



OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

Released:
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Form: 1572-2

"2200" SERIES RIGHT-ANGLE DRILL

Model 7673-A

IMPORTANT: READ THIS MANUAL CAREFULLY BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

OPERATING AND SAFETY PRECAUTIONS

Pneumatic tools should always be installed and used in accordance with A.N.S.I. B186.1 "Safety Code For Portable Air Tools."

CAUTION:

- Keep hands and clothing away from rotating end of tool.
- Wear suitable eye protection while operating tool.
- Use tool only for purposes for which it was intended.
- SHUT OFF and DISCONNECT AIR SUPPLY from tool BEFORE performing maintenance, service or disassembly of tool.

WARNING: Repeated prolonged operator exposure to vibrations which may be generated in the use of certain hand-held tools may produce Raynaud's phenomenon, commonly referred to as Whitefinger disease. The phenomenon produces numbness and burning sensations in the hand and may cause circulation and nerve damage as well as tissue necrosis. Repetitive users of hand-held tools who experience vibrations should closely monitor duration of use and their physical condition.

ROUTINE LUBRICATION REQUIREMENTS

Lack of or an excessive amount of lubrication will affect the performance and life of this tool. Use only recommended lubricants at below time intervals:

EVERY 8 HOURS OF TOOL OPERATION – Fill lubricator reservoir of recommended F.R.L. with spindle oil (29665). If an in line or air line lubricator is not used, apply several drops of spindle oil (29665) in air inlet.

EVERY 40 HOURS OF TOOL OPERATION – Flush tool with a solution of three parts cleaning solvent and one part light oil. After flushing, apply a small amount of spindle oil in air inlet and run free for one minute to insure proper lubrication.

EVERY 160 HOURS OF TOOL OPERATION – Lubricate gearing. Pack bearings, coat shafts and lubricate gears with NLGI #1 "EP" grease (33153). Gearing should contain approximately 1/4 oz. (7 g) of grease. Inject 2 or 3 strokes of grease thru grease fitting in right-angle housing. Right-angle assembly should contain approximately 1/8 oz. (3.5 g) of grease.

AIR SUPPLY REQUIREMENTS

For maximum operating efficiency, the following air supply specifications should be maintained to this air tool:

- AIR PRESSURE – 90 PSIG (6 bar)
- AIR FILTRATION – 50 micron
- LUBRICATED AIR SUPPLY
- HOSE SIZE – 3/8" (10 mm) I.D.

An ARO® model C28231-810 air line FILTER/REGULATOR/LUBRICATOR (F.R.L.) is recommended to maintain the above air supply specifications.

RECOMMENDED LUBRICANTS

After disassembly is complete, all parts, except sealed or shielded bearings, should be washed with solvent. To relubricate parts, or for routine lubrication, use the following recommended lubricants:

Where Used	ARO Part #	Description
Air Motor	29665	1 qt. Spindle Oil
"O" Rings & Lip Seals	36460	4 oz. Stringy Lubricant
Gears and Bearings	33153	5 lb. "EP" - NLGI #1 Grease

For parts and service information, contact your local ARO distributor, or the Customer Service Dept. of the Ingersoll-Rand Distribution Center, White House, TN at PH: (615) 672-0321, FAX: (615) 672-0801.

ARO Tool Products

Ingersoll-Rand Company

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DISASSEMBLY/ASSEMBLY INSTRUCTIONS

RIGHT-ANGLE SECTION

DISASSEMBLY

- Remove lock screw (32788-ARO) and drive shaft (37487) with bearing and gear attached.
- To remove bearing (41093), remove nut (32798) and gear.
- Loosen nut (32795) completely and remove drive shaft (41543) with attached parts. To remove from shaft, remove nut (32798).

