

.4 hp, 7°, Rear Exhaust Buffer

Safety, Operation and Maintenance – Save This Document and Educate All Personnel

| Model | Buffer Diameter | Power | RPM | Spindle Thread | Exhaust |
|-------|-----------------|-------|-------|----------------|----------------------|
| 51400 | 3" (76 mm) | .4 hp | 3,200 | 3/8"- 24 | Rear |
| 51401 | | | 5,000 | | Rear |
| 51403 | | | 5,000 | | Rear w/94533 Muffler |
| 51430 | 4"-5" (127 mm) | 3,200 | Rear | | |



BUFFER

Find The Most Current Offering of Support Documents and Accessories at www.Dynabrade.com

! 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 Standards Institute (ANSI). Safety Requirements for the Use, Care and Protection of Abrasive Wheels – ANSI B7.1, and Safety Requirements for Abrading Materials with Coated Abrasive Systems – ANSI B7.7, Compressed Air and Gas Institute (CAGI) Safety Code for Portable Air Tools – B186.1, Code of Federal Regulation – CFR 29 Part 1910, International Organization for Standardization (ISO) Hand Held Non-Electric Power Tools – Safety Requirements ISO 11148 series and applicable State and Local Regulations.



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



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



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



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



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



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

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 and OPERATING INSTRUCTIONS



Carefully Read and Understand the General and Grinder sections found in Tool Safety and Operating Guidelines (PN00001676) Before Handling or Using Tool.

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.

DO NOT USE Tool for Anything Other Than Its Intended Applications.

Training: Proper care, maintenance, and storage of your air tool will maximize tools performance and reduce chance for accident.

Employer's Responsibility: Provide operators with safety instructions and training for safe use of tools and accessories.

Report to Your Supervisor any Condition of the Tool, Accessories or Operation you Consider Unsafe.

LIFETIME WARRANTY

LIFETIME WARRANTY

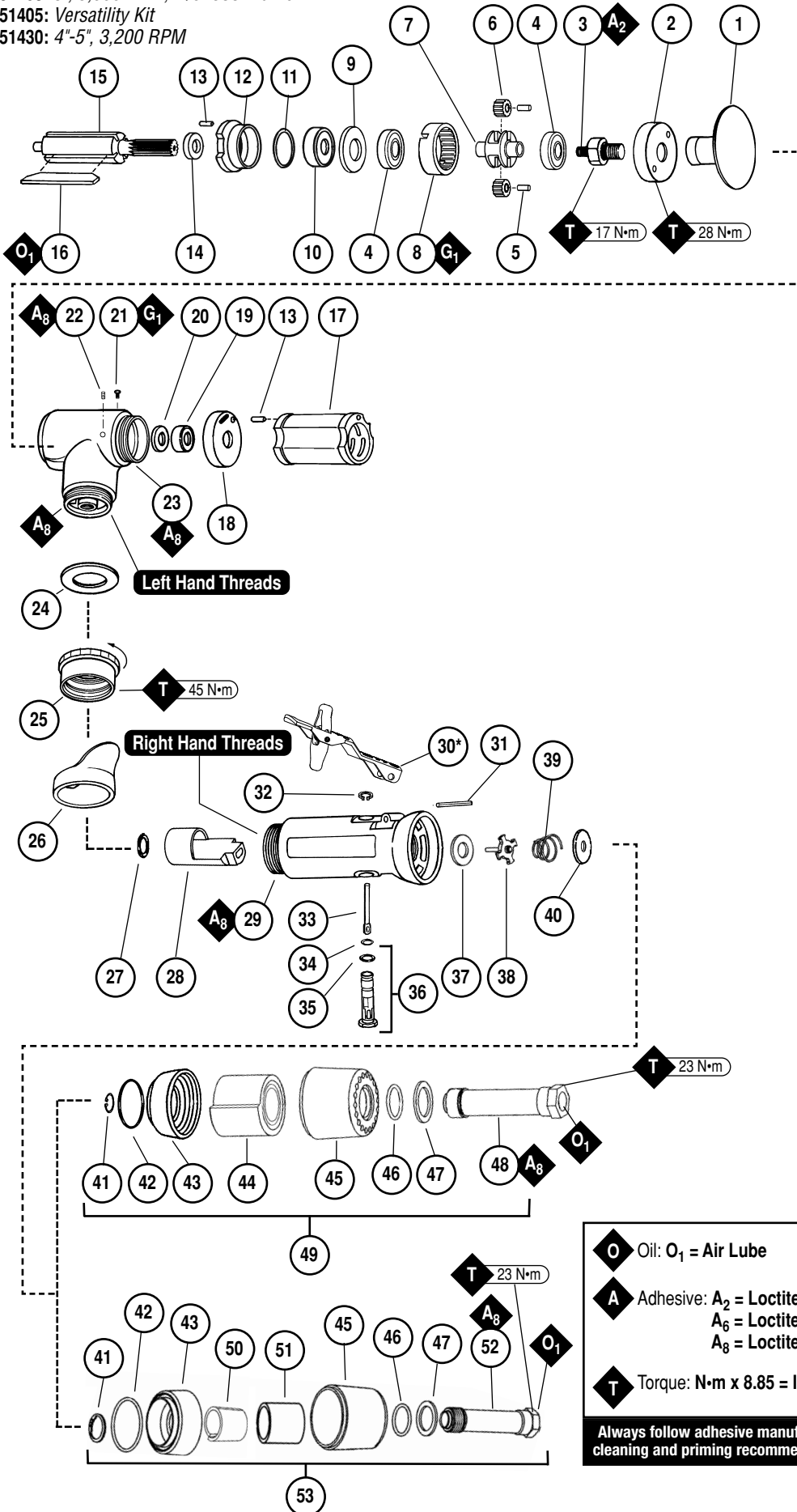
To validate Dynabrade Lifetime Warranty, you must register each tool at: www.dynabrade.com. Registration of each tool at website is required. Dynabrade will not honor Lifetime Warranty on unregistered tools. Please view the entire Lifetime Warranty Policy at: www.dynabrade.com.

