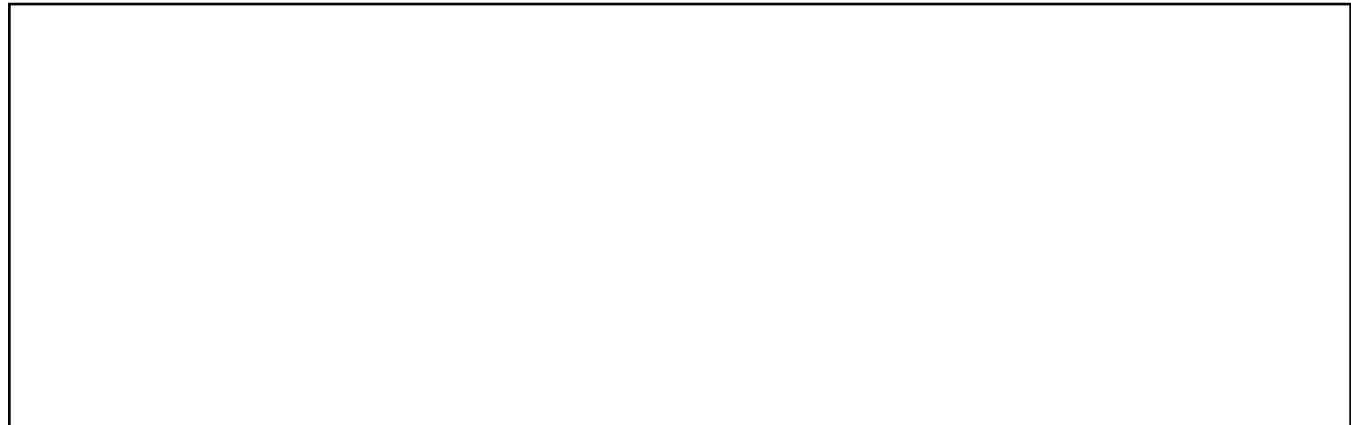



Model: 12–2240 Series

45-8180

Oscillating Saws Rear Exhaust


This manual covers all catalog numbers charted below:

14,000 CYCLES PER MINUTE	THROTTLE TYPE	TOOL TYPE
12L2240-36 12S2240-36	Lever Locking Lever	300 Series Collet (1/4" standard)
12L2240-90 12S2240-90	Lever Locking Lever	Threaded Spindle for 3/8" Arbor Hole Saw Blade Note: MAX. DIAMETER SAW BLADE = 2-1/2"

<u>TERMINATION 36</u> 300 Series Collet: #308 (1/4") is standard. Consult catalog for optional collets.	OVERHOSE OPTION: (extra cost) Add "OH" at end of model designation. "OH" specifies overhose components on Rear Exhaust models. MODEL NUMBER EXAMPLE: 12L2240-36OH is a 1/4" collet style with an overhose option.
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Saw Blades with 3/8" Arbor Hole:

Blade Part Num.	Diameter	Type	Maximum Depth & Width of Cut	Recommended For
14-1740	2"	Carbide Chip* 36/80 Grit	7/16" x 3/32"	Fiberglass
14-1741	2"	Diamond Chip* 40/60 Grit	7/16" x 5/64"	Fiberglass, Carbon Composites
14-1742	2-1/2"	Stainless Chip, 124 Teeth	9/16" x 3/64"	Wood, Uncured or Cured Composites, Aluminum, Plastic
14-1746	2-1/2"	Flush Stainless, 124 Teeth	9/16" x 3/64"	Wood, Uncured or Cured Composites, Aluminum, Plastic
14-1743	2-1/2"	Carbide** 80 Teeth	9/16" x 1/16"	Cured Graphite Composites
14-1744	2-1/2"	Razor	9/16" x 3/64"	Cardboard, Light Plastic

