Parts Page Reorder No. PD02•61
Effective December, 2002
Supersedes PD97•08

Models:

52276 – 15,000 RPM, 1/4" Collet
52277 – 18,000 RPM, 1/4" Collet
52278 – 20,000 RPM, 1/4" Collet
52281 – 15,000 RPM, 6mm Collet
52282 – 18,000 RPM, 6mm Collet
52283 – 20,000 RPM, 6mm Collet

.7hp/Straight Line/Rear Exhaust Die Grinder

Air Motor and Machine Parts

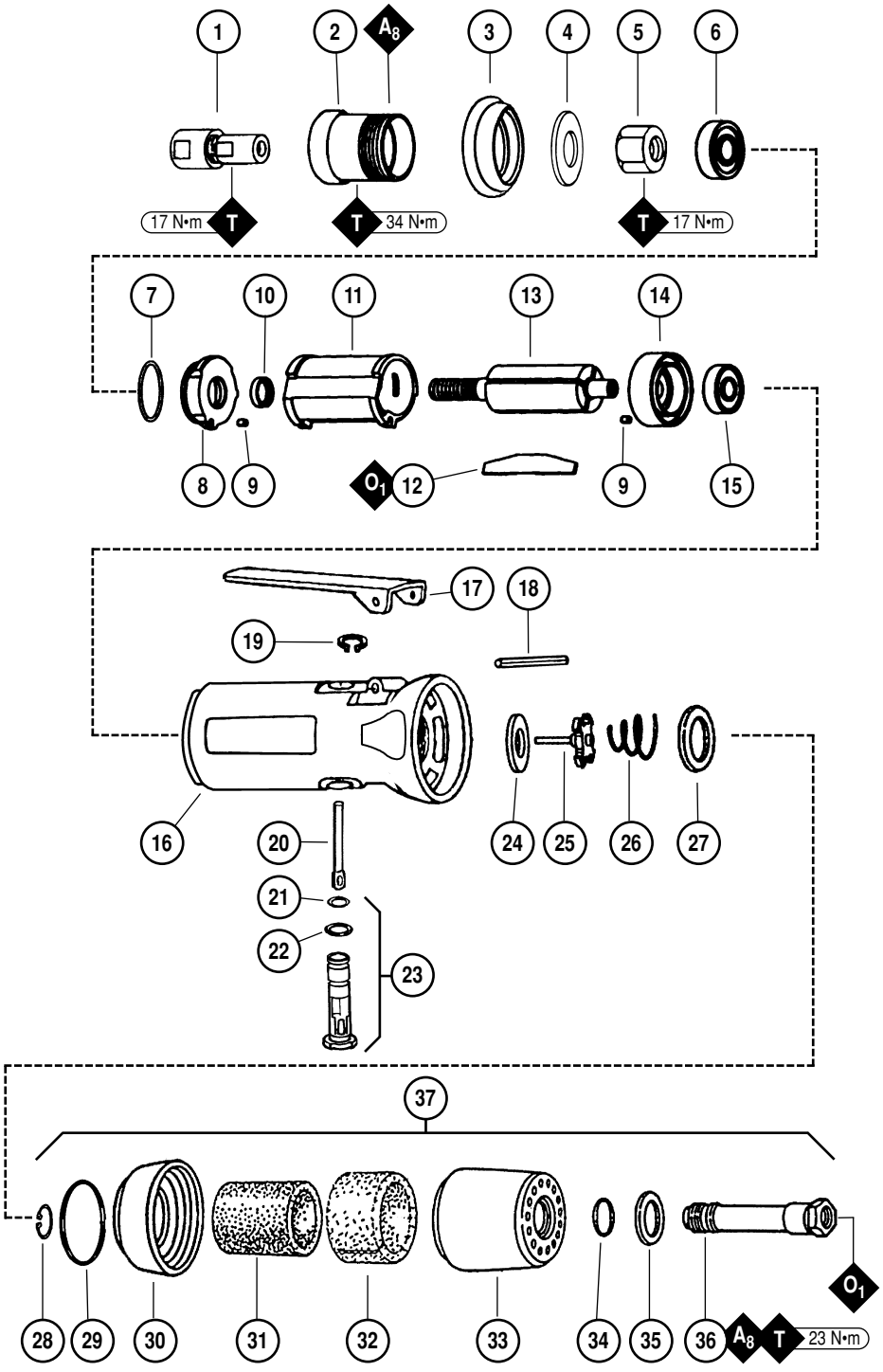
WARNING **Always operate, inspect and maintain this tool in accordance with the Safety Code for portable air tools (ANSI B186.1) and any other applicable safety codes and regulations. Please refer to Dynabrade's Warning/Safety Operating Instructions for more complete safety information.**

