Parts Page Reorder No. PD03•06
Effective January, 2003
Supersedes PD96•69

.5Hp/7°/Front Exhaust

2"-3" Disc Sander

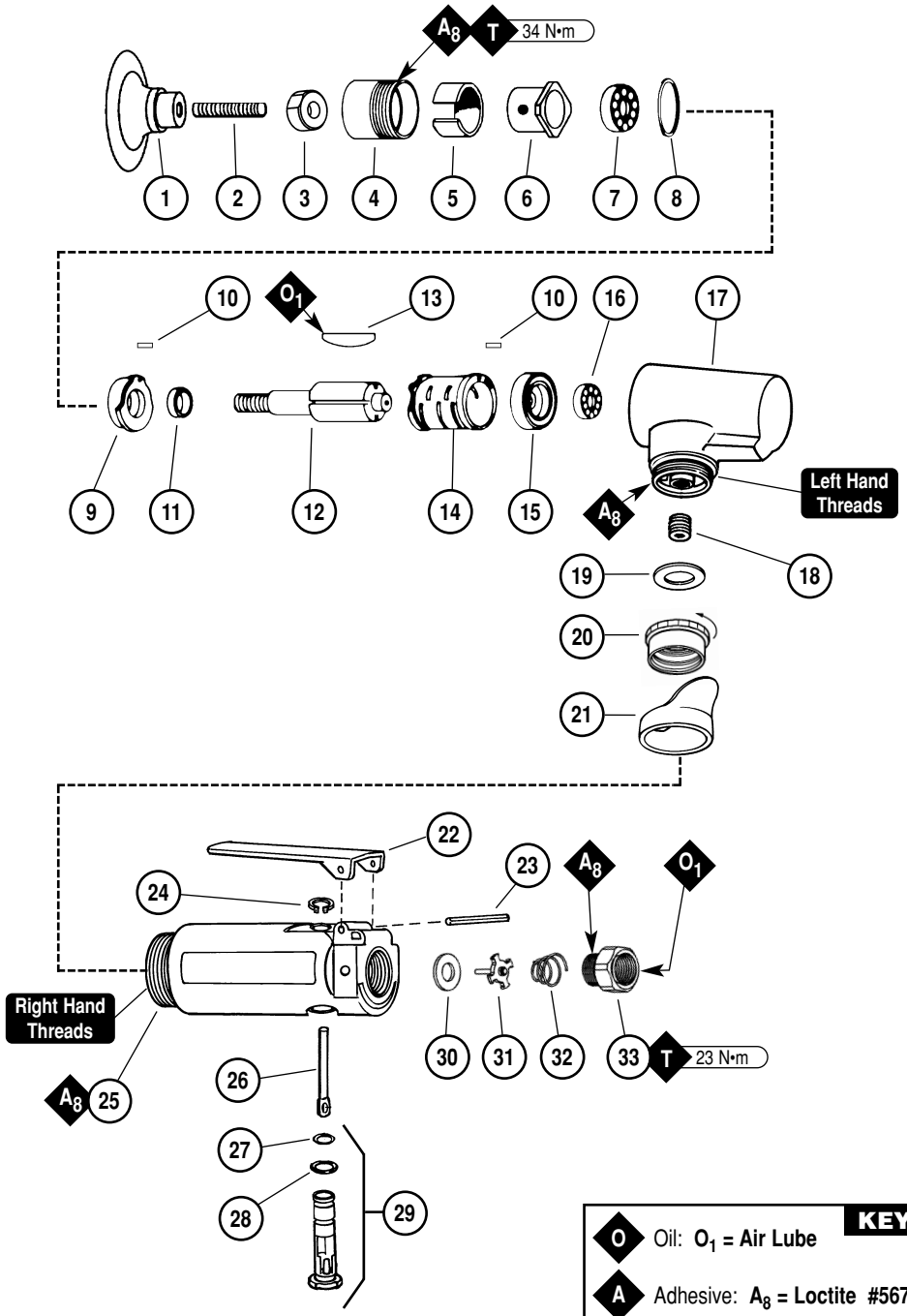
Air Motor and Machine Parts

Model:
52400 – 15,000 RPM
52401 – 18,000 RPM
52402 – 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	**51348**	2" Locking-Type Pad
2	**95392**	1/4" - 20 Set Screw
3	**04083**	Rotor Nut
4	**04087**	Lock Ring
5	**04078**	Felt Silencer
6	**Air Control Spacer**	
	01124	15,000 RPM
	01125	18,000 RPM
	04084	20,000 RPM
7	**01007**	Bearing
8	**01121**	Shim Pack (3/Pkg.)
9	**01008**	Bearing Plate
10	**50767**	Pin (2)
11	**01010**	Spacer
12	**01148**	Rotor
13	**01011**	Blade (4/Pkg.)
14	**01013**	Cylinder
15	**01014**	Bearing Plate
16	**01015**	Bearing
17	**01447**	Motor Housing
18	**01437**	Plug
19	**01548**	Gasket
20	**01461**	Lock Nut
21	**01558**	Collar
22	**01448**	Throttle lever
	01462	Safety Lock Lever
23	**12132**	Pin
24	**95558**	Retaining Ring
25	**Housing**	
	01714	Model - **52400**
	01715	Model - **52401**
	01716	Model - **52402**
26	**01449**	Valve Stem
27	**95730**	O-Ring
28	**01024**	O-Ring
29	**01469**	Speed Regulator Assy.
30	**01464**	Seal
31	**01472**	Tip Valve
32	**01468**	Spring
33	**01494**	Inlet Bushing



KEY

- **O** Oil: **O_1 = Air Lube**
- **A** Adhesive: **A_8 = Loctite #567**
- **T** Torque: **N•m x 8.85 = In. - lbs.**

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.

Operating Instructions:

Warning: Eye, face, sound, respiratory 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. Air tools are not intended for use in explosive atmospheres and are not insulated for contact with electrical power sources. Sanding/Grinding certain materials can create explosive dust. It is the employers responsibility to notify the user of acceptable dust levels. Sanding/Grinding can cause sparks which can cause fires or explosions. It is the users responsibility to make sure the work area is free of flammable materials.

