

Disassembly Instructions - 0.4 hp. Air Motor (Straight)

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

Notice: To avoid damage to the motor housing, use the Special Repair Tools designed for the disassembly and assembly of this motor.

Disconnect the tool from the air supply. Use the appropriate wrenches to hold the work spindle stationary and remove the accessory.

Motor Disassembly:

1. With the tool spindle pointing up, fasten the **01578** or **94523** Inlet Adapter in a vise with aluminum or bronze jaws.
2. Use the **50971** Lock Ring Tool to remove the rear exhaust cover or planetary housing. Turn counterclockwise.

Notice: For angle head models use the **97782** Lock Ring Tool to remove the planetary adapter/gear case.



Notice: If the **01578** or **94523** Inlet Adapter loosens before the rear exhaust cover or planetary housing, remove the inlet adapter, muffler and valve parts. Fasten the **96399** Hex Key (12 mm) in the vise with the notched end pointing up.



Place the air inlet of the **45305** Housing Core onto the **96399** Hex Key. Line-up notch with the **97045** Pin. Use the **50971** Lock Ring Tool to remove the rear exhaust cover or planetary housing from the **45305** Housing Core. To disassemble the muffler and valve components, refer to, and follow the exploded view instructions found in the parts page or tool manual.

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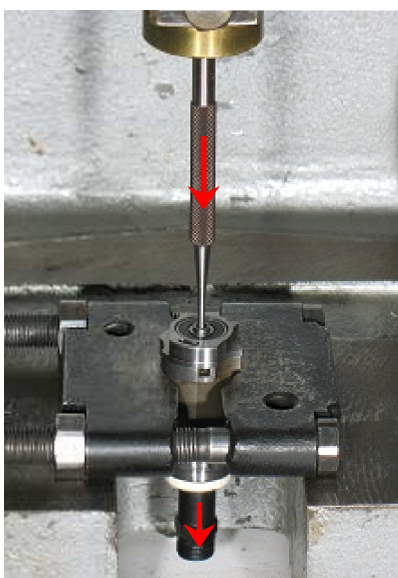
3. Remove the motor from the housing.



4. Carefully hold the tool spindle or pinion in the vise with aluminum or bronze jaws so that the governor is pointing up.
5. Use a slot-blade screwdriver to remove the governor. **LEFT HAND THREAD**
Turn clockwise.

Notice: The governor assembly is not serviceable. If the governor fails, it must be replaced as a complete assembly. (No governor on 35,000 RPM models.)

6. Fasten the **96346** Bearing Separator (2") around the **01476** Cylinder. Place the bearing separator and the motor in the **96232** Arbor Press (#2) with the tool spindle pointing down.



7. Use a 3/32" (2.38 mm) diameter flat-end drive punch as a press tool to push the rotor out of the **02696** Bearing.

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8. Remove the cylinder and vanes.
9. By hand, use the 3/32" (2.38 mm) diameter flat-end drive punch to push the **02696** Bearing (slip-fit) out of the **02676** Rear Bearing Plate.
10. Use a wrench to remove the **01435** Collet Body or pinion. Remove the **01478** Front Bearing Plate, **02649** Bearing, shims, and **01479** Spacer. Turn counterclockwise.



Motor Disassembly Complete.



Notice: Planetary gear models, use the arbor press to remove the front bearing and plate.



Important: Clean and inspect parts before assembling.

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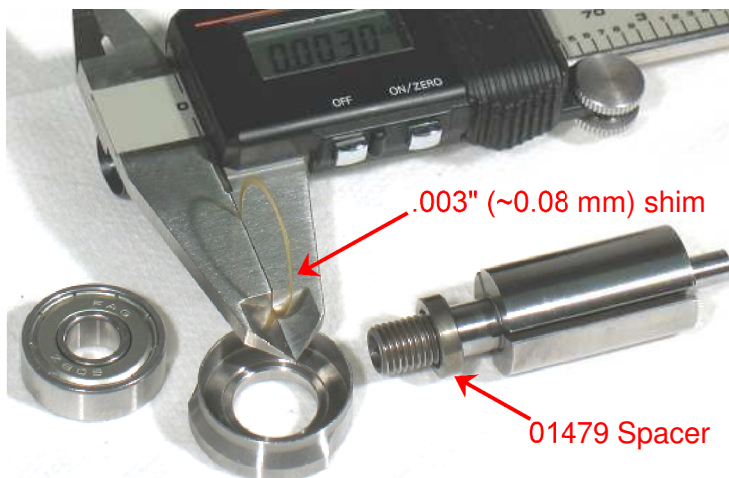
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Assembly Instructions - 0.4 hp. Air Motor (Straight)