KEY

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

Index Key

No.	Part #	Description
1	**50010**	1/4" Collet Assembly
2	**01371**	Lock Ring
3	**53175**	Insulator Collar
4	**01796**	Block Plate
5	**01708**	Rotor Nut
6	**01007**	Bearing
7	**01121**	Shim Pack (3/pkg.)
8	**01008**	Bearing Plate
9	**50767**	Pin (2)
10	**01010**	Rotor Spacer
11	**01028**	Cylinder
12	**01185**	Blade (4/pkg.)
13	**55025**	Rotor
14	**01721**	Bearing Plate
15	**02649**	Bearing
16	**01295**	Housing
17	**57342**	Throttle Lever
	01089	Safety Lock Lever (Optional)
18	**01017**	Pin
19	**95558**	Retaining Ring
20	**01477**	Valve Stem
21	**95730**	O-Ring
22	**01024**	O-Ring
23	**01247**	Speed Regulator Assy.
24	**01464**	Seal
25	**01472**	Tip Valve
26	**01468**	Spring
27	**Air Control Ring**	
	01642	15,000 RPM
	01606	18,000 RPM
	01564	20,000 RPM
28	**95711**	Retaining Ring
29	**95438**	O-Ring
30	**94521**	Muffler Base
31	**94524**	Sintered Muffler
32	**94525**	Felt Muffler
33	**94522**	Muffler Cap
34	**95375**	O-Ring
35	**94526**	Spacer
36	**94523**	Inlet Adapter
37	**94520**	Muffler Assembly



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 20 SCFM (example: if the tool specifications state 40 SCFM, set the drip rate of your filter-lubricator at 2 drops per minute).
   Dynabrade Air Lube (P/N **95842**: 1 pt. 473 ml.) is recommended.
4. An Air Line Filter-Regulator-Lubricator must be used with this air tool to maintain all warranties. Dynabrade recommends the following: **10681** Air Line Filter-Regulator-Lubricator — Provides accurate air pressure regulation, two-stage filtration of water contaminants and micro-mist lubrication of pneumatic components. Max. Air Flow: 55 SCFM/1,558 LPM, Max. Air Pressure: 145 PSIG/9.7 Bars.
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 **96529**) 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.

Lifetime Warranty

All Dynabrade portable pneumatic power tools are rigorously inspected and performance tested in our factory before shipping to our customers. If a Dynabrade tool develops a performance problem and an inherent defect is found during normal use and service, Dynabrade will warrant this tool against defects in workmanship and materials for the lifetime of the tool. Upon examination and review at our factory, Dynabrade shall confirm that the tool qualifies for warranty status, and will repair or replace the tool at no charge to the customer. Normally wearable parts and products are NOT covered under this warranty. Uncovered items include bearings, contact wheels, rotor blades, regulators, valve stems, levers, shrouds, guards, O-rings, seals, gaskets and other wearable parts. Dynabrade's warranty policy is contingent upon proper use of our tools in accordance with factory recommendations, instructions and safety practices. It shall not apply to equipment that has been subjected to misuse, negligence, accident or tampering in any way so as to affect its normal performance. To activate lifetime warranty, customer must register each tool at www.dynabrade.com. Dynabrade will not honor lifetime warranty on unregistered tools. A one-year warranty will be honored on all unregistered portable pneumatic power tools. Lifetime warranty applies only to portable pneumatic tools manufactured by Dynabrade, Inc. in the USA. Lifetime warranty applies only to the original tool owner; warranty is non-transferable.

