For Serial No. 9J1264 and Higher

Models:

52050 — 3,200 RPM, 1/4" Collet
52051 — 3,200 RPM, 6mm Collet
52052 — 3,200 RPM, 1/2" Arbor
52053 — 3,200 RPM, Versatility Kit

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. PD04•47
Effective November, 2004
Supersedes PD00•31R

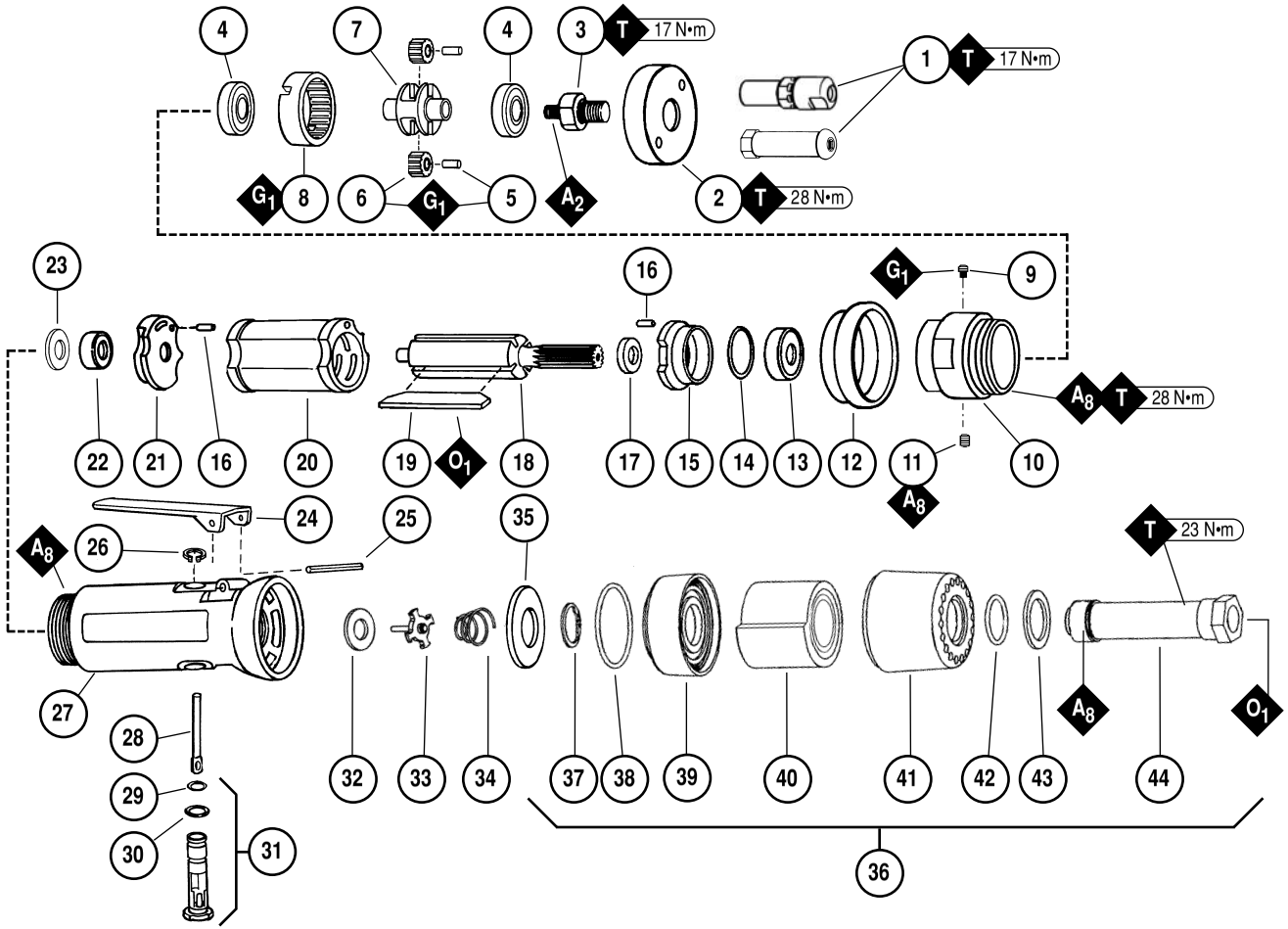
Lightweight Dyninger

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. See inside for Important Operating, Maintenance and Safety Instructions.

