For Serial No. 9J1264 and Higher

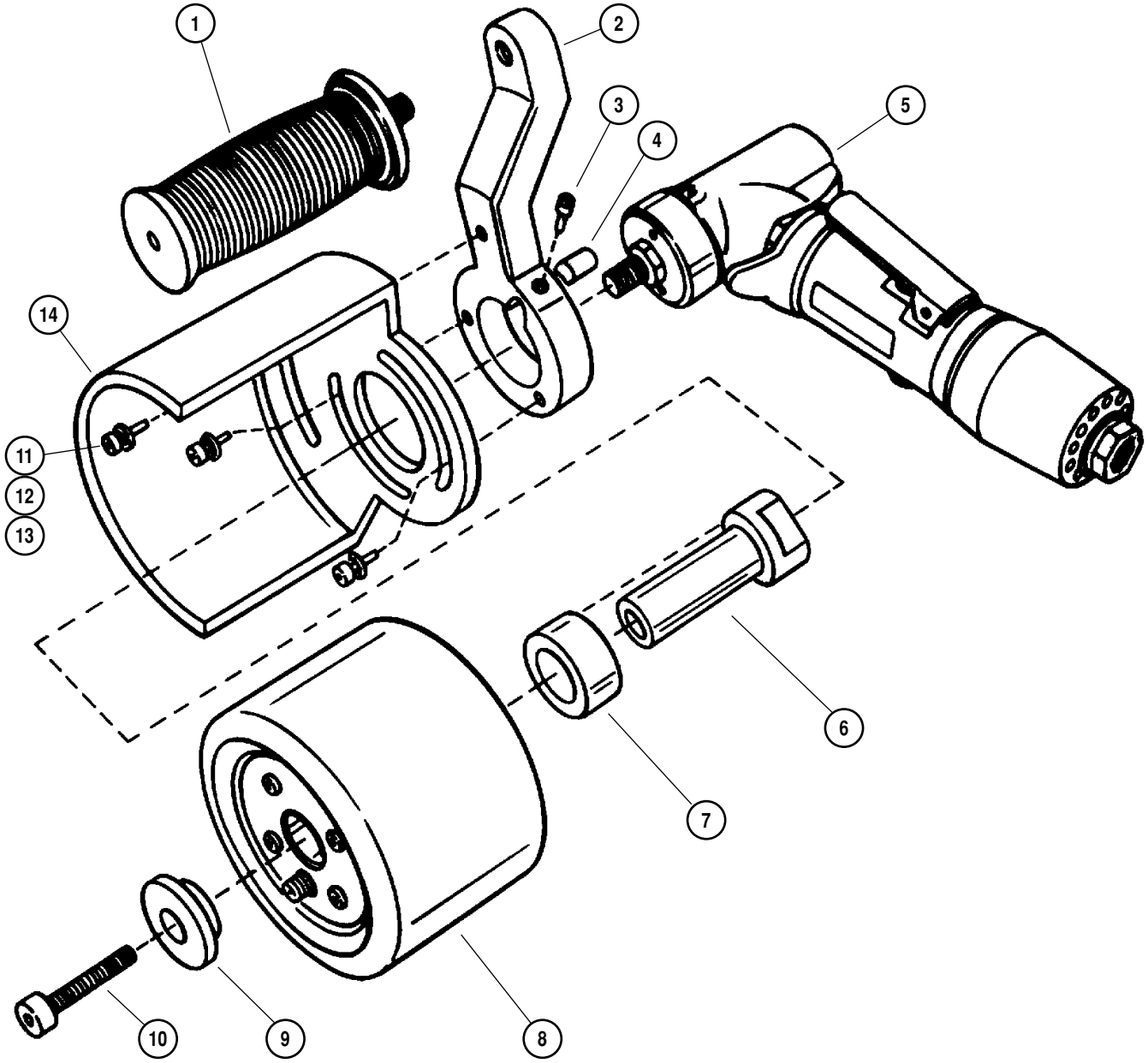
PD04•45R
November, 2015
Supersedes PD04•45

