Parts Page Reorder No. PD02•21
Effective April, 2002
Supersedes PD98•19

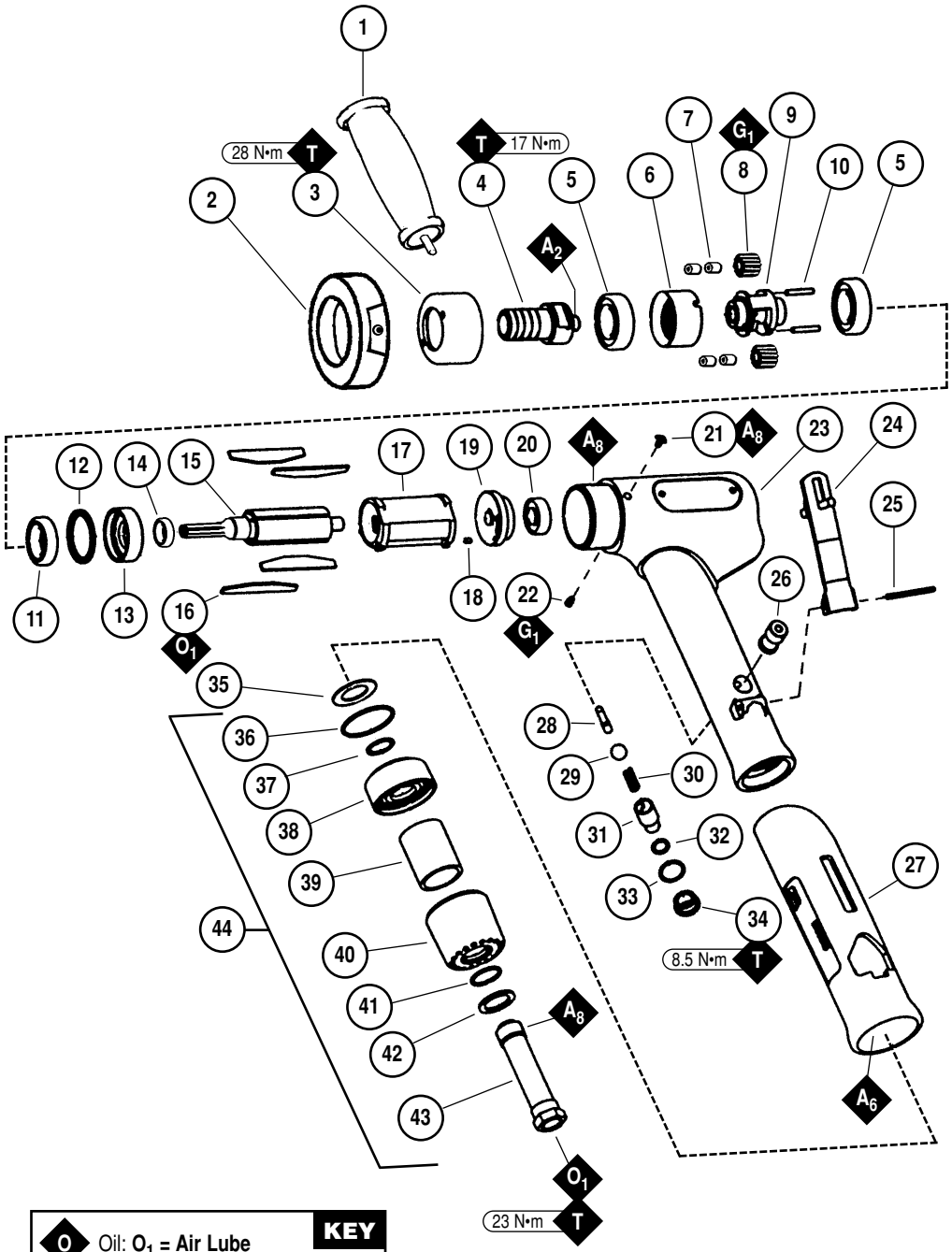
Models:

51450 — 3,400 RPM, 5/8"-11 male spindle
51451 — 4,500 RPM, 5/8"-11 male spindle
51454 — 3,400 RPM, M14 male spindle
51455 — 4,500 RPM, M14 male spindle

