

Model:

- 13201 — 3,400 RPM, with 13016 Arbor**
- 13202 — 3,400 RPM, with 13017 Arbor**
- 13203 — 3,400 RPM, with 13014 Arbor**
- 13204 — 3,400 RPM, with 13015 Arbor**
- 13205 — 3,400 RPM, with 13071 Arbor**
- 13206 — 4,500 RPM, with 13016 Arbor**
- 13207 — 4,500 RPM, with 13071 Arbor**
- 13220 — 3,400 RPM, Versatility Kit**

KEY

O	Oil	G	Grease
L	Loctite/Hernon: L ₂ = Loctite #271, L ₃ = Loctite #609, L ₄ = Hernon #940		
T	Torque: N·m x 8.85 = In. - lbs. T ₂ = 17 N·m, T ₃ = 23 N·m, T ₄ = 28 N·m		

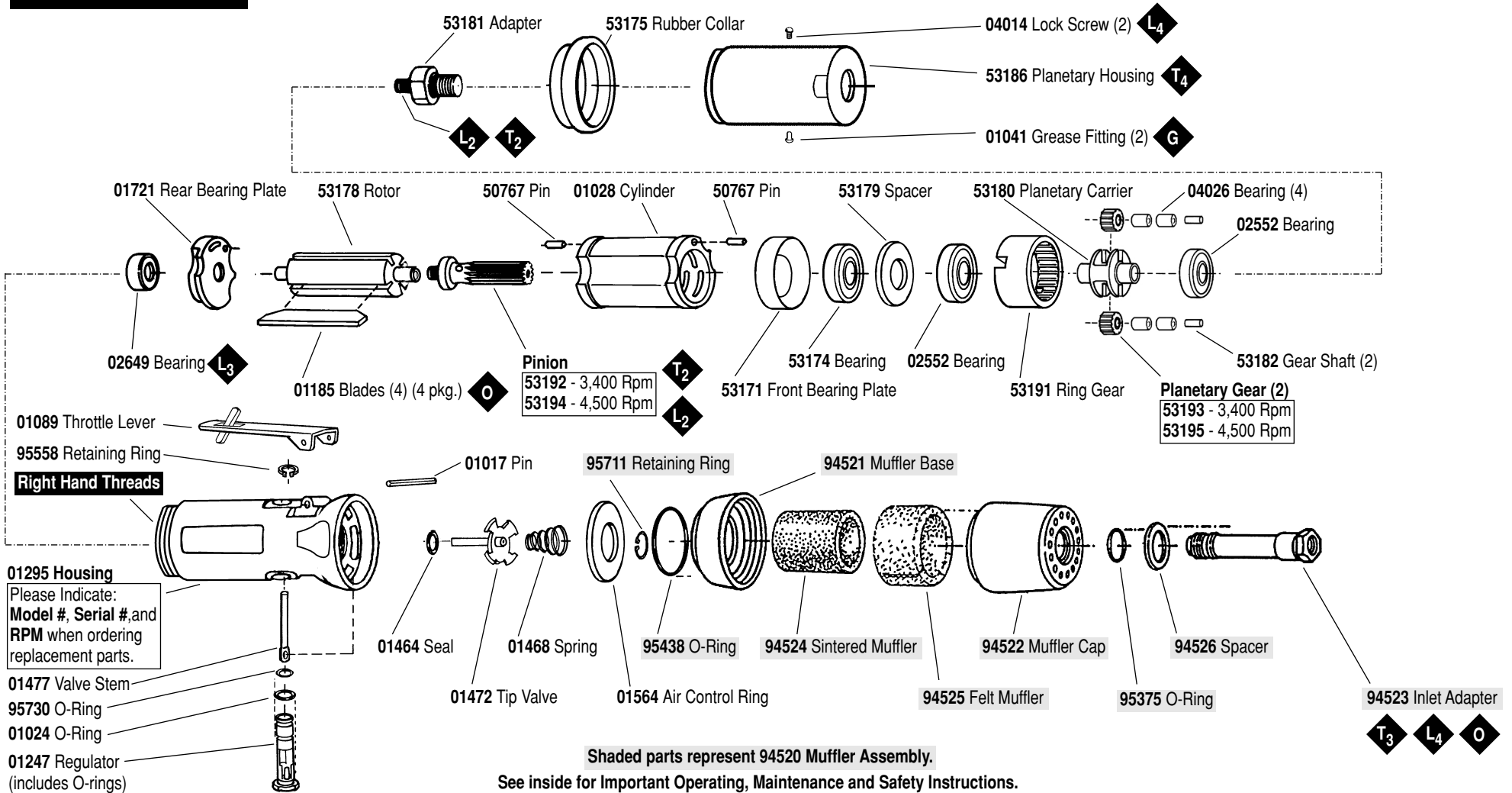
Parts Page Reorder No. PD97•26
Effective March, 1997
Supercedes PD94•06

Dynastraight

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.