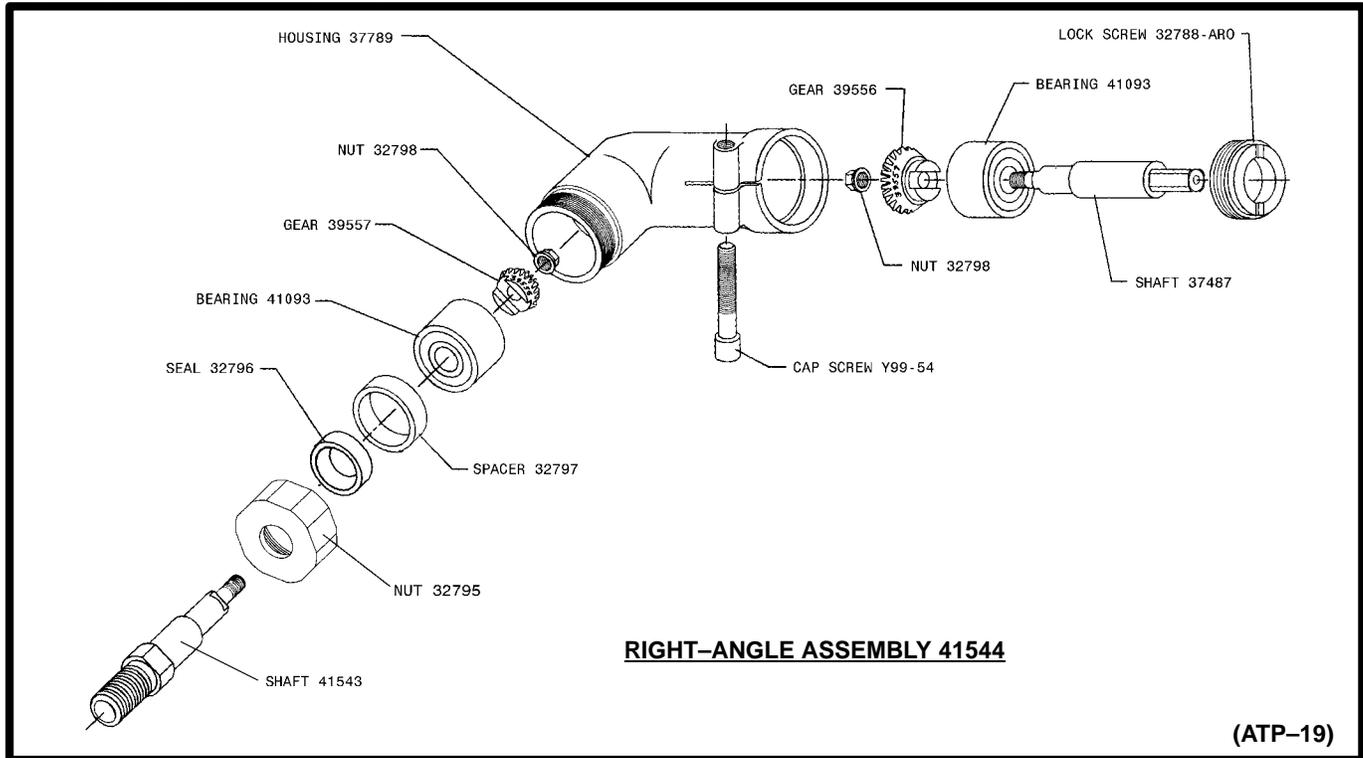
(32798). Assemble into housing and secure to housing with nut (32795).

- Assemble bearing (41093) and gear to shaft (37487) and secure with nut (32798). Assemble into housing and secure to housing with lock screw (32788-ARO).

