



Disassembly Instructions – 0.4 hp. Right Angle Tools

Motor Disassembly:

1. Use the 96461 Repair Collar to protect the right angle housing. Hold it in a vise with the spindle pointing up.
2. Use a 14 mm open-end wrench to hold the spindle stationary and remove accessories.
3. Use an adjustable wrench to loosen the housing core lock nut. Turn clockwise. – LEFT HAND THREAD – NOTICE: For Model 49425 loosen the 50019 Lock Nut. Refer to Planetary Gear Disassembly as required. For all other models, remove the motor from the housing.
4. Remove the governor chamber from the housing.
5. Fasten the 96346 Bearing Separator (2") around the 01476 Cylinder. Place the bearing separator and motor in the 96232 Arbor Press (#2) with the pinion pointing down.
6. Use a 5/32" or 4 mm diameter, flat-end drive punch as a press tool to push the rotor out of the 02696 Bearing.
7. Remove the cylinder and vanes.
8. Use a 5/32" or 4 mm diameter, flat-end drive punch to push the 02696 Bearing out of the 02676 Rear Bearing Plate. Note: If removal of the 02696 Bearing is difficult, use the 96210 Bearing Removal Tool and the arbor press.
9. Fasten the rotor in a vise with aluminum or bronze jaws and use a 14 mm wrench to remove the pinion gear. – NOTICE: For Model 49425, use the arbor press.
10. Remove the 01478 Front Bearing Plate, 02649 Bearing, shims, and 01479 Spacer.

Motor Disassembly Complete.

Right Angle Disassembly:

1. Use the 96461 Repair Collar to protect the right angle housing. Hold it in a vise with the spindle pointing up.
2. Use the 50971 Lock Ring Tool to remove the 02035 Lock Nut. Turn counterclockwise.
3. Pull the spindle, 54520 Bearing, and gear out of the housing.
4. Fasten the 96346 Bearing Separator (2") with the FLAT SIDE facing the GEAR and the BEVELED SIDE facing the 54520 Bearing. Place the bearing separator and spindle/gear assembly in the 96232 Arbor Press (#2) with the spindle pointing down. Remove gear. In the same manner, remove the bearing.
5. To remove the 02033 Needle Bearing, use a 5/16" or (8 mm) diameter, flat-end drive punch and arbor press to push the 02041 Gear Oil Plate with 01041 Lube Fitting out of the housing.

Right Angle Disassembly Complete.

Planetary Gear Disassembly: (Model 49425)

1. Fasten the inlet adapter in a vise with aluminum or bronze jaws, with the 50019 pointing up. Use an adjustable wrench on the 50024 Gear Case and remove the planetary gear assembly. Notice: If the inlet adapter loosens before the gear case, remove the muffler assembly and valve parts. Align the notched end of the 96399 Special Repair Tool (12 mm hex) with the valve stem and insert it into the inlet of the tool. Fasten the exposed end of the special repair tool in the vise so that the 50019 is pointing up. Use an adjustable wrench on the 50024 Gear Case and remove the planetary gear assembly.
2. Fasten the wrench flats of the 50024 Gear Case in the vise. Use an adjustable wrench to remove the 50019 Lock Nut.
3. Use a 2 mm hex key to remove the 50784 Setscrew from the gear case, and remove the gear reduction assembly. Important: Fasten securely the 96346 Bearing Separator (2") with the FLAT SIDE facing the RING GEAR and the BEVELED SIDE facing the 54520 Bearing. Place the bearing separator and the gear reduction assembly in the 96232 Arbor Press (#2) with the pinion pointing down.

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Disassembly/Assembly Instructions

2. Use a 5/16" or 8 mm diameter, flat-end drive punch as a press tool to push the planetary carrier out of the 54520 Bearing.
3. Remove the ring gear, shafts, and planet gears.
4. Carefully hold the planetary carrier in a vise with aluminum or bronze jaws, with the pinion pointing up.
5. Use a HEAT GUN to warm the pinion and soften the thread adhesive. Use a 14 mm open-end wrench to remove pinion from the planetary carrier. Turn counterclockwise.
6. Use the bearing separator, arbor press and a 5/16" or 8 mm diameter, flat-end drive punch to push the planetary carrier out of the 02649 Bearing.

