

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

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Form: 3610-2

MODEL 7747-()
POWER UNIT WITH GOVERNOR

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

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.
- Never exceed rated r.p.m. of tool.
- Use tool only for purposes for which it was intended.
- SHUT OFF and DISCONNECT AIR SUPPLY from tool BEFORE performing maintenance or service to 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 160 HOURS OF TOOL OPERATION – Lubricate gearing. Pack bearings, coat shafts and lubricate gears with NLGI #1 "EP" grease (33153).

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 128231-800 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
Gears and Bearings	33153	5 lb. "EP" – NLGI #1 Grease
"O" Rings & Lip Seals	36460	4 oz. Stringy Lubricant
Governor	43967	1 lb. "EP" Molybdenum Disulfide and White Solid Lubricants in Mineral Oil

MODEL NUMBER	R.P.M.	GOVERNOR ASSEMBLY	AUXILIARY GEARING	DRIVE GEARING	TOTAL REDUCTION
7747-1	250	48631-1	48972	48630-1	36:1
7747-2	325	48631-2	48972	48630-1	36:1
7747-3	375	48631-3	48972	48630-1	36:1
7747-4	400	48631-1	48972	48633-1	21:1
7747-5	550	48631-2	48972	48633-1	21:1
7747-6	650	48631-3	48972	48633-1	21:1
7747-7	675	48631-1	48996	48633-1	12.25:1
7747-8	1000	48631-2	48996	48633-1	12.25:1
7747-9	1100	48631-3	48996	48633-1	12.25:1
7747-10	1425	48631-1	48972	48635-1	6:1
7747-11	2000	48631-2	48972	48635-1	6:1
7747-12	2375	48631-3	48972	48635-1	6:1
7747-13	2450	48631-1	48996	48635-1	3.5:1
7747-14	125	48631-4	48972	48630-1	36:1

THE ARO CORPORATION • ONE ARO CENTER • BRYAN, OHIO 43506-0151
PH: (419) 636-4242 • FAX (419) 636-2115

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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.

DRIVE GEARING DISASSEMBLY

- ___ Loosen set screws (52), where applicable.
- ___ Using wrenches on flats of nose housing (50) and motor housing (13), unthread and remove nose housing.
- ___ Pull drive gearing from gear housing (37).
- ___ Do not disassemble further unless damage is evident.
- ___ To disassemble, alternately tap ends of shafts (35), loosening bearing (43).
- ___ Remove bearing, thrust race (36) and shafts (35), releasing gears.

DRIVE GEARING ASSEMBLY

- ___ Pack bearings and lubricate gears liberally with ARO 33153 grease when assembling. Gearing assembly should contain approximately 1/8 oz. (3.5 g) of grease.
- ___ Lubricate needle bearings (32) and assemble to gears.
- ___ Assemble gears to spindle, securing with shafts (35).
- ___ Assemble thrust race (36) and bearing (43) to spindle, pressing on inner race of bearing.
- ___ Assemble spindle and components into gear housing (37).
- ___ Assemble nose housing (50) to tool, tightening securely.
- ___ Assemble set screws (52) to nose housing, where applicable.

AUXILIARY GEARING DISASSEMBLY

- ___ Remove drive gearing (see "Drive Gearing Disassembly").
- ___ Slide exhaust sleeve (27) off and remove screen (29) and muffler pad (30).
- ___ Using wrenches on flats of gear housing (37) and motor housing (13), unthread and remove auxiliary gearing from tool.
- ___ Remove retaining ring (38).
- ___ Tap splined end of spindle with a soft faced hammer; spindle and components will loosen from gear housing (37).
- ___ Bearing (43) is press fit in gear housing. Do not remove bearing unless damage is evident.
- ___ Remove thrust race (36) and shafts (35), releasing gears.

AUXILIARY GEARING ASSEMBLY

- ___ Pack bearings and lubricate gears liberally with ARO 33153 grease when assembling. Gearing assembly should contain approximately 1/8 oz. (3.5 g) of grease.
- ___ Assemble bearing (43) into gear housing, pressing on outer race of bearing.
- ___ Lubricate needle bearings (32) and assemble to gears.
- ___ Assemble gears to spindle, securing with shafts (35).
- ___ Assemble thrust race (36) to spindle and assemble spindle into gear housing (37), securing with retaining ring (38).
- ___ Grease "O" rings (28) and assemble to gear housing.
- ___ Assemble gear housing (37) to motor housing, aligning splines of rotor with splines of gears. Tighten securely using wrenches on flats of gear housing and motor housing.

- ___ Assemble muffler pad (30) and screen (29) to gear housing, securing with exhaust sleeve (27).
- ___ Assemble drive gearing to tool.

