For Serial No. 9J1264 and Higher

Parts Page Reorder No. PD02•38
Effective July, 2002

1/4" Chuck/Straight-Line/Rear Exhaust

Air Power Drills

Air Motor and Machine Parts

Models:
53078 — 3,200 RPM
53079 — 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	53032	1/4" Drill Chuck
2	50781	Rear Exhaust Cover
3	50782	Adapter
4	54520	Bearing (2)
5	54472	Gear Shaft (2)
6	06213	5,000 RPM Gear (2)
	54519	3,200 RPM Gear (2)
7	**Planetary Carrier**	
	50786	3,200 RPM
	50787	5,000 RPM
8	54468	Ring Gear
9	01041	Grease Fitting
10	50784	Lock Screw
11	53152	Gear Case
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13	02649	Bearing
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16	50767	Pin (2)
17	01479	Spacer
18	**Rotor**	
	54553	5,000 RPM
	54554	3,200 RPM
19	01480	Blades (4/pkg.)
20	01476	Cylinder
21	02676	Rear Bearing Plate
22	02696	Bearing
23	02679	Shield
24	01448	Throttle Lever
	01462	Safety Lock Lever
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27	53098	Housing - 53078
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29	95730	O-Ring
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41	95375	O-Ring
42	94526	Spacer
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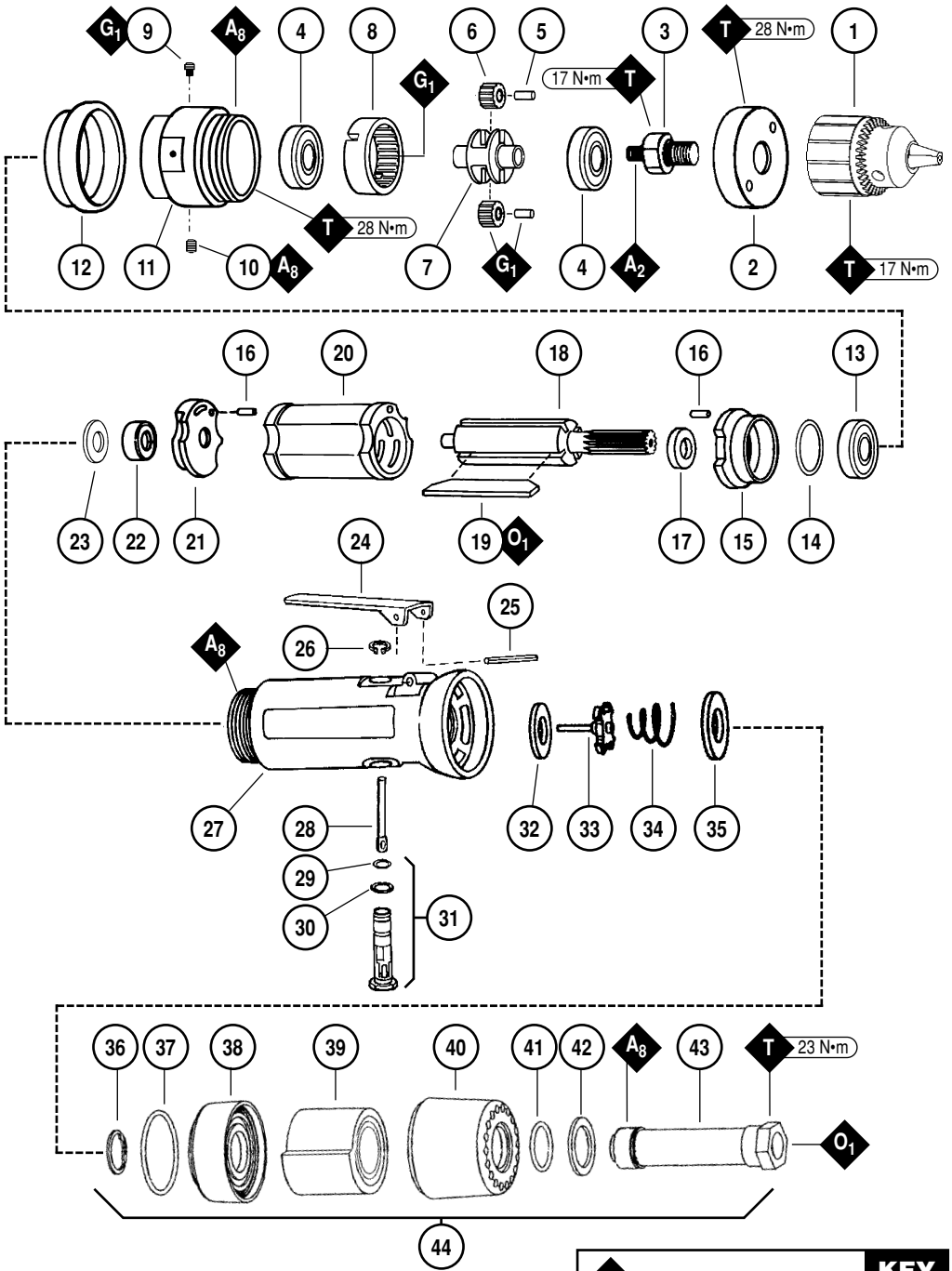