Planetary Gear Disassembly Complete.

Clean and inspect parts before assembling.

Assembly Instructions - 0.4 hp. Right Angle Tools

Motor Assembly:

1. Install the 01479 Spacer onto the rotor.
2. Select .003" (.08 mm) shim thickness from the 54529 Shim Pack and install these into the 01478 Front Bearing Plate.
3. Install the 02649 Bearing into the front bearing plate, and onto the rotor. NOTICE: For Model 49425 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. Use a .001" (0.03 mm) thick feeler gauge to check the clearance between the bearing plate and the rotor.
5. Clearance should be .001"-.0015" (0.03-0.04 mm). Note: If the clearance needs adjustment, repeat steps 2-5. Add or remove shims as required.
6. Use 95842 Dynabrade Air Lube 10W/NR (or equivalent) to oil the 01480 Vanes. Install the vanes into the rotor.
7. Install the 01476 Cylinder and the 02676 Rear Bearing Plate so that the air inlet openings line-up with each other.
8. Position the 02696 Bearing onto the bearing journal of the rotor.
9. 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 onto the rotor and into the plate until the plate just touches the cylinder. This will establish a snug fit between the bearing plates and the cylinder.
10. Carefully hold the pinion in a vise with aluminum or bronze jaws with the back end of the rotor pointing up. Apply a small amount of the Loctite #222 (or equivalent) to the threads of the governor. Use a torque driver to install the governor. Turn counterclockwise. – LEFT HAND THREAD – (Torque to 0.5 – 0.9 N·m/4 – 8 in. lbs.) Notice: The governor assembly is not serviceable. If the governor fails it must be replaced as a complete assembly.
11. Line-up and install the 45320 Governor Chamber into the housing core.
12. Line-up and carefully install the motor assembly.

Motor Assembly Complete.

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Disassembly/Assembly Instructions

Planetary Gear Assembly (Model 49425)

1. Install the flat side of the 50022 Spacer facing the planetary carrier. Use the RAISED CENTER of the 96240 Bearing Press Tool and the arbor press to install the 02649 Bearing onto the front of the 50023 Planetary Carrier.
2. Apply a small amount of Loctite #567 (or equivalent) to the threads of the Planetary Carrier. Install the pinion onto the planetary carrier. (Torque to 17 N·m/150 in. lbs.)
3. Apply the 95542 Grease (or equivalent) to the bearings in the planetary gears. Install the planetary gears into the carrier and install the 54472 Pins. Install the 54468 Ring Gear so that the notches will line-up with the lubricant and setscrew holes in the 50024 Gear Case.

4. Use the RAISED CENTER of the 96239 Bearing Press Tool and the arbor press to install the 54520 Bearing onto the planetary carrier. **IMPORTANT:** Carefully press the bearing down until it just touches the ring gear. This will establish a snug fit between the bearings and the ring gear.
5. Install the speed reduction gear assembly into the gear case. Apply Loctite #567 (or equivalent) to the 50784 Setscrew and install it to secure the gear assembly. Install hand tight, the 50019 Lock Nut onto the gear case. Apply Loctite #567 to the threads of the housing core lock nut and install the planetary gear assembly onto the housing core. (Torque to 34 N·m/300 in. lbs.) Use the 95541 Lubricant Gun to supply 2 plunges of the 95542 Gear Grease (or equivalent) through the lubricant fitting. It is recommended to supply 2 plunges of grease after every 50-hour interval of use.
6. Use the 96461 Repair Collar to protect the right angle housing and hold it in a vise. Apply Loctite #243 to the threads that join to the 50019 Lock Nut. Locate the throttle lever close to the desired position. Tighten the lock nut, onto the right angle housing while at the same time tightening the gear case into the lock nut. Work the right and left hand threads against each other. (Torque to 28 N·m/250 in. lbs.)

Planetary Gear Assembly Complete.

Final Tool Assembly

1. To install the valve and muffler components, refer to the exploded view for the order of assembly.
2. Follow adhesive and torque specifications.

Final Tool Assembly Complete.

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