AUTOMOTIVE

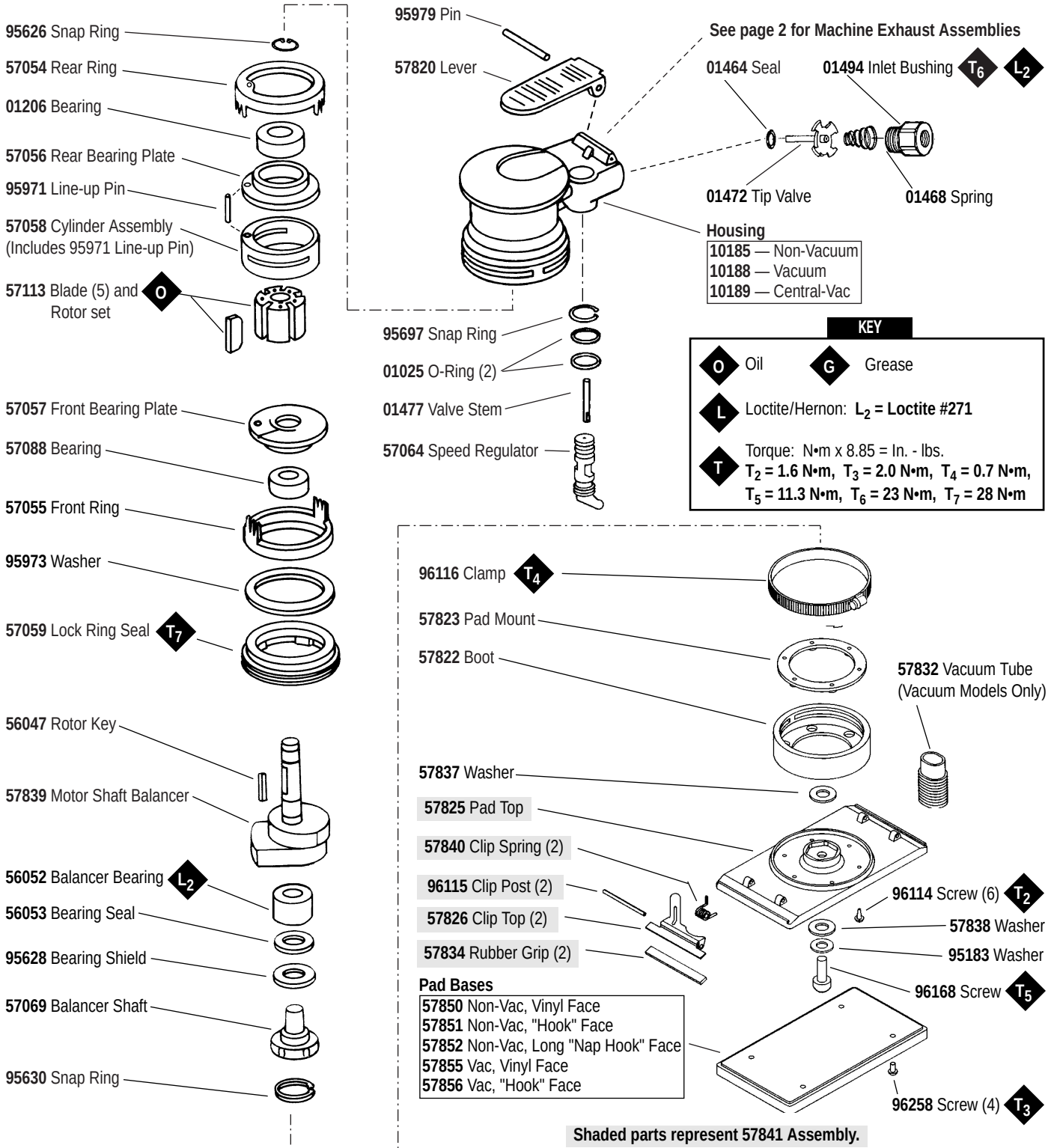
Parts Page Reorder No. APD97•13
Effective September, 1997
Supercedes APD97•05

Models:
10170 - Non-Vacuum
10171 - Vac-Ready
10172 - Basic Vacuum
10173 - Deluxe Vacuum
10174 - Central Vac-Ready

