Models:

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
13214 — 4,500 RPM, with 13072 Arbor
13215 — 4,500 RPM, Versatility Kit
13220 — 3,400 RPM, Versatility Kit

For Serial No. 8F1000 and Higher

PD08-29R
Effective March, 2018
Supersedes PD08•29

Dynastraight®

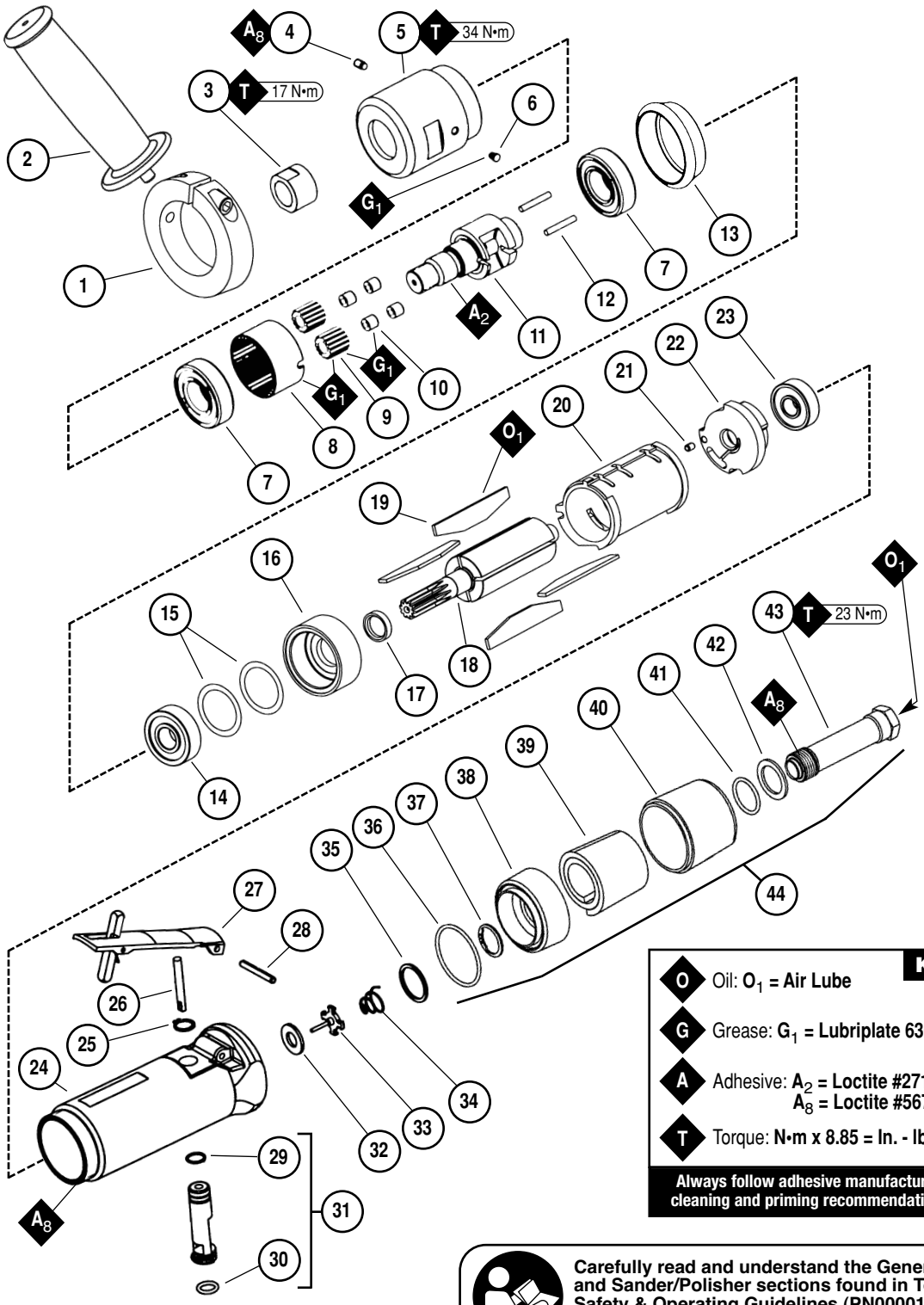
Air Motor and Machine Parts

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.