Index Key

No.	Part #	Description
1	**50010**	1/4" Collet Assy.
	50015	6mm Collet Assy.
	12980	1/2" Arbor
2	**50781**	Rear Exhaust Cover
3	**50782**	Adapter
4	**54520**	Bearing (2)
5	**54472**	Gear Shaft (2)
6	**54519**	Gear (2)
7	**50786**	Planetary Carrier
8	**54468**	Ring Gear
9	**01041**	Grease Fitting
10	**53152**	Gear Case
11	**50784**	Lock Screw
12	**01547**	Rubber Collar
13	**02649**	Bearing
14	**54529**	Shim (3/pkg.)
15	**01478**	Front Bearing Plate
16	**50767**	Pin (2)
17	**01479**	Rotor Spacer
18	**54554**	Rotor
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
25	**12132**	Pin
26	**95558**	Retaining Ring
27	**02130**	Housing - **52050**
	02131	Housing - **52051**
	02132	Housing - **52052**
28	**01449**	Valve Stem
29	**95730**	O-Ring
30	**01024**	O-Ring
31	**01469**	Speed Regulator Assy.
32	**01464**	Seal
33	**01472**	Tip Valve
34	**01468**	Spring
35	**01564**	Air Control Ring
36	**94519**	Muffler Assy.
37	**95711**	Retaining Ring
38	**95438**	O-Ring
39	**94521**	Muffler Base
40	**94528**	Felt Muffler
41	**94522**	Muffler Cap
42	**95375**	O-Ring
43	**94526**	Spacer
44	**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. 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 or operating improperly, 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. It is strongly recommended that all Dynabrade rotary vane air tools be used with a Filter-Regulator-Lubricator to minimize the possibility of misuse due to unclean air, wet air or insufficient lubrication. 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 @ 90 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 **96173**) is available which includes assorted parts to help maintain motor in peak operating condition. Please refer to Dynabrade's Preventative Maintenance Schedule for a guide to expectant life of component parts.
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, contact wheels, rotor blades, etc., are not covered under this warranty.

Machine Number	Motor HP (W)	Motor RPM	Sound Level	Air Flow Rate CFM/SCFM (LPM)	Spindle Thread	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
52050, 52051	.4 (298)	0-3,200	81 dB(A)	3/22 (623)	3/8"–24 male	2.2 (1.0)	9-1/4 (235)	1-5/8 (40)
52052	.4 (298)	0-3,200	81 dB(A)	3/22 (623)	3/8"–24 male	2.2 (1.0)	8-3/4 (222)	1-5/8 (40)

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose Size 1/4" or 8mm • Air Pressure 90 PSIG (6.2 Bars)

Disassembly/Assembly Instructions – .4Hp/Straight-Line/Planetary/Rear Exhaust

Important: The Manufacturer's warranty is void if the tool is disassembled before the warranty expires.
Notice: Dynabrade recommends the use of the 52296 Repair Collar (sold separately) during the disassembly and assembly of this sander. All of the special repair tools referred to in these instructions can be ordered from Dynabrade. Please refer to this parts page for the proper part identification.

Motor Disassembly:

1. Shut the air supply and disconnect the sander from the air supply hose.
2. Remove the mandrel and abrasive.
3. Use the **52296** Repair Collar to hold the housing in a vise.
4. Remove the **53152** Gear Case from the housing by turning it counterclockwise.
5. Pull the air motor from the housing.
6. Fasten the **96346**, 2" 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 **96232**, #2 Arbor Press so that the pinion is pointing down.
7. Use a 3/16" dia. flat end drive punch as a press tool and push the rotor out of the **02696** Bearing.
8. Remove the **02696** Bearing from the **02676** Rear Bearing Plate with the **96210** Bearing Removal Tool and the arbor press.
9. Position the **01478** Front Bearing Plate against the flat side of the bearing separator with the pinion pointing up. Place these on the arbor press and push the rotor from the **02649** Bearing.
10. Push the **02649** Bearing out of the **01478** Front Bearing Plate and remove the shims.
11. Slip the **01479** Spacer off the rotor.