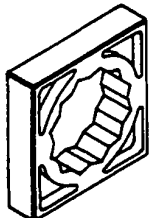
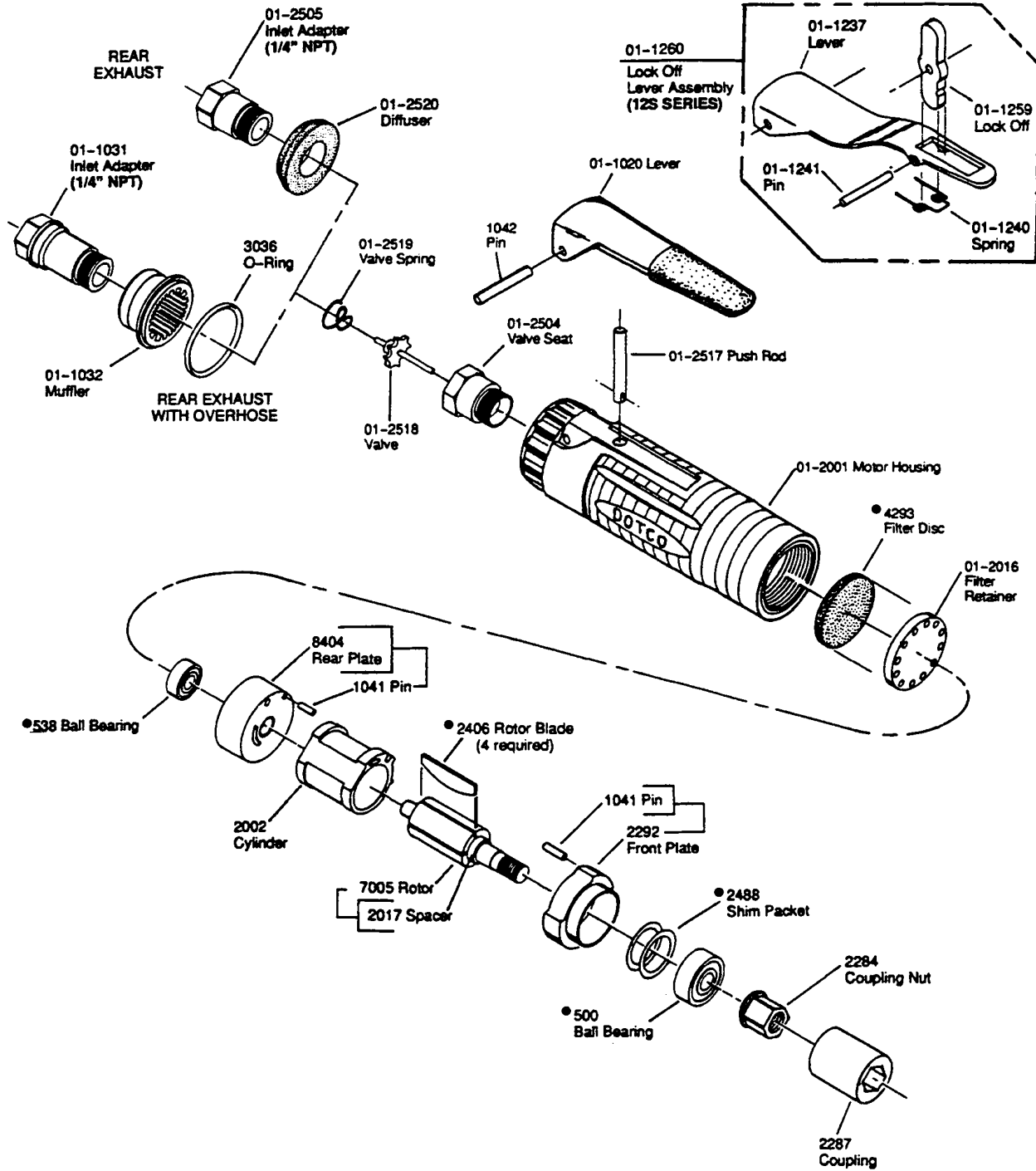
(*) CAUTION: Use only for sawing non-metallic materials.

(**) Specifications subject to change.

