

**MODELS ORB 6 NCS, ORB 6 NCI, ORB 6 NLS AND ORB 6 NL1
RANDOM ORBITAL SANDERS**

NOTICE

ARO is not responsible for customer modification of tools for applications on which ARO was not consulted.



⚠ WARNING

**IMPORTANT SAFETY INFORMATION ENCLOSED.
READ THIS MANUAL BEFORE OPERATING TOOL.**

**IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION
IN THIS MANUAL INTO THE HANDS OF THE OPERATOR.**

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

PLACING TOOL IN SERVICE

- Always operate, inspect and maintain this tool in accordance with American National Standards Institute Safety Code for Portable Air Tools (ANSI B186.1).
- For safety, top performance, and maximum durability of parts, operate this tool at 90 psig (6.2 bar/620 kPa) maximum air pressure at the inlet with 5/16" (8 mm) inside diameter air supply hose.
- 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.
- Do not use damaged, frayed or deteriorated air hoses and fittings.
- Be sure all hoses and fittings are the correct size and are tightly secured. See Dwg. TPD905-1 for a typical piping arrangement.
- Always use clean, dry air at 90 (6.2 bar/ 620 kPa) psig maximum air pressure. Dust, corrosive fumes and/or excessive moisture can ruin the motor of an air tool.
- 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.

USING THE TOOL

- Always wear eye protection when operating or performing maintenance on this tool.
- Always wear hearing protection when operating this tool.
- Keep hands, loose 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.
- Keep body stance balanced and firm. Do not overreach when operating this tool. High reaction torques can occur at or below the recommended air pressure.
- Tool accessories may continue to rotate briefly after throttle is released.
- 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.
- Use accessories recommended by ARO.
- This tool is not designed for working in explosive atmospheres.
- This tool is not insulated against electric shock.

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.

Repairs should be made only by authorized trained personnel. Consult your nearest ARO Authorized Servicenter.

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



WARNING LABEL IDENTIFICATION

⚠ WARNING

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

	<p>⚠ WARNING</p> <p>Always wear eye protection when operating or performing maintenance on this tool.</p>
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	<p>⚠ WARNING</p> <p>Always wear hearing protection when operating this tool.</p>
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	<p>⚠ WARNING</p> <p>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.</p>
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	<p>⚠ WARNING</p> <p>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.</p>
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	<p>⚠ WARNING</p> <p>Do not carry the tool by the hose.</p>
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	<p>⚠ WARNING</p> <p>Do not use damaged, frayed or deteriorated air hoses and fittings.</p>
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	<p>⚠ WARNING</p> <p>Keep body stance balanced and firm. Do not overreach when operating this tool.</p>
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	<p>⚠ WARNING</p> <p>Operate at 90 psig (6.2 bar/ 620 kPa) Maximum air pressure.</p>
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WARNING	
<p>⚠ WARNING</p> <p>Read the manual before operating this tool. Operate at 90 psig/6.2 bar max.</p>	  
<p>PN 48176-1 LABEL (NON-EU MODELS)</p>	<p>PN 49883 LABEL (-EU MODELS)</p>
<p>This label must appear on the tool at all times. If it is lost or damaged, a replacement label is available at no cost.</p>	

SANDER SPECIFIC WARNINGS

- Use only a sanding pad, buffing wheel or polishing bonnet with these tools. Do not use any grinding wheel, bur or metal removing accessory other than a sanding pad with these tools. Never use an accessory having a maximum operating speed less than the free speed of the Sander in which it is being used.
- These Sanders will operate at the free speed specified on the nameplate if the air supply line furnishes 90 psig (6.2 bar/620 kPa) air pressure at the tool. Operation at higher air pressure will result in excessive speed.
- Do not operate this Sander away from the work surface.
- Check for excessive speed and vibration before operating.
- Do not use this tool if actual free speed exceeds the nameplate rpm.
- Never exceed the rated rpm of tool.
- 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 tool who experience vibrations should closely monitor duration of use and their physical condition.
- When using a pad having a shank, insert the shank to full depth in the collet. When using a pad on a threaded arbor, make certain the flange nut is tightened securely. Check the tightness of the collet nut or flange nut before operating a Sander to make certain it will not loosen during operation.
- Always use the recommended ARO Guard furnished with the Sander.

LUBRICATION



<u>Where Used</u>	<u>ARO Part #</u>	<u>Description</u>
"O" Rings & Lip Seals	36460	4 oz. Stringy Lubricant
Gears and Bearings	33153	5 lb. "EP" – NLGI #1 Grease

Always use an air line lubricator with these tools.