Motor Disassembly Complete.

Gear Case Disassembly:

1. Shut the air supply and disconnect the sander from the air supply hose.
2. Remove the mandrel and abrasive.
3. Use the **52296** Repair Collar to hold the **53456** Housing in a vise.
4. Remove the **53152** Gear Case from the housing by turning it counterclockwise.
5. Remove the **01547** Insulator Collar and hold the wrench flats of the gear case in a vise with aluminum or bronze jaws so that the collet or arbor assembly is pointing up.
6. Use a 2.5mm adjustable pin spanner wrench or the **50971** Lock Ring Wrench to remove the **50781** Rear Exhaust Cover by turning it counterclockwise.
7. Use the **96401**, 2mm Hex Key to remove the **50784** Lock Screw from the **53152** Gear Case.
8. Pull the planetary gear assembly from the **53152** Gear Case.
9. Fasten the **96346**, 2" Bearing Separator between the rear **54520** Bearing and the **54468** Ring Gear so that the flat side of the separator is against the ring gear. To remove the bearing from the planetary carrier, place the separator on the table of the **96232** #2 Arbor Press so that the pinion gear is pointing down. Use a 3/8" dia. flat end drive punch as a press tool to push the planetary carrier from the **54520** Bearing.
10. Remove the shafts and gears from the planetary carrier.
11. Carefully hold the **56786** Planetary Carrier in a vise with aluminum or bronze jaws. Apply localized heat to the **50782** Adapter to soften the thread adhesive. Use an adjustable wrench to remove the adapter by turning it counterclockwise.
12. Use the bearing separator and the arbor press to remove the front **54520** Bearing.

Gear Case Disassembly Complete.

Valve Disassembly:

1. Use the **52296** Repair Collar to hold the housing in a vise. Position the air inlet so that it is pointing up.
2. Hold the **94523** Inlet Adapter stationary with an adjustable wrench and remove the air fitting with another wrench by turning it counterclockwise.
   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 by turning it counterclockwise. **Note:** Carefully remove the **01564** Air Control Ring saving it to avoid loss. Refer to the exploded view to identify muffler components and the order of disassembly/assembly.
4. 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.
5. Use a 2.5mm flat end drive punch to remove the **12132** Pin and throttle lever.
6. Use the retaining ring pliers to remove **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 hold 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. Assemble the **94519** Muffler Assembly and install the **01564** Air Control Ring onto the inlet opening of the housing.
7. Apply a small amount of the Loctite® #567 (or equivalent) to the male threads of the **94523** Inlet Adapter.
8. Install the muffler assembly onto the housing. (Torque to 23 N•m/200 in. lbs.)

Valve Assembly Complete.

Important: Clean and inspect parts before assembling.

Motor Assembly:

1. Install the **01479** Spacer onto the rotor.
2. Place .003" (.08mm) thickness 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 the bearing plate by using a .001" (.03mm) to .0015" (.04mm) thick feeler gauge. The clearance should be .001" (.03mm) to .0015" (.04mm). If necessary, adjust the clearance by repeating steps 1-3 changing shims as required. Once the proper rotor/bearing plate clearance is achieved, install blades that have been lubricated with the **95842** Dynabrade Air Lube (10W/NR or equivalent).
4. Install the **01476** Cylinder so that it rests against the **01478** Front 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. Use the **96216** Bearing Press Tool against the outer race of the bearing to press the **02696** Bearing into the **02676** Rear Bearing Plate. Use the **96216** Bearing Press Tool against the inner race of the bearing to press this assembly onto the rotor. **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 to 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 fits all the way into the housing.
   Note: Align the Rear Bearing Plate node with the notch on the inside of the Housing.

Motor Assembly Complete.