Models

- 51400: 3", 3,200 RPM
- 51401: 3", 5,000 RPM
- 51403: 3", 5,000 RPM, w/94533 Muffler
- 51405: Versatility Kit
- 51430: 4"-5", 3,200 RPM

.4 hp, 7°, Rear Exhaust Buffer

Air Motor and Machine Parts



| ITEM | P/N | DESCRIPTION | QTY. |
|------|-------------------------|--|------|
| 1 | 50126 50147 | Back up Pad - 3" Back-Up Pad - 4"-5" | 1 |
| 2 | 50781 | Rear Exhaust Cover | 1 |
| 3 | 50782 | Adapter | 1 |
| 4 | 54552 | Bearing | 2 |
| 5 | 54472 | Gear Shaft | 2 |
| 6 | 06213 54519 | 5,000 RPM Gear 3,200 RPM Gear | 2 |
| 7 | 50786 50787 | 3,200 RPM Planetary Carrier 5,000 RPM Planetary Carrier | 1 |
| 8 | 54468 | Ring Gear | 1 |
| 9 | 50778 | Spacer | 1 |
| 10 | 02649 | Bearing | 1 |
| 11 | 54529 | Shim (3/pkg.) | 1 |
| 12 | 01478 | Front End Plate | 1 |
| 13 | 50767 | Pin | 2 |
| 14 | 01479 | Spacer | 1 |
| 15 | 54553 54554 | 5,000 RPM Rotor 3,200 RPM Rotor | 1 |
| 16 | 01480 | Blade (4/pkg.) | 1 |
| 17 | 01476 | Cylinder | 1 |
| 18 | 02673 | Rear Bearing Plate | 1 |
| 19 | 02696 | Bearing | 1 |
| 20 | 02679 | Shield | 1 |
| 21 | 01041 | Grease Fitting | 1 |
| 22 | 50784 | Set Screw | 1 |
| 23 | 50776 | Motor Housing | 1 |
| 24 | 01548 | Gasket | 1 |
| 25 | 01461 | Lock Nut | 1 |
| 26 | 01558 | Collar | 1 |
| 27 | 95523 | O-Ring | 1 |
| 28 | 01470 | Insert | 1 |
| 29 | 02100 02101 02102 | Housing - 51400 Housing - 51401 Housing - 51430 | 1 |
| 30 | 01950 | Safety Lock Lever | 1 |
| 31 | 12132 | Pin | 1 |
| 32 | 95558 | Retaining Ring | 1 |
| 33 | 01449 | Valve Stem | 1 |
| 34 | 95730 | O-Ring | 1 |
| 35 | 01024 | O-Ring | 1 |
| 36 | 01469 | Speed Regulator Assembly | 1 |
| 37 | 01464 | Seal | 1 |
| 38 | 01472 | Tip Valve | 1 |
| 39 | 01468 | Spring | 1 |
| 40 | 01564 | Air Control Ring | 1 |
| 41 | 95711 | Retaining Ring | 1 |
| 42 | 95438 | O-Ring | 1 |
| 43 | 94521 | Muffler Base | 1 |
| 44 | 94528 | Felt Muffler | 1 |
| 45 | 94522 | Muffler Cap | 1 |
| 46 | 95375 | O-Ring | 1 |
| 47 | 94526 | Spacer | 1 |
| 48 | 94523 | Inlet Adapter | 1 |
| 49 | 94519 | Muffler Assembly | 1 |
| 50 | 94534 | Thinsulate™ Muffler | 1 |
| 51 | 94525 | Felt Silencer | 1 |
| 52 | 94527 | Inlet Adapter | 1 |
| 53 | 94533 | Muffler Assembly (Model 51403 ONLY) | 1 |