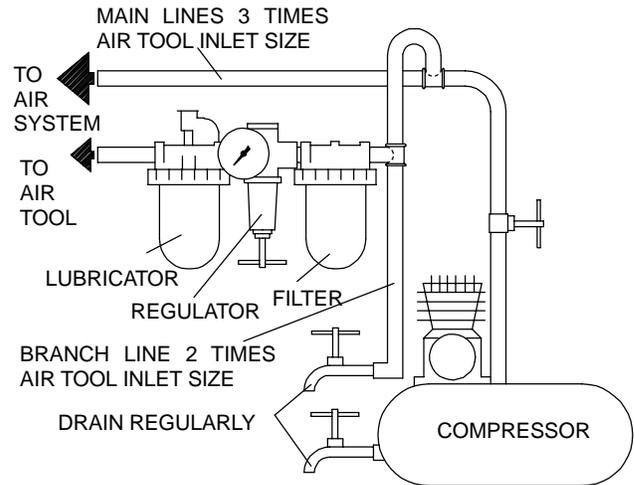
We recommend the following Filter–Lubricator–Regulator Unit:

ARO Model 129231–000 plus 29851 Gauge

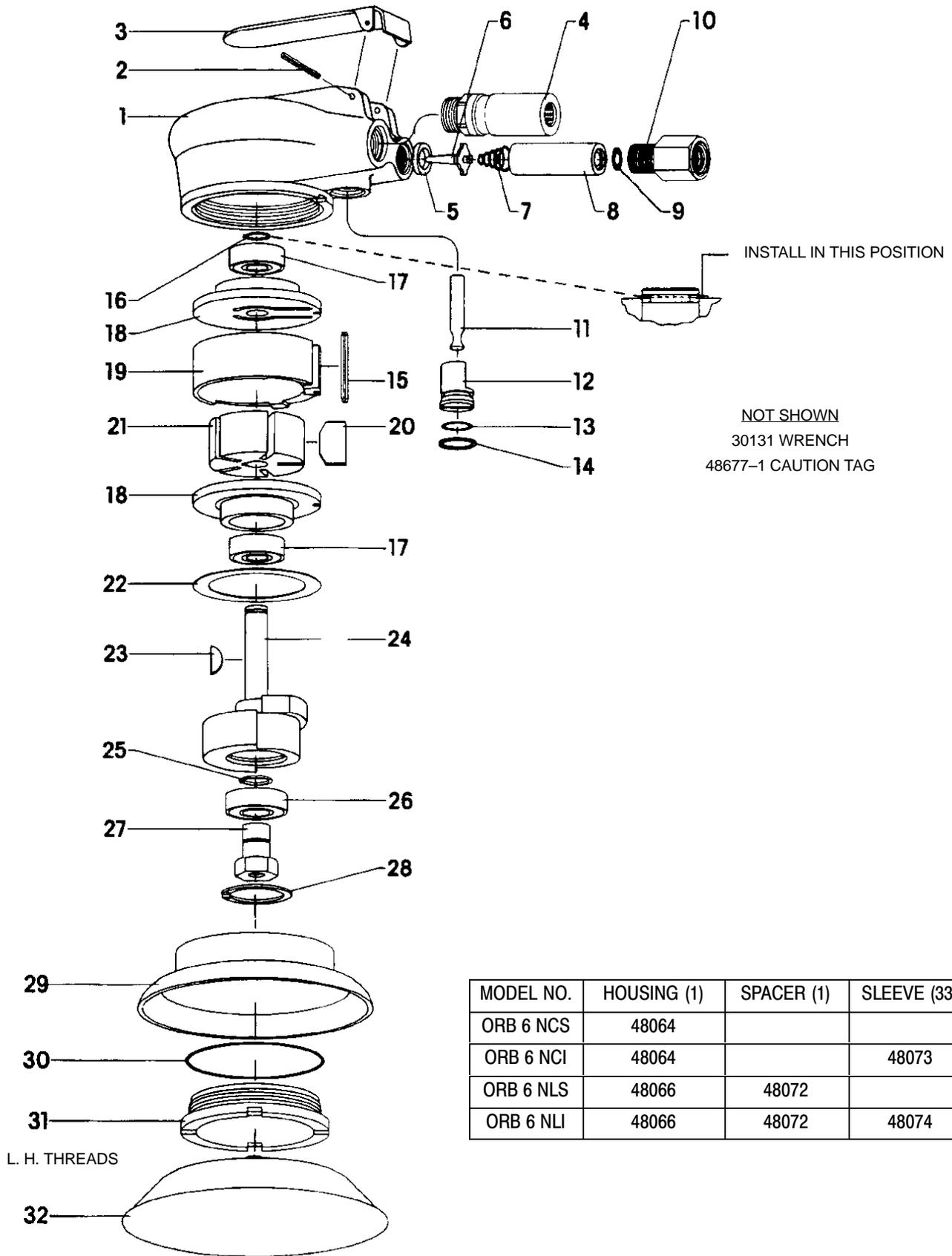
After each 160 hours of operation, inject one or two strokes of ARO Part #33153 grease through the end of the spindle (27) to lubricate the needle bearing which is in the end of the counterbalance (24). The sanding pad (32) must be removed from the spindle to allow injection of the grease.