Index Key

No.	Part #	Description
Arbor options are found on page 4.		
1	**13005**	Mount Collar
2	**53163**	Handle
3	**04032**	Spindle Nut
4	**04014**	Set Screw
5	**53186**	Planetary Housing
6	**01041**	Grease Fitting
7	**02552**	Bearing (2)
8	**53191**	Ring Gear
9	**53193**	Gear (2) – 3,400 RPM
	53195	Gear (2) – 4,500 RPM
10	**04026**	Bearing (4)
11	**53165**	Planetary Carrier
12	**53182**	Gear Shaft (2)
13	**53175**	Insulator Collar
14	**01007**	Bearing
15	**01121**	Shim (3/pkg.)
16	**53183**	Front Bearing Plate
17	**01010**	Spacer
18	**Rotor**	
	04017	3,400 RPM
	04009	4,500 RPM
19	**01185**	Blades (4/pkg.)
20	**01028**	Cylinder
21	**50767**	Pin
22	**01721**	Rear End Plate
23	**02649**	Bearing
24	**13252**	Housing – **13201**
	13253	Housing – **13202**
	13254	Housing – **13203**
	13255	Housing – **13204, 20**
	13256	Housing – **13205**
	13257	Housing – **13206**
	13258	Housing – **13207**
	13108	Housing – **13214**
25	**95558**	Retaining Ring
26	**01477**	Valve Stem
27	**01953**	Safety Throttle Lever
28	**01017**	Pin
29	**95730**	O-Ring
30	**01024**	O-Ring
31	**01247**	Speed Reg. Assy.
32	**01464**	Seal
33	**01472**	Tip Valve
34	**01468**	Spring
35	**01564**	Air Control Ring
36	**95438**	O-Ring
37	**95711**	Retaining Ring
38	**94521**	Muffler Base
39	**94528**	Felt 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**
- **G** Grease: **G_1 = Lubriplate 630 AA**
- **A** Adhesive: **A_2 = Loctite #271**, **A_8 = Loctite #567**
- **T** Torque: **N•m x 8.85 = In. - lbs.**

Always follow adhesive manufacturers cleaning and priming recommendations.

Carefully read and understand the General and Sander/Polisher sections found in Tool Safety & Operating Guidelines (PN00001676) before handling or using tool.

See inside for Important Operating, Maintenance and Safety Instructions.

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.
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 20 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. Use only genuine Dynabrade replacement parts. To reorder replacement parts,please specify the **Model #**, **Serial #** and **RPM** of your machine.
6. Grease the planetary gear assembly with the **95542** Grease by applying **2-3 plunges** with the **95541** Grease Gun after every **50 hours of use** for maximum gear life.
7. A Motor Tune-Up Kit (P/N **96260**) is available which includes assorted parts to help maintain motor in peak operating condition.
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.
- **Warning:** User of tool is responsible for accepted eye, face, respiratory, sound, and body protection. 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.

LIFETIME WARRANTY

To validate Dynabrade Lifetime Warranty, you must register each tool at: www.dynabrade.com. Registration of each tool at website is required. Dynabrade will not honor Lifetime Warranty on unregistered tools. Please view the entire Lifetime Warranty Policy at www.dynabrade.com.

