ARO
Tool Products

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

Released: 9–17–90
Revised: 12–8–95
Form: 3703–2

50 SERIES POWER UNIT

Model 7749–( )

⚠ WARNING

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

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

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

⚠WARNING

- Operate this tool at 90 p.s.i.g. (6.2 bar) maximum air pressure at the air inlet of the tool.
- Disconnect air supply from tool before removing/installing bit, socket or device attached to tool or performing maintenance procedures.
- Keep hands, clothing and long hair away from rotating end of tool.
- Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.
- Never exceed rated r.p.m. of tool.
- Wear suitable eye and hearing protection while operating tool.
- Tool shaft can continue to rotate briefly after throttle is released.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel.
- Do not remove any labels. Replace any damaged label.
- Use only accessories recommended by ARO.

⚠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.

NOTICE

- The use of other than genuine ARO replacement parts may result in safety hazards, decreased tool performance and increased maintenance and may invalidate all warranties.
- ARO is not responsible for customer modification of tools for applications on which ARO was not consulted.
- Tool maintenance and repair should be performed by authorized, trained, competent personnel. Consult your nearest ARO authorized servicenter.
- It is the responsibility of the employer to place the information in this manual into the hands of the operator.

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.

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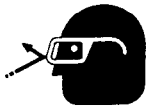
Part of worldwide Ingersoll-Rand

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

⚠ WARNING



Wear eye protection when operating or performing maintenance on this tool.

⚠ WARNING

Wear hearing protection when operating this tool.

⚠ WARNING

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

⚠ WARNING

Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.

⚠ WARNING

Do not carry the tool by the hose.

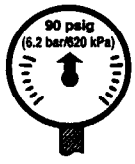
⚠ WARNING

Do not use damaged, frayed or deteriorated air hoses and fittings.

⚠ WARNING

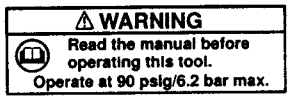
Do not overreach when operating this tool. Keep body stance balanced and firm.

⚠ WARNING



Operate at 90 p.s.i.g. (6.2 bar/620 kPa) maximum air pressure.

NOTICE



PN 48176–1 LABEL

This label must appear on the tool at all times. If it is lost or damaged, a replacement label is available at no cost.

WARNING = Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

CAUTION = Hazards or unsafe practices which could result in minor personal injury or product or property damage.

NOTICE = Important installation, operation or maintenance information.

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 160 HOURS OF TOOL OPERATION – Lubricate gearing. Pack bearings, coat shafts and lubricate gears with NLGI #1 "EP" grease (33153). Gearing should contain approximately 3/64 oz. (1.3 g) of grease for single reduction and 1/16 oz. (1.8 g) for double reduction.

AIR SUPPLY REQUIREMENTS

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

- AIR PRESSURE – 90 p.s.i.g. (6.2 bar)
- AIR FILTRATION – 50 micron
- LUBRICATED AIR SUPPLY
- HOSE SIZE – 5/16" (8 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

INSPECTION, MAINTENANCE AND INSTALLATION

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

It is important that the tools be serviced and inspected at regular intervals for maintaining safe, trouble–free operation of the tool.

Be sure the tool is receiving adequate lubrication, as failure to lubricate can create hazardous operating conditions resulting from excessive wear.

Be sure that the air supply lines and connectors are of proper size to provide a sufficient quantity of air to the tool.

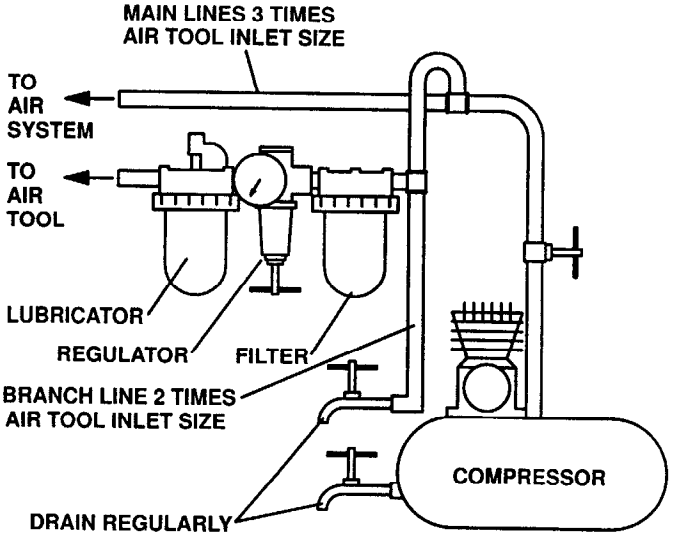
Tool maintenance and repair shall be performed by authorized, trained, competent personnel. Tools, hose and fittings shall be replaced if unsuitable for safe operation and responsibility should be assigned to be sure that all tools requiring guards or other safety devices shall be kept in legible condition. Maintenance and repair records should be maintained on all tools. Frequency of repair and the nature of the repairs can reveal unsafe application. Scheduled maintenance by competent authorized personnel should detect any mistreatment or abuse of the tool and worn parts. Corrective action should be taken before returning the tool for use.

