**For Serial No. 9J1264 and Higher**

Parts Page Reorder No. PD02•35
Effective July, 2002
Supersedes PD98•10

***Models:***
**52060 — 950 RPM**
**52061 — Basic Versatility Kit**
**52062 — Deluxe Versatility Kit**

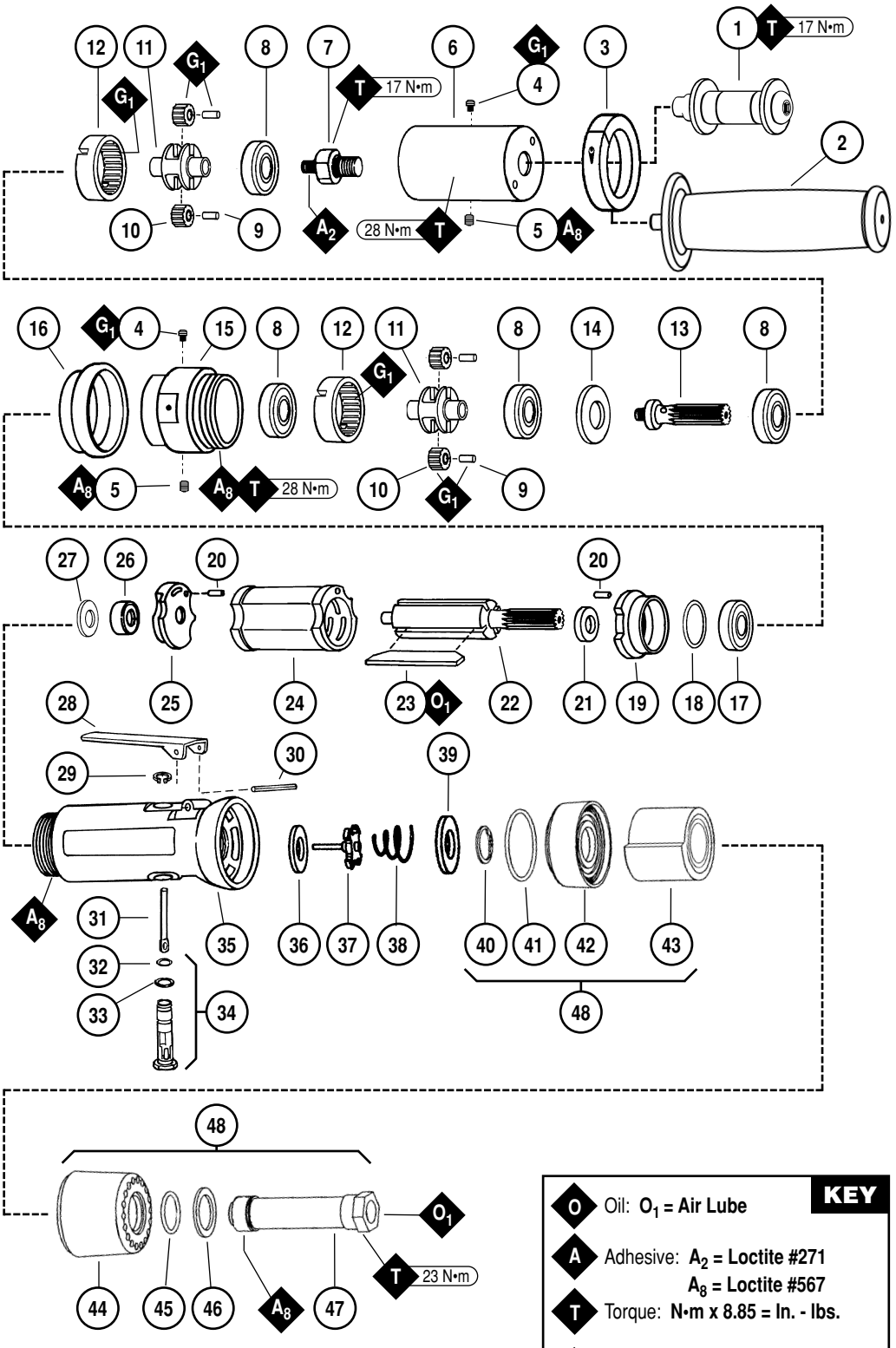
# Dyninger

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

## Index Key

| No. | Part # | Description |
|---|---|---|
| 1 | **13061** | Arbor Assembly |
| 2 | **53163** | Handle |
| 3 | **13059** | Collar |
| 4 | **01041** | Grease Fitting (2) |
| 5 | **50784** | Lock Screw (2) |
| 6 | **53153** | Planetary Housing |
| 7 | **50782** | Adapter |
| 8 | **54520** | Bearing (4) |
| 9 | **54472** | Gear Shaft (4) |
| 10 | **06213** | 950 RPM Gear (4) |
| 11 | **50787** | Planetary Carrier (2) |
| 12 | **54468** | Ring Gear (2) |
| 13 | **53150** | 950 RPM Pinion |
| 14 | **50778** | Spacer |
| 15 | **53152** | Gear Case |
| 16 | **01547** | Rubber Collar |
| 17 | **02649** | Bearing |
| 18 | **54529** | Shim Pack (3/pkg.) |
| 19 | **01478** | Front Bearing Plate |
| 20 | **50767** | Pin (2) |
| 21 | **01479** | Rotor Spacer |
| 22 | **54553** | Rotor |
| 23 | **01480** | Blades (4/pkg.) |
| 24 | **01476** | Cylinder |
| 25 | **02676** | Rear Bearing Plate |
| 26 | **02696** | Bearing |
| 27 | **02679** | Shield |
| 28 | **01448** | Throttle Lever |
| | **01462** | Safety Lock Lever (Optional) |
| 29 | **95558** | Retaining Ring |
| 30 | **12132** | Pin |
| 31 | **01449** | Valve Stem |
| 32 | **95730** | O-Ring |
| 33 | **01024** | O-Ring |
| 34 | **01469** | Speed Regulator Assy. |
| 35 | **02133** | Housing |
| 36 | **01464** | Seal |
| 37 | **01472** | Tip Valve |
| 38 | **01468** | Spring |
| 39 | **01564** | Air Control Ring |
| 40 | **95711** | Retaining Ring |
| 41 | **95438** | O-Ring |
| 42 | **94521** | Muffler Base |
| 43 | **94528** | Felt Muffler |
| 44 | **94522** | Muffler Cap |
| 45 | **95375** | O-Ring |
| 46 | **94526** | Spacer |
| 47 | **94523** | Inlet Adapter |
| 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**