ASSEMBLY

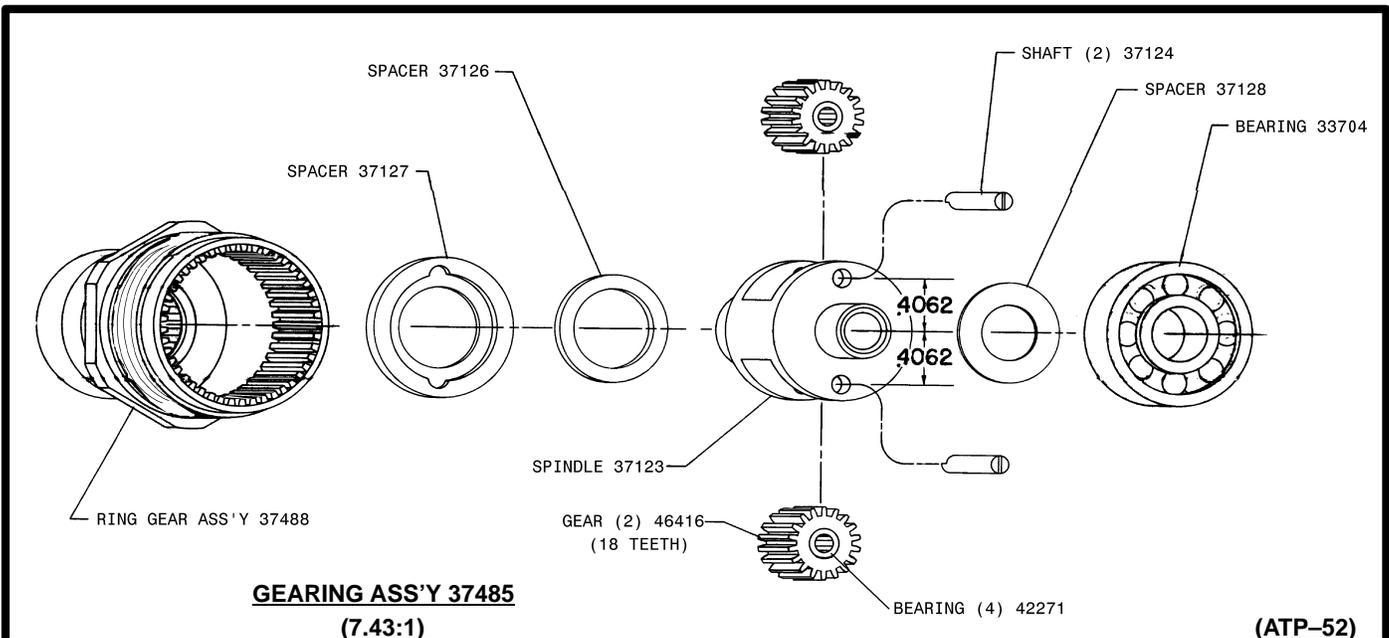
- Assemble nut (32975), seal (32796), spacer (32797), bearing (41093) and gear to shaft (41543) and secure with hex nut

NOTE: Seal (32796) must be assembled to shaft with lip of seal facing bearing. Bearings (41093) are shielded on one side. Bearings must be assembled to shafts, shielded side first. Right-angle assembly should contain 1/8 oz. of grease.



(ATP-19)

GEARING SECTION



GEARING ASS'Y 37485

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(ATP-52)