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 re–lubricating the bearing is available. Open bearings may be washed but should not be allowed to spin while being blown dry.

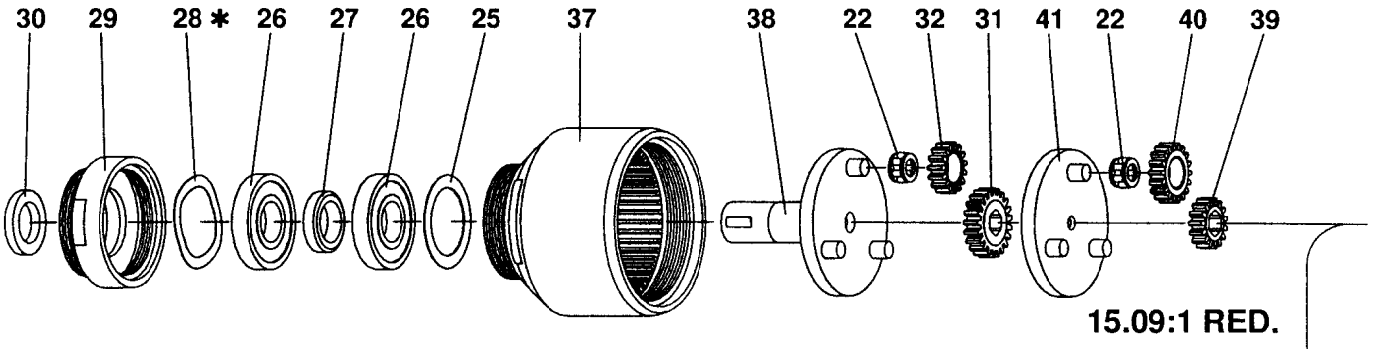
Upon reassembling, lubricate parts where required. Use 33153 grease, or equivalent, in bearings. Use 36460 lubricant for "O" ring assembly. When assembling "O" rings or parts adjacent "O" rings, care must be exercised to prevent damage to the rubber sealing surfaces. A small amount of grease will usually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

When replacement parts are necessary, consult drawing containing the part for identification.

Always use clean, dry air. Dust, corrosive fumes and/or excessive moisture can damage the motor of an air tool. An air line filter can greatly increase the life of an air tool. The filter removes rust, scale, moisture and other debris from the air lines. Low air pressure (less than 90 p.s.i.g.) reduces the speed of the air tool. High air pressure (more than 90 p.s.i.g.) raises performance beyond the rated capacity of the tool and could cause injury. Shown below is a typical piping arrangement.



* ITEMS INCLUDED IN SERVICE KIT NO. 47756.



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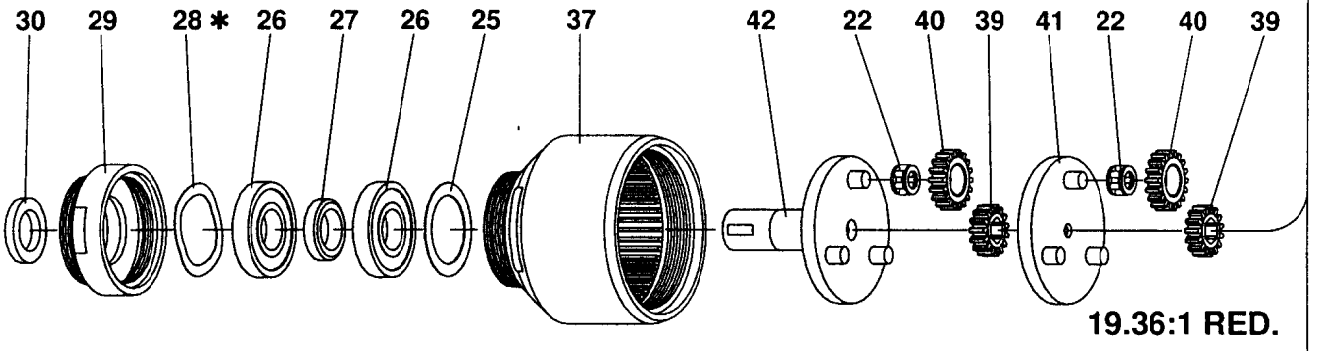