MOTOR DISASSEMBLY

- ___ Remove gearing from tool.
- ___ Tap front edge of motor housing to remove motor assembly.
- ___ Place splines of rotor in a suitable holding device, being careful not to damage splines.
- ___ Place a 1-5/16" open end or adjustable type wrench across governor body. CAUTION: DO NOT place wrench across governor weights which protrude from governor body. Unthread and remove governor assembly – LEFT HAND THREADS. Remove with care so governor components will not be damaged.
- ___ Remove retaining ring (26) and tap drive end of rotor with a soft faced hammer; motor will come apart.
- ___ Remove end plate (17) and bearing (16) from rotor.

MOTOR ASSEMBLY

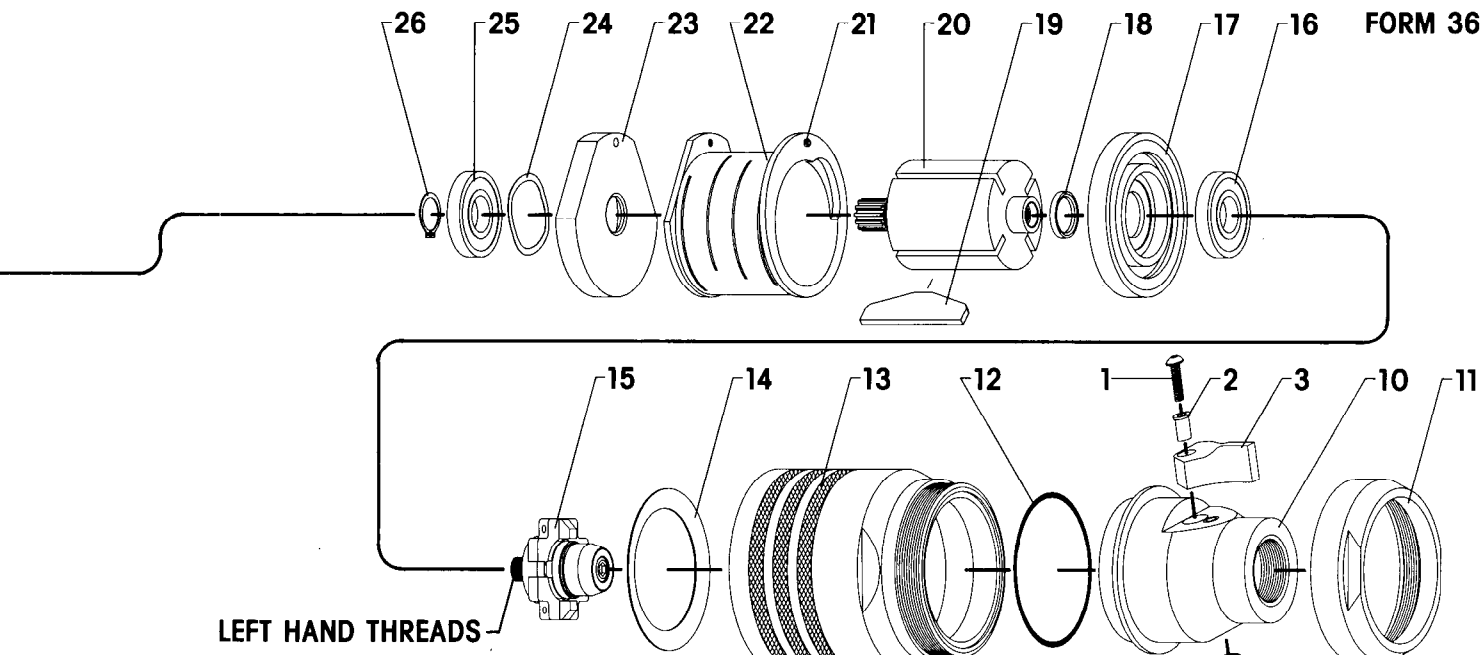
- ___ Lubricate bearing (16) with ARO 33153 grease and assemble to end plate (17) with shielded side of bearing facing out. NOTE: Press on outer race of bearing.
- ___ Assemble spacer (18) and end plate (17) to rotor, pressing on inner race of bearing.
- ___ Coat rotor blades (19) with ARO 29665 spindle oil and assemble to rotor slots – straight side out.
- ___ Coat i.d. of cylinder (22) with ARO 29665 spindle oil and assemble over rotor, aligning roll pin in cylinder with hole in end plate (17).
- ___ Assemble spring washer (24) and bearing (25) to end plate (23), pressing on outer race of bearing.
- ___ Assemble end plate (23) to rotor, pressing on inner race of bearing.
- ___ Assemble retaining ring (26) to rotor.
- ___ Lubricate areas of governor assembly (15) as indicated on cross-section with ARO 43965 lubricant.
- ___ Assemble governor assembly to rotor – LEFT HAND THREADS – and torque to 9 - 11 ft lbs.
- ___ Assemble washer (14) and motor assembly into motor housing. NOTE: Assemble washer (14) with large diameter going into motor housing first.
- ___ Assemble gearing to tool.