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

GEARING SECTION

DISASSEMBLY

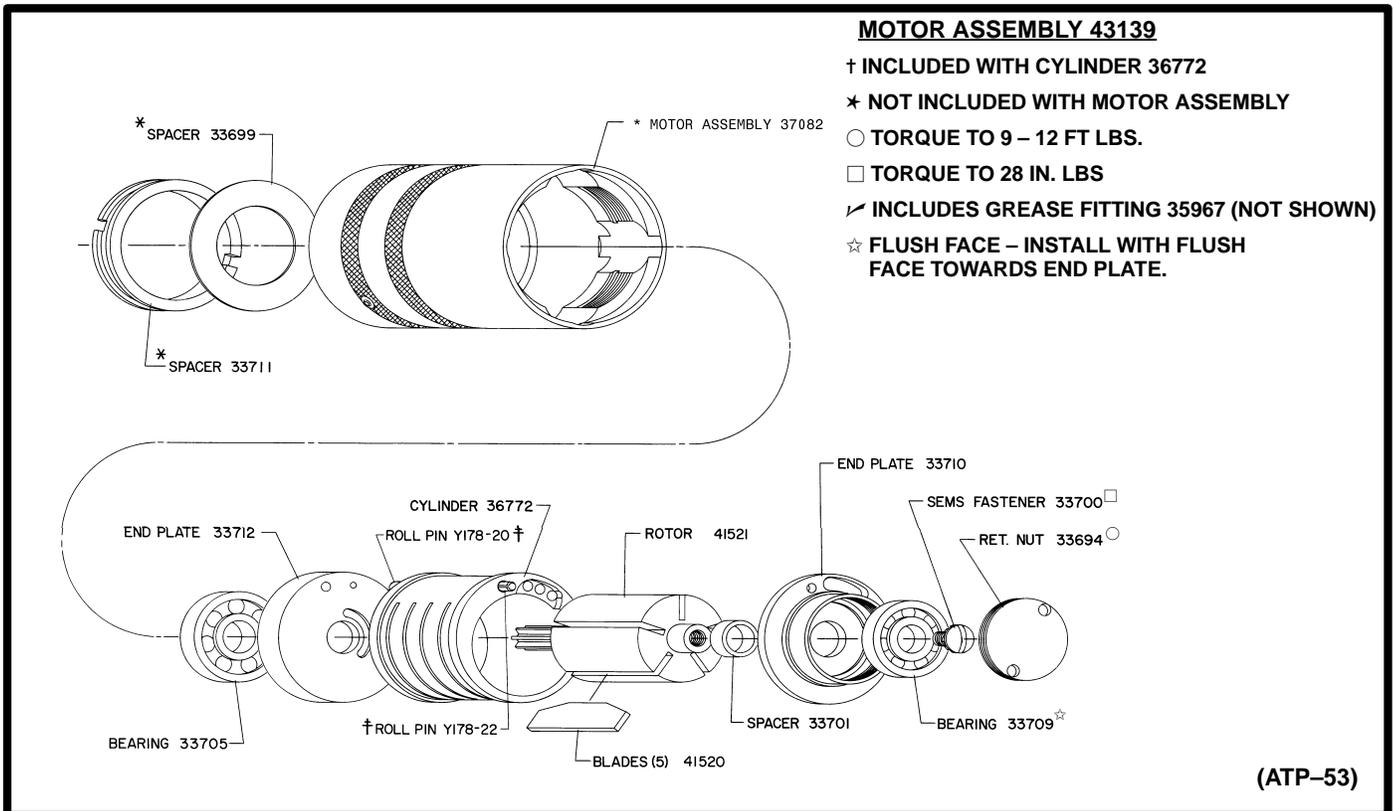
- Remove spindle, with attached parts, from ring gear and remove spacers (37127 and 37126).
- Alternately tap ends of shafts (37124) to remove bearing (33704) and spacer (37128).
- Remove shafts (37124) to remove gears from spindle.

ASSEMBLY

- Assemble gears to spindle and secure with shafts (37124).
- Assemble spacers (37126 and 37128) and bearing (33704) to spindle.
- Assemble spacer (37127) to spindle and assemble into ring gear.

NOTE: Gearing assembly should contain 1/4 oz. of grease.

MOTOR SECTION



DISASSEMBLY

- Remove motor assembly from housing. Using a spanner type wrench, remove nut (33694) and fastener (33700). Grasp cylinder in one hand and tap splined end of rotor with a soft face hammer; motor will come apart.

ASSEMBLY

NOTE: Pack bearing with 33153 grease, or equivalent, and coat i.d. of cylinder with spindle oil upon assembly.

- Assemble bearings into end plates. NOTE: Assemble bearing (33709) into end plate with the identification markings on the bearing facing "out". Assemble end plate (33710) to rotor and secure with fastener (33700). NOTE: Torque to 28 in. lbs.
- Assemble cylinder over rotor, aligning air inlet holes in cylinder, with air inlet slot of end plate and roll pin with hole in end

plate. Assemble blades to rotor. Assemble end plate (33712) to rotor and cylinder, aligning hole in end plate with roll pin in cylinder. Assemble nut (33694) to end plate, torquing to 9 – 12 ft lbs.

