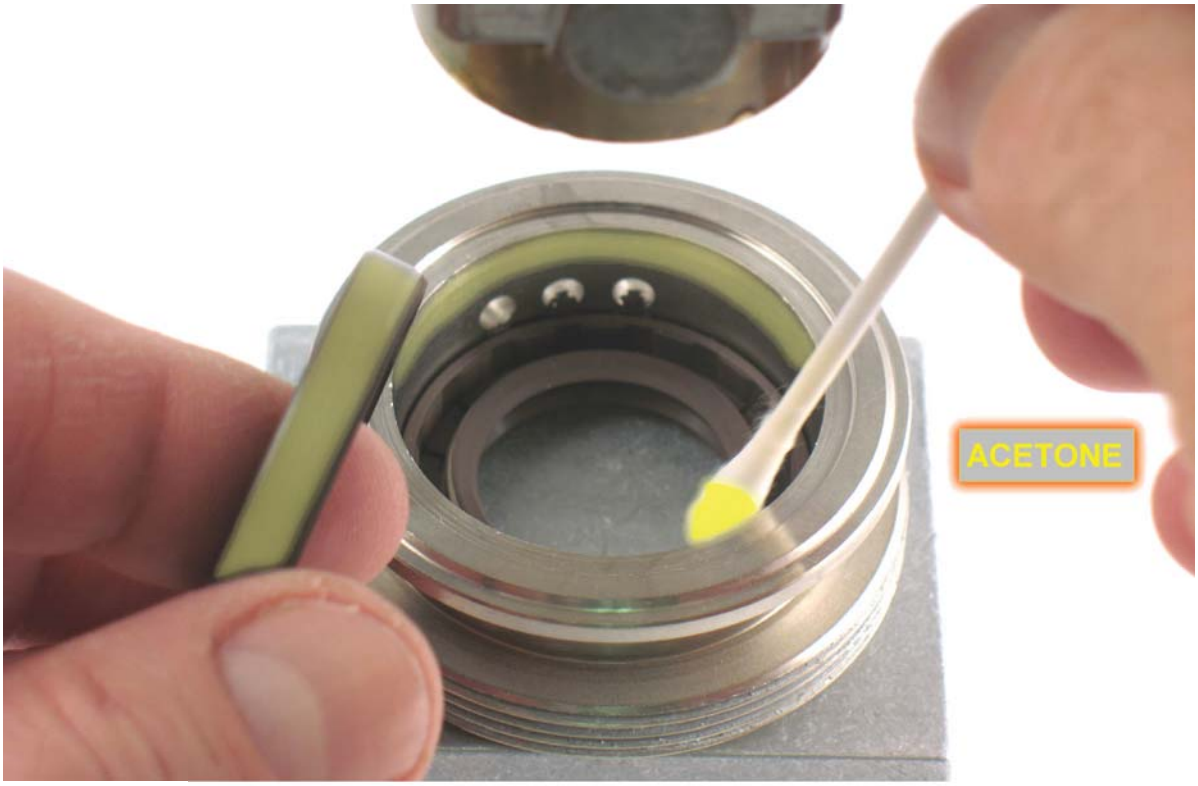
Right Angle Gear Assembly:

1. **Notice:** To remove **95913** Seals. Soak **51551** Spindle Retainer with old seals in a closed container of acetone overnight. Seals will be released from retainer.

