Parts Page Reorder No. PD08•30
Effective July, 2008

8" Random Orbital Polisher
Governor Controlled

Air Tool Manual – Safety, Operation and Maintenance

SAVE THIS DOCUMENT, EDUCATE ALL PERSONNEL

Models:

51570 – 2,800 RPM, 5/8"-11 Spindle
51571 – 2,800 RPM, M14 x 2 Spindle

Rotary Motion

3/4" Dia. Random Orbit

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⚠ WARNING

Read and understand this tool manual before operating your air tool. Follow all safety rules for the protection of operating personnel as well as adjacent areas. Always operate, inspect and maintain this tool in accordance with the American National Safety Institute (ANSI) Safety Code for Portable Air Tools – B186.1. For additional safety information, refer to Safety Requirements for the Use, Care and Protection of Abrasive Wheels – ANSI B7.1, Code of Federal Regulation – CFR 29 Part 1910, European Committee for Standards (EN) Hand Held Non-Electric Power Tools – Safety Requirements and applicable State and Local Regulations.

SAFETY LEGEND

⚠ WARNING

Read and understand tool manual before work starts to reduce risk of injury to operator, visitors, and tool.

⚠ WARNING

Practice safety requirements. Work alert, have proper attire, and do not operate tools under the influence of alcohol or drugs.

⚠ WARNING

Eye protection must be worn at all times, eye protection to conform to ANSI Z87.1.

⚠ WARNING

Ear protection to be worn when exposure to sound, exceeds the limits of applicable Federal, State or local statues, ordinances and/or regulations.

⚠ WARNING

Respiratory protection to be used when exposed to contaminants that exceed the applicable threshold limit values required by law.

⚠ WARNING

Air line hazard, pressurized supply lines and flexible hoses can cause serious injury. Do not use damaged, frayed or deteriorated air hoses and fittings.

⚠ WARNING

Some dust created by sanding, grinding, drilling, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints
- Crystalline silica from bricks and cement and other masonry products
- Arsenic and chromium from chemically treated lumber

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

SAFETY INSTRUCTIONS

Carefully Read all instructions before operating or servicing any Dynabrade® Abrasive Power Tool.
Products offered by Dynabrade are not to be modified, converted or otherwise altered from the original design without expressed written consent from Dynabrade, Inc.

Tool Intent: 8" Random Orbital Polishers are ideal for buffing and polishing of materials using cleaning and polishing accessories.

Do not use tool for anything other than its intended applications.
This power tool is not intended for use in potentially explosive atmospheres and is not insulated against contact with electrical power.

Training: Proper care, maintenance, and storage of your tool will maximize performance.

- Employer's Responsibility – Provide 8" Random Orbital Polisher operators with safety instructions and training for safe use of tools and accessories.

Accessory Selection:

- Abrasive/accessory RPM (speed) rating MUST be approved for AT LEAST the tool RPM rating.
- Before mounting an accessory, visually inspect for defects. Do not use defective accessories.
- Use only recommended accessories. Do Not use grinding wheels or cut-off wheels. See back page of manual and Dynabrade catalog.
- Follow tool specifications before choosing size and type of accessory.
- Only use recommended fittings and air line sizes. Air supply hoses and air hose assemblies must have a minimum working pressure rating of 150 PSIG (10 Bars, g) or 150 percent of the maximum pressure produced in the system, whichever is higher. (See tool Machine Specifications table.)

OPERATING INSTRUCTIONS

Warning: Always wear eye protection. Operator of tool is responsible for following: accepted eye, face, respiratory, hearing and body protection.

Caution: Hand, wrist and arm injury may result from repetitive work, motion and overexposure to vibration. Vibration level (m/s^2): 3.44. Vibration level was established using ISO 8662-12 with a 70 gram buff attached. Accessories with greater mass will increase vibration levels.

- Keep hand and clothing away from working end of the air tool.
- Working end of the air tool has potential hazard of cutting and severing.

Operation: Be sure that any loose clothing, hair and all jewelry is properly restrained.

- Secure inlet bushing on air tool with a wrench before attempting to install the air fitting to avoid damaging housing assembly.
- BEFORE MOUNTING AN ACCESSORY, after all tool repairs and whenever a 8" Random Orbital Polisher is issued for use, check tool RPM (speed) with tachometer with air pressure set at 90 PSIG while the tool is running. If tool is operating at a higher speed than the RPM marked on the tool housing, or operating improperly, the tool must be serviced and corrected before use.

Caution: Tool RPM must never exceed abrasive/accessory RPM rating. Check accessory manufacturer for details on maximum operating speed or special mounting instructions.