CAUTION

Do not mark any nonmetallic surface on this tool with customer identification codes. Such actions could affect tool performance.



(Dwg. TPD905–1)



(ATP-44)

1	Housing	See table	18	End Plate (2 req'd)	44529
2	Roll Pin	Y178-33	19	Cylinder	44531
3	Lever	48067-1	20	Blade (5 req'd)	48317-1
4	Muffler	48171-1	21	Rotor	44532-2
5	Seat	48071	22	Spacer	44878
6	Tip Valve	48070	23	Key	39442
7	Spring	32858	24	Counterbalance (includes needle bearing)	46874-2
8	Spacer	See table	25	Retaining Ring	Y145-18
9	"O" Ring	Y325-14	26	Bearing	44541
10	Inlet Adapter	48069	27	Spindle	44540
11	Valve Stem	48065	28	Retaining Ring	Y147-112
12	Regulator	48068	29	Guard	44535
13	"O" Ring	Y325-13	30	"O" Ring	Y325-36
14	Retaining Ring	Y147-62	31	Lock Ring	44536
15	Roll Pin	Y178-47	32	Sanding Pad	49097-1
16	Retaining Ring	44533	33	Sleeve (not shown)	See table
17	Bearing (2 req'd)	48169-1			

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

▲ 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.

NOTICE

- 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.

MOTOR DISASSEMBLY

- Remove sanding pad (32).
- Remove retaining ring (28).
- Remove spindle (27), retaining ring (25) and bearing (26).
- Remove bearing lock ring (31) – LEFT HAND THREADS – "O" ring (30) and guard (29).
- Remove motor assembly and pin (15). NOTE: It may be necessary to tap housing with a soft face hammer to loosen motor from housing.
- Remove retaining ring (16).
- Using special brass blocks to fit around o.d. of cylinder, clamp around cylinder and press shaft of counterbalance thru bearing (17) and end plate (18).
- Remove blades (20), rotor (21) and key (23).
- Remove other bearing (17) and end plate (18).

MOTOR ASSEMBLY

- Assemble bearings (17) into end plates (18), pressing on outer race of bearings.
- Assemble spacer (22) over counterbalance (24).
- Assemble one end plate (18), with bearing (17), onto shaft of counterbalance.
- Install key (23) in key slot.

- Assemble rotor (21) to counterbalance (24), aligning keyway to key (23).
- Coat five rotor blades (20) with 29665 spindle oil and assemble to rotor slots – straight side out.
- Coat i.d. of cylinder (19) with 29665 spindle oil and assemble over rotor.
- Assemble other end plate (18) to shaft of counterbalance, pressing on inner race of bearing.
- Install retaining ring (16) to groove in counterbalance, with bow of ring positioned as shown on parts illustration page.
- Align notches in end plates and cylinder and install roll pin (15) to notches.
- Assemble motor to housing, aligning pin (15) with groove in housing.
- Seat spacer (22) against end plate (18).
- Grease and assemble "O" ring (30) to bearing lock ring (31).
- Assemble guard (29) over lock ring (31) and thread lock ring into housing – LEFT HAND THREADS. Tighten securely.
- Lubricate roller bearing, contained in counterbalance, with 33153 grease.
- Assemble bearing (26) to spindle (27), securing with retaining ring (25).
- Assemble spindle assembly (27) to counterbalance (24), securing with retaining ring (28).
- Assemble sanding pad (32) to tool.

THROTTLE DISASSEMBLY

- Remove guard (29) – see motor disassembly.
- Remove inlet adapter (10) and "O" ring (9), releasing spacer (8) (where applicable), spring (7) and valve (6). NOTE: Do not remove seat (5) unless damage is evident.
- Remove retaining ring (14), releasing regulator (12) with "O" ring (13) and valve stem (11).
- To remove lever, remove roll pin (2).

THROTTLE ASSEMBLY

- Grease and assemble "O" ring (13) to regulator (12).
- Assemble valve stem (11) to housing, with hole in valve stem in line with housing to accept valve (6).
- Coat valve (6) with 29665 spindle oil and assemble to housing, securing valve stem (11).
- Secure valve with spring (7), spacer (8)(where applicable), "O" ring (9) and inlet adapter (10).
- Assemble regulator (12) to housing, securing with retaining ring (14).

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