



16575052
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Air Die Grinders and Grinders

Series AC and AG

Maintenance Information



Save These Instructions

IR *Ingersoll Rand*



WARNING

Always wear eye protection when operating or performing maintenance on this tool.

Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.

Lubrication

Whenever one of these Grinders is disassembled for overhaul or replacement of parts, lubricate as follows:

1. Always wipe the Vanes (27) with a light film of oil before inserting them into the vane slots.
2. Inject 0.5 to 1.0 cc of **Ingersoll Rand** No. 10 Oil into the Air Inlet (16) after assembly.

Disassembly

General Instruction:

1. Do not disassemble the tool any further than necessary to replace or repair damaged parts.
2. When grasping a tool or part in a vise, always use leather-covered or copper-covered vice jaws to protect the surface of the part or tool and help prevent distortion. This is particularly true of threaded members and housings. A special rubber block is available to hold the housing. The part number for ordering this special block is #22040992.
3. Do not remove any part, which is a press fit in or on a subassembly unless the removal of that part is necessary for repairs or replacement.
4. Do not disassemble the tool unless you have a complete set of new gaskets and O-Rings for replacement.
5. Do not press any needle bearing from a part unless you have a new needle bearing on hand for installation. Needle bearings are always damaged during the removal process.

Disassembly of the Angle Head:

1. Remove the Angle Head Cap (35). Slip the Tool Holder (63) (optional) over the body of the tool and grasp it in a vise with the end of the Arbor (43) upward.
2. **For models with Collets**, using one Collet Wrench (57) on the Arbor flats and the other Collet Wrench on the Collet Nut (48), unscrew the Collet Nut and remove the Collet Cap (47) and Collet (46).
For models with Wheel Guards, insert the Hex Wrench (58) into the end of the Arbor to keep it from turning and using the Spanner Wrench (61), unscrew and remove the Wheel Nut (54). Remove the Wheel Flange (53), wheel and Flange Spacer (52) from the Arbor. Using a 3mm Hex Wrench (59), loosen the Cap Screw (50) and remove the Guard Adaptor (49) along with the assembled Wheel Guard (51).
3. Using a suitable spanner wrench, unscrew the Arbor Bearing Cap (45).
4. Using Wrench (62), loosen the Housing Cap (33) and unscrew it from the Motor Clamp (32).
5. Loosen the Angle Housing (37) and unscrew it one turn. This is a left-hand thread.
6. Grasp the Arbor and pull the assembled Arbor out of the Angle Housing.
7. Unscrew the Angle Housing the rest of the way.
8. Use bearing support plates and an arbor press to remove the Bearings (39 and 42), Grease Wick (40), and Gear (41) as needed. Note that the Gear is keyed to the Arbor.
9. If either Bearing is removed for any reason, replace it with a new one.

Disassembly of the Motor:

1. Remove the Motor Clamp from the Motor Housing (1).
2. Pull the motor assembly out of the Housing.
3. Grasp the Cylinder (28) in a vise and use a punch to tap the Rotor (26) out of the Rear Bearing (23).
4. Remove the Vanes (27) from the Rotor.
5. Grasp the Rotor in copper-covered or leather-covered vise jaws with the Pinion (34) upward. Using a 12mm wrench, unscrew and remove the Pinion.
6. If the Front Rotor Bearing (31) must be replaced, support the Front End Plate (29) between two blocks on the table of an arbor press. Place the blocks as close to the body of the Rotor as possible and press the Rotor from the Bearing and End Plate. Remove the Front Rotor Bearing Spacer (30) from the Rotor. Press the Bearing out of the end plate using a 0.433" (11mm) pin.
7. If the Rear Rotor Bearing (23) must be replaced, press the Bearing out of the end plate using a 0.2375" (6.03mm) pin.

Disassembly of the Inlet and Throttle:

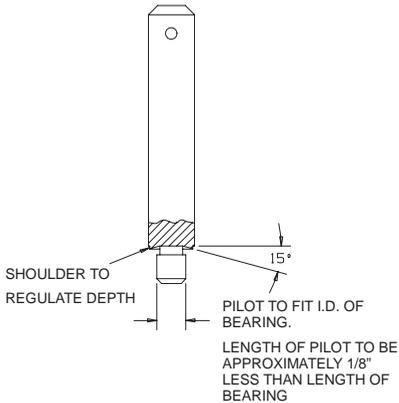
1. Using a 3/4" wrench, unscrew and remove the Inlet Bushing (16).
2. Remove the Exhaust Deflector (15), O-Ring (14) and Silencer (13) from the Inlet.
3. Using a 1/4" bushing driver, tap the Motor Housing out of the Composite Housing (9).
4. Remove the O-Ring Gasket (8), and Muffler Element (12).
5. Unscrew the Valve Plug (22), and remove the Valve Stem (18), Valve Spring (20), Valve Spring Seat (19) and Valve O-Ring (17).
6. The Valve Bushing (2), if it must be replaced, is only available as part of an assembly of the Motor Housing and Bushing.
7. Press the Throttle Lever Pin (7) from the Housing and remove the Throttle Lever Assembly (3, 4, 5 and 6).
8. Any Throttle Lever parts to be replaced are only available as part of the Throttle Lever Assembly.

Assembly

General Instructions

1. Always press on the **inner** ring of a ball-type bearing when installing the bearing on a shaft.
2. Always press on the **outer** ring of a ball-type bearing when pressing the bearing into a bearing recess.
3. Whenever grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws. Take extra care not to damage threads or distort housings.
4. Always clean every part and wipe every part with a thin film of oil before installation.
5. Check every bearing for roughness. If an open bearing must be cleaned, wash it thoroughly in clean solution and dry with a clean cloth. **Sealed or shielded bearings should not be cleaned.** Work grease into every open bearing before installation.
6. Apply a film of O-Ring lubricant to every O-Ring before installation.
7. Unless otherwise noted, always press on the stamped end of a needle bearing when installing a needle bearing into a recess. Use a bearing inserting tool similar to the one shown in Dwg. TPD786.