 For additional product information visit our web site at <http://www.coopertools.com>

CooperTools P.O. BOX 1410 Lexington, South Carolina 29071-1410
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DOTCO 12-22 Series ERGO Right Angle Oscillating Saws Motor & Motor Housing Assemblies



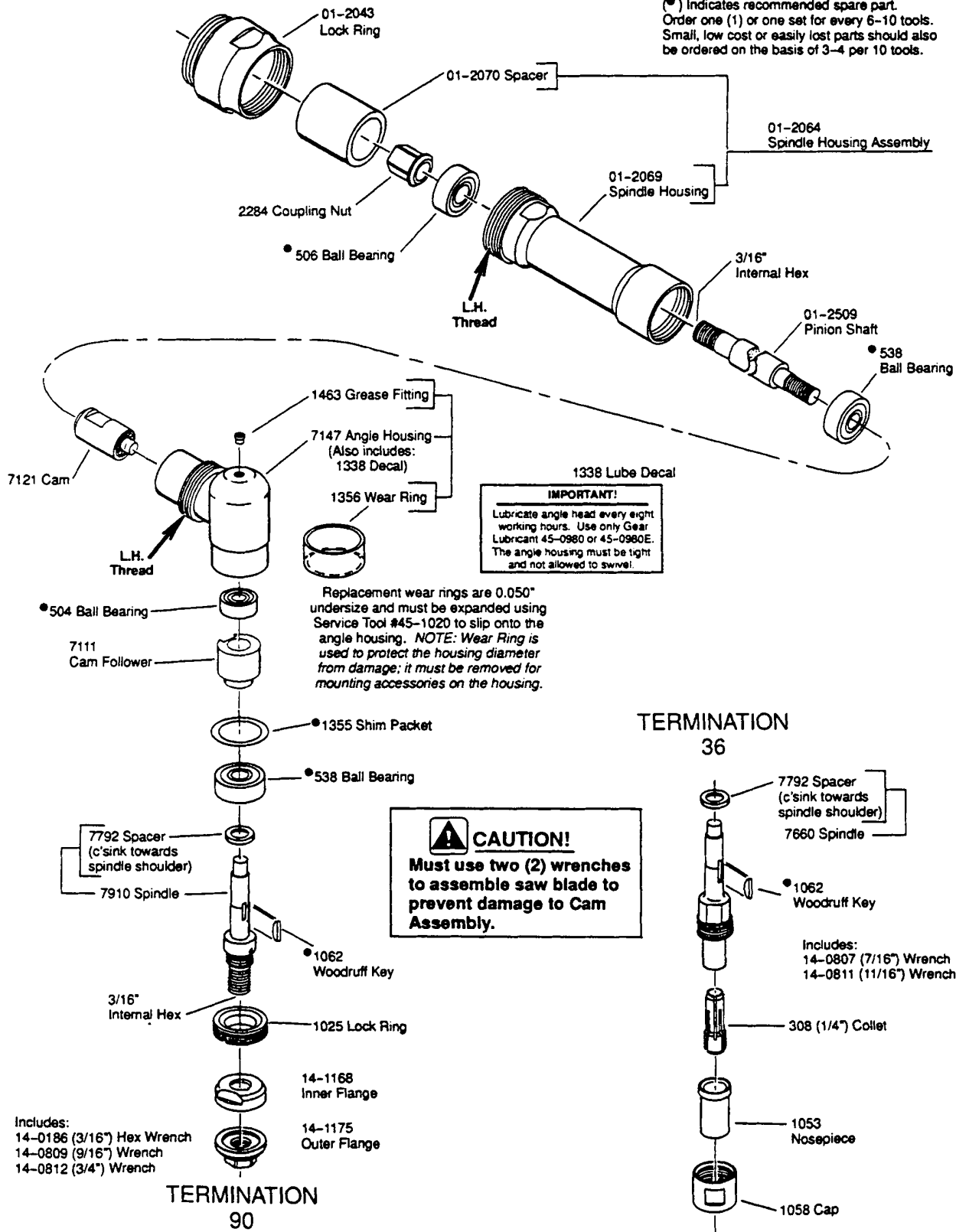
14-0851
Housing Wrench, or use
1-3/8" (12 pt.) Socket

(*) Indicates recommended spare part.
Order one (1) or one set for every 6-10 tools.
Small, low cost or easily lost parts should also
be ordered on the basis of 3-4 per 10 tools.