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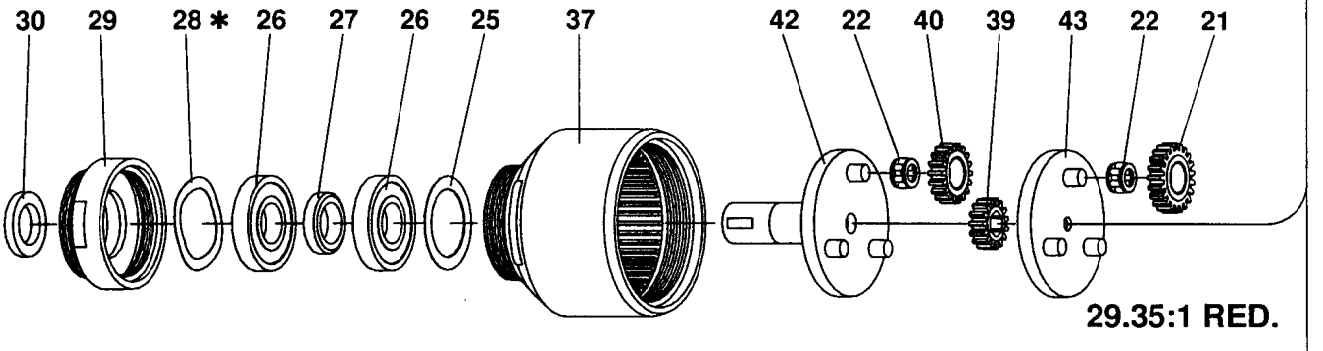

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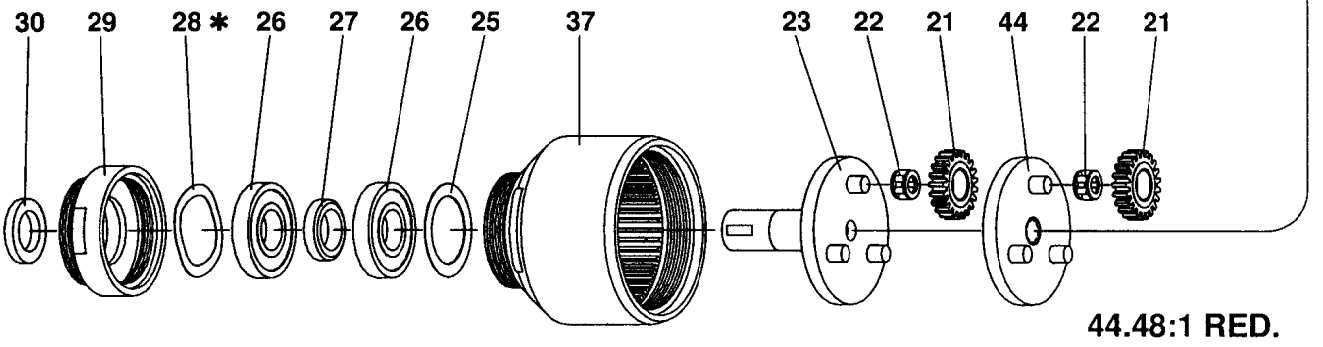