Dynabug Orbital Sander

For Serial Number 7F1045 and higher
***Air-Powered "Jitterbug-Type" Sander,* 8,000 RPM**

⚠WARNING **Always operate, inspect and maintain this tool in accordance with the Safety Code for portable air tools (ANSI B186.1) and any other applicable safety codes and regulations. Please refer to Dynabrade's Warning/Safety Operating Instructions for more complete safety information.**



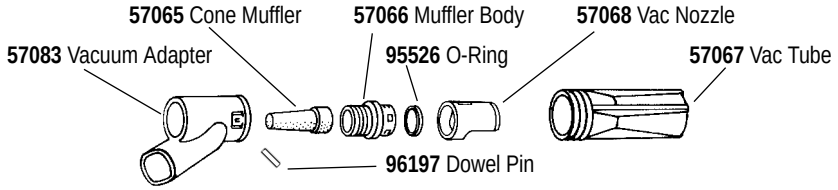
Shaded parts represent 57841 Assembly.

Note: To order replacement parts specify the model and serial number of your machine.

Machine Exhaust Assemblies

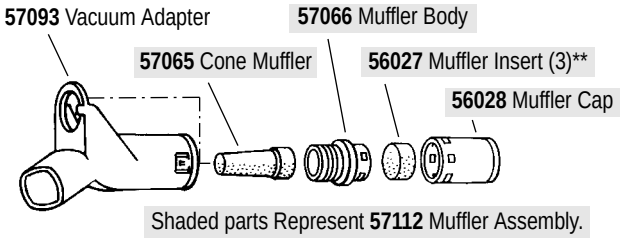
Self Generated Vacuum (Vac-Ready) / Machine Exhaust

For Models: 10171, 10172, 10173



Central Vacuum / Machine Exhaust

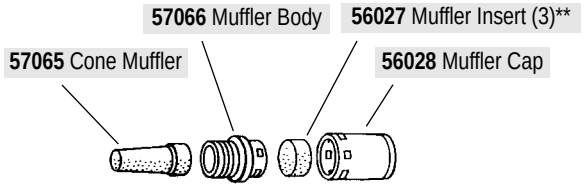
For Model: 10174



Shaded parts Represent **57112** Muffler Assembly.

Non-Vacuum / Machine Exhaust

For Model: 10170



** Muffler inserts available in Package of 30 - P/N **56054.**

Important Operating, Maintenance and Safety Instructions

Carefully read all instructions before operating or servicing any Dynabrade® Abrasive Power Tool.
Warning: Hand, wrist and arm injury may result from repetitive work motion and overexposure to vibration.
Important: All Dynabrade air tools must be used with a Filter-Regulator-Lubricator to maintain all warranties.

Operating Instructions:

Warning: Eye, face and body protection must be worn while operating power tools. Failure to do so may result in serious injury or death. Follow safety procedures posted in workplace.

1. With power source disconnected from tool, securely fasten abrasive/accessory on tool.
2. Install air fitting into inlet bushing of tool. **Important:** Secure inlet bushing of tool with a wrench before attempting to install the air fitting to avoid damaging valve body housing.
3. Connect power source to tool. Be careful not to depress throttle lever in the process.
4. Check tool speed with tachometer. If tool is operating at a higher speed than the RPM marked on the tool or operating improperly, the tool should be serviced to correct the cause before use.

Maintenance Instructions:

1. Check tool speed regularly with a tachometer. If tool is operating at a higher speed than the RPM marked on the tool, the tool should be serviced to correct the cause before use.
2. Some silencers on air tools may clog with use. Clean and replace as required.
3. All Dynabrade air motors should be lubricated. Dynabrade recommends one drop of air lube per minute for each 10 SCFM (example : if the tool specification state 40 SCFM, set the drip rate of your filter-lubricator at 4 drops per minute). Dynabrade Air Lube (P/N **95842**: 1pt. 473ml.) is recommended.
4. An air line filter-regulator-lubricator must be used with this air tool to maintain all warranties. Dynabrade recommends the following: **11289** Air Line Filter-Regulator-Lubricator — Provides accurate air pressure regulation, two-stage filtration of water contaminants and micro-mist lubrication of pneumatic components. Operates 40 CFM @ 100 PSI has 3/8" NPT female ports.
5. Use only genuine Dynabrade replacement parts. To reorder replacement parts, specify the **Model #**, **Serial #**, and **RPM** of your machine.
6. A motor tine-up kit (P/N **96024**) is available which includes assorted parts to help maintain motor in peek operating condition.
7. Mineral spirits are recommended when cleaning the tool and parts. Do not clean tool or parts with any solvents or oils containing acids, esters, keytones, chlorinated hydrocarbons or nitro carbons.