Models:
13300 – 3,200 RPM
13310 – Versatility Kit

Mini-Dynisher®

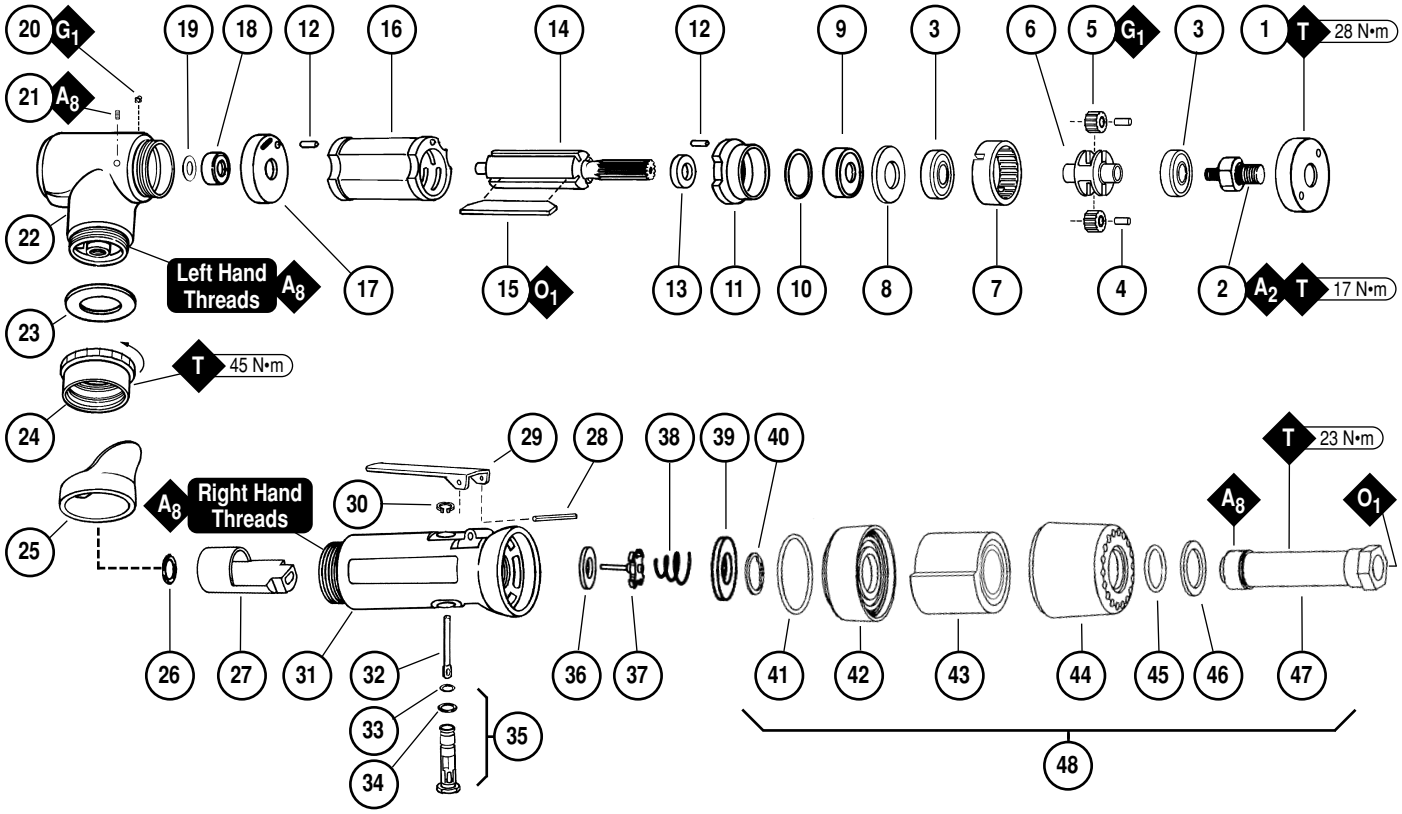
Air Motor and Machine Parts, 3200 RPM

⚠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. See inside for Important Operating, Maintenance and Safety Instructions.**



Index Key		
No.	**Part#**	**Description**
1	**53163**	Handle Assembly
2	**53156**	Handle Support
3	**01678**	Lock Screw
4	**40029**	Cam Lock
5	**01986**	Motor Assembly
6	**53154**	Spindle
7	**13063**	Spacer
8	**94507**	Pneumatic Wheel (not included)
9	**13066**	Flange
10	**96133**	Screw
11	**95146**	Flat Washer (3)
12	**01211**	Lock Washer (3)
13	**97010**	Screw (3)
14	**53157**	Shroud