2. Install first **95913** Seal so that ***open-side*** will face toward inside of **51545** Housing.

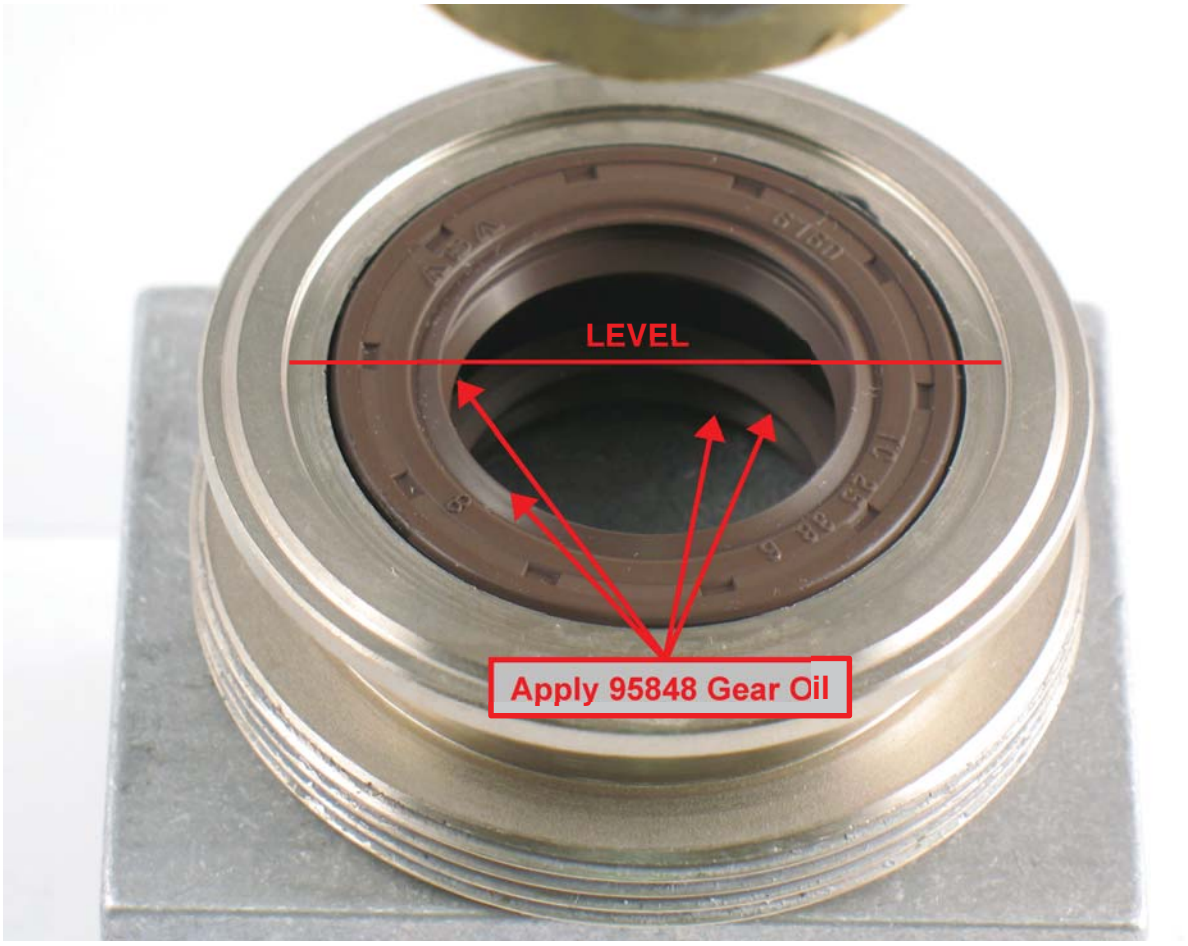
- To install seal use Ø 1½" (~38 mm) press tool against ***OUTSIDE EDGE*** of seal.
- Use **96232** Arbor Press to push seal all the way into **51551** Spindle Retainer.





3. To install second seal, use acetone to clean inside Ø of **51551** Spindle Retainer and outside Ø of **95913** Seal.

- Apply a bead of Loctite #380 Black Max or equivalent to outside Ø of seal.