# *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, sound, respiratory 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 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. 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. 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 **96173**) is available which includes assorted parts to help maintain motor in peek 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.
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.
- Please refer to Dynabrade's Warning/Safety Operating Instructions Tag (Reorder No. **95903**) for more complete safety information.
- **Warning:** Hand, wrist and arm injury may result from repetitive work, motion and overexposure to vibration.

## Notice

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

## One Year Warranty

Following the reasonable assumption that any inherent defect which might prevail in a product will become apparent to the user within one year from the date of purchase, all equipment of our manufacture is warranted against defects in workmanship and materials under normal use and service. We shall repair or replace at our factory, any equipment or part thereof which shall, within one year after delivery to the original purchaser, indicate upon our examination to have been defective. Our obligation is contingent upon proper use of Dynabrade tools in accordance with factory recommendations, instructions and safety practices. It shall not apply to equipment which has been subject to misuse, negligence, accident or tampering in any way so as to affect its normal performance. Normally wearable parts such as bearings, contact wheels, rotor blades, etc., are not covered under this warranty.

| Model Number | Motor HP (W) | Motor RPM | Wheel Arbor Dia. Inch | Sound Level | Maximum Air Flow CFM/SCFM (LPM) | Spindle Thread | Weight Pound (kg) | Length Inch (mm) | Height Inch (mm) |
|---|---|---|---|---|---|---|---|---|---|
| All Models | .4 (298) | 200-950 | 5/8 - or - 1 | 82 dB(A) | 3/22 (623) | 3/8"-24 male | 3.7 (1.7) | 11-1/8 (283) | 2-3/4 (70) |