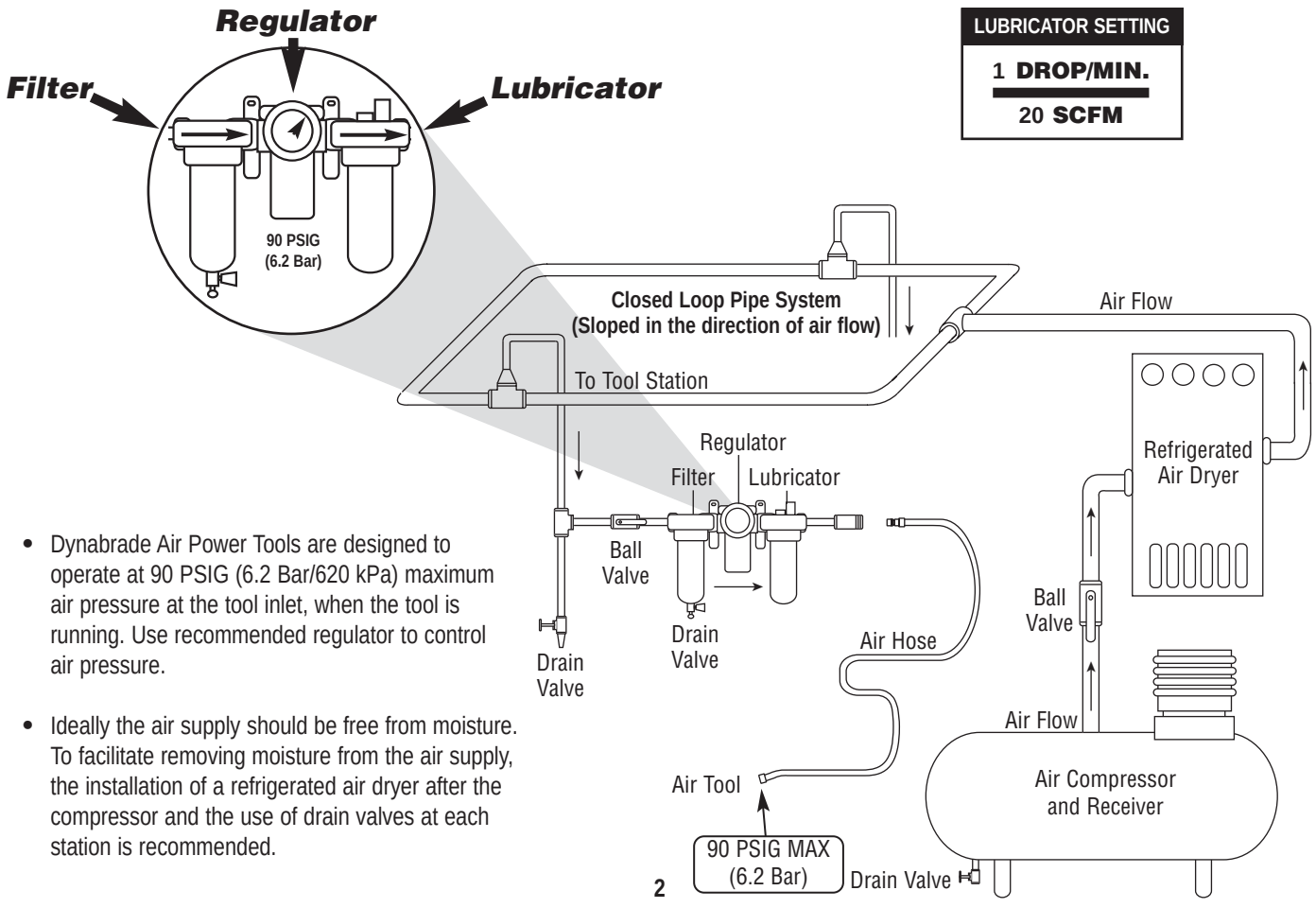
- With power source connected at the air tool relieve hose of air pressure and disconnect tool from air supply when changing recommended accessories.
- Connect air tool to power source. Be careful NOT to depress throttle lever in the process.
- Do not expose air tool to inlet pressure above 90 PSIG or (6.2 Bars).

Caution: After installing the accessory, before testing or use and/or after assembling tool, the 8" Random Orbital Polisher must be started at a reduced speed to check for good balance. Gradually increase tool speed. DO NOT USE if tool vibration is excessive. Correct cause, and retest to insure safe operation.

- Release the throttle lever in case of an interruption of the energy supply.
- Ensure that self-fixing accessories are mounted concentrically.
- Make sure that work area is uncluttered, and visitors are at a safe range from the tools and debris. Potentially explosive atmospheres can be caused by dust and fumes resulting from sanding or grinding. Always use dust extraction or suppression systems which are suitable for the material being processed.
- Proceed with caution in unfamiliar surroundings. Hidden hazards may exist, such as electricity or other utility lines.
- Air tools are not intended for use in explosive atmospheres and are not insulated for contact with electric power sources.
- Use a vise or clamping device to hold work piece firmly in place.
- Work may generate hazardous dust.
- Do not apply excessive force on tool or apply “rough” treatment to it.
- Always work with a firm footing, posture and proper lighting.
- Ensure that sparks and debris resulting from work do not create a hazard.
- This tool is rear exhaust. Exhaust may contain lubricants, vane material, bearing grease, and other materials flushed thru the tool.

Report to your supervisor any condition of the tool, accessories, or operation you consider unsafe.

Air System



- Dynabrade Air Power Tools are designed to operate at 90 PSIG (6.2 Bar/620 kPa) maximum air pressure at the tool inlet, when the tool is running. Use recommended regulator to control air pressure.
- Ideally the air supply should be free from moisture. To facilitate removing moisture from the air supply, the installation of a refrigerated air dryer after the compressor and the use of drain valves at each station is recommended.

Maintenance Instructions

Important: To keep tool safe a preventative maintenance program is recommended whenever portable power tools are used. The program should include inspection of air supply lines, air line pressure, proper lubrication and repair of tools. Refer to ANSI B186.1 for additional maintenance information.