Safety Instructions:

Products offered by Dynabrade should not be converted or otherwise altered from original design without expressed written consent from Dynabrade, Inc.

- **Important:** User of tool is responsible for following accepted safety codes such as those published by the American National Standards Institute (ANSI).
- Operate machine for one minute before application to workpiece to determine if machine is working properly and safely before work begins.
- Always disconnect power supply before changing abrasive/accessory or making machine adjustments.
- Inspect abrasives/accessories for damage or defects prior to installation on tools.
- Please refer to Dynabrade's Warning/Safety Operating Instructions Tag (Reorder No. **95903**) for more complete safety information.

Model Number	Length Inch (mm)	Height Inch (mm)	Machine Weight	Air Flow Rate SCFM (LPM)	Sound Level	Motor HP (W)	Motor RPM	Air Pressure PSI (Bars)
All Models	7-1/4" (184)	4-1/4" (108)	2.75 lbs. (1.2 kg)	13 (368)	83 dBA	.18 (134)	8,000	90 (6.2)

Additional specifications: Air Inlet Thread 1/4" (6 mm) NPT • Hose Size 1/4" (6 mm)

Motor Assembly/Disassembly Instructions – Dynabug Orbital Sander

Important: Manufacturers warranty is void if tool is disassembled before warranty expires.
A Motor Repair Kit (57098) is available which contains special tools for disassembly/assembly. Please refer to parts breakdown for part identification.

To Disassemble:

1. Disconnect tool from power source. Invert machine and secure in vice, using **57092** Collar (supplied in **57098** Repair Kit) or padded jaws.

2. Disconnect sanding pad by removing **96258** Screws (4) with a 3.0 mm wrench.

3. With a Phillips head screw driver remove **96114** Screws (6). Remove **96168** Screw with 3/16" hex wrench, and remove pad top from boot.

4. Disengage **96116** Clamp by using a screwdriver to unscrew clamp. Remove clamp, **57822** Boot and **57823** Pad mount from housing.

5. Insert **56058** Lock Ring Tool (supplied in **57098** Repair Kit) into corresponding tabs of lock ring and unscrew. Motor may now be lifted out for service.

6. Remove rear ring from motor. Upper motor may now be disassembled. Remove **95626** Snap Ring.

7 Remove the rear plate and the cylinder assembly by securing the cylinder in a bearing separator gripped on the cylinder exhaust and extra pocket area. Push the motor shaft balancer through the bearing.

8. Remove the rotor, vanes and rotor key from the motor shaft balancer. Remove the front plate using a small (#2) arbor press. Support the edges of the front plate while pressing on the small end of the motor shaft balancer.

9. **a.)** If, during step 9, the front plate and bearing remain together, press bearing out of the front plate using **57091** Press Tool (supplied in **57098** Repair Kit).
b.) If, during step 9, the front plate and **57088** Bearing remains on the motor shaft balancer, it can be removed with a bearing separator.

11. Remove **01206** Bearing from the rear plate by using a bearing press tool. Remove lock ring, washer and front ring.

12. Disassemble the balancer assembly as follows:
a.) Place motor shaft assembly into a soft jaw vise. Using a thin screwdriver, pick out the end of **95630** Snap Ring and peel out.
b.) Screw the threaded portion of the **56056** Bearing Puller (supplied in **57098** Repair Kit) into the **57069** Balancer Shaft and heat the outside of the motor shaft balancer to approximately 200° F (approximately 10 seconds with a propane torch). Now, using the slider weight, pull the assembly out.
c.) Press off **56052** Bearing with a bearing separator and remove bearing seal and bearing shield.

