For Serial No. 0J1000 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•08
Effective January, 2002
Supersedes PD98•06

.4 Hp/Straight-Line/Rear Exhaust Lightweight Die Grinder

Air Motor and Machine Parts

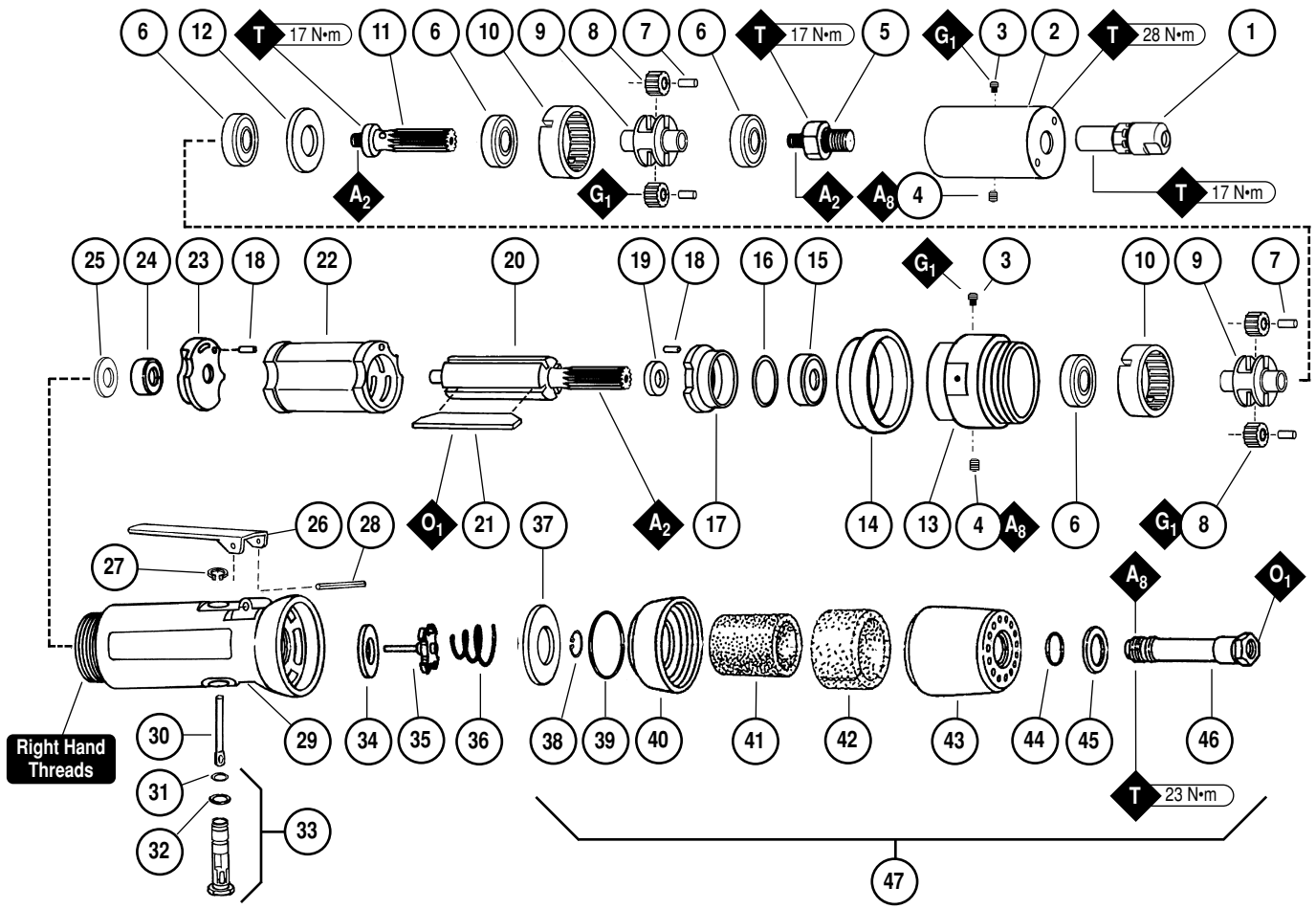
Models:

51200 — 950 RPM, 1/4"
51203 — 950 RPM, 6 mm

⚠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	6 mm Collet Assy.
2	**53153**	Planetary Housing
3	**01041**	Grease Fitting (2)
4	**50784**	Lock Screw (2)
5	**50782**	Adapter
6	**54520**	Bearing (4)
7	**54472**	Gear Shaft (4)
8	**06213**	950 RPM Gear (4)
9	**50787**	Planetary Carrier (2)
10	**54468**	Ring Gear (2)
11	**53150**	Pinion
12	**50778**	Spacer
13	**53152**	Gear Case
14	**01547**	Rubber Collar
15	**02649**	Bearing
16	**54529**	Shim Pack
17	**01478**	Front Bearing Plate
18	**50767**	Pin (2)
19	**01479**	Spacer
20	**54553**	Rotor
21	**01480**	Blades (4/pkg.)
22	**01476**	Cylinder
23	**02676**	Rear Bearing Plate
24	**02696**	Bearing
25	**02679**	Shield
26	**01448**	Throttle Lever
	01462	Safety Lock Lever
27	**95558**	Retaining Ring
28	**12132**	Pin
29	**02122**	Housing - **51200**
	02123	Housing - **51203**
30	**01449**	Valve Stem
31	**95730**	O-Ring
32	**01024**	O-Ring
33	**01469**	Speed Regulator Assembly
34	**01464**	Seal
35	**01472**	Tip Valve
36	**01468**	Spring
37	**01564**	Air Control Ring
38	**95711**	Retaining Ring
39	**95438**	O-Ring
40	**94521**	Muffler Base
41	**94524**	Sintered Muffler
42	**94525**	Felt Muffler
43	**94522**	Muffler Cap
44	**95375**	O-Ring
45	**94526**	Spacer
46	**94523**	Inlet Adapter
47	**94520**	Muffler Assy.



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 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.
3. 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 10 SCFM (example: if the tool specification 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.

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)
51200	.4 (298)	950	82 dB(A)	3/23 (651)	90 (6.2)	3/8"-24 male	2.1 (1.0)	10-3/8 (264)	1-5/8 (40)

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

Disassembly/Assembly Instructions - .4 Hp/Straight-Line/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. Failure to use this collar will highly increase the risk of damage to the valve body of this tool. Please refer to parts breakdown for part identification.

New/Updated Parts - Effective Serial Number 0J1000

02649 Bearing Replaces **01007** Bearing.
01478 Front Bearing Plate Replaces **53161** Front Bearing Plate.
54553 Rotor Replaces **50777** Rotor.

Motor Disassembly:

1. Disconnect tool from power source. Remove drill chuck.
2. Secure air tool in vise using **52296** Repair Collar.
3. With an adjustable pin wrench, remove **53153** Planetary Housing by turning counter-clockwise.
4. Pull **50782** Adapter and first planetary carrier assembly from **53153** Planetary Housing.
5. Press planetary carrier assembly from rear **54520** Bearing. Remove ring gear and gears from **50787** Planetary Carrier.
6. Secure planetary carrier in vise and remove **50782** Adapter. Press carrier from front **54520** Bearing. Remove **50778** Spacer.
7. Remove second planetary gear assembly from **53152** Gear Case.
8. Press planetary carrier assembly from rear **54520** Bearing. Remove ring gear and gears from **50787** Planetary Carrier.
9. Press carrier from front **54520** Bearing.
10. Grab onto pinion and pull motor assembly from motor housing.
11. Press **54553** Rotor from **02676** Rear Bearing Plate. Press **02696** Rear Bearing from rear bearing plate, remove **02679** Shield.
12. Remove cylinder and rotor blades from rotor.
13. Press pinion and rotor through **02649** Front Bearing and **01478** Front Bearing Plate.

Motor Disassembly Complete.

Valve Body Disassembly:

1. Position valve body in vise using **52296** Repair Collar with air inlet facing up.
2. Remove air fitting by securing **94523** Inlet Adapter with a wrench and twist air fitting from inlet adapter.
   Important: 94523 Inlet Adapter must be secured before attempting to remove air fitting to avoid damaging valve body housing.
3. Remove **94523** Inlet Adapter.
4. Remove **95711** Retaining Ring from inlet adapter and separate **94521** Muffler Base from **94522** Muffler Cap. Remove sintered muffler and felt muffler.
5. Remove **01564** Air Control Ring from valve body. Using needle nose pliers, remove **01468** Spring, **01472** Tip Valve and **01464** Seal.
6. Using a 2.5 mm drift pin, tap **12132** Pin from housing and remove throttle lever.
7. Remove **95558** Retaining Ring. Push **01469** Regulator from valve body and remove o-rings.