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 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.
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 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**: 1pt. 473ml.) is recommended.
4. An air line filter-regulator-lubricator must be used with this air tool to maintain all warranties. Dynabrade recommends the following: **11289** 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 CFM @ 100 PSI has 3/8" NPT female ports.
5. Use only genuine Dynabrade replacement parts. To reorder replacement parts, please specify the **Model #**, **Serial #** and **RPM** of your machine.
6. A motor tine-up kit (P/N **96260**) is available which includes assorted parts to help maintain motor in peak operating condition.
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, ketones, 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	Length Inch (mm)	Weight Pound (kg)	Spindle Thread	Wheel Arbor Dia. Inch (mm)	Air Flow Rate SCFM (LPM)	Sound Level	Motor HP (W)	Motor RPM	Max. SFPM (SMPM)
13201	12.6" (320)	2.14 lbs. (1.0)	1/2"-20 male	1/2" (13)	34.5 (1,076)	82 dBA	.69 (515)	3,400	4,450 (1,352)
13202	14.8" (375)	2.14 lbs. (1.0)	1/2"-20 male	5/8" (16)	34.5 (1,076)	82 dBA	.69 (515)	3,400	4,450 (1,352)
13203	13.8" (350)	3.0 lbs. (1.3)	1/2"-20 male	14 mm	34.5 (1,076)	82 dBA	.69 (515)	3,400	4,450 (1,352)
13204	14.8" (375)	3.5 lbs. (1.6)	1/2"-20 male	5/8" (16)-11 thread	34.5 (1,076)	82 dBA	.69 (515)	3,400	4,450 (1,352)
13205	14.8" (375)	2.14 lbs. (1.0)	1/2"-20 male	5/8" (16) or 1" (25)	34.5 (1,076)	82 dBA	.69 (515)	3,400	4,450 (1,352)
13206	12.6" (320)	2.14 lbs. (1.0)	1/2"-20 male	1/2" (13)	37 (1,048)	82 dBA	.7 (522)	4,500	5,890 (1,789)
13207	14.2" (360)	3.5 lbs. (1.6)	1/2"-20 male	5/8" (16) or 1" (25)	37 (1,048)	82 dBA	.7 (522)	4,500	5,890 (1,789)

Additional specifications: Machine Diameter 1-3/4" (43 mm) • Air Inlet Thread 1/4" (6 mm) NPT • Hose Size 3/8" (9 mm) • 90 PSI (6.2 Bars)

Disassembly/Assembly Instructions - Dynastraight

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 any abrasives.
2. Secure air tool in padded vise. Roll back **53175** Rubber Collar.
3. With an adjustable pin wrench, remove **53186** Planetary Housing by turning counter-clockwise.
4. Pull **53181** Adapter and first planetary carrier assembly from **53186** Planetary Housing.
5. Press planetary carrier assembly from rear **02552** Bearing. Remove ring gear and gears from **53180** Planetary Carrier.
6. Secure planetary carrier in vise and remove **53181** Adapter. Press carrier from front **02552** Bearing. Remove **53179** Spacer.
7. Grab onto pinion and pull motor assembly from motor housing.
8. Press **53178** Rotor from **01721** Rear Bearing Plate. Press **02649** Rear Bearing from rear bearing plate.
9. Remove cylinder and rotor blades from rotor.
10. Secure rotor in vise and remove pinion from rotor by inserting a 3mm drift pin through hole in pinion and twist off (right hand threads).
11. Press pinion and rotor through **53174** Front Bearing and **53171** Front Bearing Plate.

Motor disassembly complete.

Valve Body Disassembly:

1. Position valve body 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 sintered muffler and felt muffler.
5. Remove **01564** Air Control Ring from valve body. Using needle nose pliers, remove **01468** Spring, tip valve and seal.
6. Using a 2.5mm drift pin, tap **01017** Pin from housing and remove throttle lever.
7. Remove **95558** Retaining Ring. Push **01247** Regulator from valve body and remove O-rings.

Disassembly complete.

Motor Reassembly:

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

1. Place **53171** Front Bearing Plate onto front end of **53178** Rotor (threaded end). Press **53174** Front Bearing onto rotor and front bearing plate.
2. Secure rotor in padded vise with threaded spindle facing up. Apply one drop of #271 Loctite® (or equivalent) to threads of rotor. Using a 3mm drift pin, tighten pinion onto rotor (torque 17.0 N•m/150 in. - lbs.).
3. Apply one drop of #609 Loctite® (or equivalent) to outer race of **02649** Rear Bearing and slip bearing into bearing plate.
4. Install well lubricated blades into rotor slots. Dynabrade recommends using their **95842** Dynabrade Air Lube.
5. Install cylinder over rotor with air inlet hole in cylinder wall facing away from front bearing plate.
6. Press **01721** 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.
7. Install motor assembly into motor housing. Place **53179** Spacer on top of motor.
8. Press Front **02552** Bearing onto front end of first **53180** Planetary Carrier.
9. Install gears, **04026** Bearings and **53182** Gear Shafts onto planetary carrier.
10. Slip **53191** Ring Gear over gears and press rear **02552** Bearing onto planetary carrier.
11. Apply one drop of #271 Loctite® to threads of **53181** Adapter. Install adapter onto planetary carrier (torque 17.0 N•m/150 in. - lbs.).
12. Install **53186** Planetary Housing onto housing to secure motor (torque 28 N•m/250 in. - lbs.).
13. Roll back **53175** Collar and install abrasives.