.7 Hp/7° Buffer

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.**



Index Key

No.	Part #	Description
1	**53163**	Handle Assembly
2	**13005**	Collar
3	**13432**	Spindle Cover
4	**14355**	Spindle 5/8"-11 male
	07182	Spindle M14 x 2 male
5	**02552**	Bearing (2)
6	**53191**	Ring Gear
7	**04026**	Bearing (4)
8	**53193**	3,400 RPM Gear (2)
	53195	4,500 RPM Gear (2)
9	**53180**	Planetary Carrier
10	**53182**	Gear Shaft (2)
11	**01007**	Bearing
12	**01121**	Shim Pack (3/pkg.)
13	**53183**	Front Bearing Plate
14	**01010**	Spacer
15	**04017**	3,400 RPM Rotor
	04009	4,500 RPM Rotor
16	**01185**	Blades (4/pkg.)
17	**01028**	Cylinder
18	**50767**	Pin
19	**13440**	Rear Bearing Plate
20	**02649**	Bearing
21	**04014**	Screw
22	**01041**	Grease Fitting
23	**51462**	Housing Assy. – **51450**
	51463	Housing Assy. – **51451**
	51456	Housing Assy. – **51454**
	51457	Housing Assy. – **51455**
	(includes **13436** Bushing & **01041** Grease Fitting)	
24	**01089**	Throttle Lever Assembly
25	**01017**	Pin
26	**13436**	Bushing
27	**13438**	Handle Grip
28	**13435**	Valve Stem
29	**13439**	Ball
30	**07145**	Spring
31	**13437**	Speed Regulator
32	**01024**	O-Ring
33	**13428**	Packing
34	**13427**	Regulator Plug
35	**01565**	3,400 RPM Air Cntrl Ring
	01564	4,500 RPM Air Cntrl Ring
36	**95438**	O-Ring
37	**95711**	Retaining Ring
38	**94521**	Muffler Base
39	**94528**	Muffler
40	**94522**	Muffler Cap
41	**95375**	O-Ring
42	**94526**	Spacer
43	**94523**	Inlet Adapter
44	**94519**	Muffler Assembly

KEY

- **O** Oil: **O_1 = Air Lube**
- **A** Adhesive: **A_2 = Loctite #271**, **A_6 = Loctite #380**, **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, 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 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: **11411** Air Line Filter-Regulator-Lubricator — Provides accurate air pressure regulation, two-stage filtration of water contaminants and micro-mist lubrication of pneumatic components.
   Operates up to 100 SCFM @ 100 PSIG has 1/2" 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 **96234**) 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.
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	Air Flow Rate CFM/SCFM (LPM)	Air Pressure PSIG (Bars)	Spindle Thread	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
51450	.7 (522)	3,400	78 dB(A)	6/46 (1,303)	90 (6.2)	5/8"-11 male	4.1 (1.9)	10-4/5 (275)	5-4/5 (148)
51451	.7 (522)	4,500	79 dB(A)	6/46 (1,303)	90 (6.2)	5/8"-11 male	4.1 (1.9)	10-4/5 (275)	5-4/5 (148)
51454	.7 (522)	3,400	78 dB(A)	6/46 (1,303)	90 (6.2)	M14 x 2 male	4.1 (1.9)	10-4/5 (275)	5-4/5 (148)
51455	.7 (522)	4,500	79 dB(A)	6/46 (1,303)	90 (6.2)	M14 x 2 male	4.1 (1.9)	10-4/5 (275)	5-4/5 (148)

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. Size 3/8" or 10mm

Disassembly/Assembly Instructions - .7 Hp Buffer

Important: Manufacturer's warranty is void if tool is disassembled before warranty expires.
Please refer to parts breakdown for part identification.

Motor Disassembly:

1. Disconnect tool from power source. Remove buffing pad or accessory from spindle.
2. Secure motor housing using padded vise with motor spindle facing upwards.
3. Using an adjustable pin wrench, remove **13432** Spindle Cover.
4. Remove **04014** Set Screw from housing.
6. Pull **14355** Spindle and planetary carrier assembly from housing.
7. Press planetary carrier assembly from rear **02552** Bearing. Remove ring gear and gears from **53180** Planetary Carrier.
8. Secure planetary carrier in vise and remove **14355** Arbor Adapter. Press carrier from front **02552** Bearing.
9. Grab onto rotor/pinion and pull motor assembly from motor housing.
10. Press rotor/pinion from **13440** Rear Bearing Plate. Press **02649** Rear Bearing from rear bearing plate.
11. Remove **01028** Cylinder and **01185** Rotor Blades from rotor.
12. Press rotor pinion assembly through **01007** Front Bearing and **53183** Front Bearing Plate.

Motor Disassembly Complete.

