

Disassembly Instructions - 0.4 hp, Dynafire II Slow Speed

Model: **40381**

Notice: Use these instructions along with tool manual. See also, Dynafire II, 0.4 hp Motor, found under Repair Tutorials on the Dynabrade website.

Important:

- Shut off air supply and depress throttle lever to deplete air.
- Disconnect tool from air supply hose.
- Use 3 mm hex key to loosen **95311** Screw and remove motor from belt housing.
- Use a small adjustable wrench to hold **40358** Adapter stationary. By hand remove **40375** Drive Wheel. Turn counterclockwise.

Motor Disassembly:

- **Planetary Gear Disassembly:**



1. Use **96461** Repair Collar to hold housing in a vise with **40358** Adapter pointing up.



2. Use **50971** Lock Ring Tool to remove **40359** Exhaust Cover.
- Turn counterclockwise.



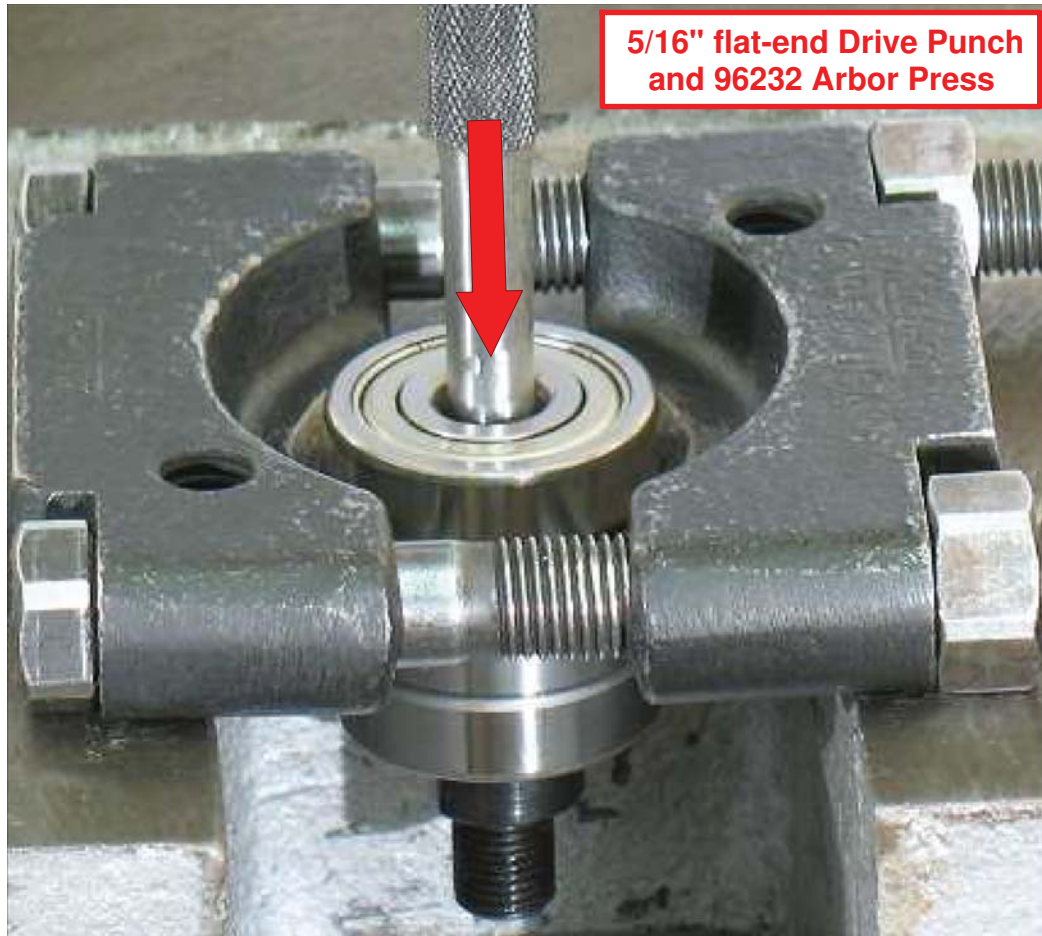
- Use a 2 mm hex key to remove **50784** Set Screw.
- Remove planetary gear assembly.





Flat side of 96346 Separator toward ring gear.

3. Fasten **96346** Bearing Separator between bearing and ring gear. Face flat side of separator toward ring gear and bevel side toward bearing.