- Use only genuine Dynabrade replacement parts to insure quality. To order replacement parts, specify **Model#**, **Serial#** and **RPM** of your air tool.
- 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: **10681** Air Filter-Regulator-Lubricator (FRL) – Provides accurate air pressure regulation and two stage filtration of water contaminants.
- Lubricate wick system through the angle gear oil fitting with **2-3 plunges** for **every 8 hours of use**, to achieve maximum gear life. **Important:** Use only the recommended angle gear oil for the wick system. Do not contaminate the wick with any other oil or grease product (order **95848** Gear oil and **95541** Gun).
- 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.
- Dynabrade recommends one drop of air lube per minute for each 20 SCFM (example: if the tool specification states 40 SCFM, set the drip rate on the filter-lubricator to 2 drops per minute). Dynabrade Air Lube (P/N **95842**: 1 pt 473 ml) is recommended.

Routine Preventative Maintenance:

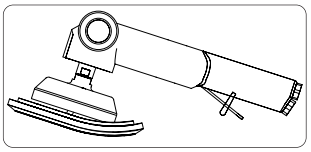
- Check free speed of 8" Random Orbital Polisher using a tachometer. This governor controlled right-angle random orbital polisher should be speed checked every 20 hours of use or weekly, whichever occurs more frequently.
- BEFORE MOUNTING AN ACCESSORY, after all tool repairs and whenever a 8" Random Orbital Polisher is issued for use, check tool RPM (speed) with tachometer with air pressure set at 90 PSIG while the tool is running. If tool is operating at a higher speed than the RPM marked on the tool housing, or operating improperly, the tool must be serviced and corrected before use.
- DO NOT disassemble the governor for any reason. Reorder correct speed – governor assembly (See Assembly Breakdown) and recheck free speed of tool with a tachometer.
- 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.
- DO NOT clean or maintain tools with chemicals that have a low flash point (example: WD-40®).
- A Motor Tune-Up Kit (P/N **96532**) is available which includes high wear and medium wear motor parts.
- Air tool labels must be kept legible at all times, if not, reorder label(s) and replace. User is responsible for maintaining specification information i.e.: Model #, S/N, and RPM. (See Assembly Breakdown)
- Blow air supply hose out prior to initial use.
- Visually inspect air hoses and fittings for frays, visible damage and signs of deterioration. Replace damaged or worn components.
- Refer to Dynabrade's Warning/Safety Operating Instructions Tag (Reorder No. **95903**) for safety information.

After maintenance is performed on tool, add a few drops of Dynabrade Air Lube (P/N **95842**) to the air line and start the tool a few times to lubricate air motor. Check for excessive tool vibration.

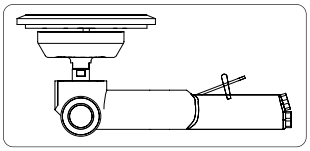
Handling and Storage:

- DO NOT rest tool on pad. (See Tool Resting Position Diagram)
- Use of tool rests, hangers and/or balancers is recommended.
- Protect tool inlet from debris (see Notice below).
- DO NOT carry tool by air hose, or near the tool throttle lever.
- Protect abrasive accessories from exposure to water, solvents, high humidity, freezing temperature and extreme temperature changes.
- Store accessories in protective racks or compartments to prevent damage.

Tool Resting Position:



INCORRECT Resting Position



CORRECT Resting Position

Machine Specifications

Model Number	Motor HP (W)	Tool RPM	Sound Level	Air Flow Rate SCFM (LPM)	Air Pressure PSIG (Bars)	Spindle Thread	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
51570	1 (746)	2,800	85 dB(A)	41 (1,167)	90 (6.2)	5/8"-11	5.8 (2.7)	14-3/8 (366)	5-3/8 (135)
51571	1 (746)	2,800	85 dB(A)	41 (1,167)	90 (6.2)	M14 x 2	5.8 (2.7)	14-3/8 (366)	5-3/8 (135)

Additional Specifications: Air Inlet Thread 3/8" NPT • Hose I.D. Size 3/8" (10 mm) • Air Flow Rate Based At Max HP. • Air Pressure 90 PSIG Max
Sound Level is the pressure measurement according to the method outlined in ISO regulation ISO-15744

Notice

All Dynabrade motors use the highest quality parts and materials 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.