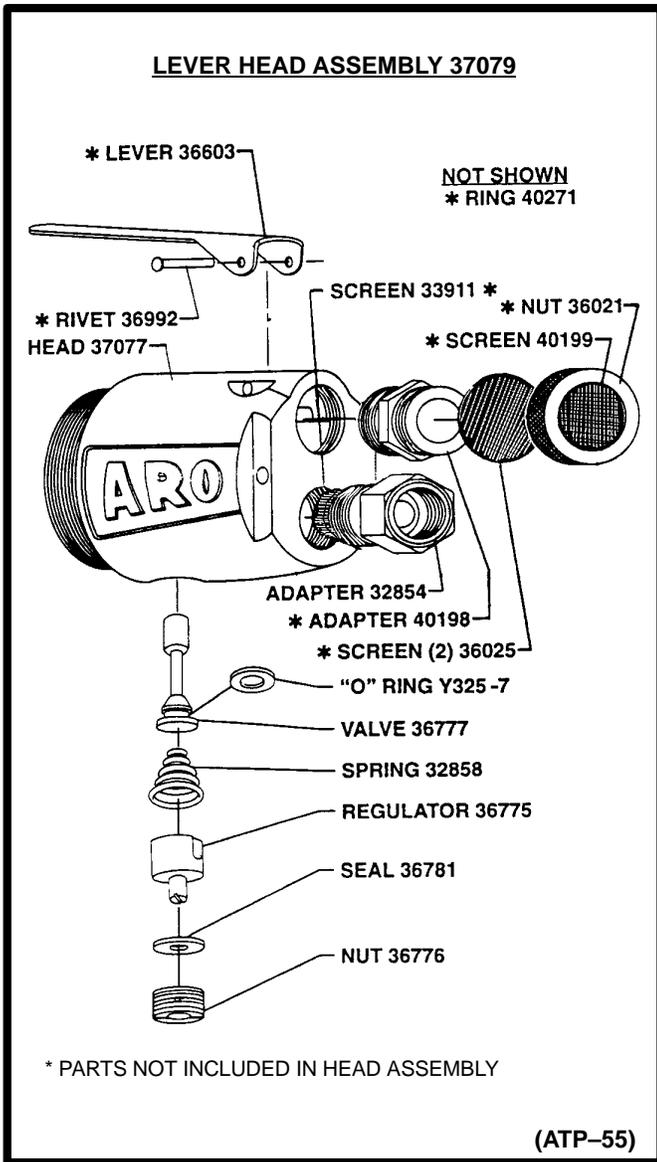
- Be sure rotor does not bind (if rotor binds, lightly tap splined end of rotor with a soft face hammer) and assemble to tool.

ASSEMBLING MOTOR TO TOOL

- Remove motor housing (37082) from head. Place head in a suitable holding device with the "motor end" in an upright position. Assemble motor assembly to head, aligning roll pin in motor with hole provided in head (.125 diameter blind hole). Slip motor housing over motor and secure to head. Assemble spacers (33699 and 33711) and gearing to tool.

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

HEAD SECTION



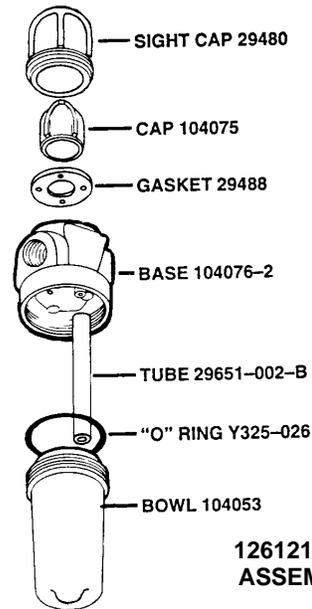
DISASSEMBLY

- a. Remove nut (36776) and valve parts are free to be removed.
- b. To remove lever, remove pin (36992)

ASSEMBLY

- a. Assemble "O" ring (Y325-7) to valve and assemble into head.
- b. Assemble spring (32858), regulator (36775) and seal (36781) into head and secure with nut.

NOTE: Opening in wall of regulator must be aligned with air inlet hole in head.



**126121-000 LUBRICATOR
ASSEMBLY (1/4" PORTS)**

(ATP-54)

KEYED CHUCK 30016
KEY NO. 30016-K (NOT SHOWN)