01986 Motor Assembly



Index Key

No.	Part #	Description	No.	Part #	Description	No.	Part #	Description
1	**50781**	Rear Exhaust Cover	17	**02673**	Rear Bearing Plate	33	**95730**	O-Ring
2	**50782**	Adapter	18	**02696**	Bearing	34	**01024**	O-Ring
3	**54552**	Bearing (2)	19	**02679**	Shield	35	**01469**	Speed Regulator Assy.
4	**54472**	Gear Shaft (2)	20	**01041**	Grease Fitting	36	**01464**	Seal
5	**54519**	3,200 RPM Gear (2)	21	**50784**	Set Screw	37	**01472**	Tip Valve
6	**50786**	Planetary Carrier	22	**50776**	Motor Housing	38	**01468**	Spring
7	**54468**	Ring Gear	23	**01548**	Gasket	39	**01564**	Air Control Ring
8	**50778**	Spacer	24	**01461**	Lock Nut	40	**95711**	Retaining Ring
9	**02649**	Bearing	25	**01558**	Collar	41	**95438**	O-Ring
10	**54529**	Shim (3/pkg.)	26	**95523**	O-Ring	42	**94521**	Muffler Base
11	**01478**	Front End Plate	27	**01470**	Insert	43	**94528**	Felt Muffler
12	**50767**	Pin (2)	28	**12132**	Pin	44	**94522**	Muffler Cap
13	**01479**	Spacer	29	**01448**	Throttle Lever	45	**95375**	O-Ring
14	**54554**	Rotor	30	**95558**	Retaining Ring	46	**94526**	Spacer
15	**01480**	Blade (4/pkg.)	31	**02115**	Housing - **13300**	47	**94523**	Inlet Adapter
16	**01476**	Cylinder	32	**01449**	Valve Stem	48	**94519**	Muffler Assembly

KEY

- **O** Oil: **O_1 = Air Lube**
- **A** Adhesive: **A_2 = Loctite #271**, **A_8 = Loctite #567**
- **T** Torque: **N•m x 8.85 = In. - lbs.**
- **G** Grease: **G_1 = Lubriplate 630 AA**

Disassembly/Assembly Instructions - .4 Hp/7°/Rear Exhaust

Important: Manufacturer's warranty is void if tool is disassembled before warranty expires.
Notice: Dynabrade strongly recommends the use of the **52296** Repair Collar (sold separately) during assembly/disassembly of the Mini-Dynisher. All of the special repair tools referred to in these instructions can be ordered from Dynabrade. Please refer to parts page for proper part number identification.

Planetary Gear Disassembly:

1. Close off the air supply and disconnect the tool from the air supply.
2. Remove any abrasives and accessory from the **53154** Spindle.
3. Loosen the **01678** Lock Screw to remove the handle and shroud assembly.
4. Position the **52296** Repair Collar around the **02115** Housing and secure the tool in a vise so that the **53154** Spindle is pointing out.
5. Remove the **53154** Spindle by holding the **50782** Adapter stationary with a wrench and turning the spindle counterclockwise.
6. Use the **50971** Lock Ring Tool to remove the **50781** Rear Exhaust Cover by turning it counterclockwise.
7. Use the **96401** Hex Key (2mm) to remove the **50784** Set Screw.
8. Remove the planetary gear assembly **50776** Motor Housing.
9. Fasten the **96346** (2") Bearing Separator between the **54468** Ring Gear and the rear **54552** Bearing.
10. Place the planetary gear assembly and the separator on the table of the **96232** (#2) Arbor Press so that the **50782** Adapter is pointing down.
11. Carefully place the **96213** Bearing Removal Tool against the **50787** Planetary carrier removing it from the rear **54552** Bearing.
12. Remove the ring gear, shafts and gears from the planetary carrier.
13. Secure the planetary carrier in a vise with aluminum or bronze jaws so that the **50782** Adapter is pointing up. Apply heat and remove the adapter from the planetary carrier.

Planetary Gear Disassembly Complete.

Motor Disassembly:

1. Pull the motor assembly from the motor housing.
2. Remove the **50778** Spacer from the motor.

(continued on next page)

Disassembly/Assembly Instructions - .4 Hp/7°/Rear Exhaust (continued)

3. Fasten the **96346** Bearing Separator (2") around the rear portion of the **01476** Cylinder closest to the rear bearing plate.
4. Place the separator and the motor assembly on the table of the **96232** Arbor Press so that the pinion gear of the rotor is pointing down. Use a 3/16" dia. flat end drive punch as a tool. Place it against the rear bearing journal of the rotor and push the rotor from the **02696** Bearing.
5. Remove the **02679** Shield from the **02696** Bearing.
6. Use the **96210** Bearing Removal Tool to remove the **02696** Bearing from the **02673** Rear Bearing Plate.
7. Remove the **01480** Blades from the rotor.
8. Press the **02649** Bearing from the rotor, removing the **01478** Front Bearing Plate and the **54529** Shims.
9. Remove the **01479** Spacer from the rotor.

Motor Disassembly Complete.