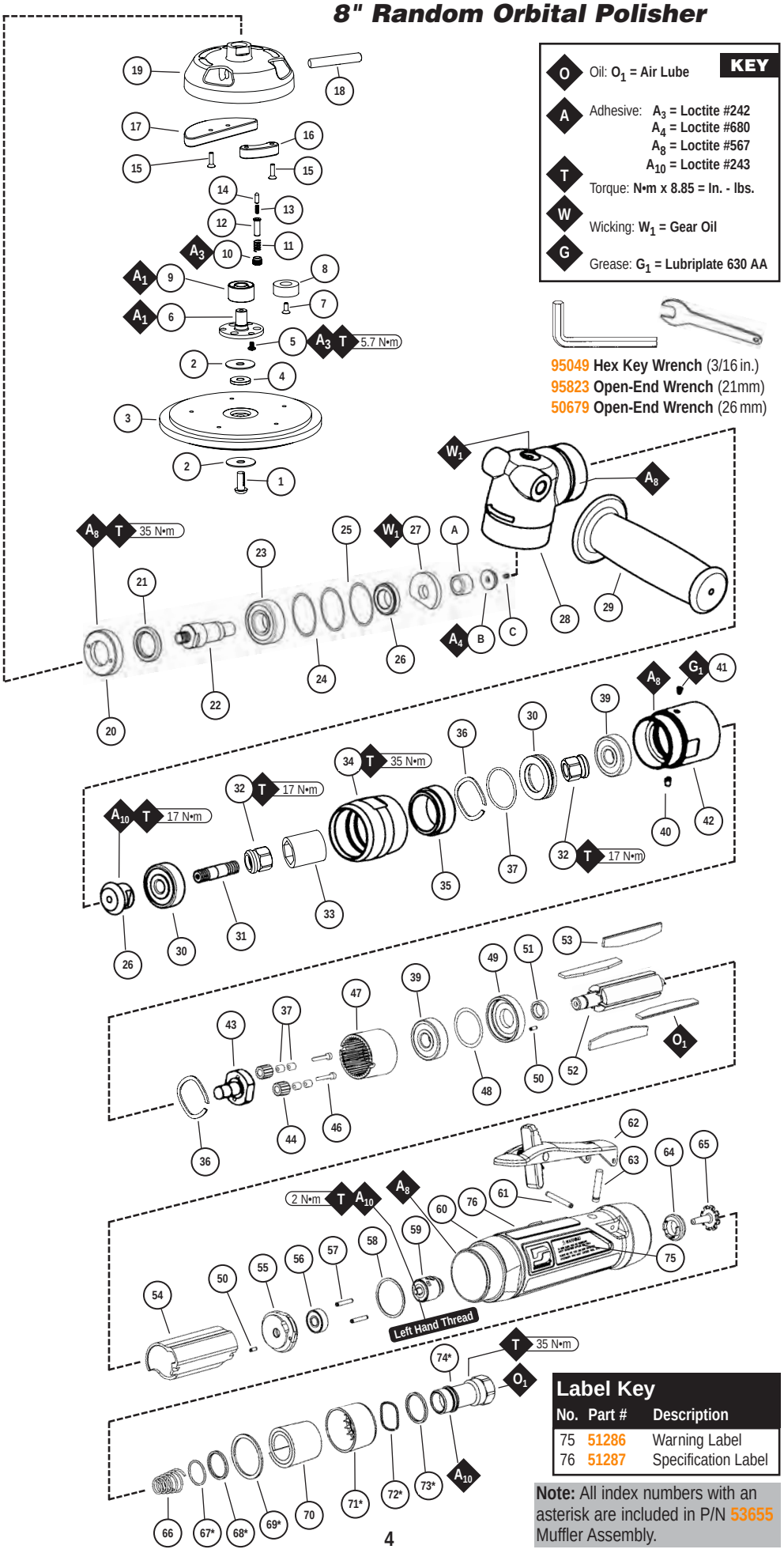
One Year Warranty

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.

8" Random Orbital Polisher

Index Key

No.	Part #	Description
1	96188	Screw
2	94594	Washer (2)
3	50855	Pad
4	94595	Spacer
5	95235	Screw (3)
6	61392	Shaft Balancer
7	61389	Screw
8	61387	Counterweight
9	56052	Bearing
10	61398	Locking Pin Bushing
11	61395	Switch Spring
12	61393	Pin
13	61397	Spring
14	61396	Locking Pin Insert
15	92517	Screw (4)
16	61388	Counterweight
17	61386	Counterweight
18	61394	Switch Shaft
19	61390	Housing - 5/8"-11
	61391	Housing - M14 x 2
20	50963	Retainer
21	50899	Seal
22	53603	Spindle - 5/8"-11
	53606	Spindle - M14 x 2
23	97679	Bearing
24	97678	Shim
25	97677	Shim (2)
26	53637	Gear Set
27	53608	Wick
28	53600	Right Angle Housing Assy. Includes the following: A 96325 Shell Bearing; B 53649 Gear Oil Plate; C 01041 Gear Oil Fitting
29	53163	Side Handle
30	01266	Bearing
31	53635	Pinion Adapter
32	51969	Coupling Nut (2)
33	50902	Coupling Insert
34	53650	Lock Ring
35	53651	Spacer
36	96498	Wave Spring (2)
37	95438	O-Ring
38	53620	Adapter
39	54520	Bearing (2)
40	04014	Set Screw
41	01041	Grease Fitting
42	53695	Gear Casing
43	53669	Carrier
44	53195	Gear (2)
45	04026	Needle Bearing (4)
46	53679	Shaft (2)
47	53665	Ring Gear
48	51951	Shim Pack (3/Pkg.)
49	51922	Front Bearing Plate
50	96441	Pin (2)
51	51927	Spacer
52	53666	Rotor
53	51926	Blade (4/Pkg.)
54	51925	Cylinder
55	51923	Rear Bearing Plate
56	02057	Bearing
57	96445	Pin (2)
58	51924	Gasket
59	51933	Governor Assembly
60	**All Housings Include:** Warning & Specification Labels; 20036 Housing – Model 51570; 20037 Housing – Model 51571	
61	96444	Pin
62	51949	Safety Lever Assembly
63	51946	Valve Stem Assembly (Incl. 96443 O-Ring)
64	51945	Valve Seat
65	51944	Tip Valve
66	51943	Spring
67*	96442	O-Ring
68*	51940	Spacer
69	53682	Gasket - Standard
	53687	Gasket - Overhose Version
70*	94528	Felt Silencer
71*	53686	Muffler Cap
72*	94924	Wave Spring
73*	53683	Spacer
74*	53681	Inlet BushinG (Incl. 2 – 51938 Screens)



95049 **Hex Key Wrench** (3/16 in.)
95823 **Open-End Wrench** (21mm)
50679 **Open-End Wrench** (26 mm)

Label Key

No.	Part #	Description
75	51286	Warning Label
76	51287	Specification Label

Note: All index numbers with an asterisk are included in P/N 53655 Muffler Assembly.

Disassembly Instructions

Important: Manufacturer's warranty is void if tool is disassembled before warranty expires.
Disconnect tool from power source before tool repair.