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. Size 1/4 (8 mm) • Air Pressure 90 PSIG (6.2 Bars)

# *Disassembly/Assembly Instructions – Dyninger*

**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.**

## Planetary Housing Disassembly:

1. Disconnect tool from the air supply.
2. Use the **52296** Repair Collar to secure the tool in a vise.
3. Remove the arbor assembly, collar and handle.
4. Use the **50971** Lock Ring Tool or an adjustable pin spanner wrench to remove the **53163** Planetary Housing by turning it counterclockwise.
5. Remove the **50784** Set Screw from the planetary housing.
6. Push the planetary gear assembly from the planetary housing.
7. Fasten the **96346** Bearing Separator between the rear **54520** Bearing and the **54468** Ring Gear to remove the bearing from the planetary carrier. Place the separator on the table of the **96232** Arbor Press so that the threaded spindle points down. Use a 3/8" dia. flat end drive punch as a press tool to push the carrier from the **54520** Bearing.
8. Remove the shafts and gears from the planetary carrier.
9. Carefully hold the **50787** Planetary Carrier in a vise with aluminum or bronze jaws and remove the **50782** Adapter by turning it counterclockwise.
10. Use the bearing separator and the arbor press to remove the front **54520** Bearing.

**Planetary Housing Disassembly Complete.**

## Gear Case Disassembly:

1. Disconnect the tool from the air supply.
2. Use the **52296** Repair Collar to secure the tool in a vise.
3. Use an adjustable wrench to remove the **53152** Gear Case by turning it counterclockwise.
4. Remove the **50784** Set Screw from the **53152** Gear Case.
5. Pull the planetary gear assembly from the **53152** Gear Case.
6. Fasten the **96346** Bearing Separator between the rear **54520** Bearing and the **54468** Ring Gear to remove the bearing from the planetary carrier. Place the separator on the table of the **96232** Arbor Press so that the **53150** Pinion is pointing toward the floor. Use a 3/8" dia. flat end drive punch as a press tool to push the planetary carrier from the **54520** Bearing.
7. Remove the shafts and gear from the planetary carrier.
8. If the **53150** Pinion needs to be replaced, carefully hold the **50787** Planetary Carrier in a vise with aluminum or bronze jaws.
9. Use the bearing separator and the arbor press to remove the front **54520** Bearing.

**Gear Case Disassembly Complete.**

## Motor Disassembly:

1. Remove the **53152** Gear Case from the housing by turning it counterclockwise.
2. Pull the air motor from the housing.
3. Fasten the **96346** Bearing Separator around the portion of the **01476** Cylinder that is closest to the **02676** Rear Bearing Plate. Place the separator on the table of the **96232** Arbor Press so that the pinion is pointing down. Use a 3/16" dia. flat end drive punch as a press tool and push the **54553** Rotor out of the **02696** Bearing.
4. Remove the **02696** Bearing from the **02676** Rear Bearing Plate with the **96210** Bearing Removal Tool and the arbor press.
5. Position the flat side of the **01478** Front Bearing Plate against the bearing separator placing these on the arbor press with the pinion pointing up and push the rotor from the **02649** Bearing.
6. Push the **02649** Bearing out of the **01478** Front Bearing Plate and remove the shims.
7. Slip the **01479** Spacer off the rotor.

**Motor Disassembly Complete.**

## Valve Disassembly:

1. Use the **52296** Repair Collar to secure the tool in a vise. Position the air inlet so that it is pointing up.
2. Secure **94523** Inlet Adapter with a wrench and remove the air fitting. **Important:** The **94523** Inlet Adapter must be held stationary with a wrench when the air fitting is installed or removed to avoid damage to the housing.
3. Remove the **94523** Inlet Adapter.
4. Remove the **95711** Retaining Ring and separate the **94521** Muffler Base from the **94522** Muffler Cap.
5. Remove the felt silencer.
6. Remove the **01564** Air Control Ring.
7. Use a needle nose pliers to remove the **01468** Spring and the **01472** Tip Valve. The **01464** Seal can be picked out of the housing with a small flat bladed screwdriver.
8. Use a 2.5 mm drive punch to remove the **12132** Pin and throttle lever.
9. Remove the **95558** Retaining Ring and push the **01469** Speed Regulator Assembly along with the **01449** Valve Stem out of the housing.

