OPERATING PRECAUTIONS

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.

AIR AND LUBE REQUIREMENTS

Air pressure of 90 p.s.i.g. (6 bar) at the air inlet of the tool is required for maximum motor efficiency. If necessary, an air regulator should be installed to maintain this air pressure when the tool is in operation.

Filtered and oiled air will allow the tool to operate more efficiently and yield a longer life to operating parts and mechanisms. A line filter capable of filtering particles larger than 50 microns should be used with a line oiler.

Filter–Regulator–Lubricator (F–R–L) assembly model C28231–810 is recommended for use with this air tool. The capacity of this F–R–L is adequate to provide clean (40 micron) oiled and regulated air for the tool.

Flush tool with a solution of three parts cleaning solvent and one part light oil after each 40 hours of operation. After flushing, apply a small amount of spindle oil in air inlet and run free for one minute to insure proper lubrication.

Recommended hose size – 5/16" (8 mm) nominal inside diameter.

Recommended lubricants: spindle oil 29665, 1 qt. (.9 liter) container for oiler and air inlet; grease 33153, 5 lb. (2.3 kg) can for gears and bearings, "O" ring lubricant 36460, 4 oz. (113 g) tube for lubrication and installation of "O" rings.

MAINTENANCE

Disconnect air supply from tool or shut off air supply line to tool and exhaust (drain) air line to tool of compressed air before performing service or maintenance to tool.

Air tools are made of precision parts and should be handled with reasonable care when servicing. Excessive pressure exerted by a holding device may cause distortion of a part. Apply pressure evenly when disassembling (or assembling) parts which have a press fit. When removing or installing bearings, apply pressure to the bearing race that will be press fit to the mating part; if this is not practiced, Brinelling of the bearing races will occur, making replacement necessary. It is important that the correct tools and fixtures are used when servicing this air tool.

Disassembly should be done on a clean work bench with a clean cloth spread to prevent the loss of small parts. After disassembly is completed, all parts should be thoroughly washed in a clean solvent, blown dry with air and inspected for wear levels, abuse and contamination.

Double sealed or shielded bearings should never be placed in solvent unless a good method of relubricating the bearing is available. Open bearings may be washed but should not be allowed to spin while being blown dry. When replacement parts are necessary, consult drawing containing the part for identification.

Before reassembling, lubricate parts where required. Use 33153 grease, or equivalent, in bearings. Use 36460 lubricant for "O" ring assembly. When assembling "O" rings, care must be exercised to prevent damage to the rubber sealing surfaces. A small amount of grease will usually hold steel balls and other small parts in place while assembling.

When ordering parts, be sure to list **part number, part name, model number** and **serial number of tool.** Use only genuine ARO® replacement parts.

DISASSEMBLY AND ASSEMBLY OF TOOLS

DISASSEMBLY

FLAT ANGLE – Remove cap screw (Y99–52), releasing flat angle assembly (33342). Remove lock nut (33498), bearings (31824), shaft (33486) and bevel gear (39564) from housing. Unscrew sems fastener (33493) to release gear (39564) from shaft. Remove four screws in cover plate which will release bearings and drill bit adapter.

GEARING – Holding adapter (32326) with a wrench, unscrew adapter (33485) and remove drive gearing. Holding housing (33442) with a wrench, unscrew adapter (32326) and remove auxiliary gearing. On the drive gearing assembly, remove spring (31551), pin (31552), driver (33496) and key (314009). Grasp adapter in one hand and tap end of spindle with a soft face hammer until gearing is released from adapter. Remove rear bearing, press planet gear shafts out of spindle, releasing planet gears and bearings. Remove front bearing and spacer.

MOTOR – Using a wrench, remove motor and motor housing assembly (33442). Tap splined end of rotor (30745) with a soft face hammer to remove motor from housing. Grasp motor cylinder (32824) in one hand and tap splined end of rotor until motor comes apart.

VALVE – Place tool in a holding device, securing on flats of housing. Unscrew plug (30600) and valve parts may easily be removed.

ASSEMBLY

VALVE – Assemble "O" ring (Y325–7) to valve stem (46134). Assemble valve stem, spring (30609), regulator (31026) and "O" ring (Y325–8) into head, aligning hole in regulator with air inlet of head. Secure valve components with "O" ring (Y325–13) and valve plug (30600).

MOTOR – Assemble bearing (Y65–7) into end plate (30750), pressing on outer race of bearing. Assemble end plate (30750) to rotor, pressing on inner race of bearing. Assemble cylinder (32824) over rotor to end plate, aligning roll pin (Y178–22) with hole in rear end plate. Assemble blades to rotor slots – straight side out. Assemble bearing (Y65–15) to front end plate (31158), pressing on outer race of bearing. Assemble end plate to rotor and cylinder, pressing on inner race of bearing. Assemble shield (38805) and cap (38783) to rear end plate. Be sure rotor turns without binding and assemble motor to housing (33442).

GEARING – Assemble spacer and bearing to drive end of spindle. Assemble planet gears and bearings into spindle and secure with planet gear shafts. Align planet gear shafts to spacer with a small screwdriver. Assemble bearing to rear end of spindle. This method applies to both gearing assemblies. If gearing assembly has loose needle–type bearings, apply a small amount of grease to bearings to hold them in place while assembling. Assemble key (31409), driver (33496) and pin (31552) to spindle of drive gearing and secure with spring (31551). Assemble spacer (32305) and gearing to tool.

FLAT ANGLE – Place bearings, gear (40461) and drill bit adapter into housing. Place cover plate in place and secure with four screws. Assemble gear (39564) to shaft (33486) and secure with sems fastener (33493). Assemble shaft (33486) and bearings (31824) into housing and secure with lock nut (33498). Assemble flat angle attachment to tool and secure with screw (Y99–52).