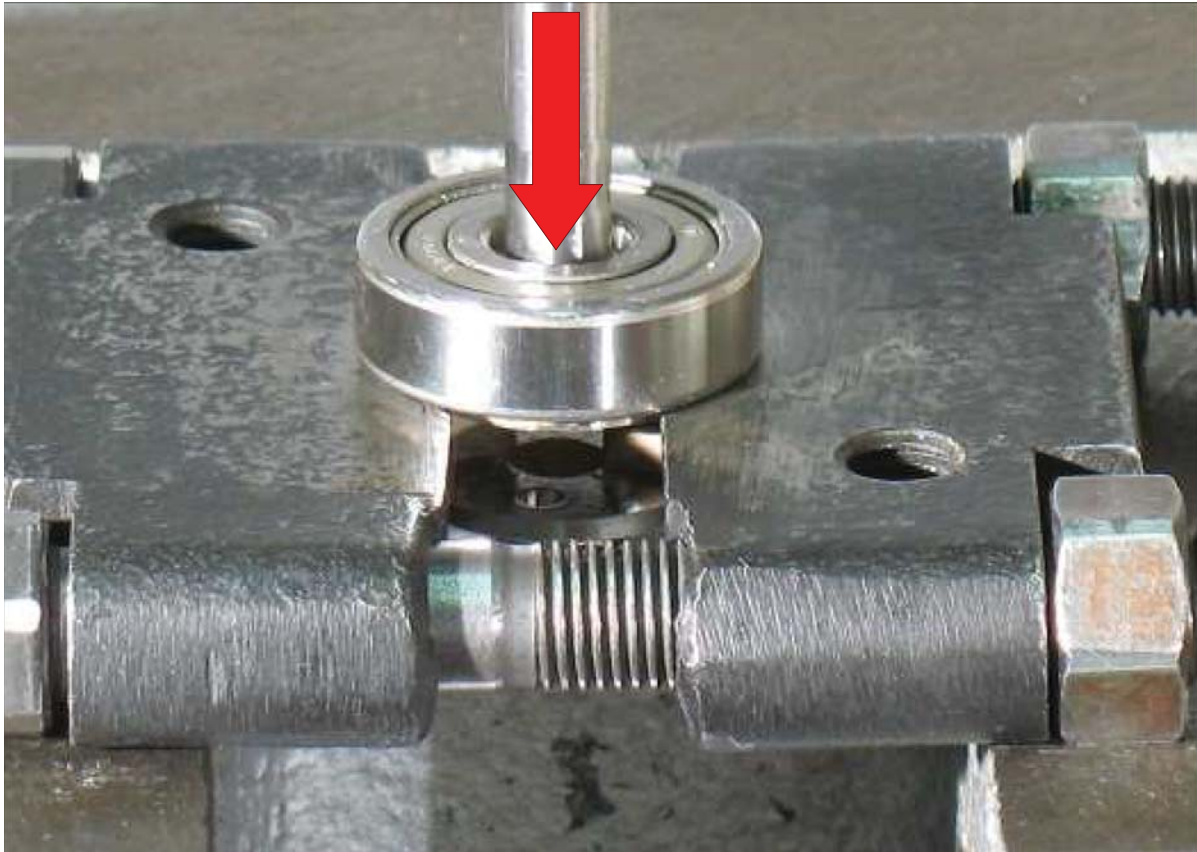
4. Use a 5/16" flat-end drive punch as a press tool and **96232** Arbor Press to push the planetary carrier out of the **54552** Bearing.



5. Remove the ring gear.
To remove shafts and planet gears, gently tap the carrier on a hard surface.
The shafts and gears will fall out.



6. With planetary carrier pointing up, carefully fasten **40358** Adapter in vise with aluminum or bronze jaws. Insert a screwdriver through carrier and turn counterclockwise to remove adapter.



7. Use arbor press and 5/16" flat-end drive punch as a press tool to push the planetary carrier out of the remaining **54552** Bearing.

- **Planetary gear disassembly completed.**

Important: Clean and inspect parts before assembling.

Motor Disassembly:



1. Pull motor from housing.



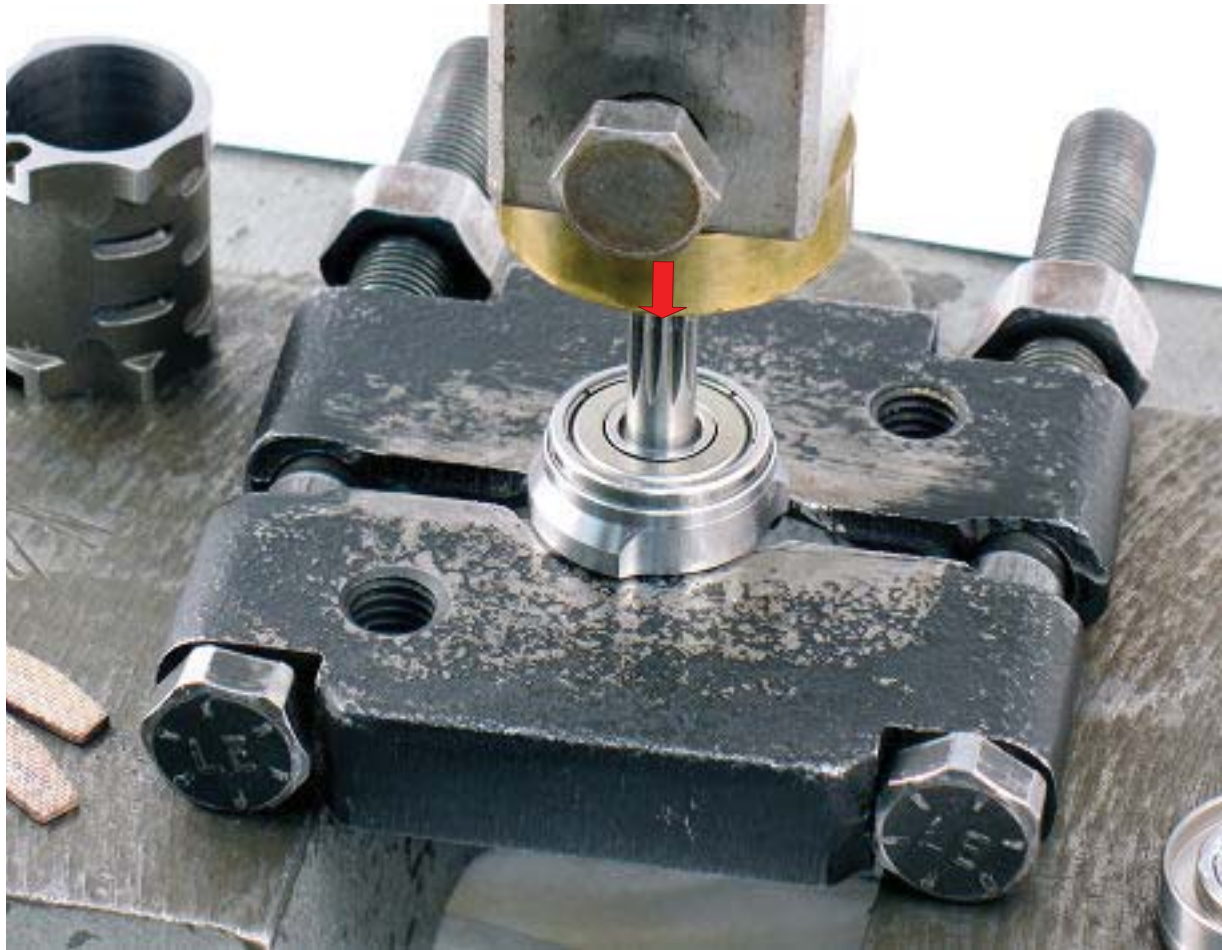
2. Remove **02679** Shield from **02696** Bearing.



3. Fasten **96346** Bearing Separator (2") around **01476** Cylinder.
 - Place bearing separator and motor in **96232** Arbor Press (#2) with pinion pointing down.
 - Use a $\varnothing 3/16$ " or ~4 mm flat-end drive punch to push rotor out of bearing.
 - Remove cylinder and vanes.



4. By hand, use Ø 3/16" or ~4 mm flat-end drive punch to push **02696** Bearing (slip-fit) out of **02673** Rear Plate.



5. With pinion gear pointing up, use arbor press to push rotor out of **02649** Bearing.



6. Remove **02649** Bearing, front plate, shims and **01479** Spacer.

Motor disassembly completed.

Important: Clean and inspect parts before assembling.

