Parts Page Reorder No. PD00•81
Effective November, 2000
Supersedes PD96•82

# .7 Hp/Gearless/Rear Exhaust
# 3" Disc Sander

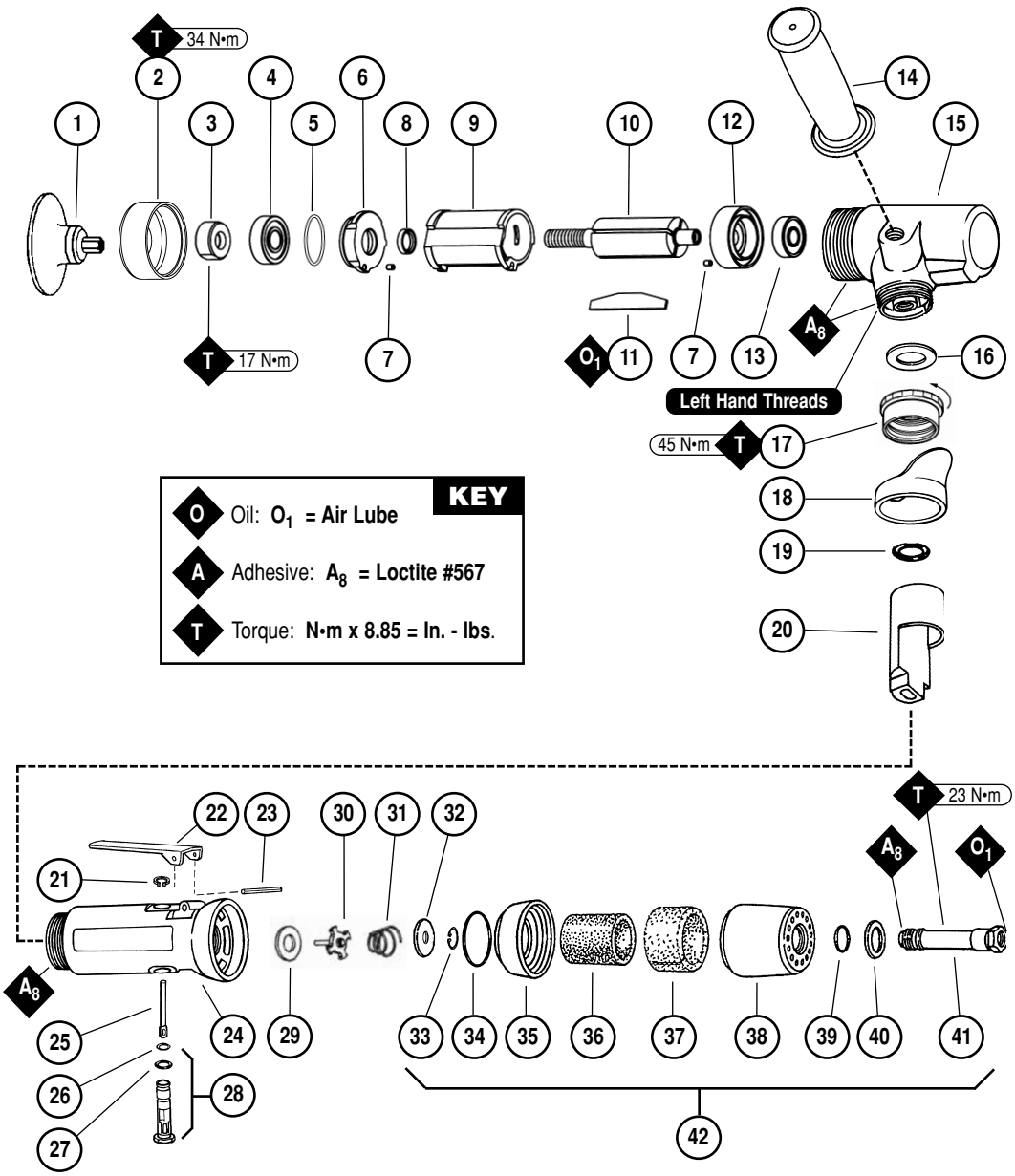
*Air Motor and Machine Parts*

***Models:***
**52413 – 15,000 RPM**
**52414 – 18,000 RPM**
**52415 – 20,000 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.**