DOTCO

12-22 Series ERGO Right Angle Oscillating Saws Angle Head Assemblies

(*) Indicates recommended spare part.
Order one (1) or one set for every 6-10 tools.
Small, low cost or easily lost parts should also
be ordered on the basis of 3-4 per 10 tools.



INSTALLATION

For best tool performance, a working air pressure of **90 pounds per square inch** is recommended. Pipings, fittings and hose should be adequate to maintain **90 psig** while the tool is in operation. An air line filter and lubricator, such as Cooper Power Tool's #F02-M Filter (1/4" NPT) and #L02-EP Lubricator (1/4" NPT) should be used (**refer to Cooper's "F-R-L" brochure**). Hose should be blown out before attaching to the tool.

LUBRICATION

The motor must be lubricated and free of moisture. Use a high grade SAE #5 spindle oil, such as Cooper's Lubricating Oil #45-0918 (*one quart*). Two or three drops per minute should be sufficient.

LOSS OF POWER

It is seldom necessary to disassemble this tool for loss of power. A loss of power may not be related to the tool. First, check the air line regulator. Also check the air line pressure; it should be 90 psig at or near the tool while it is running. Check the size of hose and fittings to be certain they are not causing air restrictions. Make certain they are not plugged with dirt, rust or scale.

SERVICE INSTRUCTIONS

Do not squeeze tool or parts in a vise except as specified. Care must be used in their assembly and disassembly. When pressing bearings onto a shaft, press only on the inner race. When pressing bearings into a bore, press on the outer race only. NOTE: ball bearings are the shielded type. They are lubricated for life by the bearing manufacturer and should not be washed out with solvents to clean.

DISASSEMBLY INSTRUCTIONS

To Disassemble Complete Saw:

1. Place the special 12—point socket wrench, *part #14-0851*, horizontally in a vise and insert the tool's housing vertically into the wrench. Unscrew Lock Ring (*part #01-2043*) and remove the angle head assembly from the tool.

2. **To remove & disassemble motor:** Once the angle head assembly has been removed, pull motor from housing. Hold motor in one hand and tap the rear of rotor (*part #7005*) with a brass drive punch until Rear Plate (*part #8404*) and Ball Bearing (*part #538*) are free from rotor. Remove Cylinder (*part #2002*) and four Rotor Blades (*part #2406*).

Coupling Nut (*part #2284*) may be removed by holding the rotor in soft vise jaws and unthreading the coupling nut. The Front Plate (*part #2292*) and Ball Bearing (*part #500*) can now be pressed off (NOTE: do not lose Spacer - *part #2017*).

3. Removing spindle housing from angle head:

Lightly hold the Angle Head Housing (*part #7147*) in soft vise jaws (BE CAREFUL NOT TO CRUSH) and remove spindle housing assembly with wrench on flats at rear of spindle housing - NOTE: LH Thread.

4. Using a 3/16" hex wrench in rear of Pinion Shaft (*part #01-2509*) and an open end wrench on Coupling Nut (*part #2284*), remove coupling nut. Push rear end of Pinion Shaft (*part #01-2509*) to disassemble from spindle housing. Now, clamp Pinion Shaft in soft vise jaws and remove Cam (*part #7121*) and Ball Bearing (*part #538*).

5. **To disassemble angle head:** Remove Lock Ring (*part #1025*) and pull out the spindle assembly. Remove Ball Bearing (*part #504*) and press off Cam Follower (*part #7111*). After key is removed, ball Bearing (*part #538*) can be pressed off spindle.