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)
52276/52281	.7 (522)	15,000	80 dB(A)	4/32 (906)	90 (6.2)	3/8"-24 male	2.3 (1.0)	8-1/8 (206)	1-7/8 (48)
52277/52282	.7 (522)	18,000	81 dB(A)	5/34 (963)	90 (6.2)	3/8"-24 male	2.3 (1.0)	8-1/8 (206)	1-7/8 (48)
52278/52283	.7 (522)	20,000	81 dB(A)	5/37 (1,048)	90 (6.2)	3/8"-24 male	2.3 (1.0)	8-1/8 (206)	1-7/8 (48)

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

Disassembly/Assembly Instructions – .7hp Rear Exhaust

Important: Manufacturer's warranty is void if tool is disassembled before warranty expires.

Motor Disassembly:

1. Disconnect the tool from the air supply.
2. Secure the air tool in a vise by holding on the flats of the motor housing.
3. Remove the collet assembly from the rotor shaft by inserting a 3/16" hex key through the collet body and into the rotor shaft. Use a 14mm wrench to loosen the collet assembly turning it counter-clockwise.
4. Remove the **01371** Lock Ring with an adjustable wrench turning it counter-clockwise.
5. Pull the motor assembly from the housing.
6. Fasten a 2 in. bearing separator around the portion of the **01028** Cylinder nearest the **01721** Rear Bearing Plate.
7. Place the bearing separator and the air motor on the table of an arbor press so that the threaded shaft of the rotor is pointing toward the floor.
8. Use a 1/4" dia. drive punch as a press tool and push the rear rotor shaft out of the **02649** Rear Bearing.
9. The **02649** Bearing can be removed from the **01721** Rear Bearing Plate with **96213** Bearing Removal Tool and an arbor press.
10. Secure the vane portion of the **55025** Rotor in a vise with aluminum or bronze jaws.
11. Use an adjustable wrench to remove the **01708** Rotor Nut turning it counter clock-wise.
12. The **01007** Bearing, **01008** Bearing Plate, **01121** Shim & **01010** Spacer can now be removed.

Motor Disassembly Complete.

Valve Body Disassembly:

1. Secure the valve body (housing) in a vise by holding on the flats so that the air inlet is pointing up.
2. **Important: 94523** Air Inlet must be held stationary with a wrench while removing any air fitting from the air inlet.
3. Remove the **94523** Air Inlet.
4. Refer to the exploded view of the **94520** Muffler on the front of this parts page to identify specific parts and order of assembly.
5. Remove the air control ring, **01468** Spring, **01472** Tip Valve, and **01464** Seal.
6. To remove the throttle lever use a 2.5mm drive punch.
7. Pull the **01477** Valve Stem out of the speed regulator assembly.
8. Remove the **95558** Retaining Ring and push the **01247** Speed Regulator Assembly out of the valve body (housing).

Valve Body Disassembly Complete.

Motor Assembly:

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

1. Secure the vane portion of the **55025** Rotor in a vise with aluminum or bronze jaws.
2. Install **01010** Spacer on the rotor.
3. Place a .002" and a .001" thick shim into the **01008** Front Bearing Plate and install the **01007** Bearing. Slide this assembly onto the rotor.
4. Install the **01708** Rotor Nut onto the rotor (Torque to 17 N•m/150 in. lbs.).
5. Check the clarence between the rotor and the bearing plate by using a .001" thick feeler gauge (clarence should be at .001" to .0015"). Adjust clarence by repeating steps 3-5 with different shimming if necessary. Once proper rotor/gap clarence is achieved proceed with the motor assembly.
6. Install lubricated (10W oil; **95842** Dynabrade Air Lube) **01185** Blades (4/pkg.).
7. Place **01028** Cylinder onto the assembly so that the air inlet opening will line up with the inlet holes in the **01721** Rear Bearing Plate.
8. Press **02649** Bearing into the **01721** Bearing Plate by using **96240** Bearing Press Tool pushing against the outer race of the bearing.
9. Press the rear bearing/bearing plate assembly onto the rear shaft of the **55025** Rotor by using **96240** Bearing Press Tool pushing against the inner race of the bearing. **Important:** Carefully press the bearing/bearing plate assembly onto the rotor so as to achieve a snug fit between the bearing plates and the cylinder. A snug fit will trap the cylinder while still allowing it to be shifted from side to side with a slight amount of finger pressure. A loose fit will not achieve the proper preload of the motor bearings.
10. With the outer diameters of the bearing plates and the cylinder aligned carefully slide the motor assembly into the housing so that the air passage node of the **01721** Rear Bearing Plate will fit into the air passage notch inside the motor housing. Be sure that the motor is positioned properly, all the way into the housing before installing the lock ring.
11. Secure the motor housing in a vise by holding on the flats of the housing so that the rotor shaft is pointing up.
12. Insert **01796** Block Plate into **01371** Lock Ring. Apply a small amount of Loctite #567 (or equivalent) to the threads of the lock ring and install these parts onto the motor housing (Torque to 35 N•m/300 in. lbs.).
13. The motor can now be checked for proper adjustment. With the motor housing still mounted in the vise pull up on the end of the rotor shaft while turning it back and forth. (apply 10-15 lbs. force) Perform the same procedure while pushing down on the rotor shaft with the same amount of force. The rotor should turn freely without any drag, or rub being felt. If a pull rub is felt, increase preload or remove shims. If a push rub is felt, then deload or add shims.
14. Install collet assembly.

Motor Assembly Complete.

Valve Body Assembly:

1. Secure the valve body (housing) in a vise by holding on the flats so that the air inlet is pointing up.
2. Install the **01247** Speed Regulator Assembly (includes o-rings) and **01477** Valve Stem into the valve body (housing).

(continued on next page)

3. Place the **01464** Seal into the valve body. Use needle nose pliers to install the **01472** Tip Valve so that its metal pin fits into the hole of the **01477** Valve Stem, and then place the smaller end of the **01468** Spring against the back of the tip valve.
4. Install the air control ring onto the threaded male end of the **94520** Muffler Assembly. Apply a small amount of Loctite® #567 (or equivalent) to the male threads of the **94523** Air Inlet and then install the **94520** Muffler Assembly. (Torque to 23 N•m/200 in. lbs.)
5. Fasten throttle lever assembly onto valve body with **01017** Pin.
6. Hold the **94523** Air Inlet with an adjustable wrench while installing the air fitting.

Valve Body 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

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

Collet Inserts
- **50013** – 1/4"
- **50014** – 3/8"
- **50016** – 6mm
- **50039** – 8mm
- **50065** – 1/8"

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 m)
95843: 1 gal. (3.8 L)

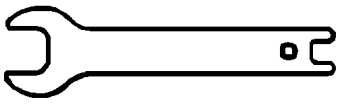
96529 Motor Tune-Up Kit:
- Includes assorted parts to help maintain and repair motor.

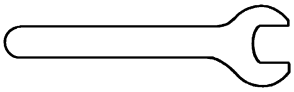
96213 Bearing Removal Tool
- This tool is designed to pass through the I.D. of the bearing plate and push against the I.D. of the bearing.

96240 Bearing Press Tool
- This tool is designed to safely press a bearing into a bearing plate and onto a shaft.

Wrenches

95281 – 19mm open-end.





95262 – 14mm open-end.

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Email: Customer.Service@Dynabrade.com

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DYNABRADE, INC., 8989 Sheridan Drive • Clarence, NY 14031-1419 • 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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