THROTTLE DISASSEMBLY

- ___ Remove screw (1), releasing lever (3) and bushing (2).
- ___ Remove plug (9) and "O" ring (8), releasing spring (6) and valve (5).
- ___ Unthread and remove lock nut (11), releasing housing (10) and "O" ring (12).

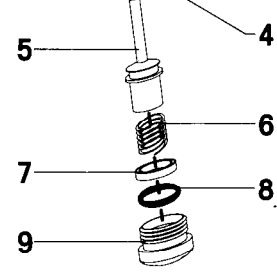
THROTTLE ASSEMBLY

- ___ Grease and assemble "O" ring (12) to housing (10).
- ___ Assemble housing (10) to motor housing (13), securing with lock nut (11).
- ___ Assemble lever (3) and bushing (2) to housing (10), securing with screw (1).
- ___ Grease and assemble "O" ring (4) to valve (5).
- ___ Lubricate narrow end of valve (5) with ARO 33153 grease and assemble into housing (10).
- ___ Assemble spring (6) into head.
- ___ Grease and assemble "O" ring (8) and seal (7) to plug (9). NOTE: Assemble seal with lips facing away from plug.
- ___ Assemble plug (9) to head (10), securing valve (5) and spring (6).



PART NUMBER FOR ORDERING

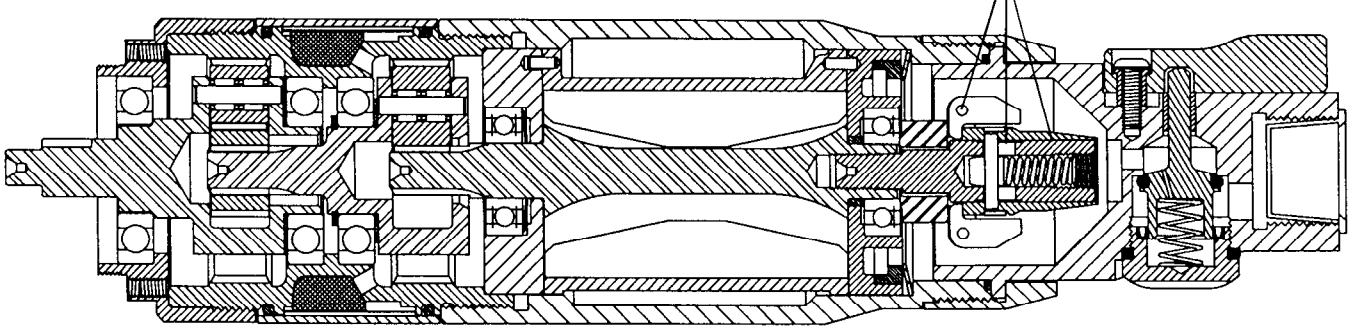
1	Screw	45808
2	Bushing	43533
3	Lever	43526
4	"O" Ring	Y325-111
5	Valve	43539
6	Spring	41283
7	Lip Seal	41447
8	"O" Ring	Y325-117
9	Plug	42481
10	Housing	48638-1
11	Lock Nut	48636-1
12	"O" Ring	Y325-32
13	Motor Housing	48624-1
14	Belleville Washer	46155
15	Governor Assembly (see Model Identification Chart)	48631(-)
16	Bearing	34690
17	Rear End Plate	46179
18	Spacer	33555
19	Blade (4 req'd)	45406
20	Rotor	48623-1
21	Roll Pin (2 req'd)	Y178-18
22	Cylinder (includes item 21)	48629-1
23	Front End Plate	48632-1
24	Spring Washer	35963
25	Bearing	31064
26	Retaining Ring	41663
MOTOR ASSEMBLY (includes items 16 thru 26)		48628-1
27	Exhaust Sleeve	45412
28	"O" Ring (2 req'd)	Y325-141
29	Screen	44941
30	Muffler Pad	46726
31	Spindle	45410-1