13. If during step 12, the **56052** Bearing remains in the motor shaft balancer, it can be removed by the heating the shaft balancer again and using either an inside bearing puller or a blind hole bearing puller.

Tool disassembly complete.

To Reassemble

Important: Be certain parts are clean and in good repair before reassembling.

1. Assemble the balancer assembly as follows:
a.) Install **95630** Snap Ring onto **57069** Balancer Shaft. Install **95628** Shield with convex face toward hex of balancer shaft. Install **56053** Seal.
Note: Be certain seal is pressed completely over shaft step.
b.) Apply 1 drop of #271 Loctite® (or equivalent) and spread over several places around the inside diameter of the **56052** Bearing and the outside diameter of the **57069** Balancer Shaft.
c.) Press fit **56052** Bearing with seal side toward hex of balancer shaft up to shaft step. This must be a firm press fit for proper retention of bearing.

2. Place the motor shaft balancer in a soft jaw vise with large end-up.

3. Apply 1 drop of #271 Loctite® (or equivalent) and spread over several places around the outside diameter of the **56052** Bearing and slide balancer assembly into the motor shaft balancer until **56052** Bearing is firmly seated at bottom. Squeeze **95630** Snap Ring into groove in motor shaft balancer to complete the assembly. Remove from vise.

4. Press **57088** Bearing onto the motor shaft balancer down to the shoulder. Place lock ring, washer and front ring on motor shaft balancer.

5. Press **57057** Front Bearing Plate onto **57088** Bearing and check for smooth rotation.

6. Place the **57090** Rotor and **56047** Rotor Key on the motor shaft balancer. Place the **56073** Vanes into the rotor slots
Note: Vanes should be lightly lubricated with Dynabrade Air Lube P/N **95842** (or equivalent)before installation into the rotor slots.

7. Place **57058** Cylinder Assembly over rotor. The "short" line-up pin goes toward the front plate.

8. Place **57056** Rear Bearing Plate (with rear bearing pressed into place) over shaft and "long" end of line-up pin and press fit in place**.** Insert **95626** Snap Ring

9. Place **57054** Rear Ring over the rear plate and line-up pin. Make sure that the "legs and fingers" on the front and rear rings line-up.

10. Secure motor housing in vise, using **57092** Collar or padded jaws. Spread 2-3 drops of pneumatic tool oil around the housing bore and slide motor assembly in housing. **Note:** Be certain line-up pin enters the pocket in bottom of the housing and the "legs" of the rings stay in line.

11. Tighten lock ring with **56058** Lock Ring Tool torque to 28 N•m/250 in. - lbs.

12. Insert **57823** Pad Mount into boot. Attach boot to housing with exhaust hole facing back and slide clamp over boot.

13. Place **57837** Washer into hex pocket with shoulder down. Line-up holes in pad top with holes in boot and secure with **96114** Screws (6).

14. Secure pad top and boot to motor assembly by installing **57838** Washer, **95183** Washer and **96168** Screw through pad top and into balancer shaft.

15. Position pad top to desired angle and tighten clamp to 0.7 N•m/6 in. - lbs. so that the top of the clamp is even with the top of the boot.

16. Attach sanding pad by installing **96258** Screws (4).

Valve and Speed Regulator Assemblies:

1. Secure housing in vice using **57092** Collar or padded jaws. Remove inlet bushing, **01468** Spring, tip valve and seal from housing.

2. Remove **95697** Snap Ring. Press the speed regulator and valve stem out of the housing. Remove the **01025** O-Rings (2).

3. Place new **01025** O-Rings (2) on the speed regulator and place in housing with valve stem. Install new **95967** Snap Ring.

4. Place seal in housing. Using tweezers or needle nose pliers, place the tip valve in the housing so that its pin goes into the valve stem hole. Place **01468** Spring into the housing so the small end is toward the tip valve.

5. Spread one drop of #271 Loctite® (or equivalent) around the first threads of the first inlet bushing and tighten into housing torque to 23 N•m/200 in. - lbs..

Tool assembly is complete. Please allow 30 minutes for adhesives to cure before operating tool.