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. Use only genuine Dynabrade replacement parts. To reorder replacement parts, specify the **Model #**, **Serial #**, and **RPM** of your machine.
4. A Motor Tune-Up Kit (P/N **96044**) is available which includes assorted parts to help maintain motor in peek operating condition. Please refer to Dynabrade's Preventative Maintenance Schedule for a guide to expectant life of component parts.
5. 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.
6. DO NOT clean or maintain air tools with chemicals that have a low flash point (example: WD-40®).

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).
- 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.

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.

Full 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)
52400	.5 (373)	15,000	81 dB(A)	4/26 (736)	90 (6.2)	1/4"-20 male	1.7 (.8)	6 (152)	5-1/2 (140)
52401	.5 (373)	18,000	82 dB(A)	4/28 (793)	90 (6.2)	1/4"-20 male	1.7 (.8)	6 (152)	5-1/2 (140)
52402	.5 (373)	20,000	82 dB(A)	4/28 (793)	90 (6.2)	1/4"-20 male	1.7 (.8)	6 (152)	5-1/2 (140)

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

Disassembly/Assembly Instructions - .5 Hp/7°/Front Exhaust

Important: Manufactures warranty is void if tool is disassembled before warranty expires.
Notice: All of the special repair tools referenced to in these instructions can be ordered from Dynabrade.
Please refer to parts breakdown for part identification.