Assembly Instructions - 0.4 hp, Dynafire II Slow Speed

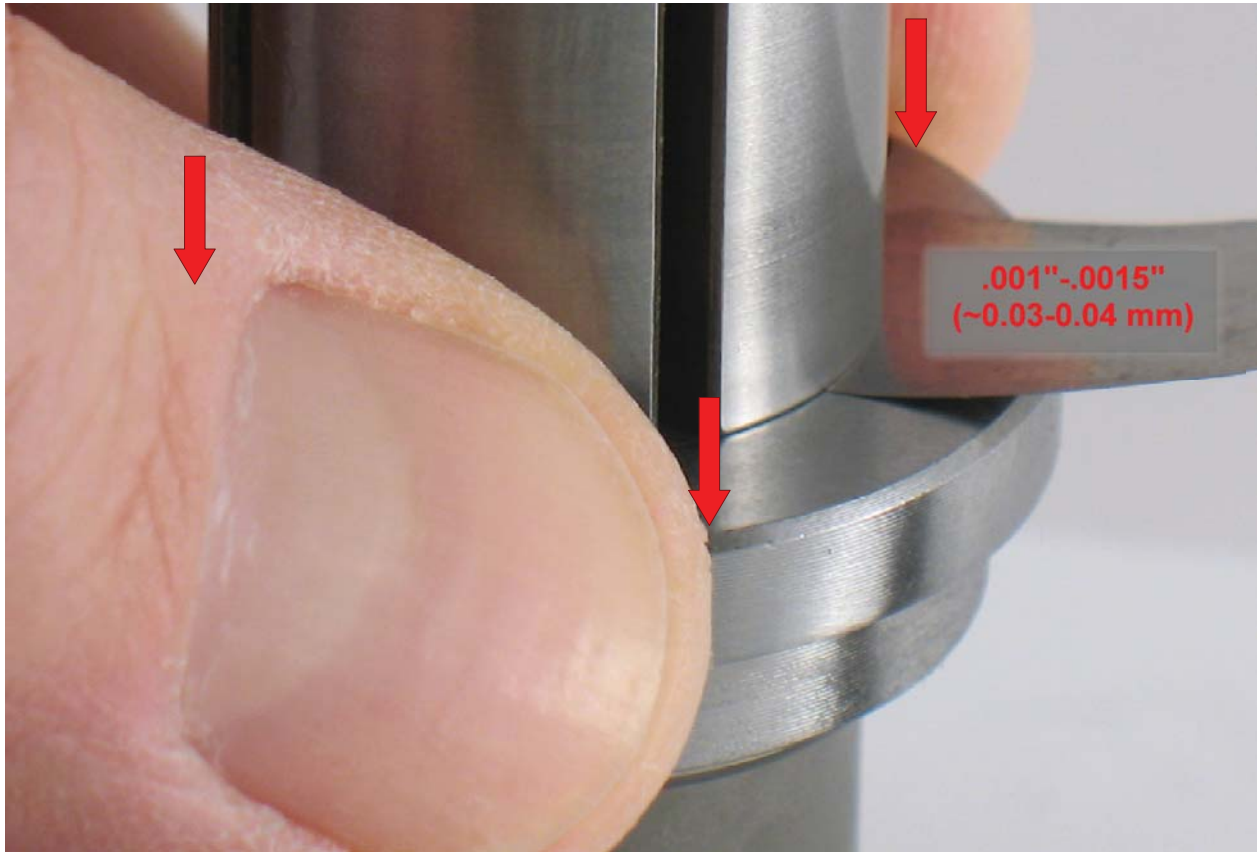
Motor Assembly:



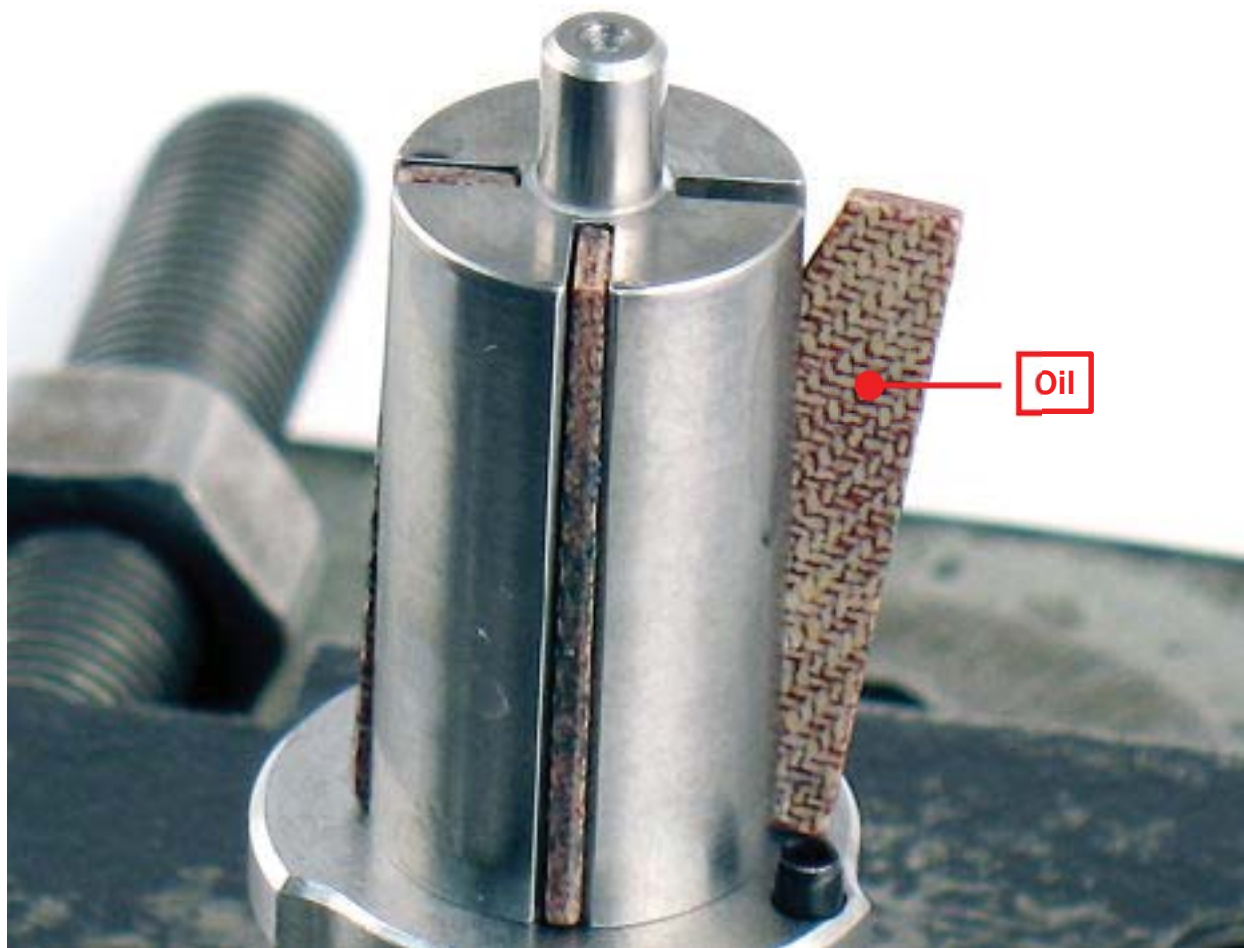
1. Install **01479** Spacer onto rotor.
 - Select .003" (~0.08 mm) shim thickness from **54529** Shim Pack.
 - Install shims into front plate.
 - Install **02649** Bearing into front plate.