Housing Disassembly:

1. Position housing in padded vise 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 **94528** Felt Muffler.
5. Remove air control ring from housing.
6. Using a 2.5mm drift pin, tap **01017** Pin from housing and remove throttle lever assembly.
7. Remove **13427** Plug. Pull **13437** Speed Regulator from housing and remove **01024** O-Rings, **07145** Spring, **13439** Ball, and **13435** Valve Stem.

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 rotor/pinion in padded vise with threaded spindle facing upwards.
2. Slip **01010** Spacer onto rotor/pinion.
3. Place a .002" shim into **53183** Front Bearing Plate as an initial spacing and slip **01007** Bearing into plate.
   Note: 01121 Shim Pack contains .001" and .002" shims.
4. Press bearing/bearing plate assembly onto rotor.
5. Check clearance between rotor and bearing plate by using a .001" feeler gauge. Clearance should be at .001" to .0015". Adjust clearance by repeating steps 2-4 with different shim if necessary.
6. Once proper rotor gap clearance is achieved, install well lubricated **01185** Blades (4) into rotor slots. Dynabrade recommends using their **95842** Air Lube.
7. Install cylinder over rotor/pinion. Be sure air inlet holes of cylinder face away from **53183** Front Bearing Plate.
8. Press **02649** Rear Bearing into **13440** Rear Bearing Plate. Press bearing/bearing plate assembly onto rotor. Be sure that pin and air inlet holes line up with pin slot and air inlet holes in cylinder. **Important:** Fit must be snug between bearing plates and cylinder. If too tight, rotor will not turn freely. Rotor must then be lightly tapped at press fit end so it will turn freely while still maintaining a snug fit. A loose fit will not achieve the proper preload of motor bearings.
10. Secure motor housing in padded vise so motor cavity faces upwards. Install motor assembly into housing. Be sure motor inlet is facing the handle and it drops all the way into housing.
11. Press front **02552** Bearing onto front end of **53180** Planetary Carrier.
12. Apply #271 Loctite® to **14355** Arbor Adapter and install onto **53180** Planetary Carrier (torque 17.0 N•m/150 in. - lbs.).
13. Install gears, **04026** Bearings and **53182** Gear Shafts onto planetary carrier.
14. Slip **53191** Ring Gear over gears and press rear **02552** Bearing onto planetary carrier.
15. Apply two drops of #271 Loctite® to threads of **13432** Spindle Cover.
16. Apply #271 Loctite® to **13432** Spindle Cover and install onto housing, to secure motor (torque 28 N•m/250 in. - lbs.).

Motor Assembly Complete.

Housing Assembly:

1. Install **13438** Handle Grip.
2. Insert **13435** Valve Stem through housing and into hole in **13436** Bushing.
3. Insert **13439** Ball, **07145** Spring, **13437** Speed Regulator with **01024** O-Ring in place.
4. Install **13428** Packing onto **13427** Regulator Plug. Secure plug in place torque (8.5 N•m/75 in. - lbs.).
5. Insert **94528** Muffler into **94522** Muffler Cap. Install **94521** Muffler Base onto muffler cap.
6. Install **95438** O-Ring into groove on muffler base. Place **95375** O-Ring and **94526** Spacer into recessed area of muffler cap.

(continued on next page)

Disassembly/Assembly Instructions (continued)

7. Slip **94523** Inlet Adapter through muffler assembly and install **95711** Retainer Ring into groove on inlet adapter.
8. Install air control ring into housing.
9. Apply Loctite® #567 to threads of **94523** Inlet Adapter and install entire muffler assembly onto housing inlet (torque 23.0 N•m/200 in. - lbs.).
10. Replace air fitting. Secure inlet adapter with a wrench before tightening air fitting.
11. Install throttle lever and **01017** 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.

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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.

Note: For proper connection to a 1/4" NPT a threaded reducing bushing is required.

- **95461** 3/8" NPT.



95542 Grease 10 oz.

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

95541 Push-type Grease Gun

- One-hand operation.



Dynabrade Air Lube

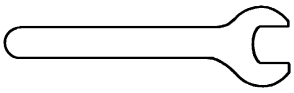
- Formulated for pneumatic equipment.
- Absorbs up to 10% of its weight in water.
- Prevents rust and formation of sludge.
- Keeps pneumatic tools operating longer with greater power and less down time.

95842: 1pt. (437 ml)
95843: 1 gal. (3.8 L)



96234 Tune-Up Kit

- Includes assorted parts to help maintain and repair motor.



95281 Wrench – 19mm

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

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