**Valve Disassembly Complete.**

## Valve Assembly:

1. Install the **01469** Speed Regulator Assembly (o-rings included) along with the **01449** Valve Stem into the housing and secure it in place with the **95558** Retaining Ring.
2. Install the **01464** Seal into the inlet opening of the housing.
3. Align the hole in the **01449** Valve Stem with the inlet opening of the housing.
4. Use needle nose pliers to install the **01472** Tip Valve so that the metal pin fits into the hole of the **01449** Valve Stem.
5. Install the **01468** Springs so that the small end of the spring fits against the tip valve.
6. To install the **94519** Muffler Assembly, apply a small amount of Loctite #567 (or equivalent) to the male threads of the **94523** Inlet Adapter. Install the muffler assembly onto the housing. (Torque to 23 N•m/200 in.- lbs.)

**Valve Assembly Complete.**

## Motor Assembly:

**Important:** Clean and inspect parts before assembly.

1. Install the **01479** Spacer onto the **54553** Rotor.
2. Place .003" thickness in shims from the **54553** Shim Pack into the **01478** Front Bearing Plate as an initial spacing. Install the **02649** Bearing into the **01478** Front Bearing Plate. Use the **96240** Bearing Press Tool against the inner race of the bearing and press the assembly onto the rotor.

(continued on next page)

# Disassembly/Assembly Instructions (continued)

3. Check the clearance between the rotor and the bearing plate by using a .001" thick feeler gauge. The clearance should be a .001" to .0015" gap. If necessary adjust the clearance by repeating steps 1-3 changing shims as required. Once the proper rotor gap clearance is achieved, install blades that have been lubricated with the **95842** Dynabrade Air Lube (10W/NR or equivalent).
4. Install the **01476** Cylinder so that it rests against the **01478** Front Bearing Plate. Make sure that the air inlet holes of the cylinder line up with the air inlet holes in the **02676** Rear Bearing Plate.
5. Press the **02696** Bearing into the **02676** Rear Bearing Plate. (Use the **96216** Bearing Press Tool against the outer race of the bearing.) Press this assembly onto the rotor. (Use the **96216** Bearing Press Tool against the inner race of the bearing.) **Important:** The fit must be snug between the bearing plates and the cylinder. If it is too tight the rotor will not turn freely. The rotor must turn freely while still maintaining a snug fit. A loose fit will not achieve proper preload of the motor bearings. Place a small amount of grease on the seal of the **02696** Bearing and stick the **02679** Shield against the bearing.
6. Use the **52296** Repair Collar to secure the housing in a vise. Position the opening of the housing so that the motor cavity is pointing up.
7. Install the motor assembly into the housing making sure that the motor drops all the way into the housing.
   **Note:** Align the rear bearing plate node with the notch inside the housing.

**Motor Assembly Complete.**

## Gear Case Assembly:

1. To assemble the gear case planetary gear assembly, press the front **54520** Bearing onto the threaded end of the **50787** Planetary Carrier.
2. Secure the planetary carrier in a vise with aluminum or bronze jaws.
3. Apply one drop of Loctite #271 (or equivalent) to the threads of the **53150** Pinion.
4. Install the pinion onto the planetary carrier. (Torque to 17 N•m/150 in.- lbs.)
5. Apply a small amount of the **95542** Grease to the needle bearings, the planetary gears, and the gear shafts. Install these into the planetary carrier.
6. Slip the **54468** Ring Gear over the planetary gear assembly positioning it so that the notches in the ring gear will align with the lock screw and grease fitting openings in the **53132** Gear Case.
7. Press the rear **54520** Bearing onto the **50787** Planetary Carrier until the outer race of the bearing touches the ring gear.
8. Install the complete planetary gear assembly into the **53152** Gear Case. Apply a small amount of Loctite #567 (or equivalent) to the **50784** Lock Screw and install it.
9. Install the **01547** Insulator Collar onto the **53152** Gear Case.
10. Apply a small amount of the Loctite #567 (or equivalent) to the threads of the housing and install the **53152** Gear Case onto the housing. (Torque to 28 N•m/250 in.- lbs.)