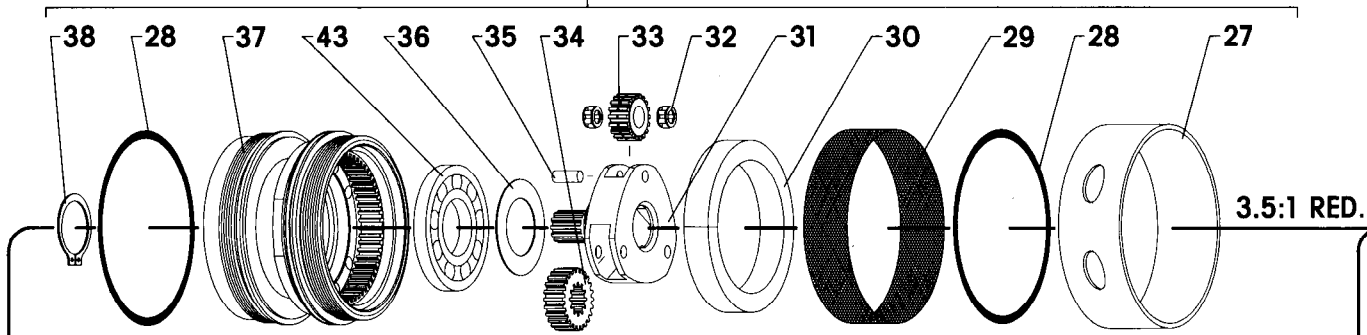
PART NUMBER FOR ORDERING

32	Needle Bearing (6 req'd)	42271
33	Planet Gear (3 req'd) 3.5:1 ratio (18 teeth)	45315
34	Sun Gear (12 interior - 24 exterior teeth)	45310
35	Pin (3 req'd)	45322
36	Thrust Race	45080
37	Gear Housing (includes item 43)	48971
38	Retaining Ring	Y145-23
39	Gearing Assembly 3.5:1 ratio	48996
40	Spindle	45410-2
41	Planet Gear (3 req'd) 6:1 ratio (24 teeth)	41427
42	Gearing Assembly 6:1 ratio	48972
43	Bearing	39527
44	Spindle	48969-1
45	Gearing Assembly 3.5:1 ratio	48633-1
46	Spindle	48969-2
47	Gearing Assembly 6:1 ratio	48630-1
48	Drive Spindle	48970
49	Gearing Assembly 1:1 ratio	48635-1
50	Nose Housing	48627-1
51	Bearing	39527
52	Set Screw (2 req'd)	Y29-82

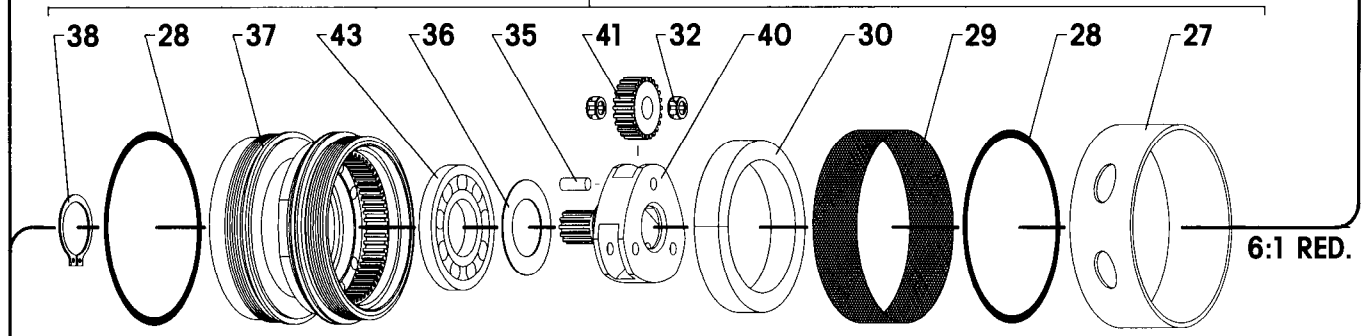
GOVERNOR LUBRICATION POINTS



39 48996 GEARING ASSEMBLY

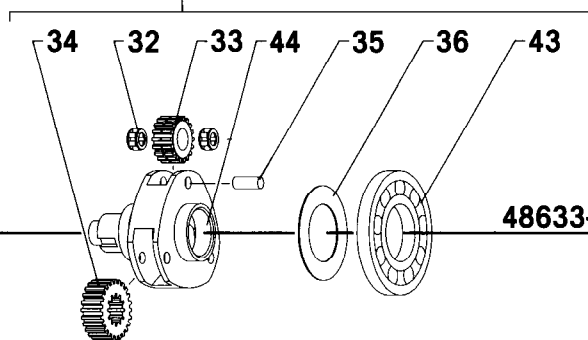


42 48972 GEARING ASSEMBLY

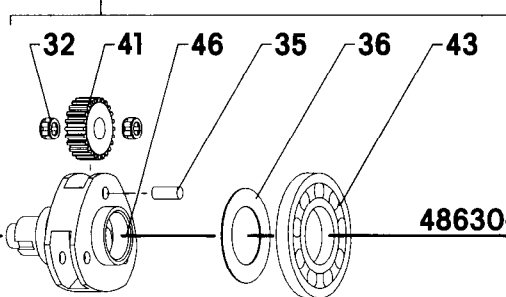


* NOT USED ON MODELS USING 1:1 RED. GEARING

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