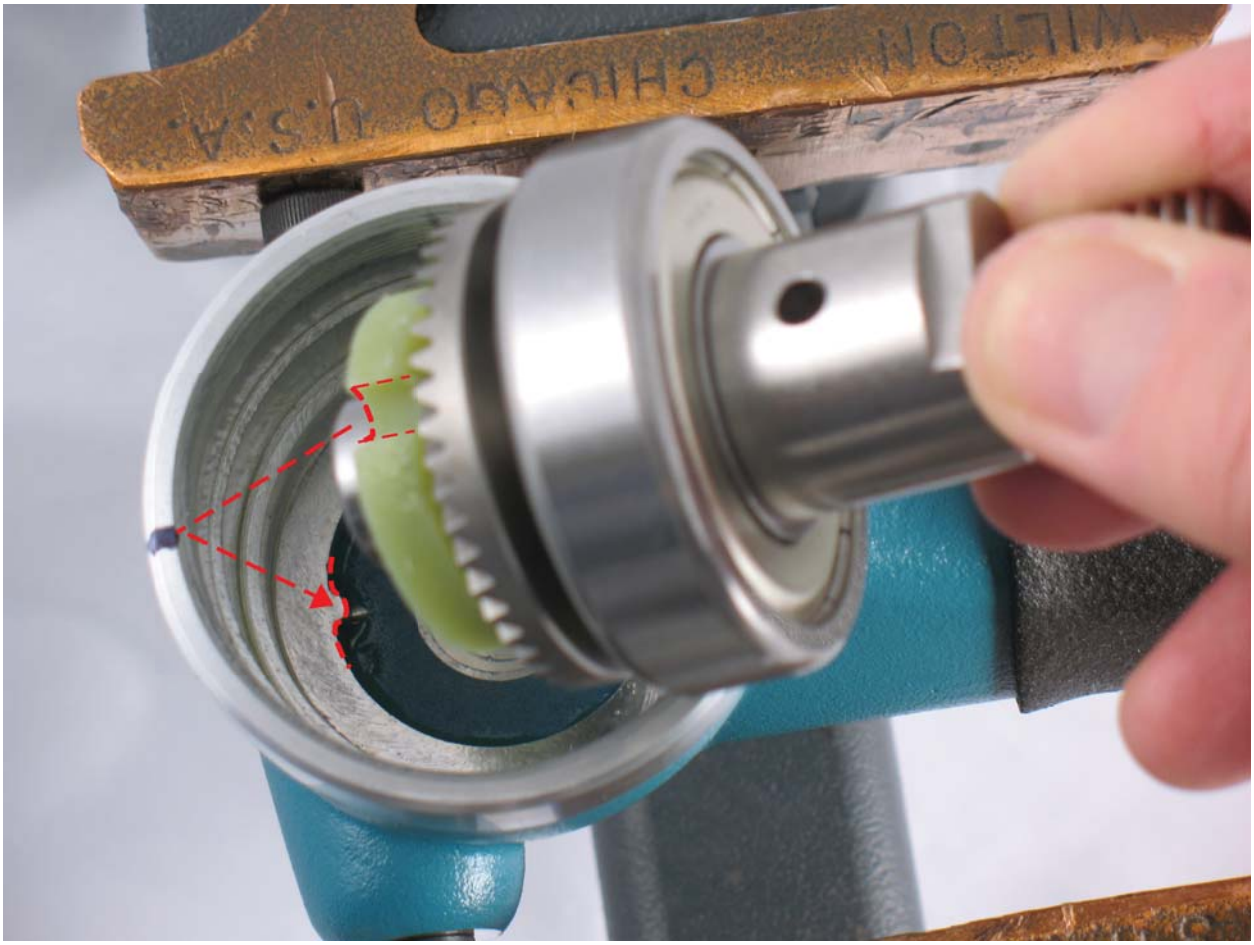


4. Install second **95913** Seal with ***open-side*** facing in toward first seal.

- Use Ø $1^{11}/_{16}$" (~43 mm) press tool, ***FLAT*** against seal.
- Make seal level with surface of **51551** Spindle Retainer.
- Allow 30 minutes for adhesive to cure.
- Apply a small amount of **95848** Gear Oil to lip of each seal.