Orbital Head Disassembly:

1. Slide 61394 Switch Shaft to the random (lock) position. Use the 95823 21mm wrench to hold the orbital head in position and removed the 96188 Screw with the 95049 3/16" hex key.
2. Hold the 18552 Housing in a vise with bronze or aluminum jaws so the orbital head assembly is facing up.
3. Apply localized heat to the three 95235 Screws and use a 9/64" hex key to remove these.
4. Apply localized heat to the 57069 Balancer Shaft and remove the shaft along with the 56052 Bearing.
5. Use the 96346 2" Bearing Separator and the 96232 #2 Arbor Press to remove the 56052 Bearing from the 57069 Balancer Shaft.
6. Apply localized heat to 61398 Locking Pin Bushing and use 96364 Slotted screwdriver to remove.
7. Remove 61935 Switch Spring, 61393 Pin, 61397 Spring, and 61396 Locking Pin Insert.
8. Remove 61394 Switch Shaft from Orbital Head Housing.
9. Use the 95823 21mm Wrench to remove the orbital head from the spindle.

Orbital Head Disassembly Complete.

Right Angle Head Disassembly:

1. Remove side handle and orbital head assembly.
2. Secure 53600 Right Angle Housing, against both side handle bosses, in a padded vise with spindle facing upward.
3. Using 97782 Pin Wrench (*ordered separately*) or an adjustable pin wrench, remove 50963 Retainer. (**Left Hand Threads**)
4. Remove 50899 Shaft Seal from retainer.
5. Pull spindle and gear assembly from housing.
6. Press spindle through 97679 Bearing and spiral bevel gear.
7. Remove shims and 53608 Wick from right angle housing.
8. Remove 53650 Lock Ring from right angle housing (**Left Hand Threads**) and from 53695 Gear Casing (**Right Hand Threads**).
9. Remove angle head from vise and remove 96325 Bearing by pressing 53649 Gear Oil Plate through housing.
10. Pull pinion gear, bearing and coupler sub-assembly from angle housing.
11. Secure gear, bearing and coupler sub-assembly by the pinion gear wrench flats and remove the 50902 Coupling Insert (twist counterclockwise).
12. Secure 53635 Adapter using an allen wrench and remove pinion gear (twist counterclockwise).
13. Press 53635 Adapter through 01266 Bearing.
14. Remove 04014 Set Screw from 53695 Gear Casing and remove gear casing (**Right Hand Thread**) from motor housing.
15. Slide 53665 Ring Gear from gear casing.
16. Secure planetary carrier using 53698 Wrench (*ordered separately*) and remove 51969 Coupling (twist counterclockwise).
17. Press planetary carrier thread end through 54520 Bearing.
18. Remove 96498 Wave Spring.
19. Press 53679 Pins from carrier to remove gears.

Right Angle Head Disassembly Complete.

Motor Disassembly:

1. Remove 53651 Spacer and 96498 Wave Spring from housing assembly.
2. Pull motor assembly from housing.
3. Remove 53620 Motor Adapter with 95438 O-Ring. **Note:** Step 3 applies to 4,500 RPM models only.
4. Remove governor assembly by using a slotted screwdriver. (**Left Hand Thread**)
5. Secure 51925 Cylinder using 96209 Motor Repair Clamp (*ordered separately*) and place a 1/8" (3 mm) drift pin to the base of the terminal thread and press 51921 Rotor from the 02057 Rear Bearing.
6. Slide 02057 Rear Bearing from 51923 Rear Bearing Plate.
7. Remove 51925 Cylinder and 51926 Blades.
9. Press rotor through 54520 Bearing, 51922 Front Bearing Plate and 51927 Rotor Spacer.
10. Slide 54520 Bearing and shims from 51922 Front Bearing Plate.

Motor Disassembly Complete.

Housing Disassembly:

1. Secure housing using 51989 Repair Collar (*see back cover for Optional Accessories*).
2. Remove inlet bushing with muffler assembly (twist counterclockwise).
3. Remove 53682 Gasket, 51943 Spring, 96442 O-Ring, 51940 Spacer, 94528 Felt Silencer, 53686 Muffler Cap, 94924 Wave Spring and 53683 Spacer from 53681 Inlet Bushing.
4. Remove 51944 Tip Valve and 51945 Valve Seat.
5. Remove housing and 51989 Repair Collar and lay collar on bench with flange facing down so it is supporting throttle lever. Place a 3/32" (3 mm) drift pin on 96444 Pin and tap pin thru housing.
6. Remove 51946 Valve Stem Assembly.
7. Remove 96443 O-Ring from 51946 Valve Stem Assembly.

Housing Disassembly Complete.

Assembly Instructions

Motor Assembly:

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

1. Place rotor into a padded vise with gear teeth or male thread facing upwards.
2. Slip 51927 Rotor Spacer over rotor shaft and down against rotor body face.
3. Press 96441 Coiled Pin into 51922 Front Bearing Plate. Make certain, coiled pin does not protrude beyond internal bearing surface.
4. Place a .002" shim into the base of 51922 Front Bearing Plate as an initial spacing and slide 54520 Bearing to the front plate base. **Note:** 51951 Shim Pack contains 001" and .002" shims.
5. Slip bearing/bearing plate assembly onto rotor. Add one drop of Loctite® #243 (or equiv.) to 51921 Rotor 3/8-24 male thread and screw 51969 Coupling Nut into place (Torque to 17 N•m 150 lb.-in.). **Note:** Step 5 applies to 4,500 RPM models only, omit step 6.
6. Press Bearing/Bearing Plate assembly onto rotor.
7. Check clarence between rotor and front bearing plate by using a .001" feeler gauge. Clarence should be between .001" – .0015". Adjust clarence by repeating steps 4,5 and 6 with different shims if necessary.
8. Once proper rotor gap clarence is achieved, install well lubricated 51926 Blades (4) into rotor slots. Dynabrade recommends lubricating blades with 95842 Air Lube.
9. Install 51925 Cylinder over rotor and front plate raised boss. Align coiled pin on front plate to cylinder slot.
10. Press 96441 Coiled Pin into blind hole on 51923 Rear Bearing Plate. Press (2) 96445 Coiled Pins into the back side of rear bearing plate.
11. Peel backing off 51924 Gasket and apply it firmly in place onto 51923 Rear Bearing Plate.
12. Place 51923 Rear Bearing Plate over rotor mandrel and insert raised boss on rear bearing plate into cylinder diameter, while inserting short coiled pin into cylinder slot. Be sure inlet slot on rear bearing plate lines up with inlet slot on cylinder. To correct alignment flip cylinder end to end and repeat step 9 for correct assembly.

(continued on next page)

Assembly Instructions - (Continued)

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

13. Using 96243 Bearing Press Tool (*ordered separately*) press 02057 Bearing onto rotor and into 51923 Rear Bearing Plate hole until it is seated. **Important:** Cylinder must fit snug between bearing plates. If too tight, rotor will not turn freely. Rotor must be lightly tapped at press fit end until rotor spins freely while still maintaining a snug fit. A loose fit will not achieve the proper preload on motor. While pressing 02057 Bearing, make certain to contact inner race of bearing.
14. Add one drop of Loctite® 243 (or equiv.) to governor assembly male thread and screw governor assembly into place (**Left Hand Thread**) with slotted screw head. Torque to 2 N•m (18 lb.-in.).
15. Install motor assembly into housing, making sure motor drops all the way into housing. **Note:** Align both 96445 Coiled Pins to slots in insert and against 51924 Gasket.

Motor Assembly Complete.

Right Angle Head Assembly:

1. Press 01041 Gear Oil Fitting into 53649 Gear Oil Plate. Apply a drop of Loctite® #680 (or equiv) to the diameter of the gear oil plate and insert sub-assembly into right angle housing.
2. Press 96325 Bearing into housing until it is firmly seated against 53649 Gear Oil Plate. **Important:** While pressing 96325 Bearing, make certain to contact outer race of bearing only.
3. Add one drop of Loctite® #243 (or equiv.) to male thread of 53635 Adapter and tighten pinion using a 3/16" Hex Key wrench and the pinion wrench flats. Torque to 17 N•m (150 lb.- in.).
4. Using 96244 Bearing Press Tool (*ordered separately*) press 53635 Adapter into 01266 Bearing. **Important:** While pressing 01266 Bearing, make certain to contact inner race of bearing only.
5. Add one drop of Loctite® #243 (or equiv.) to male thread of adapter and tighten 51969 Coupling Nut using wrench flats. Torque to 17 N•m (150 lb.- in.).
6. Insert sub-assembly into male threaded end of 53600 Right Angle Housing.
7. Apply a small amount of Loctite® #567 (or equiv.) to 53600 Right Angle Housing thread, and install 53650 Lock Ring (**Left hand Threads**).
8. Install 53665 Ring Gear over 54520 Front Motor Bearing, keeping 2 slots facing outward.
9. Install gears with needle bearings and assemble onto planetary carrier by pressing retainer shafts into place.
10. Place 96498 Wavy Washer at the base of 53695 Gear Casing female threaded end.
11. Slide planetary carrier assembly, with threaded end first, into 53695 Gear Casing and through 54520 Bearing.
12. Apply one drop of Loctite® #243 (or equiv.) to threads of 51969 Coupling Nut. Secure planetary carrier using 53698 Wrench (*order separately*) and thread on 51935 Coupling (twist clockwise). Torque to 17 N•m (150 lb.-in.).
13. Apply a small amount of Loctite® #567 (or equiv.) to male thread of motor housing and thread 53695 Gear Casing over ring gear and onto motor housing. **Important:** Align rotor spline into planet gears to allow carrier to spin freely.
14. When slots from ring gear line up with set screw hole, apply a small amount of Loctite® #567 (or equiv.) to male thread of 04014 Set Screw, and install set screw to lock ring gear in place.
15. Torque 53695 Gear Casing to 35 N•m (310 lb.-in.).
16. Place 50902 Coupling Insert into 51969 Coupling Nut. Make certain insert radii in coupling base, to correct alignment remove insert and rotate 90˚.
17. Secure 53600 Right Angle Housing, against both side handle bosses, in a padded vise.
18. Rotate motor housing/gear casing and 53650 Lock Ring until throttle lever is located between the 6-9 o'clock position. Throttle lever in this position safe guards against accidental start ups of the tool. Torque lock ring to 35 N•m (310 lb.-in.).
19. Place well lubricated 53608 Wick against 96325 Bearing with flat edge towards pinion gear. (Wick must be completely saturated with Dynabrade 95848 Gear Oil before installation). **Note:** Do not contaminate wick with any other oil or grease product.
20. Press 97679 Bearing onto spindle and against shoulder. **Important:** While pressing 97679, make certain to contact inner race of bearing only.
21. Press gear, with teeth facing away from bearing, into spindle and against 97679 Bearing inner race.
22. Insert spindle assembly into 53600 Right Angle Housing until 97679 Bearing contacts housing shoulder.
23. Rotate spindle while pressing down into housing to check for gear alignment and backlash. Install shims as required (minimum backlash is recommended for maximum gear life. Make certain there is clarence throughout 360˚ revolution).
24. Press 50899 Shaft Seal into 50963 Retainer with base of seal facing outward.
25. Apply a small amount of Loctite® #567 (or equiv.) to the male thread of the retainer and thread into place. (**Left Hand Thread**)
26. Using 97782 Pin Wrench (*ordered separately*) or an adjustable pin wrench, torque retainer to 35 N•m (310 lb.-in.).