Needle Bearing Inserting Tool



(Dwg. TPD786)

Tool Specific Instructions:

1. Assembly sequence is the reverse of disassembly.
2. First install the Throttle Lever Assembly, then the Valve parts.
3. Place the O-Ring Gasket and Muffler Element in position on the back of the Motor Housing and slide the Composite Housing down over the Motor Housing. Make sure the Gasket stays in correct position so as to not get pinched by the Composite Housing. Push the Composite Housing all the way back.
4. Install the Inlet parts. Make sure the O-Ring stays in correct position so as to not get pinched by the Inlet Bushing.
5. Assemble the Motor and install it in the Motor Housing. Make sure the Cylinder Dowel (24) is aligned with the round hole in the Motor Housing.
6. Install the Motor Clamp and screw it down until it just bottoms out.
7. Position the Housing Cap over the Motor Clamp.
8. Assemble the Angle Housing and install it. Make sure the flat side of the wick faces downward.
9. Back off the Motor Clamp slightly and maintain its position while tightening the Angle Housing. Adjust the Angle Housing orientation by loosening the Housing, making a slight turn on the Motor Clamp and tightening the Housing again.
10. Thread the Housing Cap onto the Motor Clamp and tighten the Cap using the Wrench provided for the spanner holes.
11. **For models with Collets**, install the Collet, then the Collet Cap, and thread the Collet Nut onto the Arbor. **For models with Wheel Guards**, install the Guard Adaptor and the Wheel Guard. Thread the Flange Spacer onto the Arbor; add the wheel and Wheel Flange and screw on the Wheel Nut.
12. Inject 2 cc of **Ingersoll Rand** No. 67 or No. 77 grease into the Angle Housing using the grease fitting on the back of the head.
13. Install the Angle Head Cap.

Troubleshooting Guide

Trouble	Probable Cause	Solution
Low power or low free speed	Insufficient air pressure.	Check air line pressure at the Inlet of the Tool. It must be 90 psig (6.2 bar/620 kPa).
	Clogged muffler elements.	Disassemble the Tool and agitate bare Motor Housing and Flange in a clean, suitable cleaning solution. Back Flush the Muffler Elements with a clean, suitable cleaning solution until all contaminants and obstructions are removed. If elements cannot be cleaned, replace them.
	Plugged Inlet Screen.	Clean the Inlet Screen with a clean, suitable cleaning solution or replace the Screen.
	Worn or broken Vanes.	Install a complete set of new Vanes.
	Worn or broken Motor Housing.	Replace the Motor Housing.
	Internal air leakage in the Motor Housing indicated by high air consumption/low speed or air leaking out the front and rear exhaust simultaneously.	Replace the Motor Housing.
	Grit buildup under the Throttle Lever restricting full Throttle Valve Plunger movement.	Remove the Throttle Lever and clean the groove in the Motor Housing.
	Bent stem on Throttle Valve.	Replace the Throttle Valve.
	Angle gear wick misaligned or damaged.	Reposition or replace the wick.
Excessive runout	Bent Arbor.	Replace the Arbor.
	Loose Collet Nut.	Tighten the Collet Nut until snug.
	Worn or damaged Collet, Collet Nut or Nosepiece.	Replace the damaged component and retest.
	Worn or damaged Upper Arbor Bearing or Lower Arbor Bearing.	Replace the worn or damaged Bearing.
Scoring of End Plate	Worn Front End Plate Spacer or Front End Plate.	Install a new Front End Plate Spacer and Front End Plate.
	Worn Front Rotor Bearing.	Install a new Front Rotor Bearing.
Leaky Throttle Valve	Dirt accumulation on Throttle Valve or Throttle Valve Seat.	Disassemble, inspect and clean parts.
	Worn Throttle Valve or Throttle Valve Seat.	Replace the Throttle Valve and/or Throttle Valve Seat.
	Excessive dirt build-up beneath the Throttle Lever.	Clean out the slot area.
	Bent Throttle Valve Plunger.	Replace the Plunger.
Front Rotor Bearing runs hot	Front End Plate Spacer rubbing the bore of the Front End Plate.	Replace the Front End Plate and Front End Plate Spacer combination.
Slow tool idle	Bent or leaky Throttle Valve.	Replace the Throttle Valve.
Rough operation/vibration	Improper lubrication or dirt buildup.	Disassemble the Tool and clean in a suitable cleaning solution. Assemble the Tool and inject 3 cc of the recommended oil into the Inlet and run the Grinder long enough to coat the internal parts with the oil.
	Worn or broken Rear Rotor Bearing or Front Rotor Bearing.	Replace the worn or broken Bearings. Examine the Front End Plate, Front End Plate Spacer, Front Seal Cup and Rear Rotor Bearing Spacers and replace any damaged parts. If the rear end plate is damaged, replace the Rotor.
	Worn or broken Upper Arbor Bearing or Lower Arbor Bearing.	Replace the worn or broken Bearing.
	Worn or broken Bevel Gear or Bevel Pinion.	Examine the Bevel Gear and Bevel Pinion. If either is worn or damaged, replace both the Gear and the Pinion because they are a matched set and must not be used separately.

Related Documentation

For additional information refer to:

Product Safety Information Manual Form 04580288 and 04584959.

Product Information Manual Form 80152853 and 80152846.

Product Parts List Manual Form 16574006.

Manuals can be downloaded from www.irttools.com.

Notes

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