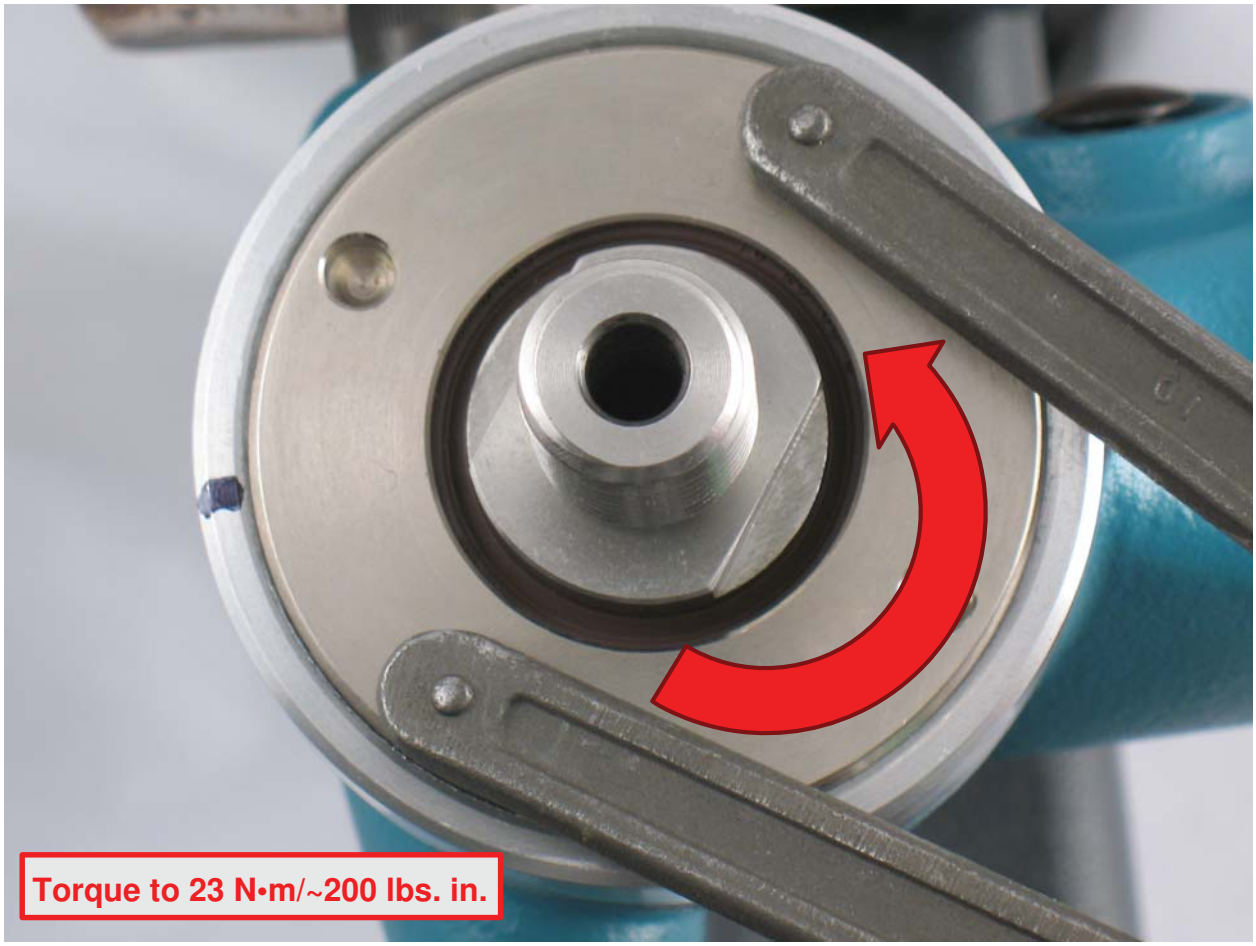
5. Use deep-well socket with Ø outside ~1.0781 (~27 mm) and arbor press.
- Install **02685** Bearing and **51514** Gear.

6. Saturate **53608** Wick using **95848** Gear Oil.
   - Install **53608** Wick.
   - Use ***RAISED INSIDE DIAMETER*** of **96242** Bearing Press Tool to install **02057** Bearing. **Notice:** Make bearing level with end of spindle.

