For Serial No. 9J1264 and Higher

KEY

- O — Oil: O_1 = Air Lube
- A — Adhesive: A_2 = Loctite #271, A_8 = Loctite #567
- T — Torque: N•m x 8.85 = In. - lbs.
- G — Grease: G_1 = Lubriplate 630 AA

Parts Page Reorder No. PD02•36
Effective July, 2002
Supersedes PD97•60

.4 Hp/7°/Rear Exhaust Disc Sander

Air Motor and Machine Parts

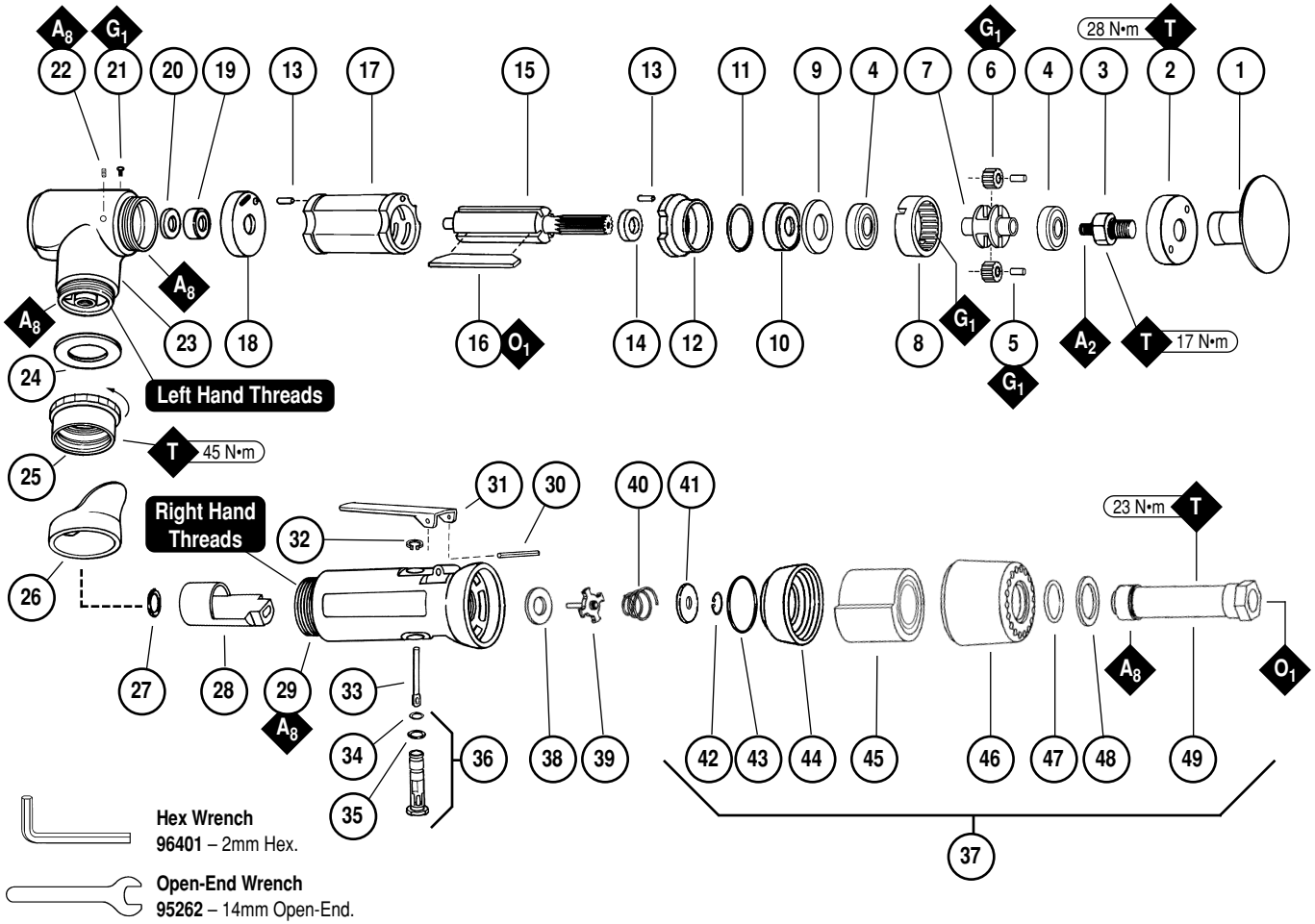
Models:

51420 – 3-1/2" 3,200 RPM
51425 – 4" 5,000 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. See inside for Important Operating, Maintenance and Safety Instructions.**

Index Key

No.	Part #	Description
1	**50126**	Backing Pad - **51420**
	50132	Backing Pad - **51425**
2	**50781**	Rear Exhaust Cover
3	**50782**	Adapter
4	**54552**	Bearing (2)
5	**54472**	Gear Shaft (2)
6	**06213**	5,000 RPM Gear (2)
	54519	3,200 RPM Gear (2)
7	**50786**	3,200 RPM Carrier
	50787	5,000 RPM Carrier
8	**54468**	Ring Gear
9	**50778**	Spacer
10	**02649**	Bearing
11	**54529**	Shim Pack (3/pkg.)
12	**01478**	Front End Plate
13	**50767**	Pin (2)
14	**01479**	Spacer
15	**Rotor**	
	54553	5,000 RPM
	54554	3,200 RPM
16	**01480**	Blade (4/pkg.)
17	**01476**	Cylinder
18	**02673**	Rear Bearing Plate
19	**02696**	Bearing
20	**02679**	Shield
21	**01041**	Grease Fitting
22	**50784**	Set Screw
23	**50776**	Motor Housing
24	**01548**	Gasket
25	**01461**	Lock Nut
26	**01558**	Collar
27	**95523**	O-Ring
28	**01470**	Insert
29	**02109**	Housing - **51420**
	02110	Housing - **51425**
30	**12132**	Pin
31	**01448**	Throttle Lever
	01462	Safety Lock Lever
32	**95558**	Retaining Ring
33	**01449**	Valve Stem
34	**95730**	O-Ring
35	**01024**	O-Ring
36	**01469**	Speed Regulator
37	**94519**	Muffler Assembly
38	**01464**	Seal
39	**01472**	Tip Valve
40	**01468**	Spring
41	**01564**	Air Control Ring
42	**95711**	Retaining Ring
43	**95438**	O-Ring
44	**94521**	Muffler Base
45	**94528**	Felt Muffler
46	**94522**	Muffler Cap
47	**95375**	O-Ring
48	**94526**	Spacer
49	**94523**	Inlet Adapter



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.
5. 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 sparks which can cause fires or explosions. It is the user 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. 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**: 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: **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. Lubricate planetary gears through the grease fitting with 2 plunges for every 50 hours of use, to achieve maximum gear life (order **95542** Grease and **95541** Gun).
6. Use only genuine Dynabrade replacement parts. To reorder replacement parts, specify the **Model #**, **Serial #** and **RPM** of your machine.
7. A Motor Tune-Up Kit (P/N **96174**) 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.
8. 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.
9. 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).
- 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, contact wheels, 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)
51420	.4 (298)	3,200	80 dB(A)	3/24 (680)	90 (6.2)	3/8"-24 male	2.3 (1.0)	9 (229)	5-1/4 (133)
51425	.4 (298)	5,000	78 dB(A)	3/24 (680)	90 (6.2)	3/8"-24 male	2.3 (1.0)	9 (229)	5-1/4 (133)

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. Size 1/4" or 8mm

Disassembly/Assembly Instructions - .4 Hp/7°/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. All of the special repair tools referred to in these instructions can be ordered from Dynabrade. Please refer to this parts page for proper part identification.

Planetary Gear Case Disassembly:

1. Disconnect tool from power source.
2. Remove the disc pad.
3. Use the **52296** Repair Collar to secure the tool in a vise so that the **50782** Adapter is pointing up.
4. Use the **50971** Lock Ring Wrench to remove the **50781** Rear Exhaust Cover by turning it counterclockwise.
5. Use the **96401** 2mm Hex Key to remove the **50784** Set Screw.
6. Pull the **50782** Adapter Along with the planetary gear assembly out of the **50776** Motor Housing.
7. Fasten the **96346** 2" Bearing Separator between the **54468** Ring Gear and the rear **54552** Bearing.
8. Place the planetary gear assembly and the separator on the table of the **96232** Arbor Press so that the **50782** Adapter is pointing down.
9. Carefully place the **96213** Bearing Removal Tool against the **50786** or **50787** Planetary Carrier removing it from the rear **94552** Bearing.
10. Remove the ring gear, shafts and gears from the planetary carrier.
11. Secure the planetary carrier in a vice with aluminum or bronze jaws so that the **50782** Adapter is pointing up. Use an adjustable wrench to remove the adapter from the planetary carrier.