**Index Key**

| No. | Part # | Description |
|---|---|---|
| 1 | **50113** | Roloc® Disc Pad |
| 2 | **04034** | Exhaust Cover |
| 3 | **01708** | Rotor Nut |
| 4 | **01007** | Bearing |
| 5 | **01121** | Shim Pack (3/pkg.) |
| 6 | **01008** | Bearing Plate |
| 7 | **50767** | Pin (2) |
| 8 | **01010** | Rotor Spacer |
| 9 | **01028** | Cylinder |
| 10 | **55025** | Rotor |
| 11 | **01185** | Blade Set (4/pkg.) |
| 12 | **01743** | Rear Bearing Plate |
| 13 | **02649** | Bearing |
| 14 | **53163** | Handle |
| 15 | **01739** | Housing |
| 16 | **01548** | Gasket |
| 17 | **01461** | Lock Nut |
| 18 | **01558** | Collar |
| 19 | **95523** | O-Ring |
| 20 | **01470** | Insert |
| 21 | **95558** | Retaining Ring |
| 22 | **01448** | Throttle Lever |
| | **01462** | Safety Lock Lever |
| 23 | **12132** | Pin |
| 24 | **02175** | Housing – **52413** |
| | **02176** | Housing – **52414** |
| | **02177** | Housing – **52415** |
| 25 | **01449** | Valve Stem |
| 26 | **95730** | O-Ring |
| 27 | **01024** | O-Ring |
| 28 | **01469** | Speed Regulator Assy. |
| 29 | **01464** | Seal |
| 30 | **01472** | Tip Valve |
| 31 | **01468** | Conical Spring |
| 32 | **01606** | Cntrl. Ring 15,000 RPM |
| | **01564** | Cntrl. Ring 20,000 RPM |
| 33 | **95711** | Retaining Ring |
| 34 | **95438** | O-Ring |
| 35 | **94521** | Muffler Base |
| 36 | **94524** | Sintered Muffler |
| 37 | **94525** | Felt Muffler |
| 38 | **94522** | Muffler Cap |
| 39 | **95375** | O-Ring |
| 40 | **94526** | Spacer |
| 41 | **94523** | Inlet Adapter |
| 42 | **94520** | Muffler Adapter |




**Please indicate: Model #**, **Serial #**, and **RPM** when ordering replacement parts.
**See reverse side for Accessories and Important Operating, Maintenance and Safety Instructions.**

# *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 Rotary Vane air tools must be used with a Filter-Regulator-Lubricator to maintain all warranties.

## Operating Instructions:

**Warning:** Eye, face, respiratory, sound 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 Rotary Vane air motors should be lubricated. Dynabrade recommends one drop of air lube per minute for each 10 SCFM (example: if the tool specifications 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: **11405** 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 SCFM @ 100 PSIG 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 Tune-Up Kit (P/N **96045**) 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.
- **Warning:** Hand, wrist and arm injury may result from repetitive work, motion and overexposure to vibration.

## Notice

All Dynabrade motors use the highest quality parts and metals available and are machined to exacting tolerances. The failure of quality pneumatic motors can most often be traced to an unclean air supply or the lack of lubrication. Air pressure easily forces dirt or water contained in the air supply into motor bearings causing early failure. It often scores the cylinder walls and the rotor blades resulting in limited efficiency and power. Our warranty obligation is contingent upon proper use of our tools and cannot apply to equipment which has been subjected to misuse such as unclean air, wet air or a lack of lubrication during the use of this tool.

## One Year Warranty

Following the reasonable assumption that any inherent defect which might prevail in a product will become apparent to the user within one year from the date of purchase, all equipment of our manufacture is warranted against defects in workmanship and materials under normal use and service. We shall repair or replace at our factory, any equipment or part thereof which shall, within one year after delivery to the original purchaser, indicate upon our examination to have been defective. Our obligation is contingent upon proper use of Dynabrade tools in accordance with factory recommendations, instructions and safety practices. It shall not apply to equipment which has been subject to misuse, negligence, accident or tampering in any way so as to affect its normal performance. Normally wearable parts such as bearings, sanding pads, rotor blades, etc., are not covered under this warranty.