Motor Assembly:

1. Install the **01479** Spacer onto the rotor.
2. Select **.003"** (~0.08 mm) shim thickness from the **54529** Shim Pack. Install shims in the **01478** Front Bearing Plate.
3. Install the **02649** Bearing into the front bearing plate and onto the rotor.



Notice: Planetary geared models use the **RAISED CENTER** of the **96240** Bearing Press Tool and the arbor press to install the **02649** Bearing with the bearing plate onto the rotor.

4. Fasten the rotor in the vise with aluminum or bronze jaws so that the spindle is pointing up. Use a 12 mm socket and torque wrench to install the **01435** Collet Body. (T to 17 N•m/~150 in. lbs.)
5. Pull the front bearing plate forward to take play out of the bearing. Use a **.001"** (~0.03 mm) thick feeler gauge to check the clearance between the bearing plate and rotor.
6. Clearance should be **.001"-.0015"** (~0.03-0.04 mm). **Notice:** Repeat steps 2-5 If clearance needs further adjustment. Install or remove shims as required.



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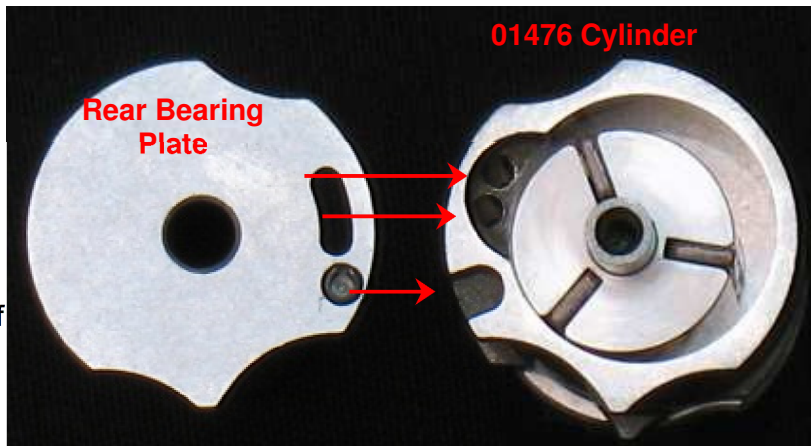
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7. Use Dynabrade Air Lube **95842** 10W/NR (or equivalent) to lubricate the **01480** Vanes. Install the vanes in the rotor.
8. Install the **01476** Cylinder and the **02676** Rear Bearing Plate so that the air inlet openings line-up.
9. Position the **02696** Bearing onto the bearing journal of the rotor.
10. Use the **RAISED CENTER** of the **96242** Bearing Press Tool and the arbor press to install the **02696** Bearing onto the rotor, and into the **02676** Rear Bearing Plate.
IMPORTANT: Carefully press the bearing until the plate just touches the cylinder. This will establish a "snug-fit" between the bearing plates and the cylinder.



Complete Motor Assembly

Notice: The rear bearing should sit below the outside surface of the rear bearing plate.