**Gear Case Assembly Complete.**

## Planetary Housing Assembly:

1. To assemble the planetary housing gear assembly, press the front **54520** Bearing onto the threaded end of the **50787** Planetary Carrier.
2. Secure the planetary carrier in vise with aluminum or bronze jaws. Apply one drop of Loctite #271 (or equivalent) to the threads of the **50782** Adapter. Install the adapter onto planetary carrier. (Torque to 17 N•m/150 in.- lbs.)
3. Apply a small amount of the **95542** Grease to the needle bearings, the planetary gears, and the gear shafts. Install these into the planetary carrier.
4. Slip the **54468** Ring Gear over the planetary assembly positioning it so that the notches in the ring gear will align with the lock screw and grease fitting openings in the **53153** Planetary Housing.
5. Press the rear **54520** Bearing onto the **50787** Planetary Carrier until the outer race of the bearing touches the ring gear.
6. Slip the complete planetary gear assembly into the **53153** Planetary Housing. Apply a small amount of the Loctite #567 (or equivalent) to the **50784** Lock Screw and install it.
7. Install the **50778** Spacer into the **53152** Gear Case so that the chamfered side is visible.
8. Apply a small amount of Loctite #567 (or equivalent) to the threads of the **53152** Gear Case and carefully install the planetary housing assembly onto the gear case making sure to properly align the pinion gear with the planetary gears. (Torque to 28 N•m/250 in.- lbs.)
9. Lubricate planetary gears through the **01041** Grease Fittings, applying 2-3 plunges of the **95542** Grease with the **96641** Grease Gun initially, and there after for every 50 hours of use.
10. Install the collar, handle and arbor assembly onto the sander.

**Planetary Housing Assembly Complete. Tool Assembly Complete. Please allow 30 minutes 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.

# Optional Accessories



**Star Insert**

**93236 1/2" Diameter Star Insert**: Adapts abrasive stars to most 1/2" diameter arbor tools.

**93237 5/8" Diameter Star Insert**: Adapts stars to most 5/8" diameter arbor tools.



**Arbor Spacer**

**13067 Spacer**: Use on arbor for less than full loading of six stars. One or more spacers may be required.

| 8" O. D. x 1" I. D. Diameter Arbors | |
|---|---|
| **Grit** | **Part Number** |
| 80 | **93243** |
| 120 | **93245** |
| 150 | **93246** |
| 180 | **93247** |
| 220 | **93248** |
| 320 | **93251** |
| 400 | **93252** |

**Unit = 18 Stars each**

**8" Dia. Coated Aluminum Oxide Sanding Stars**

Mount to 1/2" arbor using **93236** Adapter; 5/8" arbor using **93237** Adapter. One or more **13067** Spacers (optional) may be required for less than a full loading of six stars.

- 1/2" and 5/8" diameter arbors also adaptable.
- 1,500 Rpm Maximum.



**96173 Motor Tune-Up Kit**

- Includes assorted parts to help maintain and repair motor.



**Dynaswivel®**

- Swivels 360° AT TWO PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.
- New **94300** 1/4" NPT, non-marring composite construction.



**Grease and Grease Gun**

- Multi-purpose grease for all types of bearing, cams, gears.
- High film strength; excellent resistance to water, steam, etc.
- Workable range 0°F to 300°F.

**95541**: Push-type grease gun.

**95542**: 10oz. (283.5g) tube.

**Visit Our Web Site:** www.dynabrade.com

**Email:** Customer.Service@Dynabrade.com

DYNABRADE®

***DYNABRADE, INC.,*** 8989 Sheridan Drive • Clarence, NY 14031-1490 • Phone: (716) 631-0100 • Fax: 716-631-2073 • International Fax: 716-631-2524

***DYNABRADE EUROPE S.àr.l.,*** Zone Artisanale • L-5485 Wormeldange—Haut, Luxembourg • Telephone: 352 76 84 94 1 • Fax: 352 76 84 95 1

©DYNABRADE, INC., 2002

PRINTED IN USA