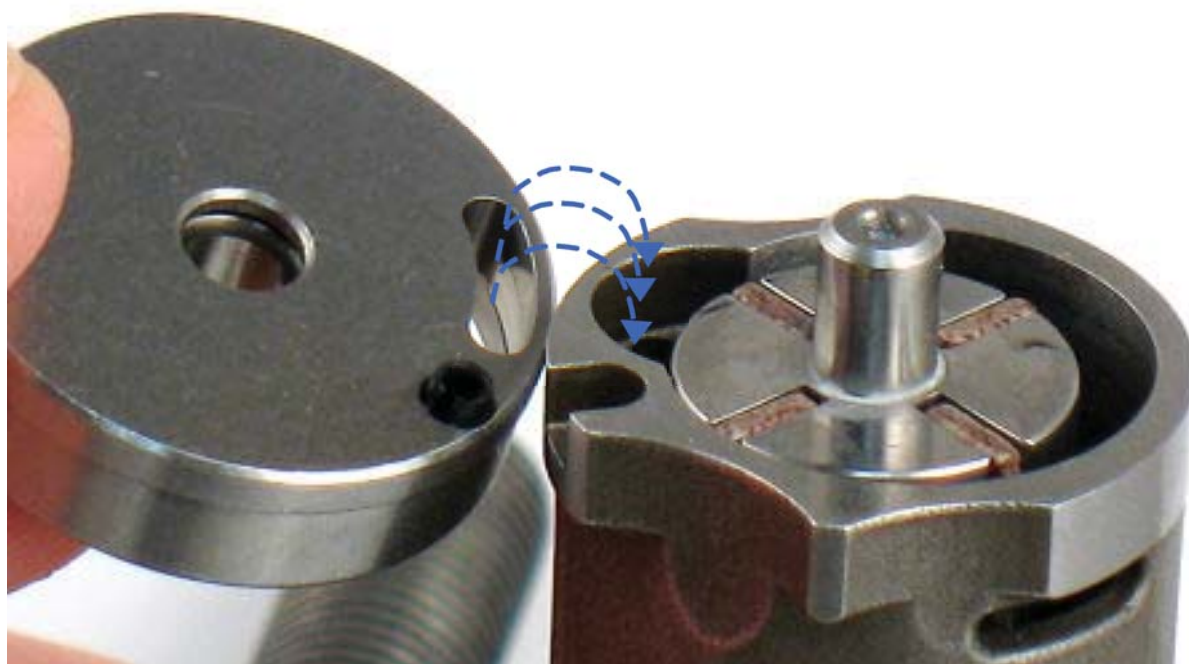
2. Use arbor press and ***RAISED INSIDE DIAMETER*** of the **96240** Bearing Press Tool to install **02649** Bearing with bearing plate onto rotor.