Gear Case Assembly:

1. Use the raised center portion of the **96239** Bearing Press Tool and the **96232**, #2 Arbor Press to push the front **54520** Bearing onto the female threaded end of the **50786** Planetary Carrier.
2. Hold the planetary carrier in a vise with aluminum or bronze jaws. Apply one drop of Loctite® #271 (or equivalent) to the threads of the **50782** Adapter and install the adapter onto the planetary carrier. (Torque to 17 N•m/150 in. lbs.)
3. 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.
4. 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.
5. Use the raised center portion of the **96239** Bearing Press Tool and the arbor press to push the rear **54520** Bearing onto the **50786** Planetary Carrier until the outer race of the bearing touches the ring gear. Important: The fit should be snug between the bearings and the ring gear. If it is too tight the carrier will not turn freely. The carrier must turn freely while still maintaining a snug fit. A loose fit will not achieve proper preload of the bearings.
6. Install the complete planetary gear assembly into the **53152** Gear Case. Apply a small amount of the Loctite® #567 (or equivalent) to the **50784** Set Screw and install it.
7. Install the **01547** Insulator Collar onto the **53152** Gear Case.
8. 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.)
9. Lubricate planetary gears through the 01041 Grease Fitting, applying 2-3 plunges of the **95542** Grease with the **95541** Grease Gun initially, and there after for every 50 hours of use. **Gear Case Assembly Complete.**

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.

Loctite® is a registered trademark of the Loctite Corp.

Eyelet Sanding Stars/Mandrels

4" Diameter Arbor-Mount Sanding Stars

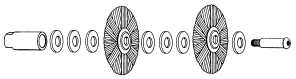
Grit	Part Number
80	**93392**
120	**93393**
150	**93394**
180	**93395**
220	**93396**
320	**93397**
400	**93398**

Unit = 40 Stars each

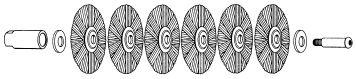
Options for Arbor Mount Stars

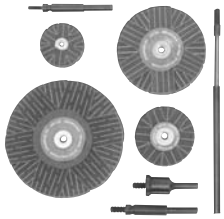
- Grit and spacing determine sanding aggressiveness.

Least Aggressive/Most Flexible



Most Aggressive/Least Flexible





4" Diameter Spindle-Mount Sanding Stars

Grit	Part Number
80	**93166**
120	**93167**
150	**93168**
180	**93169**
220	**93171**
320	**93172**
400	**93173**

Unit = 10 Stars each

3/4", 1", 1-1/2", 2", 3" and 4" Diameter Eyelet Stars and Mandrels

General Purpose Metalworking			General Purpose Woodworking/Metalworking			
Grit	**3/4" Diameter P/N**	**1" Diameter P/N**	**1-1/2" Diameter P/N**	**2" Diameter P/N**	**3" Diameter P/N**	**4" Diameter P/N**
80	**93579**	**93586**	**93541**	**93551**	**93558**	**93565**
120	**93580**	**93587**	**93542**	**93552**	**93559**	**93566**
150	**93581**	**93588**	**93543**	**93553**	**93560**	**93567**
180	**93582**	**93589**	**93544**	**93554**	**93561**	**93568**
220	**93583**	**93590**	**93545**	**93555**	**93562**	**93569**
320	**93584**	**93591**	**93546**	**93556**	**93563**	**93570**
400	**93585**	**93592**	**93547**	**93557**	**93564**	**93571**

Optional Accessories



Dynaswivel®

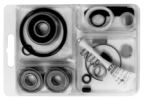
- Swivels 360° AT TWO PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.
- **94300** 1/4" NPT, non-marring composite construction.



Grease

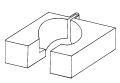
- Multi-purpose grease for all types of bearings, cams, gears.
- High film strength; excellent resistance to water, steam, etc.
- Workable range 0˚ F to 300˚ F.

95541: Push-type Grease Gun (one-handed operation).
95542: 10oz. (283.5g) tube.



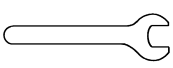
96173 Motor Tune-Up Kit

- 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.



Open-End Wrenches
95262 – 14mm open-end.
95281 – 19mm open-end.

Visit Our Web Site: www.dynabrade.com

Email: Customer.Service@Dynabrade.com

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