Housing Assembly:

1. Secure housing using 51989 Repair Collar (*see back cover for Optional Accessories*) with inlet facing upward.
2. Slide 96443 O-Ring onto 51946 Valve Stem and slide sub-assembly until o-ring passes through housing hole. Make certain valve stem assembly slides freely after the o-ring passes through the hole.
3. Install 51945 Valve Seat by aligning 3 male prongs with three deep slots on insert. Make certain valve seat is pressed flat against base of pocket. **Note:** Add a few drops of Dynabrade Air Lube (P/N 95842) to pocket walls before inserting 51945 Valve Seat.
4. Install 51944 Tip Valve as shown.
5. Pre-assemble muffler, slide 53683 Spacer over 53681 Inlet Bushing and up against the hex head base. Slide 94924 Wave Spring over 53681 Inlet Bushing and up against spacer. Pre roll 94528 Felt and install it in 53686 Muffler Cap. Support felt in felt/muffler cap assembly and slide 53681 Inlet Bushing thru the inside until the muffler cap assembly seats against the 94924 Wave Spring. Flare the felt and place 51940 Spacer over male thread and set 96442 O-Ring into groove at the base of thread. Return felt to unflared form. Slide 51943 Spring into bushing and up to the two 51938 screens.
6. Place 53682 Gasket over felt silencer and against 53686 Muffler Cap.
7. Apply one drop of Loctite® #243 (or equiv.) to 53681 Inlet Bushing Thread.
8. Align small inside diameter of 51943 Spring to cone point on 51944 Tip Valve and thread inlet bushing and sub-assembly into place. Torque bushing to 35 N•m (310 lb.- in.).
9. Remove housing from 51989 Repair Collar and place repair collar onto the bench top with the part number identifier against the bench. Align the throttle lever holes to housing pinhole and rest the housing and throttle lever onto the legs of the repair collar. Press 96444 Coiled Pin into lever hole and center into housing.

Orbital Head Assembly:

1. Slide 61394 Switch Shaft into the housing so that it is in the rotary (unlock) position.
2. Install 61935 Switch Spring, 61393 Pin, 61397 Spring, and 61396 Locking Pin Insert.
3. Apply a small amount of the Loctite #242 (or equivalent) to the external threads of 61398 Locking Pin Bushing and install into the orbital head using the 96364 Slotted screwdriver.
4. Wipe all oil and grease for the outside diameter of the 57069 Balancer Shaft with a clean cloth. Wipe all oil and grease from the inside diameter of the 56052 Bearing.
5. Apply a small amount of the Loctite #609 (or equivalent) to the outside diameter of the 57069 Balancer Shaft.
6. Place the 57069 Balancer Shaft on the tool plate of the 96232 #2 Arbor Press. Position the sealed side of the 56052 Bearing on the balancer shaft and use the 57091 Bear Press Tool to install the bearing onto the balancer shaft.
7. Wipe all oil and grease from the outside diameter of the 56052 Bearing and the bearing pocket of the orbital head. Apply a small amount of the Loctite #609 (or equivalent) to the outside diameter of the bearing and install the balancer shaft and the bearing into the orbital head
8. Apply a small amount of the Loctite #242 (or equivalent) to the threads of the three 95235 Screws and install these into the orbital head (Torque to 5.7 N•m/50lb-in.).
9. Use the 95823 21mm Wrench to install the orbital head assembly on the spindle.
10. Slide 61394 Switch Shaft to the lock position.
11. Assemble the washers and spacer as shown on page 4 and place the backing pad on the 57069 Balancer Shaft. Use the 95823 21mm Wrench to hold the head stationary while installing the 96168 Screw with a 3/16" hex key (Torque to 11.3 N•m/100lb-in.).
12. Connect the polisher to the air supply hose and check for the proper operation.

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

Important: Before operating, place 2-3 drops of Dynabrade Air Lube (P/N 95842) directly into inlet with throttle lever depressed. Operate tool for 30 seconds to allow air lube to properly lubricate internal motor components. Motor should now be tested for proper operation at 90 PSIG max. If tool operates at a higher RPM than marked on the tool or if vibration and sound levels seem abnormal, the tool should be serviced to correct the cause before use.

Buy parts on line at https://Dynashop.co.uk/ for all things Dynabrade

Preventative Maintenance Schedule

For All 1hp 8" Random Orbital Polishers

This service chart is published as a guide to expectant life of component parts. The replacement levels are based on average tool usage over one year. Dynabrade Inc. considers one year usage to be 1,000 hours.