Planetary Gear Case Disassembly Complete.

Motor Disassembly:

1. Pull the motor assembly from the housing.
2. Remove the **50778** Spacer from the motor.
3. Fasten the **96346** 2" Bearing Separator around the rear portion of the **01476** Cylinder closest to the rear bearing plate.
4. Place the separator and the motor assembly on the table of the **96232** Arbor Press so that the pinion gear of the rotor is pointing down. Use a 3/16" dia. flat end drive punch as a press tool. Place it against the rear bearing journal of the rotor and push the rotor from the **02696** Bearing.
5. Remove the **02679** Shield from the **02696** Bearing.
6. Use the **96210** Bearing Removal Tool to remove the **02696** Bearing from the **02676** Rear Bearing Plate.
7. Remove the **01480** Blades from the rotor.
8. Press the **02649** Bearing from the rotor, removing the **01478** Front Bearing Plate and the **54529** Shims.
9. Remove the **01479** Spacer from the rotor.

Motor Disassembly Complete.

Valve Disassembly:

1. Place the **52296** Repair Collar around the valve housing and secure it in a vise so that the air inlet is pointing up.
2. Use two wrenches when removing the air fitting. Place one wrench on the **94523** Inlet Adapter to hold it stationary and use another wrench to remove the air fitting.
3. Remove the inlet adapter from the valve housing. **Note:** Refer to the exploded view of the muffler assembly to identify the parts and their order of disassembly.
4. Use a needle nose pliers to remove the **01468** Spring and the **01472** Tip Valve. The **01464** Seal can be removed from the valve housing with a small screwdriver.
5. Use retaining ring pliers to remove the **95558** Retaining Ring and push the **01469** Speed Regulator Assembly along with the **01449** Valve Stem out of the valve housing.
6. Use a 2.5mm drive punch to remove the **12132** Pin and the throttle lever.

Valve Disassembly Complete.

Valve Assembly:

Important: Clean and inspect all parts before assembling.

1. Place the **52296** Repair Collar around the valve housing and secure it in a vise so that the air inlet is pointing up.
2. Install the **01469** Speed Regulator Assembly (includes o-rings) into the motor housing and secure it in place with the **95558** Retaining Ring.
3. Insert the **01449** Valve Stem so that the end with the hole fits into the **01469** Speed Regulator Assembly.
4. Install the **01469** Seal into the air inlet so that it is lying flat.
5. Use a needle nose pliers to gasp the white nylon portion of the **01472** Tip Valve and insert the metal pin of the tip valve into the hole in the **01449** Valve Stem.
6. Install the **01468** Spring so that the smaller end of the spring fits against the center of the tip valve.
7. **Note:** Refer to the exploded view of the muffler assembly to identify the parts and their order of assembly. Apply a small amount of the #567 Loctite (or equivalent) to the threads of the inlet adapter and install it into the air inlet of the valve housing. (Torque to 23 N•m/200 in.- lbs.)
8 Install the throttle lever and secure it in place with the **12132** Pin.
9. Use two wrenches when installing the air fitting. Place one wrench on the **94523** Inlet Adapter to hold it stationary and use another wrench to install the air fitting.

Valve Assembly Complete.

Motor Assembly:

1. Install the **01479** Spacer onto the rotor.
2. Select .003" thickness in shims from the **54529** Shim Pack and place these into the **01478** Front Bearing Plate.
3. Install the **02649** Bearing into the front bearing plate.
4. Use the **96240** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and the **96232** Arbor Press to install these parts onto the pinion end of the rotor.
5. Check the rotor/plate clearance with a .001" (0.03mm) feeler gage. The clearance should be .001"-.0015" (0.03-0.04mm). If the rotor/plate clearance needs adjustment, repeat steps 4-5 and shim as required.
6. Apply the **95842** Dynabrade Air Lube (10W/NR or equivalent) to the **01480** Blades (4) and install these into the slots in the rotor.
7. Install the **01476** Cylinder over the rotor so that the air inlet opening of the cylinder will align with the air inlet opening of the **02676** Rear Bearing Plate.
8. Use the **96216** Bearing Press Tool (position the raised outside diameter against the outside diameter of the bearing) and **96232** Arbor Press to install the **02696** Bearing into the rear bearing plate.
9. Use the **96216** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and **96232** Arbor Press to install these parts onto the rear bearing journal of the rotor. **Important:** Press the rear bearing/plate assembly down onto the rotor only until the **02676** Rear bearing Plate comes in contact with the **01478** Cylinder. This fit will establish a preload on the motor bearings producing a "snug fit" between the bearings and the cylinder. If the fit is too tight it will cause the bearings to wear prematurely, too loose and the desired preload will not be achieved. If an adjustment is required disassemble and repeat steps 7-8.
10. Apply a small amount of the **95542** Grease to the seal of the **02696** Bearing and install the **02679** Shield against the bearings.