Disassembly Complete.

Motor Assembly:

Important: Be sure parts are clean and in good repair before assembling**.** Follow all grease, oil, and torque specifications.

1. Place **01478** Front Bearing Plate onto front end of **54553** Rotor. Press **02649** Front Bearing onto rotor and front bearing plate.
2. Apply one drop of #271 Loctite® (or equivalent) to outer race of **02696** Rear Bearing and slip bearing into bearing plate. Install **02679** Shield.
3. Install well lubricated blades into rotor slots. Dynabrade recommends using their **95842** Dynabrade Air Lube.
4. Install cylinder over rotor with air inlet hole in cylinder wall facing away from front bearing plate.
5. Press **02676** Rear Bearing plate on to rotor. Be sure that pin and air inlet hole in cylinder line up with air inlet hole and pin hole in bearing plate.
6. Install motor assembly into motor housing.
7. Press front **54520** Bearing onto front end of first **50787** Planetary Carrier.
8. Install gears and **54472** Gear Shafts onto planetary carrier.
9. Slip **54468** Ring Gear over gears and press rear **54520** Bearing onto planetary carrier.
10. Press front **54520** Bearing onto front end of second **50787** Planetary Carrier.
11. Install **06213** Gears and **54472** Gear Shafts onto planetary carrier.
12. Slip **54468** Ring Gear over gears and press rear **54520** Bearing onto planetary carrier.
13. Apply one drop of #271 Loctite® to threads of **50782** Adapter. Install adapter onto planetary carrier (torque 17.0 N•m/150 in. - lbs.).
14. Place **50778** Spacer over pinion. Slip complete planetary carriers onto pinion in motor housing.
15. Install **53153** Planetary Housing onto housing to secure motor (torque 28 N•m/250 in. - lbs.). Install drill chuck onto adapter.

Motor Assembly Complete.

Valve Body Assembly:

1. Insert **01469** Regulator with o-rings and valve stem in place into valve body. Secure with **95558** Retaining Ring.
2. Secure valve body in vise using **52296** Repair Collar with air inlet facing upwards. Insert **01464** Seal.

(continued on next page)

Disassembly/Assembly Instructions (continued)

3. Line up hole in valve stem with hole in housing (looking past brass bushing). Insert **01472** Tip Valve so that the metal pin passes through the hole in the valve stem. Install **01468** Spring (small end towards tip valve).
4. Assemble sintered muffler and felt muffler together and place in **94522** Muffler Cap. Install **94521** Muffler Base onto muffler cap.
5. Install **95438** O-Ring into groove on muffler base. Place **95375** O-Ring and **94526** Spacer into recessed area of muffler cap.
6. Slip **94523** Inlet Adapter through muffler assembly and install **95711** Retainer Ring into groove on inlet adapter.
7. Install **01564** Air Control Ring into valve body housing.
8. Apply Loctite® #567 PST Pipe Sealant to threads of **94523** Inlet Adapter and install entire muffler assembly onto valve body (torque 23.0 N•m/200 in. - lbs.).
9. Replace air fitting. Secure inlet adapter with a wrench before tightening air fitting.
10. Install throttle lever and **12132** Pin.

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

Loctite® is a registered trademark of Loctite Corp.

Optional Accessories



Composite 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

Dynaswivel®

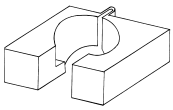
95460 – 1/4" NPT (Aluminum)



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 m)
95843: 1 gal. (3.8 L)



52296 Repair Collar

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



96173 Motor Tune-Up Kit

- Includes assorted parts to help maintain and repair motor.

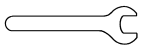


95542 Grease 10 oz.

- 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.



Open-End Wrenches

95262 – 14 mm open-end.
95281 – 19 mm open-end.



Collet Inserts

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

Visit Our Web Site: www.dynabrade.com **Email:** Customer.Service@Dynabrade.com

DYNABRADE®

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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