KEY

- **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**

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, 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. 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 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. 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 Gear Casing Grease Fitting with **2-3 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 **96173**) 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)	Spindle Thread	Air Pressure PSIG (Bars)	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
53078	.4 (298)	3,200	81 dB(A)	3/22 (623)	3/8"-24 male	90 (6.2)	1.8 (.8)	10-1/2 (267)	1-5/8 (40)
53079	.4 (298)	5,000	84 dB(A)	3/22 (623)	3/8"-24 male	90 (6.2)	1.8 (.8)	10-1/2 (267)	1-5/8 (40)

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

Disassembly/Assembly Instructions – Air Power Drills

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 of these air power drills. 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.

Gear Case Disassembly:

1. Disconnect tool from the air supply.
2. Remove the drill chuck.
3. Use the 52296 Repair Collar to secure the tool in vise.
4. Use the 50971 Lock Ring Tool or an adjustable pin spanner wrench to remove the 50781 Rear Exhaust Cover by turning it counterclockwise.
5. Remove the 50784 Set Screw from the 53152 Gear Case.
6. Pull the planetary gear assembly from the 53152 Gear Case.
7. Fasten the 96346 2" Bearing Separator between the rear 54520 Bearing and the 54468 Ring Gear to remove the bearing from the planetary carrier. Place the separator on the table of the 96232 Arbor Press so that the 50782 Adapter is pointing toward the floor. Use a 3/8" dia. flat end drive punch as a press tool to push the planetary carrier from the 54520 Bearing.
8. Remove the shafts and gears from the planetary carrier.
9. Remove the 50782 Adapter by carefully holding the 50786 or 50787 Planetary Carrier in a vise with aluminum or bronze jaws. Use an adjustable wrench to remove the adapter by turning it counterclockwise.
10. Use the bearing separator and the arbor press to remove the front 54520 Bearing.

Gear Case Disassembly Complete.

Motor Disassembly:

1. Remove the 53152 Gear Case from the housing by turning it counterclockwise.
2. Pull the air motor from the housing.
3. Fasten the bearing separator around the portion of the 01476 Cylinder that is closest to the 02676 Rear Bearing Plate. Place the separator on the table of the arbor press so that the pinion is pointing down. Use a 3/16" dia. flat drive punch as a press tool and push the 01478 Rotor out of the 02696 Bearing.
4. Remove the 02696 Bearing from the 02676 Rear Bearing Plate with the 96210 Bearing Removal Tool and the arbor press.
5. Position the flat side of the 01478 Front Bearing Plate against the bearing separator placing these on the arbor press with the pinion pointing up and push the rotor from the 02649 Bearing.
6. Push the 02649 Bearing out of the 01478 Front Bearing Plate and remove shims.
7. Slip the 01479 Spacer off the rotor.

Motor Disassembly Complete.

Valve Disassembly:

1. Use the 52296 Repair Collar to secure the tool in a vise. Position the air inlet so that it is pointing up.
2. Secure the 94523 Inlet Adapter with a wrench and remove the air fitting. **Important:** The 94523 Inlet Adapter must be held stationary with a wrench when the air fitting is installed or removed to avoid damage to the housing.
3. Remove the 94523 Inlet Adapter.
4. Remove the 95711 Retaining Ring and separate the 94521 Muffler Base from the 94522 Muffler Cap.
5. Remove the felt silencer.
6. Remove the 01564 Air Control Ring.
7. Use a needle nose pliers to remove the 01468 Spring and the 01472 Tip Valve. The 01464 Seal can be picked out of the housing with a small flat bladed screwdriver.
8. Use a 2.5 mm drive punch to remove the 12132 Pin and throttle lever.
9. Remove the 95558 Retaining Ring and push the 01469 Speed Regulator Assembly along with the 01449 Valve Stem out of the housing.

Valve Disassembly Complete.

Valve Assembly:

1. Install the 01469 Speed Regulator Assembly (o-rings included) along with the 01449 Valve Stem into the housing and secure it in place with the 95558 Retaining Ring.
2. Install the 01464 Seal into the inlet opening of the housing.
3. Align the hole in the 01449 Valve Stem with the inlet opening of the housing.
4. Use needle nose pliers to install the 01472 Tip Valve so that the metal pin fits into the hole of the 01449 Valve Stem.
5. Install the 01468 Spring so that the small end of the spring fits against the tip valve.
6. To install the 94519 Muffler Assembly, apply a small amount of Loctite #567 (or equivalent) to the male threads of the 94523 Inlet Adapter. Install the muffler assembly onto the housing. (Torque to 23 N•m/200 in.- lbs.)