| Model Number | Motor HP (W) | Motor RPM | Sound Level | Maximum Air Flow CFM/SCFM (LPM) | Air Pressure PSIG (Bars) | Spindle Thread | Weight Pound (kg) | Length Inch (mm) | Height Inch (mm) |
|---|---|---|---|---|---|---|---|---|---|
| 52413 | .7 (522) | 15,000 | 76 dB(A) | 4/29 (821) | 90 (6.2) | 3/8"-24 male | 2.3 (1.0) | 8-1/8 (206) | 5-1/2 (140) |
| 52414 | .7 (522) | 18,000 | 80 dB(A) | 4/32 (906) | 90 (6.2) | 3/8"-24 male | 2.3 (1.0) | 8-1/8 (206) | 5-1/2 (140) |
| 52415 | .7 (522) | 20,000 | 77 dB(A) | 5/35 (991) | 90 (6.2) | 3/8"-24 male | 2.3 (1.0) | 8-1/8 (206) | 5-1/2 (140) |

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. Size 3/8" (10 mm)

# *Disassembly/Assembly Instructions-.7 Hp Rear Exhaust*

**Important: Manufacturer's warranty is void if tool is disassembled before warranty expires.**
**Notice: Dynabrade strongly recommends the use of their 52296 Repair Collar (sold separately) during assembly/disassembly activities. Failure to use this collar will highly increase the risk of damage to the valve body of this tool. Please refer to parts breakdown for part identification.**

## Motor Disassembly:

1. Disconnect tool from power source.
2. Secure air tool in vise using **52296** Repair Collar. Remove disc pad.
3. With an open-end or adjustable wrench remove **04034** Exhaust Cover by turning counter-clockwise.
4. Pull motor assembly from housing.
5. Attach a 2 in. bearing separator around the rear portion of the **01028** Cylinder nearest the rear bearing plate.
6. Place the separator on the table of a #2 arbor press with the rotor spindle pointing down.
7. Press the rear rotor shaft out of the rear motor bearing by using a 3/16 in. flat nose drive punch.
8. Remove **01028** Cylinder, and **01185** Blades (4) from rotor.
9. Hold the body of the **55025** Rotor in a soft (bronze or aluminum) jaw vise, and remove the **01708** Rotor Nut by turning it counter-clockwise.
10. Remove **01007** Bearing, **01008** Front Bearing Plate and **01010** Spacer by sliding them from the rotor spindle.
11. Remove **02649** Rear Bearing from the **01743** Rear Bearing Plate by using Bearing Removal Tool **96213**.

**Optional:** To disassemble the valve body from the motor housing, peel back **01558** Collar to expose **01461** Lock Nut. Unscrew lock nut/valve body from housing (left hand threads).

**Motor Disassembly Complete.**

## Valve Body Disassembly:

1. Position valve body in vise using **52296** Repair Collar with air inlet facing up.
2. Remove air fitting by securing **94523** Inlet Adapter with a wrench and twist air fitting from inlet adapter.
   **Important: 94523** Inlet Adapter must be secured before attempting to remove air fitting to avoid damaging valve body housing.
3. Remove **94523** Inlet Adapter.
4. Remove **95711** Retaining Ring from inlet adapter and separate **94521** Muffler Base from **94522** Muffler Cap. Remove sintered muffler and felt muffler.
5. Remove air control ring from valve body. Using needle nose pliers, remove **01468** Spring, **01472** Tip Valve and **01464** Seal.
6. Using a 2.5 mm drift pin, tap **12132** Pin from housing and remove throttle lever.
7. Remove **95558** Retaining Ring. Push **01469** Regulator from valve body and remove O-Rings.