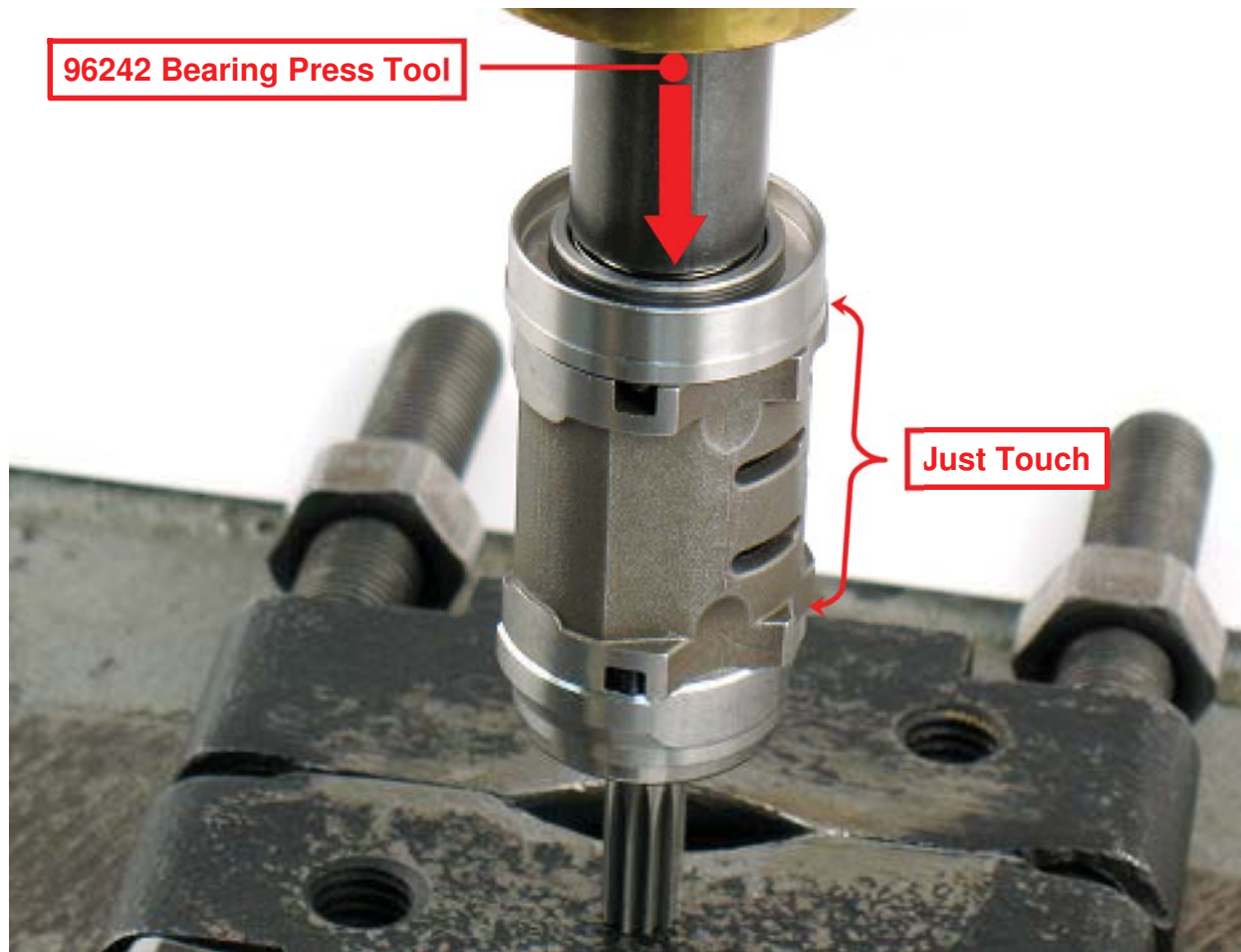
3. By hand, move front plate forward away from rotor and check the amount of clearance between rotor and front plate.
 - Use a .001" (~0.03 mm) thick feeler gauge. **Notice:** The clearance should be .001"-.0015" (~0.03-0.04 mm). If rotor/plate clearance needs adjustment, repeat steps 1 and 2. - Remove or add shims as required.



4. Oil vanes with **95842** Dynabrade Air Lube 10W/NR or equivalent, and install.



5. Install **01476** Cylinder and **02673** Rear Plate so that air inlet openings line-up.



6. Use ***RAISED INSIDE DIAMETER*** of 96242 Bearing Press Tool and arbor press to install 02696 Bearing and rear plate.
 - **Important:** Press bearing and plate down until the rear plate **just touches the cylinder**. This will produce a close fit between the bearing plates and cylinder.