Motor Reassembly Complete.

Valve Body Reassembly:

1. Insert **01247** Regulator with O-rings and valve stem in place into valve body. Secure with **95558** Retaining Ring.
2. Secure valve body in padded vise with air inlet facing upwards. Insert **01464** Seal.
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 Herson #940 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. Install throttle lever and **01017** Pin.

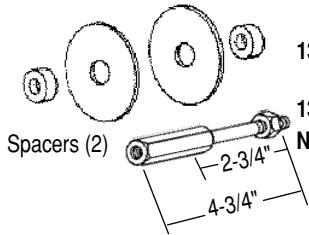
Tool Assembly is complete. Please allow 30 minutes for adhesives to cure before operating tool.

Important: Motor should now be tested for proper operation at 90 PSI. 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.

Arbors and Abrasive Capacity

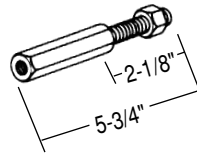
Mount up to 2" wide wheels

3" diameter Wheel Flanges (2)



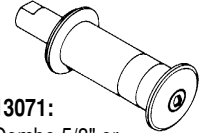
- 13014:** 14 mm diameter for Model **13203**.
 - 13016:** 1/2" diameter for Models **13206, 13201**.
 - 13017:** 5/8" diameter for Model **13202**.
- Note:** To mount 1" wide wheels, additional spacer is required.

Mount up to 3-1/2" wide Dynacushion® wheels



- 13015:** 5/8"-11 threaded for Model **13204**.

Mount up to 3" wide wheels



- 13071:** Combo 5/8" or 1" diameter for Models **13207, 13205, and 13200**.

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.

- **95460** 1/4" NPT.
- **95461** 3/8" NPT.
- **95462** 1/2" NPT.



94465 Wheel Inflation Tool

- Controlled inflation/deflation of pneumatic wheel.
- Has 1/4" female thread; fits 1/4" air hose.
- **95633** Nozzle Replacement available.



96260 Motor Tune-Up Kit

- Includes assorted parts to help maintain motor in tip-top shape.



5" Dia. x 3-1/2" Wide



5" Dia. x 2-3/4" Wide



3-1/4" Dia. x 3" Wide

Dynacushion® Pneumatic Wheels

Model Number	Wheel Size	Arbor Hole	Belt Size	Maximum RPM	P/N Rubber Wheel Only
94469	5" diameter x 3-1/2" wide	1/2" Bore	3-1/2" wide x 15-1/2" long	3,500	94481
94470	5" diameter x 3-1/2" wide	1/2"-13 Thread	3-1/2" wide x 15-1/2" long	3,500	94481
94471	5" diameter x 3-1/2" wide	5/8" Bore	3-1/2" wide x 15-1/2" long	3,500	94481
94472	5" diameter x 3-1/2" wide	5/8"-11 Thread	3-1/2" wide x 15-1/2" long	3,500	94481
94473	5" diameter x 3-1/2" wide	3/4" Bore	3-1/2" wide x 15-1/2" long	3,500	94481
94490	5" diameter x 2-3/4" wide	1/2" Bore	2-3/4" wide x 15-1/2" long	3,500	94482
94491	5" diameter x 2-3/4" wide	1/2"-13 Thread	2-3/4" wide x 15-1/2" long	3,500	94482
94492	5" diameter x 2-3/4" wide	5/8"-11 Thread	2-3/4" wide x 15-1/2" long	3,500	94482
94493	5" diameter x 2-3/4" wide	3/4" Bore	2-3/4" wide x 15-1/2" long	3,500	94482
94494	5" diameter x 2-3/4" wide	5/8" Bore	2-3/4" wide x 15-1/2" long	3,500	94482
94503	3-1/4" diameter x 3" wide	3/8" Bore	3" wide x 10-11/16" long	7,000	94500
94504	3-1/4" diameter x 3" wide	3/8"-24 Thread	3" wide x 10-11/16" long	7,000	94500
94505	3-1/4" diameter x 3" wide	1/2" Bore	3" wide x 10-11/16" long	7,000	94500
94506	3-1/4" diameter x 3" wide	1/2"-13 Thread	3" wide x 10-11/16" long	7,000	94500
94507	3-1/4" diameter x 3" wide	5/8" Bore	3" wide x 10-11/16" long	7,000	94500
94508	3-1/4" diameter x 3" wide	5/8"-11 Thread	3" wide x 10-11/16" long	7,000	94500



Visit our new Web Site via Industry.Net MROP On-Line: <http://www.dynabrade.industry.net>

E-Mail: DynaTalk@aol.com

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.à.r.l., Zone Artisanale • L-5485 Wormeldange—Haut, Luxembourg • Telephone: 352 76 84 94 • Fax: 352 76 84 95

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