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: 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 grease fitting with 2 plungers 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 96174) 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, 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.

MOTOR ASSEMBLY/DISASSEMBLY INSTRUCTIONS

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.

MOTOR DISASSEMBLY:

1. Disconnect tool from power source.
2. Secure air tool in vise using 52296 Repair Collar. Remove back-up pad.
3. With an adjustable pin wrench or 50971 Lock Ring Tool, remove 50781 Rear Exhaust Cover by turning counter-clockwise.
4. Remove 50784 Set Screw and pull 50782 Adapter and planetary carrier assembly from 50776 Housing.
5. Press planetary carrier assembly from rear 54552 Bearing. Remove ring gear and gears from 50786 or 50787 Planetary Carrier.
6. Secure planetary carrier in vise and remove 50782 Adapter. Press carrier from front 54552 Bearing.
7. Grab onto pinion and pull motor assembly from motor housing. Remove 50778 Spacer.
8. Press 54553 or 54554 Rotor from 02673 Rear Bearing Plate. Press 02696 Rear Bearing from rear bearing plate, remove 02679 Shield.
9. Remove cylinder and rotor blades from rotor.
10. Press 54553 or 54554 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 w/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 2.5mm 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.

VALVE 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 01479 Spacer onto 54553 or 54554 Rotor.
2. Place a .002" Shim into 01478 Front Bearing Plate for initial spacing. Then slip 02649 Bearing into 01478 Front Bearing Plate. Press assembly onto rotor.
3. Check the clearance between rotor and bearing plate by using a .001" feeler gauge. Clearance should be at .001" to .0015". Adjust clearance by repeating steps 1-3 changing shims as required.
4. Once proper rotor gap clearance is achieved, install lubricated blades into rotor slots, (use 95842 Dynabrade Air Motor Oil or equivalent).
5. Install 01476 Cylinder so it rests against the 01478 Front Bearing Plate, (make sure inlet holes of cylinder line up with inlet holes in 02673 Rear Bearing Plate).
6. Press 02696 Bearing into 02673 Rear Bearing Plate. Press this assembly onto rotor. 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 end so it will turn freely while still maintaining a snug fit. A loose fit will not achieve the proper preload or motor bearings. Next, place a small amount of grease on the 02696 Bearing and stick 02679 Shield against the bearing.
7. Secure housing in vise using 52296 Repair Collar or padded jaws so that motor cavity points upward.
8. Install motor assembly into housing, making sure motor drops all the way into housing.
9. Install 50778 Spacer so that flat side rests against 02649 Bearing.
10. Press front 54552 Bearing onto front end of 50786 or 50787 Planetary Carrier.
11. Hold planetary carrier in a soft jaw vise and apply one drop of #271 Loctite® to the threads of 50782 Adapter. Install adapter onto planetary

- carrier. Torque to 17 N-m/150 in. lbs.
- Install planetary gears and **54472** Gear Shafts onto planetary housing.
 - Slip **54468** Ring Gear over gears making sure that notches in ring gear will align with lock screw and grease fitting in **50776** Housing once planetary gear assembly is installed.
 - Press rear **54552** Bearing onto **50786** or **50787** Planetary Carrier, until the outer race of the bearing touches the ring gear.
 - Slip the complete planetary gear assembly into **50776** Housing and install **50784** Lock Screw.
 - Install **50781** Rear Exhaust Cover onto **50776** Housing. Use **50971** Lock Ring Tool, torque to 28 N-m/250 in. lbs.
 - Lubricate planetary gears through **01041** Grease Fitting with two plunges every 50 hours of use for maximum gear life.
 - Install back-up pad.