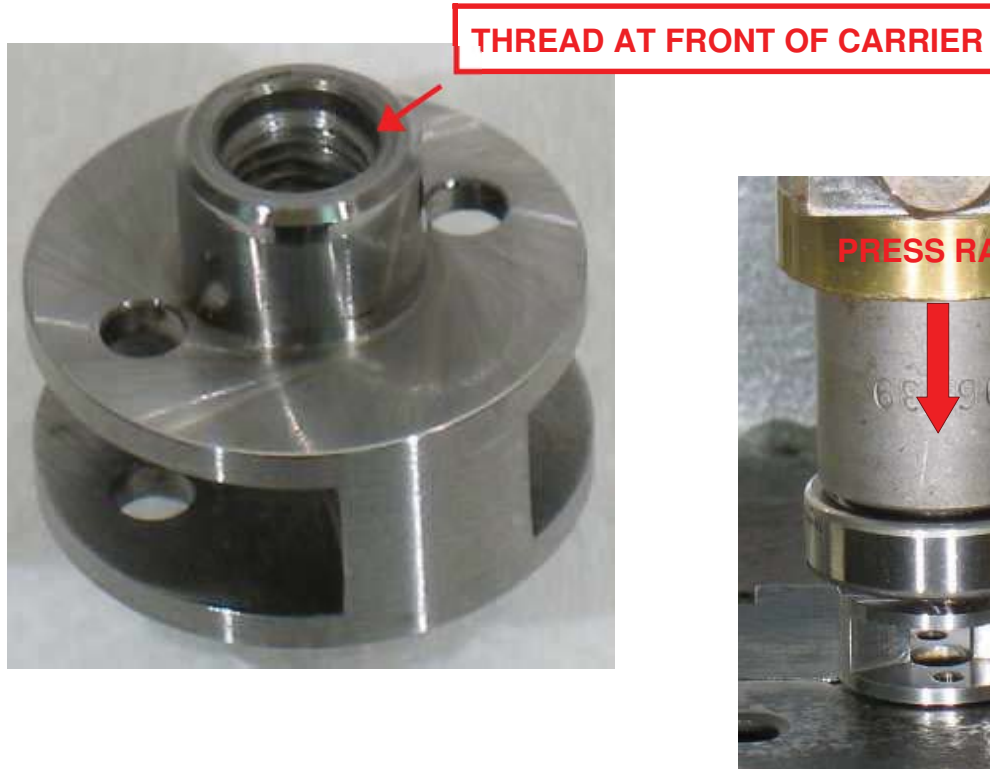


7. Apply a small amount of clean grease on shield of **02696** Bearing.
 - Stick **02679** Shield against bearing.
 - **Notice:** The **02673** Rear Plate channels the inlet air. It is not necessary to line-up motor air inlet with housing air inlet.



8. Install motor into housing.
 - Install **50778** Spacer with flat side toward motor and beveled side facing up.

- Planetary Gear Assembly:



1. Use the **RAISED INSIDE DIAMETER** of the **96239** Bearing Press Tool and the arbor press to install the **54552** Bearing onto the front of the planetary carrier.



2. Apply a small amount of Loctite #271 (or equivalent) to the adapter thread.



3. Carefully hold planetary carrier in vise with aluminum or bronze jaws and install the adapter onto carrier. (**T** to 17 N•m/~150 lbs. in.)



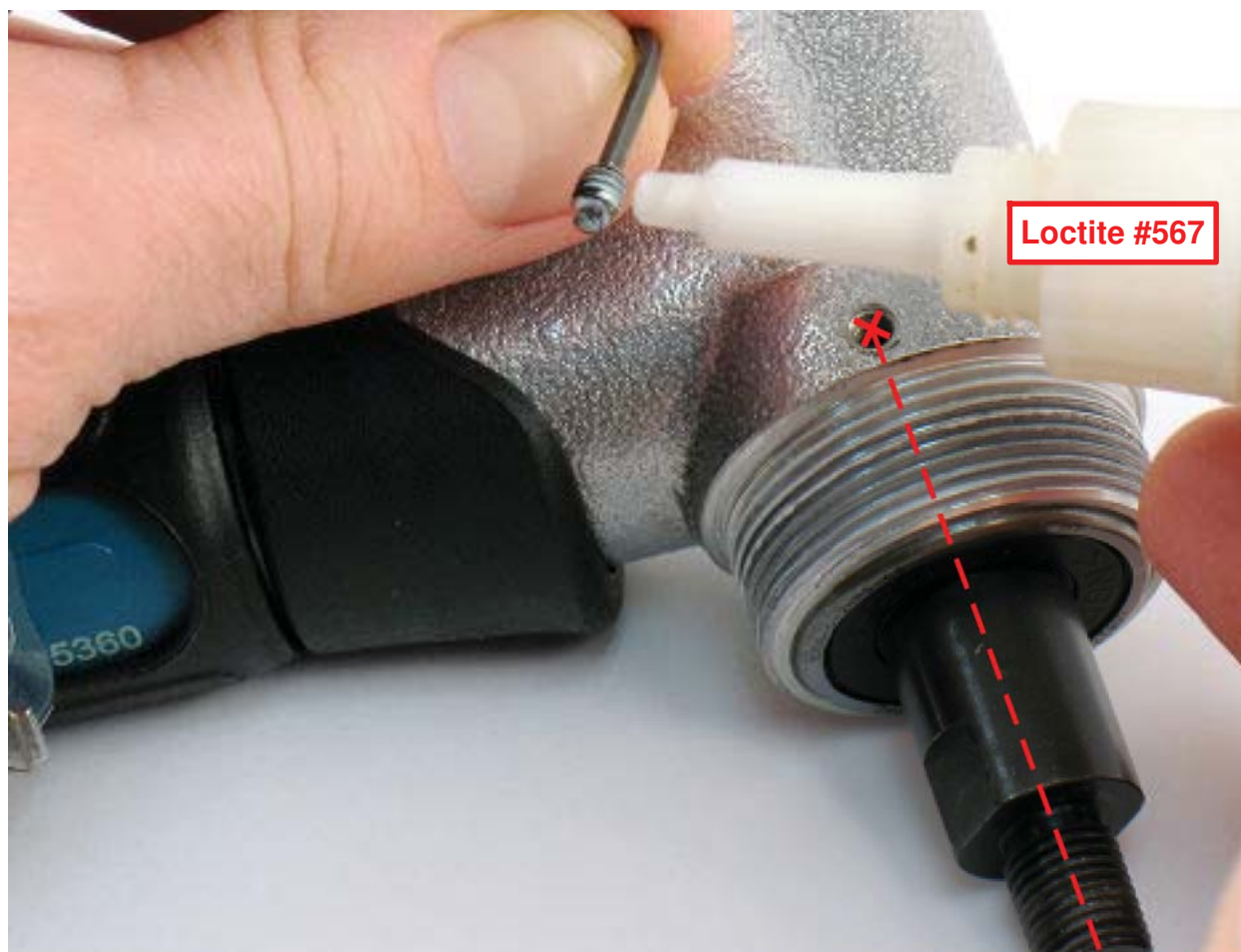
4. Apply **95542** Grease (or equivalent) to the needle bearings in the planet gears. Install gears and **54472** Shafts into carrier.