(continued on next page)

Disassembly/Assembly Instructions (continued)

11. Orient the motor assembly so that the node of the **02676** Rear Bearing Plate will align with the notch inside the motor housing.
12. Install the motor assembly into the **50776** Motor Housing.

Motor Assembly Complete.

Planetary gear Case Assembly:

1. Use the **96239** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and the **96232** Arbor Press to install the front **54552** Bearing onto the female threaded end of the **50786** or **50787** Planetary Carrier.
2. Apply a small amount of Loctite #271 (or equivalent) to the male threads of the **50782** Adapter and install the adapter onto the planetary carrier. (Torque to 17 N•m.150 in.- lbs.)
3. Apply the **95542** Grease to the shafts, bearings and gears of the planetary carrier. Install these parts into the carrier.
4. Orient the **54468** Ring Gear on the planetary carrier so that the set screw and grease fitting notches will align properly with the openings in the **50776** Motor Housing once it's installed.
5. Use the **96239** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and the **96232** Arbor Press to install the rear bearing down onto the carrier only until the **54552** Bearing comes in contact with the **54468** Ring Gear. This fit will establish a preload on the bearings producing a "snug fit" between the bearings and the ring gear. If the fit is too tight it will cause the bearings to wear prematurely, if the fit is too loose the desired preload will not be achieved. If an adjustment is required disassemble and repeat this step.
6. Install the **50778** Spacer with the flat side of the spacer against the **02649** Bearing of the motor assembly.
7. Slide the planetary gear assembly into the **50776** Motor Housing so that the set screw and grease fitting notches align with the corresponding openings in the motor housing.
8. Apply a small amount of the #567 Loctite (or equivalent) to the **50784** Set Screw and install it into the motor housing.
9. Apply a small amount of the #567 Loctite (or equivalent) to the threads of the motor housing and install the **50781** Rear Exhaust Cover. (Torque to 28 N•m.250 in.- lbs.)
10. Lubricate the planetary gear assembly with the **95542** Grease through the grease fitting. Use the **95541** Grease Gun and apply 2-3 plunges of grease for every 50 hours of use.
11. Install the disc pad.

Planetary Gear Case Assembly Complete.

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.

Throttle Lever Positioning Procedure:

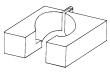
1. Place the **52296** Repair Collar around the valve housing and secure it in a vise so that the **50776** Housing is pointing up.
2. Slip the **01558** Collar down onto the valve housing to expose the **01461** Lock Nut.
3. With a firm hold on the **50776** Housing, use a 34mm or an adjustable wrench to turn the **01461** Lock Nut counterclockwise to loosen the **50776** Housing from the valve housing.
4. Orient the throttle lever to the operators desired grip and positioning. **Note:** Allow for additional rotation of the **50776** Housing as the **01461** Lock Nut is tightened.
5. With a firm hold on the **50776** Housing to reduce its rotation, use a 34mm or an adjustable wrench to tighten the **01461** Lock Nut. (Torque to 45 N•m/400 in.- lbs.)

Important: Carefully preform this procedure so as not to entirely separate the **50776** Housing from the valve housing. Loosen the **01461** Lock Nut only enough to make desired throttle lever adjustment.

Optional Accessories

Dynaswivel®
- Swivels 360° AT TWO PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.

94300 – 1/4" NPT.



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

95542 Grease 10 oz.
- Multi-purpose grease for all types of bearings, cams, gears.
- High film strength; excellent resistance to water, steam, etc.
- Workable range 0˚ F to 300˚ F.

95541 Push-type Grease Gun
- One-hand operation.

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

96174 Motor Tune-Up Kit
- Includes assorted parts to help maintain and repair motor.

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

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

96210 & 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.

96216, 96239 & 96240 Bearing Press Tool
- These tools are designed to safety press a bearing into a bearing plate and onto a shaft.

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

Visit Our Web Site: www.dynabrade.com

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DYNABRADE®

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