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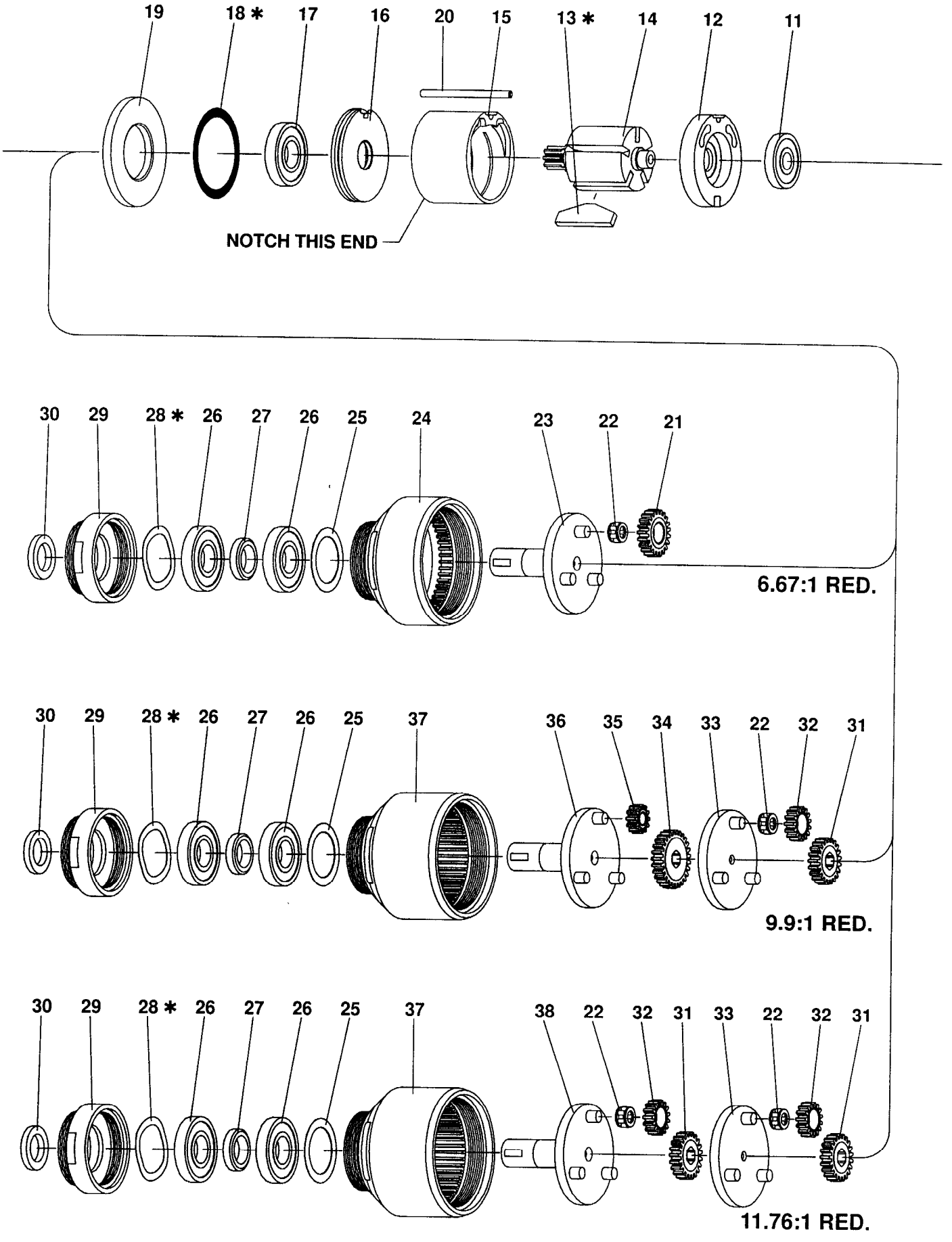
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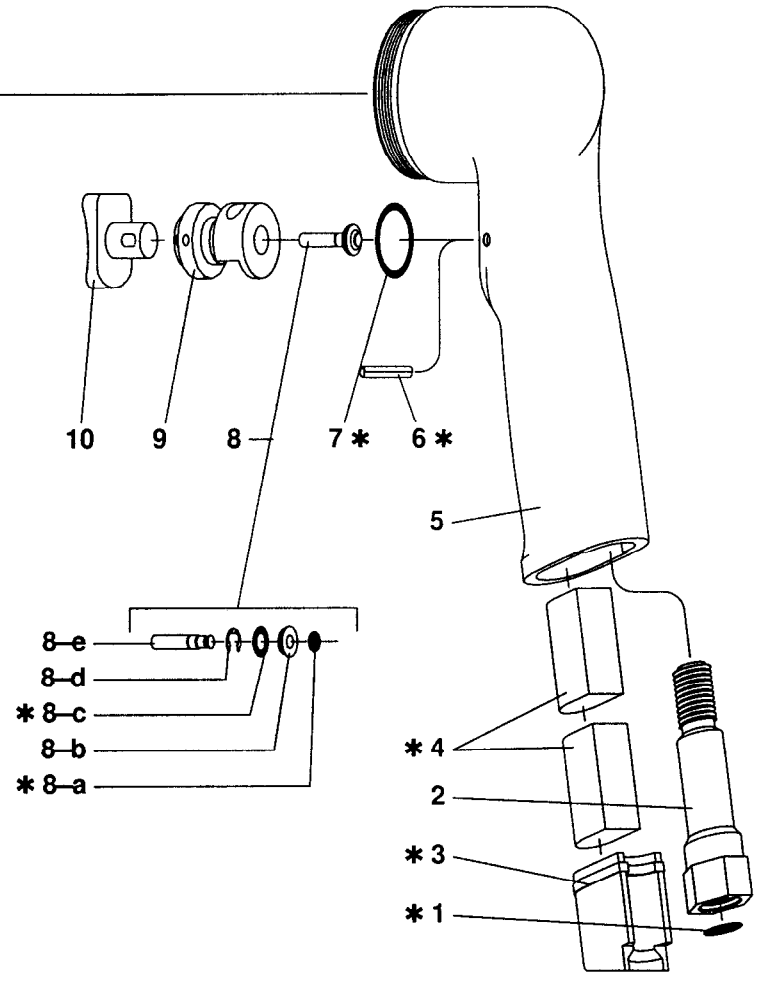
*** ITEMS INCLUDED IN SERVICE KIT NO. 47756.**