Model Number	Motor hp (W)	Motor RPM	Wheel Arbor Diameter	Air Inlet Thread	Maximum Air Flow CFM / SCFM (LPM)	Air Pressure PSIG (Bars)	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
13201	.7 (522)	3,400	1/2"	1/4" NPT	5/35 (977)	90 (6.2)	3.9 (1.8)	13-5/8 (346)	1-3/4 (44)
13202	.7 (522)	3,400	5/8"	1/4" NPT	5/35 (977)	90 (6.2)	3.9 (1.8)	13-5/8 (346)	1-3/4 (44)
13203	.7 (522)	3,400	14 mm	1/4" NPT	5/35 (977)	90 (6.2)	3.9 (1.8)	13-5/8 (346)	1-3/4 (44)
13204	.7 (522)	3,400	5/8"-11 thread	1/4" NPT	5/35 (977)	90 (6.2)	3.8 (1.7)	14-5/8 (371)	1-3/4 (44)
13205	.7 (522)	3,400	5/8" or 1"	1/4" NPT	5/35 (977)	90 (6.2)	4.0 (1.8)	13-5/8 (346)	1-3/4 (44)
13206	.7 (522)	4,500	1/2"	1/4" NPT	6/40 (1,133)	90 (6.2)	3.9 (1.8)	13-5/8 (346)	1-3/4 (44)
13207	.7 (522)	4,500	5/8" or 1"	1/4" NPT	6/40 (1,333)	90 (6.2)	4 (1.8)	13-5/8 (346)	1-3/4 (44)
13214	.7 (522)	4,500	5/8"-11 Thread	1/4" NPT	6/40 (1,333)	90 (6.2)	4 (1.8)	13-5/8 (346)	1-3/4 (44)

Additional Specifications: Spindle Thread 12"-20 Male • Hose I.D. Size 3/8" (10 mm) • Visit dynabrade.com for your model's vibration and sound data.

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 arbor assembly.
2. Secure air tool in padded vise.
3. With an adjustable pin wrench, remove **53186** Planetary Housing by turning counterclockwise.
4. Remove **04014** Set Screw and **53175** Rubber Collar, pull planetary carrier assembly from **53186** Planetary Housing.
5. Press planetary carrier assembly from rear **02552** Bearing. Remove ring gear and gears from **53165** Planetary Carrier.
6. Secure planetary carrier in vise and remove **04032** Spindle Nut. Press carrier from front **02552** Bearing.
7. Grab onto pinion and pull motor assembly from motor housing.
8. Press **04017** or **04009** Rotor from **01721** Rear Bearing Plate. Press **02649** Rear Bearing from rear bearing plate.
9. Remove cylinder and rotor blades from rotor.
10. Press **04017** or **04009** Rotor through **01007** Front Bearing and **53183** Front Bearing Plate.
11. Remove **01007** Bearing and shims from **53183** Bearing Plate. Remove **01010** Spacer from rotor.

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 **94528** 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 2.5mm 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 Assembly:

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

1. Slip **01010** Spacer onto **04017** or **04009** Rotor.
2. Place a .002 shim into **53183** Bearing Plate (**Note: 01121** Shim Pack contains .001 and .002 shims) and slip **01007** Bearing into plate.
3. Press **01007**, **53183** Bearing/Bearing Plate onto **04017** or **04009** Rotor.
4. Check the clearance between rotor and bearing plate by using .001 feeler gage, clearance should be at .001 to.0015. Adjust clearance by repeating steps 2-4 with a different shim if necessary.
5. Once proper rotor/plate clearance is achieved, install well-lubricated **01185** Blades into **04017** or **04009** Rotor. Dynabrade Air Lube P/N **95842** is recommended for lubrication.
6. Install **01028** Cylinder so it rests against **53183** Bearing Plate. (Make sure that the air inlet opening faces away from the **53183** Bearing Plate).
7. Press **02649** Bearing into **01721** Rear Bearing Plate. Press these parts onto **04017** or **04009** Rotor, be sure that the line-up pin and the air inlet opening line up with pin slots and air passage. **Important:** Fit must be snug between bearing plates and cylinder. If too tight, rotor will not turn free. Release, press and repress assembly so that it turns free, while still maintaining a snug fit. A loose fit will not achieve the proper preload of the motor bearing.
8. Install motor assembly into motor housing, making sure that the bearing plate node fits into the notch inside the housing.
9. Press front **02552** Bearing onto front end of first **53165** Planetary Carrier.
10. Apply one drop of #271 Loctite® to threads of **04032** Nut and install nut onto planetary carrier (torque 17 N•m/150 in. - lbs.).
11. Install gears with needle bearings and **53182** Gear Shafts onto planetary carrier.
12. Slip **53191** Ring Gear over planetary gears making sure that the notches will line up with the set screw and the grease fitting. Then press rear **02552** Bearing onto planetary carrier.
13. Slide planetary gear assembly into **53186** Planetary Housing and apply a small amount of #567 Loctite® to the threads of **04014** Set Screw and install.
14. Install **53175** Rubber Collar onto **53186** Planetary Housing. Apply a small amount of #567 Loctite® to the threads of the motor housing and install **53186** Planetary Housing onto housing to secure motor (torque 28 N•m/250 in. - lbs.).