Motor Disassemble:

1. Disconnect the tool from the air supply.
2. Carefully secure the **01447** Housing in a vise with aluminum or bronze jaws. Hold the back portion of the housing opposite the lock ring so as not to crush the housing.
3. Remove the disc pad.
4. Use the **50971** Lock Ring Wrench or an adjustable pin spanner wrench to remove the lock ring by turning it counterclockwise.
5. Remove the **04087** Silencer.
6. Pull the air motor out of the **01447** housing.
7. Remove the **01447** Housing from the vise.
8. Fasten the **96346** Bearing Separator (2") around the portion of the **01013** Cylinder that is closest to the **01014** Bearing Plate.
9. Place the motor with the separator attached on the table of the **96232** Arbor Press (#2) and using a 3/16" dia. flat end drive punch as a press tool push the rear stem of the **01148** Rotor out of the **01015** Bearing.
10. Use the **96211** Bearing Removal Tool and the arbor press to remove the **01015** Bearing from the **01014** Bearing Plate.
11. Secure the vane slot portion of the **01148** Rotor in a vise with aluminum or bronze jaws so that the threaded stem of the rotor is pointing up.
12. Use an adjustable wrench to remove the **04083** Rotor Nut from the rotor by turning it counterclockwise.
13. Slip the **01008** Bearing Plate, **01007** Bearing, shims and **01010** Spacer from the rotor.

Motor Disassembly Complete.

Valve Disassembly:

1. Position the valve housing in a vise so that the air inlet is pointing up.
2. Hold the **01494** Inlet Bushing stationary with an adjustable wrench while removing the air fitting.
3. Use a wrench to remove the air inlet bushing from the valve housing.
4. Remove the **01468** Spring, **01472** Tip Valve and **01464** Seal from the valve housing.
5. Use a 2.5 mm drive punch to remove the **12132** Pin and the throttle lever from the valve housing.
6. Remove the **95558** Retaining Ring with retaining ring pliers.
7. Push the **01469** Speed Regulator Assembly out of the housing and remove the **01449** Valve Stem.

Valve Disassembly Complete.

Important: Clean and inspect all of the parts for wear before assembling.

Valve Assembly

1. Install the **01469** Speed Regulator Assembly (includes o-rings) into the valve housing and secure it in place with the **95558** Retaining Ring.
2. Insert the **01449** Valve Stem so that the hole in the valve stem is visible through the air inlet opening.
3. Install the **01464** Seal into the air inlet opening of the valve housing so that it lays flat.
4. Use needle nose pliers to install the **01472** Tip Valve into the air opening so that the metal pin of the tip valve passes through the hole in the valve stem.
5. Place the smaller end of the **01468** Spring into the air inlet opening so that it fits onto the back of the **01472** Valve Stem.
6. Apply a small amount of Loctite #567 (or equivalent) to the threads of the **01494** Inlet Bushing and install it into the valve housing. (Torque to 23 N•m/200 in.- lbs.)
7. Install the throttle lever and secure it in place with the **12132** Pin.
8. Hold the **01494** Inlet Bushing stationary with an adjustable wrench while installing the air fitting.

Valve Assembly Complete.

Motor Housing Assembly:

1. Secure the vane slot portion of the **01148** Rotor in a vise with aluminum or bronze jaws so that the threaded stem of the rotor is pointing up.
2. Install the **01010** Spacer onto the rotor.
3. Select .003 (.08 mm) thickness in shims from the **01121** Shim Pack and install these into the **01008** Bearing Plate.
4. Install the **01007** Bearing into the **01008** Bearing Plate.
5. Slip this assembly down onto the **01148** Rotor and secure it in place with the **04083** Rotor Nut. (Torque to 17 N•m/150 in.- lbs.)
6. Check the rotor/plate clearance with a .001 (0.03 mm) feeler gage. The clearance should be .001 - .0015 (0.03 - 0.04 mm). If the rotor/plate clearance needs further adjustment, repeat steps 3-6 and shim as required.
7. Once the proper rotor/plate clearance is achieved, install the **01011** Blades (4) that have been lubricated with the **95842** Dynabrade Air Lube (10W/NR or equivalent).
8. Install the **01013** Cylinder so that the air inlet openings in the **01014** Bearing Plate will align with the air inlet opening in the cylinder.
9. Use the **96241** Bearing Press Tool and the **96232** Arbor Press to install the **01015** Bearing into the **01014** Bearing Plate. Position the press tool so that it is resting against the outer race of the bearing when pressing the bearing into the bearing plate.
10. Use the opposite end of the **96241** Bearing Press Tool to install the bearing/plate assembly onto the **01148** Rotor. Position the press tool so that it is resting against the inner race of the bearing when pressing the bearing/plate assembly onto the rotor. **Note:** Press the assembly together only until the **01014** Bearing Plate comes in contact with the **01013** Cylinder. This should create a snug fit between the bearing plates and the cylinder. A loose fit will not achieve the proper preload of the motor bearings.