		PART NUMBER FOR ORDERING				PART NUMBER FOR ORDERING
1	Screen	33911		22	Needle Bearing (3 or 6 req'd)	42315
2	Inlet Adapter	46385		23	Spindle Assembly	48795–1
3	Muffler Assembly	46857		24	Ring Gear (single reduction)	46713
4	Filler (2 req'd)	46851		25	Spacer	46496
5	Pistol Grip Housing	47367		26	Ball Bearing (2 req'd)	Y65–13
6	Spirol Pin	46849		27	Spacer	46706
7	"O" Ring	Y325–15		28	Washer	47682
8	Valve Stem Assembly	46848–2		29	Lock Nut	48793
8–a	"O" Ring	Y325–3		30	Spacer	46705
8–b	Valve	45473		31	Sun Gear (1 or 2 req'd) 21 teeth	46465
8–c	"O" Ring	Y325–7		32	Planet Gear (3 or 6 req'd) 15 teeth	46899
8–d	Retaining Ring	Y180–13		33	Carrier Assembly	46521
8–e	Valve Stem	46847–2		34	Sun Gear (27 teeth)	46464
9	Plug	48796		35	Planet Gear (3 req'd) 12 teeth	46460
10	Trigger	46298		36	Spindle Assembly	48795–4
11	Ball Bearing	47724		37	Ring Gear (double reduction)	46712
12	Rear End Plate	48797		38	Spindle Assembly	48795–3
13	Blade (5 req'd)	46413		39	Sun Gear (1 or 2 req'd) 15 teeth	46466
14	Rotor	See table		40	Planet Gear (3 or 6 req'd) 18 teeth	46900
15	Cylinder	48201–1		41	Carrier Assembly	46522
16	Front End Plate	48800		42	Spindle Assembly	48795–2
17	Ball Bearing	Y65–13		43	Carrier Assembly	46721
	Motor Assembly (includes items 11 thru 17)	See table		44	Carrier Assembly	47544
18	"O" Ring	Y325–214				
19	Spacer	46412			Service Kit : includes items 1, 3, 4, 6, 7,	
20	Locating Pin	47723–1			8–a, 8–c, 13, 18 and 28	47756
21	Planet Gear (3 or 6 req'd) 21 teeth	46901				

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

- Never apply excessive pressure by a holding device which may cause distortion of a part.
- Apply pressure evenly to parts which have a press fit.
- Apply even pressure to the bearing race that will be press fitted to the mating part.
- Use correct tools and fixtures when servicing this tool.
- Don't damage "O" rings when servicing this tool.
- Use only genuine ARO replacement parts for this tool. When ordering, specify part number, description, tool model number and serial number.