Motor Assembly Complete.

Valve Body Assembly:

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 upward. 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 toward tip valve).
4. Place felt muffler 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.

(continued on next page)

Disassembly/Assembly Instructions - Dynastraight® *(Continued)*

8. Apply Loctite #567 PST Pipe Sealant to threads of **94523** Inlet Adapter and install entire muffler assembly onto valve body (torque 23 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 Complete. Please allow 30 minutes for adhesives to cure before operating tool.

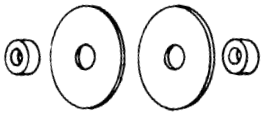
Important: Motor should now be tested for proper operation at 90 PSIG. If motor does not operate properly or operates at a higher RPM than marked on the tool, the tool should be serviced to correct the cause before use. Before operating, place 2-3 drops of Dynabrade Air Lube (P/N **95842**) directly 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.

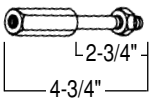
Dynastraight® Arbors

Mount up to 2" wide wheels

3" diameter Wheel Flanges (2)



Spacers (2)



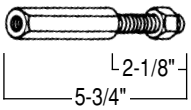
13014: 14mm diameter
For Model: **13203**.

13016: 1/2" diameter
For Models: **13201** and **13206**.

13017: 5/8" diameter
For Model: **13202**.

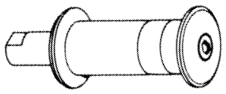
Note: To mount 1" wide wheels, an additional spacer is required.

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



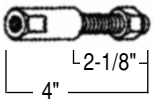
13015: 5/8"-11 threaded.
For Model: **13204 & 13220**.

Mount up to 3" wide wheels



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

Mount 1" wide Dynawheels



13072: 5/8"-11 threaded.
For Models: **13070 & 95274**.

Optional Accessories



95544 Grease 2.5 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.



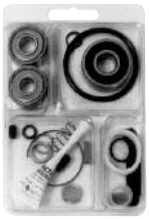
Dynaswivel®

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 thread, a reducing bushing is required.
- **95461:** 3/8" NPT



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



96260 Motor Tune-Up Kit
- Includes assorted parts to help maintain and repair motor.



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. (473 ml)
95843: 1gal. (3.8 L)



50066 1/4" Collet Assembly

REFERENCE CONTACT INFORMATION

American National Standards Institute (ANSI) • www.ansi.org
25 West 43 Rd St., 4th Floor • New York, NY 10036 • Tel: 1 (202) 293-8020

Compressed Air & Gas Institute (CAGI) • www.cagi.org
1300 Sumner Ave. • Cleveland, OH 44115
Tel: 1 (216) 241-7333

European Committee for Standards (PNEUROP) • www.pneurop.org
rue de Drapiers 21 • 1050 Brussels, Belgium

International Organization for Standardization (ISO)
www.iso.org • PO Box 56 • Ch-1211 Geneve 20, Switzerland

U.S. Government Publishing Office (GPO) • www.gpo.gov
Superintendent of Documents
732 North Capitol Street NW • Washington, DC 20401
Tel: 1 (202) 512-1800

DYNABRADE, INC. **www.dynabrade.com**
8989 Sheridan Drive • Clarence, NY 14031-1419 • Phone: (716) 631-0100 • Fax: 716-631-2073 • International Fax: 716-631-2524
©DYNABRADE, INC., 2018

DYNABRADE®