**Disassembly Complete.**

## Motor Assembly:

**Important:** Be sure parts are clean and in good repair before assembling.

1. Hold the body of the **55025** Rotor in a soft (bronze or aluminum) jaw vise, and slide **01010** Spacer onto rotor spindle.
2. Place a .002" shim into front bearing plate as an initial spacing and slip **01007** Bearing into plate.
   **Note: 01121** Shim Pack contains .001" and .002" shims.
3. Slide bearing/bearing plate assembly onto rotor.
4. Install **01708** Rotor Nut and tighten onto rotor (torque to 17 N•m/150 in. - lbs.).
5. Check clearance between rotor and bearing plate by using a .001" feeler gauge. Clearance should be at .001" to .0015". Adjust clearance by repeating steps 1-5 with different shim if necessary.
6. Once proper rotor/gap clearance is achieved, install well lubricated **01185** Blades (4) into rotor slots. Dynabrade air lube P/N **95842** is recommended.
7. Install cylinder over rotor. Be sure air inlet holes of cylinder face away from bearing plate.
8. Press **02649** Rear Bearing into **01743** Rear Bearing Plate. Press bearing/bearing plate assembly onto rotor.
   **Note: 96240** Bearing Press Tool can be used. Be sure that pin and air inlet holes line-up with pin slot and air inlet holes in cylinder.
   **Important:** Fit must be snug between bearing plates and cylinder. If too tight, rotor will not turn freely. Rotor must then be lightly tapped at press fit end so it will turn freely while still maintaining a snug fit. A loose fit will not achieve the proper preload of motor bearings.
9. Secure motor housing in padded vise so motor cavity faces upwards.
10. Install motor assembly into housing. Be sure motor drops all the way into housing.
11. Install **04034** Lock Nut onto motor housing (torque 34 N•m/300 in. - lbs.).
12. Motor adjustment must now be checked. With motor housing still mounted in vise, pull end of rotor and twist (10-15 lbs. force), rotor should turn freely without drag. If drag or rub is felt, then increase preload or remove shim. Also, push end of rotor and twist (10-15 lbs. force), rotor should turn freely without drag. If drag or rub is felt, then deload or add shim.

## Valve Body Assembly:

1. Insert **01469** Regulator with o-rings and valve stem in place into valve body. Secure with **95558** Retaining Ring.
2. Secure valve body in vise using **52296** Repair Collar with air inlet facing upwards. Insert **01464** Seal.
3. Line up hole in valve stem with hole in housing (looking past brass bushing). Insert **01472** Tip Valve so that the metal pin passes through the hole in the valve stem. Install **01468** Spring (small end towards tip valve).
4. Assemble sintered muffler and felt muffler together and place in **94522** Muffler Cap. Install **94521** Muffler Base onto muffler cap.
5. Install **95438** O-Ring into groove on muffler base. Place **95375** O-Ring and **94526** Spacer into recessed area of muffler cap.
6. Slip **94523** Inlet Adapter through muffler assembly and install **95711** Retainer Ring into groove on inlet adapter.
7. Install air control ring into valve body housing.

## *Disassembly/Assembly Instructions-.7 Hp Rear Exhaust (continued)*

8. Apply Loctite #567 PST Pipe Sealant (or equivalent) to threads of **94523** Inlet Adapter and install entire muffler assembly onto valve body (torque 23.0 N•m/200 in. - lbs.).
9. Replace air fitting. Secure inlet adapter with a wrench before tightening air fitting. Install throttle lever and **12132** Pin.

**Tool Assembly Complete. Please allow 30 minutes for adhesives to cure before operating tool.**

**Important:** Motor should now be tested for proper operation at 90 PSIG. If motor does not operate properly or operates at a higher RPM than marked on the tool, the tool should be serviced to correct the cause before use. Before operating, place 2-3 drops of Dynabrade Air Lube (P/N **95842**) directly into air inlet with throttle lever depressed. Operate tool for 30 seconds to determine if tool is operating properly and to allow lubricating oils to properly penetrate motor.

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## *Optional Accessories*



**53032** – 1/4" Drill Chuck
Includes: **53052** Mated Chuck Key



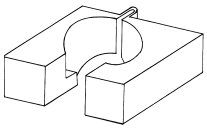
**Collet Inserts**
- **50065** – 1/8"
- **50016** – 6 mm
- **50039** – 8 mm



**Dynaswivel®**
Swivels 360° at two locations which allows an air hose to drop straight to the floor, no matter how the tool is held.
- **94300** 1/4" NPT



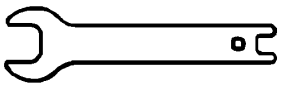
**96045 Motor Tune-Up Kit:**
- Includes assorted parts to help maintain and repair motor.

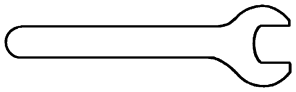


**52296 Repair Collar**
- Specially designed collar for use in vise to prevent damage to valve body housing during disassembly/assembly.

## *Wrenches*

**95281** – 19 mm open-end





**95262** – 14 mm open-end

**Visit Our Web Site:** www.dynabrade.com **Email:** Customer.Service@Dynabrade.com

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