5. Install **54468** Ring Gear so that openings line-up with the lubricant and set screw holes in housing.



6. Use ***RAISED INSIDE DIAMETER*** of **96239** Bearing Press Tool and the arbor press to install **54552** Bearing onto planetary carrier.
IMPORTANT: Carefully press bearing to **just touch the ring gear**. This will produce a close fit between the bearings and ring gear.



7. Install planetary gear assembly into housing.
Apply Loctite #567 (or equivalent) to the **50784** Set Screw and install.
- Planetary gear assembly completed.



8. Apply a small amount of Loctite #567 to threads of housing.



9. Use **50971** Lock Ring Tool and torque wrench to fasten exhaust cover.
(Torque to 34 N•m/~300 lbs. in.)

Motor assembly completed.

Final Assembly:

See: Disassembly and Assembly for Rear Exhaust, 7° Off-Set Throttle Body.

Notice: To disassemble and assemble valve components, muffler, and belt housing assembly, see exploded view found in tool manual.

1. **Important:** Without an accessory installed, check spindle speed of tool with **max. 90 PSIG or 6.2 Bar operating air pressure at air inlet of tool.**
 - Use a tachometer to check RPM. **Notice:** Unless otherwise stated, the no-load speed should not exceed the maximum rated speed.
 - Install drive wheel and, install motor into belt housing.

Final assembly completed.

Disassembly Instructions - Throttle Body, Valve and Muffler - 7° Off-Set

1. Use **96461** Repair Collar to fasten **7° Off-Set** Housing in a vise with with motor spindle pointing down.



2. Pull **01558** Collar back onto throttle body housing.
 - Use **96460** Wrench to loosen throttle body lock nut from **7° Off-Set** Housing. Turn clockwise. **Left Hand Thread**

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3. Fasten **94523** Inlet Adapter in a vise with aluminum or bronze jaws, with throttle body pointing up.
 - Use **96393** Throttle Body Socket to remove throttle body from muffler assembly. Turn counterclockwise.
4. To disassemble muffler and valve components, see exploded view in tool manual.

Throttle Body, valve and muffler disassembly completed.

Assembly Instructions - Throttle Body, Valve and Muffler - 7° Off-Set

1. To assemble valve and muffler components, see exploded view in tool manual.
2. Install air control ring onto **94523** Inlet Adapter.
 - Apply a small amount of Loctite #567 to male thread of inlet adapter.
 - By hand, install muffler assembly onto the throttle body.

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3. Fasten **94523** Inlet Adapter vise with throttle body pointing up.
 - Use **96393** Throttle Body Socket and torque wrench to throttle body onto muffler assembly. Turn clockwise. (Torque to 28 N•m/~250 in. lbs.)



4. Apply a small amount of clean grease to **95523** O-Ring and install it onto the throttle body.

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5. Apply Loctite Primer #7649 to threads of 7° **Off-Set** housing.
 - Apply a small amount of Loctite #567 to threads.



6. Install throttle body onto .
 - **Notice:** Hold throttle lever in the desired position. Use **96460** Wrench and a torque wrench to fasten throttle body assembly onto the 7° **Off-Set** housing.
 - Turn counterclockwise. **Left Hand Thread** (Torque to 45 N·m/~400 in. Lbs.)
- Throttle Body, valve and muffler assembly completed.**

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