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(continued on next page)

Vacuum Conversion Instructions

To Disassemble:

1. Disconnect tool from power source. Invert machine and secure in vise, using **57092** Collar (supplied in **57098** Repair Kit) or padded jaws.
2. Remove **56028** Muffler Cap and **56027** Muffler Insert (3) from **57066** Muffler Body. Using a 12mm hex wrench (supplied in **57098** Repair Kit), remove muffler body and **57065** Cone Muffler from housing (not applicable for Self-Generated Vac to Central Vac).

Non-Vac to Self-Generated Vac for Hook-Up to Self-Contained Dust Collection System

1. Attach **57083** Vacuum Adapter to **57832** Vacuum Tube. Then attach to the housing making sure the tube is secured in the hole in the pad top.
2. Place **95526** O-Ring on the muffler body between the shoulder and the four (4) protrusions. Using a 12mm hex wrench, attach the muffler body, cone muffler and O-ring to the housing through the vacuum adapter.
3. Place vacuum nozzle into the vacuum adapter with the slots facing outward making sure that the knob on the nozzle is aligned with the slot in the adapter.
4. Place **57067** Vacuum Tube into the vacuum adapter with the grooves facing inward until the adapter "snaps" onto the tube and the tube cannot be pulled out. If the tube can be pulled out, rotate it 1/4 turn and place it back into the adapter until it "snaps".
5. Rotate tube until holes line up. Insert **96197** Dowel Pin in holes until it is centered.
6. Attach machine to portable dust collection system.

Non-Vac to Central Vac

1. Attach **57093** Vacuum Adapter to **57832** Vacuum Tube. Then attach to the housing making sure the tube is secured in the hole in the pad top.
2. Using a 12mm hex wrench, attach the muffler body and cone muffler to the housing through the central vacuum adapter.
3. Place muffler cap with inserts on muffler body making sure that the protrusions on the body fit in the pockets on the cap.
4. Attach machine to central vacuum system.

Self-Generated Vac to Central Vac

1. Remove **96197** Dowel Pin with an 1/8" drive pin.
2. Remove **57067** Vacuum Tube from the **57083** Vacuum Adapter by turning it clockwise while pulling backwards.
3. Using a small flat screwdriver, pry the vacuum nozzle until it is loose and then remove it by using two fingers to push and pull it until it hits the "legs" on the vacuum adapter. Place the vacuum tube back into the vacuum adapter far enough to push the "legs" back then push the vacuum nozzle and the vacuum tube out the rest of the way.
4. Using a 12mm hex wrench (supplied in **57098** Repair Kit), remove the **57066** Muffler Body, **57065** Cone Muffler and **95526** O-Ring from the housing through the adapter. Remove the O-ring from the muffler body.
5. Remove **57083** Vacuum Adapter and attach **57093** Vacuum Adapter to to **57832** Vacuum Tube.
6. Using a 12mm hex wrench, attach the muffler body, cone muffler and O-ring to the housing through the central vacuum adapter.
7. Place muffler cap with inserts on muffler body making sure that the protrusions on the body fit in the pockets on the cap.
8. Attach machine to central vacuum system.

Central Vac to Self Generated Vac

1. Remove **57093** Central Vacuum Adapter and put the **57083** Vacuum Adapter in its place.
2. Place **95526** "O" Ring on the muffler body between the shoulder and the four (4) protrusions. Using a 12mm hex wrench (supplied in **57098** Repair Kit), attach the muffler body, cone muffler and O-ring to the housing through the vacuum adapter.
3. Place vacuum nozzle into the vacuum adapter with the slots facing outward making sure that the knob on the nozzle is aligned with the slot in the adapter.
4. Place **57067** Vacuum Tube into the vacuum adapter with the grooves facing inward until the adapter "snaps" onto the tube and the tube cannot be pulled out. If the tube can be pulled out, rotate it 1/4 turn and place it back into the adapter until it "snaps".
5. Rotate tube until holes line up. Insert **96197** Dowel Pin in holes until it is centered.
6. Attach machine to portable dust collection system.

Accessories



96024 Motor Tune-Up Kit:
Includes assorted parts to help maintain motor in tip-top shape.



57098 Motor Repair Kit:
Includes special tools for proper disassembly/assembly of the machine.

DYNABRADE®

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