VALVE BODY ASSEMBLY:

- Insert **01469** Regulator with o-rings and valve stem in place into valve body. Secure with **95558** Retaining Ring.
- Secure valve body in vise using **52296** Repair Collar with air inlet facing upwards. Insert **01464** Seal.
- 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).
- Roll **94528** Felt Muffler and place into **94522** Muffler Cap. Install **94521** Muffler Base onto muffler cap.
- Install **95438** O-Ring into groove on muffler base. Place **95375** O-Ring and **94526** Spacer into recessed area of muffler cap.
- Slip **94523** Inlet Adapter through muffler assembly and install **95711** Retainer Ring into groove on inlet adapter.

- Install **01564** Air Control Ring into valve body housing.
- 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.).
- Replace air fitting. Secure inlet adapter with a wrench before tightening air fitting.
- Install throttle lever and **12132** Pin.

TOOL ASSEMBLY COMPLETE.

PLEASE ALLOW 30 MINUTES FOR ADHESIVES TO CURE BEFORE OPERATING TOOL.

NOTICE: To adjust throttle body orientation for a rear exhaust tool:

- Use **52296** Repair Collar to secure valve body in vise with **50776** Housing facing up.
- Peel down **01558** Collar to expose the hex portion of **01461** Lock Nut.
- Using a 34 mm crows foot and firmly holding motor housing, turn **01461** Lock Nut counter clockwise to loosen assembly.
- Adjust orientation of the throttle lever to agree with your grip and comfort level allowing for additional rotation due to torquing.
- Using the 34 mm crows foot and a torque wrench set to 400 lb. in., (while firmly holding motor housing in place to reduce housing rotation) tighten **01461** Lock Nut.

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.*

MACHINE SPECIFICATIONS

| Model | Speed | Power | Sound Level | Air Consumption | Pad Diameter | Spindle Thread | Weight | Length | Height |
|-------------|-----------|------------------|-------------|----------------------|----------------------|----------------|----------------------|--------------------|--------------------|
| 51400 | 3,200 RPM | .4 hp (298 W) | 80 dB(A) | 24 SCFM (680 LPM) | 3" (76 mm) | 3/8"-24 Male | 1.7 lbs. (.8 kg) | 8-3/4" (222 mm) | 4-1/4" (108 mm) |
| 51401/51403 | 5,000 RPM | | 78 dB(A) | | | | | | |
| 51430 | 3,200 RPM | | 80 dB(A) | | 4"-5" (102-107mm) | | 2.4 lbs. (1.1 kg) | 9-3/4" (248 mm) | 4-1/2" (114 mm) |

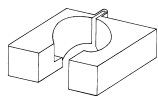
Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. 3/8" (10 mm) • Visit dynabrade.com for your model's current vibration and sound data.

OPTIONAL ACCESSORIES



Dynaswivel® (1/4" NPT) Part No. 94300

- Patented "universal-joint" connects portable air tools to an air line.
- Swivels 360° AT TWO PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.
- New lightweight, non-marring composite construction; industrial quality.



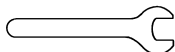
Repair Collar Part No. 52296

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



50971 Lock Ring Tool

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



Open-End Wrench

Part No. 95262 – 14mm open-end.



Finesse Sanding Creme

Part No. 95723: 4 oz. (118 ml).
Part No. 95724: 1 qt. (946 ml).
Part No. 95725: 1 gal. (3.8 L).

- A sanding compound for metal, fiberglass and composites. Use with fine-grade sanding discs.



Dynabrade Glaze

• For use with slow-speed tools to achieve a high gloss after compounding.
Part No. 95727: 4 oz. (118 ml).
Part No. 95728: 1 qt. (946 ml).

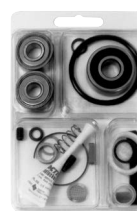


Grease 10 oz. Part No. 95542

- 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.

Push-type Grease Gun Part No. 95541

- One-hand operation.



Motor Tune-Up Kit Part No. 96174

- Includes assorted parts to help maintain and repair motor.



"Flat-Face" Foam Buffs

- Velcro-backed for easy attachment/removal.
- Excellent absorption of excess compound/glaze.
- Prevents swirls.
- Two sizes to choose from:
3" – 90038
• Use with models **51400**.
- 5" – 90040**
• Use with models **51430**, 7° Buffer.



3" diameter
90027
Terry Cloth



3" diameter
90029
Synthetic Wool

REFERENCE CONTACT INFORMATION

American National Standards Institute (ANSI)
www.ansi.org

Compressed Air & Gas Institute (CAGI)
www.cagi.org

European Committee for Standardization (PNEUROPE)
www.pneurop.org

International Organization of Standards (ISO)
www.iso.org

U.S. Government Publishing Office (GPO)
www.gpo.gov

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
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