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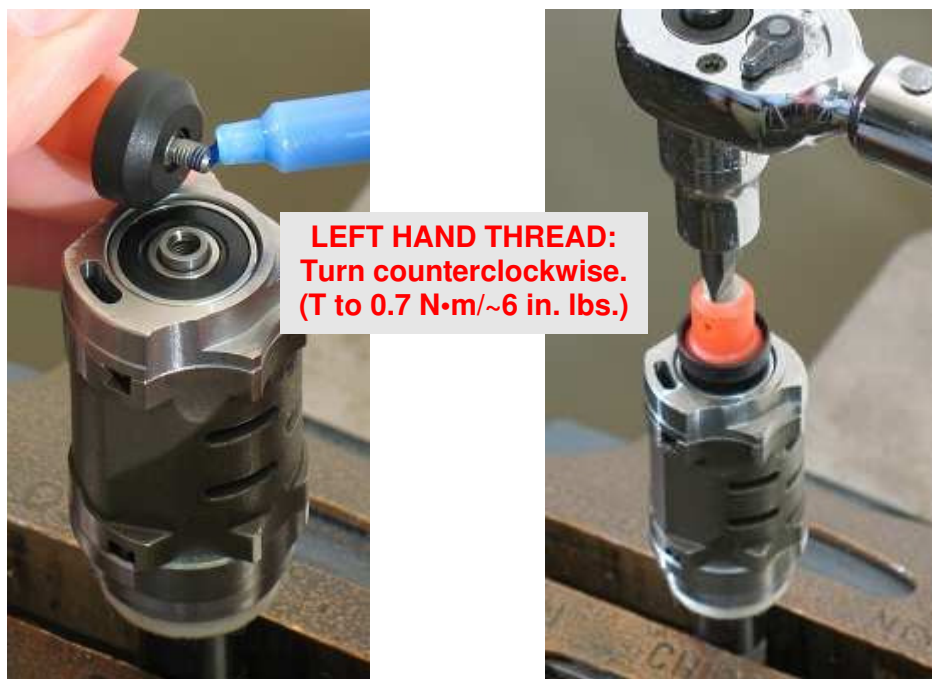
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11. Apply a small amount of Loctite #243 (or equivalent) to the threads of the governor assembly and carefully install the governor onto the rotor. **LEFT HAND THREAD**
Turn counterclockwise. (T to 0.7 N•m/~6 in. lbs.)



12. Fasten the **96399** Hex Key (12 mm) in a vise with aluminum or bronze jaws so that it is pointing up. Place the **45305** or **45307** Housing Core onto the 12 mm hex key so that the air inlet is pointing up.
13. Refer to the parts page or tool manual and follow the exploded view instructions to assemble the muffler and valve components.
14. Install the **01564** Air Control Ring onto the **01578** or **94523** Inlet Adapter and apply a small amount of Loctite #567 to the male threads of the inlet adapter.
15. Use a torque wrench to install the inlet adapter.
(T to 28 N•m/~250 in. lbs.)



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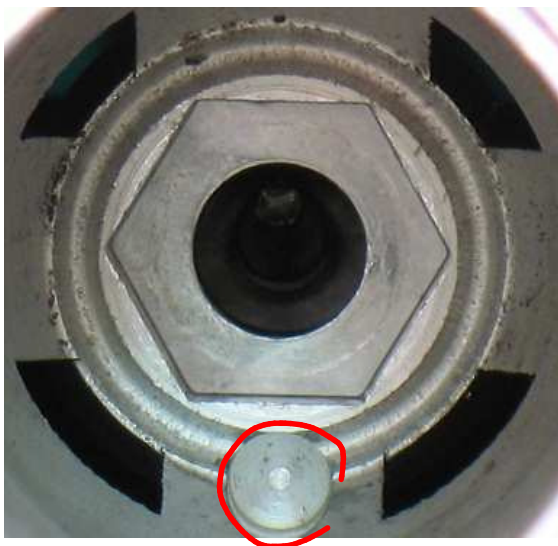
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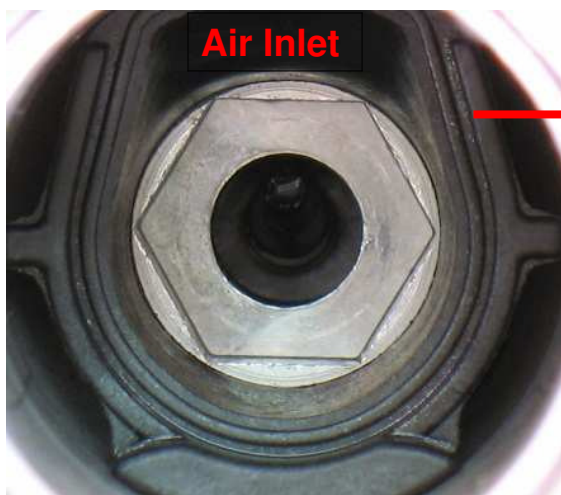
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17. Install the **45320 Governor Chamber**.



16. Line-up the **45320 Governor Chamber** pin with the hole on the inside of the **45305** or **45307** Housing Core.



The **45320 Governor Chamber** installed in **45305** or **45307** Housing.

18. Carefully line-up and install the motor assembly.



Motor Assembly Complete.

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