11. Install the air motor into the **01447** Housing.
12. Carefully secure the **01447** Housing in a vise with aluminum or bronze jaws. Hold the back portion of the housing opposite the lock ring so as not to crush the housing.
13. Install the **04078** Silencer into the lock ring.
14. Apply a small amount of the Loctite #567 to the threads of the **01447** Housing. Use the **50971** Lock Ring Wrench or an adjustable pin spanner wrench to install the lock ring. (Torque to 34 N•m/300 in.- lbs.)
15. Install the disc pad.

Motor Assembly Complete. Tool Assembly Complete.

Throttle Lever Positioning Procedure:

1. Secure the holding flats of the valve housing in a vise with aluminum or bronze jaws so that the **01447** Housing is pointing up.
2. Slip the **01558** Collar down onto the valve housing to expose the **01461** Lock Nut.
3. With a firm hold on the **01447** Housing, use a 34 mm or an adjustable wrench to turn the **01461** Lock Nut counterclockwise to loosen the **01447** Housing from the valve housing.
4. Orient the throttle lever to the operators desired grip and positioning. **Note:** Allow for additional rotation of the **01447** Housing as the **01461** Lock Nut is tightened.
5. With a firm hold on the **01447** Housing to reduce its rotation, use a 34 mm or an adjustable wrench to tighten the **01461** Lock Nut. (Torque to 45 N•m/400 in- lbs.)

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Optional Accessories

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 (Composite)
- **95460** 1/4" NPT (Aluminum)

96044 Motor Tune-Up Kit:
- Includes assorted parts to help maintain and repair motor.

50971 Lock Ring Tool
- Lock Ring Tool has a 3/8 in. square socket for use with 3/8 in. drive; breaker bar, ratchet head, or torque wrenches.

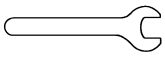
Dynabrade Air Lube
- Formulated for pneumatic equipment.
- Absorbs up to 10% of its weight in water.
- Prevents rust and formation of sludge.
- Keeps pneumatic tools operating longer with greater power and less down time.

95842: 1pt. (473 ml)
95843: 1gal. (3.8 L)

96346 Bearing Separator
- Use the separator to remove bearings and gears.

96232 #2 Arbor Press
- This arbor is ideal for the disassembly and assembly of air motors.

96211 Bearing Removal Tool
- This tool is used to pass through the I.D. of the bearing plate and to push against the I.D. of the bearing.



95262 – 14 mm Open-end Wrench.
95281 – 19 mm Open-end Wrench.

96241 Bearing Press Tool
- This tool is used to safely press a bearing into a bearing plate or onto a shaft.

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DYNABRADE, INC., 8989 Sheridan Drive • Clarence, NY 14031-1490 • Phone: (716) 631-0100 • Fax: 716-631-2073 • International Fax: 716-631-2524
DYNABRADE EUROPE S.àr.l., Zone Artisanale • L-5485 Wormeldange—Haut, Luxembourg • Telephone: 352 76 84 94 1 • Fax: 352 76 84 95 1

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