GEARING DISASSEMBLY

_ Using a strap type wrench, unthread and remove ring gear (24 or 37) and components from the tool.
_ Remove spindle(s) and gears from ring gear. NOTE: Keep gears grouped with mating spindle when disassembling double reduction gearing. Do not remove bearings (22) unless damage is evident.
_ Do not remove bearings (26) or spacers (25 or 27) unless damage is evident.
_ To remove bearings (26) and spacers (25 and 27) from ring gear, remove lock nut (29) from ring gear.
_ Do not remove gear (31, 34 or 39) from carrier assembly unless damage is evident. Gear is press fit onto carrier assembly.

GEARING ASSEMBLY

_ Assemble spacer (25) into ring gear.
_ Assemble bearing (26) into ring gear, pressing on outer race of bearing.
_ Coat shafts of spindle with ARO 33153 grease.
_ Assemble gears, containing bearings (22), to shafts of mating spindle.
_ Assemble carrier assembly to spindle assembly of double reduction gearing.
_ Lubricate sets of gears liberally with ARO 33153 grease (approximately 3/64 oz. for single reduction and 1/16 oz. for double reduction).
_ Assemble spindle(s) and gearing into ring gear (24 or 37). Rotate spindle and gears to align gear teeth with splines of ring gear.
_ Assemble spacer (27) to spindle.
_ Assemble bearing (26) to spindle, pressing on inner race of bearing.
_ Assemble washer (28) and lock nut (29) to ring gear.
_ Thread ring gear to tool and tighten, using a strap type wrench.
_ Assemble spacer (30) to spindle.

MOTOR DISASSEMBLY

_ Remove gearing from tool.
_ Remove spacer (19) and "O" ring (18).
_ Tap front edge of housing to remove motor assembly. Locating pin (20) should also come out.
_ Tap drive end of rotor (14) with a soft face hammer; motor will come apart.

MOTOR ASSEMBLY

_ Lubricate bearing (11) with ARO 33153 grease and assemble into end plate (12), pressing on outer race of bearing.
_ Assemble end plate (12) to rotor, pressing on inner race of bearing.
_ Coat five rotor blades (13) with ARO 29665 spindle oil and assemble to rotor slots – straight side out.
_ Coat i.d. of cylinder (15) with ARO 29665 spindle oil and assemble over rotor. NOTE: Air inlet slots in end of cylinder must be aligned with two air inlet slots in end plate (12).
_ Assemble bearing (17) into end plate (16), pressing on outer race of bearing.
_ Assemble end plate (16) to rotor, pressing on inner race of bearing. Be sure rotor turns without binding.
_ Insert locating pin (20) into .096" diameter blind hole at bottom of motor cavity in housing.
_ Align notches of end plates and cylinder and install motor into housing, aligning notches with locating pin (20).
_ Grease and assemble "O" ring (18) to end plate (16).
_ Assemble spacer (19) to motor.
_ Assemble gearing to tool.

HOUSING DISASSEMBLY

_ Drive pin (6) out left side of housing.
_ Remove trigger (10), plug (9), valve assembly (8) and "O" ring (7).
_ Remove "O" ring (8–a), valve (8–b), "O" ring (8–c) and retaining ring (8–d).
_ Remove inlet adapter (2) and screen (1).
_ Remove muffler (3) and fillers (4).

HOUSING ASSEMBLY

_ Grease and assemble "O" ring (7) into housing.
_ Assemble retaining ring (8–d) to valve stem (8–e).
_ Grease and assemble "O" ring (8–c) to valve (8–b).
_ Assemble valve (8–b) to valve stem, with smallest diameter of valve going on valve stem first.
_ Grease and assemble "O" ring (8–a) to valve stem.
_ Assemble valve stem thru plug (9) and install plug, with valve components, into housing, aligning .102" diameter holes in housing and plug.
_ Assemble trigger (10) to plug, securing with spirol pin (6). NOTE: Insert pin (6) from left side of housing.
_ Install fillers (4) and muffler (3) into housing, securing with inlet adapter (2).
_ Clean and replace screen (1) in inlet adapter (2).

MODEL NUMBER	R.P.M.	ROTOR (ITEM 14)	MOTOR ASSEMBLY	GEARING REDUCTION
7749–4	400	46470	48799	44.48:1
7749–6	600	46470	48799	29.35:1
7749–10	1000	46454	48798	19.36:1
7749–12	1200	46454	48798	15.09:1
7749–15	1500	46454	48798	11.76:1
7749–19	1900	46454	48798	9.9:1
7749–28	2800	46470	48799	6.67:1