Valve Assembly Complete.

Motor Assembly:

Important: Clean and inspect parts before assembling.

1. Install the 01479 Spacer onto the 54553 or 54554 Rotor.
2. Place .003" thicknesses in shims from the 54529 Shim Pack into the 01478 Front Bearing Plate as an initial spacing. Install the 02649 Bearing into the 01478 Front Bearing Plate. Use the 96240 Bearing Press Tool against the inner race of the bearing and press the assembly onto the rotor.
3. Check the clearance between the rotor and bearing plate by using a .001" thick feeler gauge. The clearance should be a .001" to .0015" gap. If necessary adjust the clearance by repeating steps 1-3 changing shims as required. Once the proper rotor gap clearance is achieved, install blades that have been lubricated with the 95842 Dynabrade Air Lube (10W/NR or equivalent).

(continued on next page)

Disassembly/Assembly Instructions (continued)

4. Install the 01476 Cylinder so that it rests against the 01478 Front Bearing Plate. Make sure that the air inlet holes in the 02676 Rear Bearing Plate. Make sure that the air inlet holes of the cylinder line up with the air inlet holes in the 02676 Rear Bearing Plate.
5. Press the 02696 Bearing into the 02676 Rear Bearing Plate. (Use the 96216 Bearing Press Tool against the outer race of the bearing.) Press this assembly onto the rotor. (Use the 96216 Bearing Press Tool against the inner race of the bearing.) **Important:** The fit must be snug between the bearing plates and the cylinder. If it is too tight the rotor will not turn freely. The rotor must turn freely while still maintaining a snug fit. A loose fit will not achieve proper preload of the motor bearings. Place a small amount of grease on the seal of the 02696 Bearing and stick the 02679 Shield against the bearing.
6. Use the 52296 Repair Collar or pad the jaws and secure the housing in a vise. Position the opening of the housing so that the motor cavity is pointing up.
7. Install the motor assembly into the housing making sure that the motor drops all the way into the housing. **Note:** Align the rear bearing plate node with the notch inside the housing.

Motor Assembly Complete.

Gear Case Assembly:

1. To assemble the gear case planetary gear assembly, press the front 54520 Bearing onto the threaded end of the 50786 or 50787 Planetary Carrier.
2. Secure the planetary carrier in a vise with a soft aluminum or bronze jaw.
3. Apply one drop of Loctite #271 (or equivalent) to the threads of the 53150 Pinion.
4. Install the pinion onto the planetary carrier. (Torque to 17 N•m/150 in.- lbs.)
5. Apply a small amount of the 95542 Grease to the needle bearings, the planetary gears, and the gear shafts. Install these into the planetary carrier.
6. Slip the 54468 Ring Gear over the planetary gear assembly positioning it so that the notches in the ring gear will align with the lock screw and grease fitting openings in the 53152 Gear Case.
7. Press the rear 54520 Bearing onto the 50786 or 50787 Planetary Carrier until the outer race of the bearing touches the ring gear.
8. Install the complete planetary gear assembly into the 53152 Gear Case. Apply a small amount of Loctite #567 (or equivalent) to the 50784 Lock Screw and install it.
9. Install the 01547 Insulator Collar onto the 53152 Gear Case.
10. Apply a small amount of the Loctite #567 (or equivalent) to the threads of the housing and install the 53152 Gear Case onto the housing. (Torque to 28 N•m/250 in.- lbs.)
11. Lubriplate planetary gears through the 01041 Grease Fitting, apply 2-3 plunges of the 95542 Grease with the 95541 Grease Gun initially, and there after for 50 hours of use.

Gear Case 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 PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.
- 94300 1/4" NPT, non-marring composite construction.

Grease and Grease Gun
- Multi-purpose grease for all types of bearing, cams, gears.
- High film strength; excellent resistance to water, steam, etc.
- Workable range 0°F to 300°F.

95541: Push-type grease gun.
95542: 10oz. (283.5g) tube.

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)

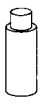
50791 Lock Ring Tool
- Lock ring Tool has a 3/8" square socket for use with 3/8" drive; breaker bar, ratchet head, or torque wrenches.

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

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

96173 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.



96210 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 Bearing Press Tool
96240 Bearing Press Tool
- This tool is designed to safely press a bearing into a bearing plate and onto a shaft.

Visit Our Web Site: www.dynabrade.com

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