Parts Common to all Models:

Index #	Part Number	Description	Number Required	High Wear 100%	Medium Wear 70%	Low Wear 30%	Non-Wear 10%
1	96188	Screw	1		X		
2	94594	Washer	2		X		
3	50855	Pad	1	N/A	N/A	N/A	N/A
4	94595	Spacer	1				X
5	95235	Screw	3			X	
6	61392	Shaft Balancer	1			X	
7	61389	Screw	1			X	
8	61387	Counterweight	1				X
9	56052	Bearing	1			X	
10	61398	Locking Pin Bushing	1			X	
11	61395	Switch Spring	1			X	
12	61393	Pin	1			X	
13	91397	Spring	1			X	
14	61396	Locking Pin Insert	1			X	
15	92517	Screw (4)	4			X	
16	61388	Counterweight	1				X
17	61386	Counterweight	1				X
18	61394	Switch Shaft	1			X	
19	See Note	Housing	1				X
20	50963	Retainer	1	R			
21	50899	Seal	1	R			
22	See Pg.4	Spindle	1				X
23	97679	Bearing	1		X		
24	97678	Shim	1				X
25	97677	Shim	1				X
26	53637	Gear Set	1			X	
27	53608	Wick	1		X		
28	53600	Right-Angle Housing Assy.	1				X
A	96325	Shell Bearing	1		X		
B	53649	Gear Oil Plate	1				X
C	01041	Gear Oil Fitting	1				X
29	53163	Side Handle	1				X
30	01266	Bearing	1		X		
31	53635	Pinion Adapter	1				X
32	51969	Coupling Nut	2				X
33	50902	Coupling Insert	1			X	
34	53650	Lock Ring	1				X
35	53651	Spacer	1				X
36	96498	Wave Spring	1		T, L		
37	95438	O-Ring	1				T, X
38	53620	Adapter	1				X
39	54520	Bearing	1		T, X		
40	04014	Set Screw	1		L		
41	01041	Grease Fitting	1			X	
42	53695	Adapter	1				X
43	53669	Carrier	1			X	
44	53195	Gear	2			X	
45	04026	Needle Bearing	4			X	
46	53679	Shaft	1			X	
47	53665	Ring Gear	1			X	
48	51951	Shim Pack	1		T, L		
49	51922	Front Bearing Plate	1			X	
50	96441	Pin	2			X	
51	51927	Spacer	1		T, X		
52	53666	Rotor	1			X	
53	51926	Blade (4/pkg.)	1	T, X			
54	51925	Cylinder	1			X	
55	51923	Rear Bearing Plate	1			X	
56	02057	Bearing	1		T, X		
57	96445	Pin	2			X	
58	51924	Gasket	1		T, X		
59	51933	Governor Assembly	1				X
60	See Pg.4	Housing	1				X
61	96444	Pin	1		T, L		
62	51949	Safety Lever Assembly	1			X	
63	51946	Valve Stem Assembly	1		T, X		
64	51945	Valve Seat	1				X
57	51944	Tip Valve	1		T, X		
58	51943	Spring	1				X
59	96442	O-Ring	1		T, L		
60	51940	Spacer	1				X
61	53682	Gasket	1				
62	94528	Felt Silencer	1	T, R			
63	53686	Muffler Cap	1				X
64	94924	Wave Spring	1				X
65	53683	Spacer	1				X
66	53681	Inlet Bushing	1				X

LEGEND	
T	Part included Tune-up Kit
X	Type of wear, no other comments apply.
L	Easily lost. Care during assembly/disassembly.
D	Easily damaged during assembly/disassembly.
R	Replace each time tool is disassembled.

96532 – 1hp Motor Tune-Up Kit

Note: Please refer to page 4 of tool manual for specific part number or number required.

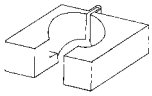
Optional Accessories

FIND THE MOST CURRENT OFFERING OF SUPPORT DOCUMENTS AND ACCESSORIES @ WWW.DYNABRADE.COM

Dynaswivel®

- Swivels 360° AT TWO PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.

95461 – 3/8" NPT



51989 Repair Collar

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

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)

Bearing Press Tool

- Used to install bearings.

96243: For installing 02057 Bearing.

96244: For installing 01266 Bearing.

Dynabrade Angle Gear Oil

- Specifically formulated to saturate wick system in right angle gear head.

95848: 2 oz. tube

95849: 10 oz. tube

95541: Push-Type Gear Oil Gun

97782 Retainer Repair Tool

- Tool has a 3/8 in. square socket for use with 3/8 in. drive; breaker bar, ratchet head, or torque wrenches.

96209 Motor Repair Clamp

- Specially designed clamp to secure motor cylinder before disassembly.

90082 Natural Sheepskin Polishing Pad

96532 Motor Tune-Up Kit

- Includes assorted parts to help maintain and repair motor.

01904 Drop-In Motor - 2,800 RPM

- Allows quick and easy replacement. No motor adjustments needed.

53621 Over Hose Assembly

- Over Hose Assembly directs exhaust away from operator.

53698 Carrier Wrench

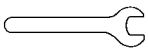
- Carrier Wrench has a 3/8 in. square socket for use with 3/8 in. drive; breaker bar, ratchet head, or torque wrenches.

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

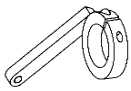
- One-hand operation.



95263 – 17 mm open-end wrench.
95281 – 19 mm open-end wrench.

53209 Ergo-Handle

- Increases operators comfort when using unbalanced wheels.



50984 Top Handle Assembly

Reference Contact Information

1. **American National Safety Institute – ANSI**
   25 West 43rd Street
   Forth Floor
   New York, NY 10036
   Tel: 1 (212) 642-4900
   Fax: 1 (212) 398-0023

2. **Government Printing Office – GPO**
   Superintendent of Documents
   Attn. New Orders
   P.O. Box 371954
   Pittsburgh, PA 15250-7954
   Tel: 1 (202) 512-1803

3. **European Committee for Standardization**
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   B - 1050 Brussels, Belgium

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