ASSEMBLY INSTRUCTIONS

All parts should be thoroughly cleaned and inspected before assembly. Ball bearings are normally replaced in most repairs.

To assemble motor:

6. Make sure all parts are clean and oiled. Press Pins (*part #1041*) —if necessary— into the motor end plates. To correct for bearing tolerances, it is necessary to use shims to maintain correct clearances between the ends of the rotor and the bearing plates. Shim Packet (*part #2488*) contains a 0.001" shim and two 0.002" shims. Insert a 0.002" Shim in the Front Bearing Plate's pocket and install #500 Ball Bearing into the Front Plate. Also, install #538 Ball Bearing into the Rear Bearing Plate, #8404. Slip Spacer, *part #2017*, onto the threaded end of the Rotor. Support the rotor on the *rear end* and assemble the front plate assembly onto the rotor by pressing on the bearing's inner

race. Thread Driver (*part #2284*) onto rotor tightly by holding rotor in soft vise jaws.

7. Hold rotor in left hand and front bearing plate in the other hand. Apply an outward (pulling) pressure and observe the spacing between the end of the rotor and bearing plate. This must be from flush, not rubbing, to 0.002" maximum. If the rotor rubs the bearing plate, reduce the spacing between the bearing and bearing plate by removing the 0.002" shim entirely or by substituting the 0.001" shim for the 0.002" shim. However, if there was more than 0.002" between the bearing and bearing plate, **add 0.001"** between the bearing and bearing plate. Install Cylinder (*part #2002*) - NOTE: BE SURE CYLINDER IS NOT ON BACKWARDS, air inlet in cylinder must line up with air inlet in Rear Plate (*part #8404*) when Pin (*part #1041*) is engaged in mating slot of cylinder.

ASSEMBLY INSTRUCTIONS*(continued)***Motor assembly (continued):**

8. Insert all four Rotor Blades (*part #2406*) in rotor. Support the assembly on the face of the Driver (*part 2284*). Press on the Rear Plate (*part #8404*) by pressing on the inner race of Ball Bearing (*part #538*) just enough to bring the bearing plate up against the cylinder. There should be only a slight drag between the bearing plate and the cylinder when these are moved in the fingers. Position cylinder until motor turns freely.

9. Insert motor assembly into housing. Screw in Lock Ring (*part #01-2043*), but do not tighten at this time.

To assemble angle head:

10. Make certain all parts are properly cleaned. Press Ball Bearing (*part #538*) against spindle shoulder; press only on bearing's inner race. Insert key (*part #1062*) in slot of spindle. Align keyway of Cam Follower (*part #7111*) with key and press onto spindle until it seats on inner race of bearing. Complete the spindle assembly by pressing on Ball Bearing (*part #504*) until it seats on spindle's shoulder.

Insert this assembly into housing and thread Lock Ring (*part #1025*) into housing until tight.

spindle housing/spindle subassembly:

11. To assemble the pinion assembly, press bearing (*part #538*) onto Pinion Shaft (*part #01-2509*) and thread on Cam (*part #7121*). Hold pinion shaft in soft vise jaws and tighten cam. Slide this assembly into Spindle Housing (*part #01-2069*); then, install Ball Bearing (*part #506*) and Coupling Nut (*part #2284*) on rear end of pinion shaft. Hold pinion shaft with a 3/16" hex wrench and tighten Coupling Nut (*#2284*) with an open end wrench. Thread this assembly onto angle housing *being careful to align Cam and Cam Follower*. (NOTE: LH THREAD). Tighten spindle housing.

To assemble complete angle head assembly to the motor:

12. Install Coupling (*part #2287*) over motor's Coupling Nut (*part #2284*) and thread the angle head assembly into the Lock Ring (*part #01-2043*) – NOTE: LH threads. Be sure that driver in angle head properly engages Coupling (*#2287*). Before tightening, position the angle head assembly approximately in the desired position and hold both housings while tightening Lock Ring. Test assembly at reduced speed. NOTE: IT'S IMPORTANT THAT THE LOCK RING REMAINS TIGHT.