Valve Disassembly

1. Place the **52296** Repair Collar around the **02115** Housing and secure it in a vise so that the **94523** Inlet Adapter is pointing up.
2. Use two wrenches when removing the air fitting. Place one wrench on the **94523** Inlet Adapter to hold it stationary and use another wrench to remove the air fitting.
3. Remove the inlet adapter from the housing by turning it counterclockwise. **Note:** Refer to the exploded view of the muffler assembly to identify the parts and their order of disassembly.
4. Use needle nose pliers to remove the **01468** Spring and the **01472** Tip Valve. The **01464** Seal can be removed from the valve housing with a small screwdriver.
5. Use a 2.5mm drive punch to remove the **12132** Pin and throttle lever.
6. Use retaining ring pliers to remove the **95558** Retaining Ring and push the **01469** Speed Regulator Assembly along with the **01449** Valve Stem out of th valve housing.

Valve Disassembly Complete.

Valve Assembly:

1. Place the **52296** Repair Collar around the **02115** Housing and secure it in a vise so that the air inlet opening is pointing up.
2. Install the **01469** Speed Regulator Assembly (includes o-rings) into the housing and secure it in place with the **95558** Retaining Pin.
3. Insert the **01449** Valve Stem so that the end with the hole fits into the **01469** Speed Regulator Assembly.
4. Install the **01464** Seal into the air inlet opening so that it lays flat.
5. Use needle nose pliers to gasp the white nylon portion of the **01472** Tip Valve and insert the metal pin of the tip valve into the hole in the **01449** Valve Stem.
6. Install the **01468** Spring so that the smaller end of the spring fits against the center of the tip valve.
7. **Note:** Refer to the exploded view of the muffler assembly to identify the parts and their order of assembly. Apply a small amount of the Loctite #567 (or equivalent) to the threads of the inlet adapter and install it into the air inlet opening of the housing. (Torque to 23 N•m/200 in.-lbs.)
8. Install the throttle lever and secure it in place with the **12132** Pin.
9. Use two wrenches when installing the air fitting, Place one wrench on the **94523** Inlet Adapter to hold it stationary and use another wrench to install the air fitting.

Motor Assembly:

1. Install the **01479** Spacer onto the rotor.
2. Select .003 (.08mm) thick shims from the **54529** Shim Pack and place these into the **01478** Front Bearing Plate.
3. Install the **02649** Bearing into the front bearing plate.
4. Use the **96240** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and the **96232** Arbor Press to install these parts onto the pinion end of the rotor.
5. Check the rotor/plate clearance with a .001 (0.03mm) feeler gage. The clearance should be .001-.0015 (0.03-0.04mm). If the rotor/plate clearance needs adjustment, repeat steps 3-5 and shim as required.
6. Apply the **95842** Dynabrade Air Lube (10W/NR or equivalent) to the **01480** Blades (4) and install these into the slots in the rotor.
7. Install the **01476** Cylinder over the rotor so that the air inlet opening of the cylinder will align the air inlet opening of the **02673** Rear Bearing Plate.
8. Use the **96216** Bearing Press Tool (position the raised outside diameter against the outside diameter of the bearing) and **96232** Arbor Press to install the **02696** Bearing into the rear bearing plate.
9. Use the **96216** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and **96232** Arbor Press to install these parts onto the rear bearing journal of the rotor. **Note:** Press the rear bearing/plate assembly down onto the rotor only until the **02673** Rear Bearing Plate comes in contact with the **01476** Cylinder. This fit will establish a preload on the motor bearings producing a "snug fit" between the bearings and the cylinder. If the fit is too tight it will cause the bearings to wear prematurely, too loose and the desired preload will not be achieved. If an adjustment is required disassemble and repeat steps 7-9.
10. Apply a small amount of the **95542** Grease (or equivalent) to the seal of the **02696** Bearing and install the **02679** Shield against the bearing.
11. Install the motor assembly into the **50776** Motor Housing.

Motor Assembly Complete.

Planetary Gear Assembly:

1. Use the **96239** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and the **96232** Arbor Press to install the front **54552** Bearing(s) onto the female threaded end of the **50786** Planetary Carrier.
2. Apply a small amount of the Loctite #271 (or equivalent) to the carrier threads of the **50782** Adapter and install the adapter onto the planetary carrier. (Torque to 17 N•m/150 in.-lbs.)
3. Apply the **95542** Grease to the shafts, bearings and gears of the planetary carrier and install these parts.
4. Orient the **54468** Ring Gear on the planetary carrier so that the set screw and grease fitting notches align properly with the openings in the **50776** Motor Housing once it's installed.
5. Use the **96239** Bearing Press Tool (position the raised inside diameter against the inside diameter of the bearing) and the **96232** Arbor Press to install the rear **54552** Bearing onto the rear bearing journal of the **50786** Planetary Carrier. **Note:** Press the bearing down onto the carrier only until the **54552** Bearing comes in contact with the **54468** Ring Gear. This fit will establish preload on the bearings producing a "snug fit" between the bearings and the ring gear. If it fits too tight it will cause the bearings to wear prematurely, if the fit is too loose the desired preload will not be achieved. If an adjustment is required disassembled and repeat this step.
6. Install the **50778** Spacer with the flat side of the spacer against the **02649** Bearing of the motor assembly.
7. Slide the planetary gear assembly into the **50776** Motor Housing so that the set screw and grease fitting notches align with the corresponding openings in the housing.
8. Apply a small amount of the Loctite #567 (or equivalent) to the **50784** Set Screw and install it into the housing.
9. Apply a small amount of the Loctite #567 (or equivalent) to the threads of the motor housing and install the **50781** Rear Exhaust Cover. (Torque to 28 N•m/250 in.-lbs.)
10. Lubricate the planetary gear assembly with the **95542** Grease through the grease fitting. Use the **95541** Grease Gun to initially apply 2-3 plunges of grease and there after 2-3 plunges for every 50 hours of use.
11. Install the **53154** Spindle.

Planetary Gear Assembly Complete. 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.

Pneumatic Wheel/Abrasive Wheel Installation:

94507 Pneumatic Wheel:

1. Remove **96133** Screw and **13066** Flange with 3mm hex key. Install **94507** Pneumatic Wheel (with air inlet facing out) onto spindle.
   Note: Be sure **13063** Spacer is located on spindle behind pneumatic wheel.
2. Tighten **96133** Screw and flange onto spindle to secure pneumatic wheel. Install abrasive belt and inflate (20 PSIG max).

Abrasive Wheel: (must have 5/8" bore and cannot exceed 4" dia. x 3" wide)

1. Remove **96133** Screw and **13066** Flange with 3mm hex key, install wheel. Use **13063** Spacer for wheel less than 3" wide.
2. Tighten **96133** Screw and flange onto spindle to secure wheel.

Loctite® is a registered trademark of Loctite Corp.

Model Number	Motor HP (W)	Motor RPM	Sound Level	Air Flow Rate SCFM (LPM)	Air Pressure PSIG (Bars)	Wheel (Dia. x Length)	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
All Models	.4 (298)	3,200	80 dB(A)	21 (595)	90 (6.2)	3-1/4" x 3"	2.8 (1.3)	10 (254)	7 (178)

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. Size 1/4" (6mm)

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. 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 or operating improperly, 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 gear casing grease fitting with 2-3 plunges for every 50 hours of use, to achieve maximum gear life **(order 95542 Grease and 95541 Gun)**.
6. Use only genuine Dynabrade replacement parts. To reorder replacement parts, specify the **Model #**, **Serial #** and **RPM** of your machine.
7. A Motor Tune-Up Kit (P/N **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, keytones, chlorinated hydrocarbons or nitro carbons.

Safety Instructions:

Products offered by Dynabrade should not be converted or otherwise altered from original design without expressed written consent from Dynabrade, Inc.



- **Important:** User of tool is responsible for following accepted safety codes such as those published by the American National Standards Institute (ANSI).
- Operate machine for one minute before application to workpiece to determine if machine is working properly and safely before work begins.
- Always disconnect power supply before changing abrasive/accessory or making machine adjustments.
- Inspect abrasives/accessories for damage or defects prior to installation on tools.
- Please refer to Dynabrade's Warning/Safety Operating Instructions Tag (Reorder No. **95903**) for more complete safety information.
- **Warning:** Hand, wrist and arm injury may result from repetitive work, motion and overexposure to vibration.

Notice

All Dynabrade motors use the highest quality parts and metals available and are machined to exacting tolerances. The failure of quality pneumatic motors can most often be traced to an unclean air supply or the lack of lubrication. Air pressure easily forces dirt or water contained in the air supply into motor bearings causing early failure. It often scores the cylinder walls and the rotor blades resulting in limited efficiency and power. Our warranty obligation is contingent upon proper use of our tools and cannot apply to equipment which has been subjected to misuse such as unclean air, wet air or a lack of lubrication during the use of this tool.

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.



Optional Accessories



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



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.



55064 Adapter
- 3/8"-24 to 5/8"-11 Male Thread.



96174 Tune-Up Kit
- Includes assorted parts to help maintain and repair motor.



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.

Visit Our Web Site: www.dynabrade.com

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