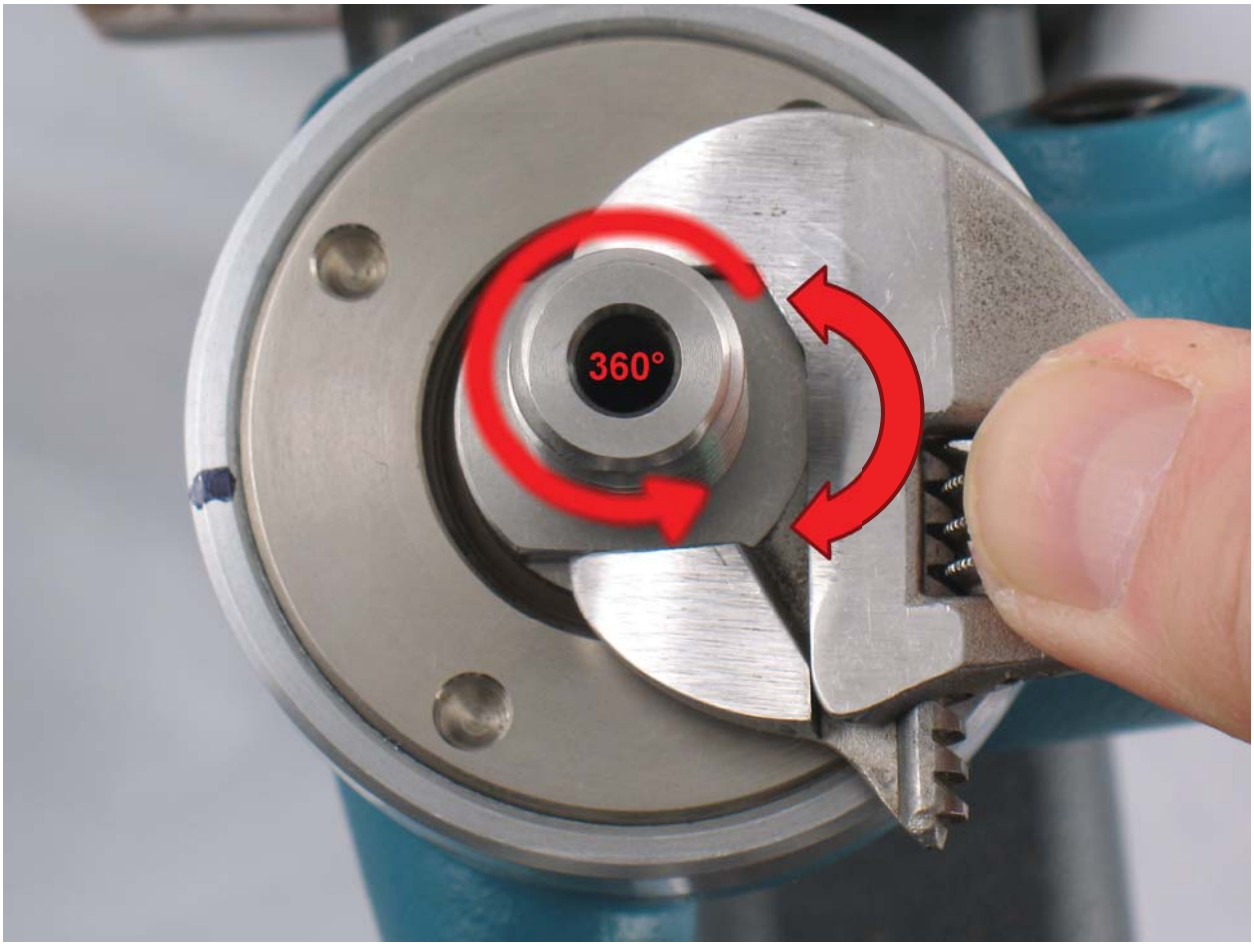


7. Install **98243** Wave Spring in housing.

- Use one to two **96554** Shims (.003"-.006" or ~0.08 - 0.15 mm) from **96570** Shim Pack and install into housing.
- By eye, line-up ***notch*** in **53608** Wick, with ***lobe*** in housing.
- Carefully install spindle assembly.
- Install **96564** O-Ring.



8. Apply a small amount of Loctite #567 to threads on **51551** Spindle Retainer.
- Carefully install spindle retainer so as not to damage seals.
- Use an adjustable pin spanner wrench to fasten spindle retainer. Turn counterclockwise. **Left Hand Thread**. Torque to 23 N•m/~200 lbs. in.



9. Fasten an adjustable wrench thumb tight onto flats of spindle.

- Rotate spindle forward and backward to check amount of backlash or free movement between gear teeth. There should be minimal free movement between teeth.
- Check 360° rotation of spindle and gear assembly. The correct fit should have minimal backlash without any restricted movement between gear teeth.
- Add or remove shims to adjust the correct gear “backlash”.

Right angle gear assembly completed.

Important: Check operation of air tool.

- Initially, use **95541** Lubricant Gun to apply three plunges of **95848** Gear Oil through **01041** Lubricant Fitting. Continue to apply three plunges of gear oil after every eight hours of use.

Refer to the tool parts page or manual and follow directions for checking RPM before installing any accessories.

- If necessary, install guards or shrouds.
- Use the appropriate wrenches to hold the work spindle stationary to install accessories.