

**Models:**

- 52050 — 3,200 RPM, 1/4" Collet
- 52051 — 3,200 RPM, 6mm Collet
- 52052 — 3,200 RPM, 1/2" Arbor
- 52053 — 3,200 RPM, Versatility Kit

KEY	
<b>O</b>	Oil: O <sub>1</sub> = Air Lube
<b>A</b>	Adhesive: A <sub>2</sub> = Loctite #271 A <sub>8</sub> = Loctite #567
<b>T</b>	Torque: N•m x 8.85 = In. - lbs.
<b>G</b>	Grease: G <sub>1</sub> = Lubriplate 630 AA

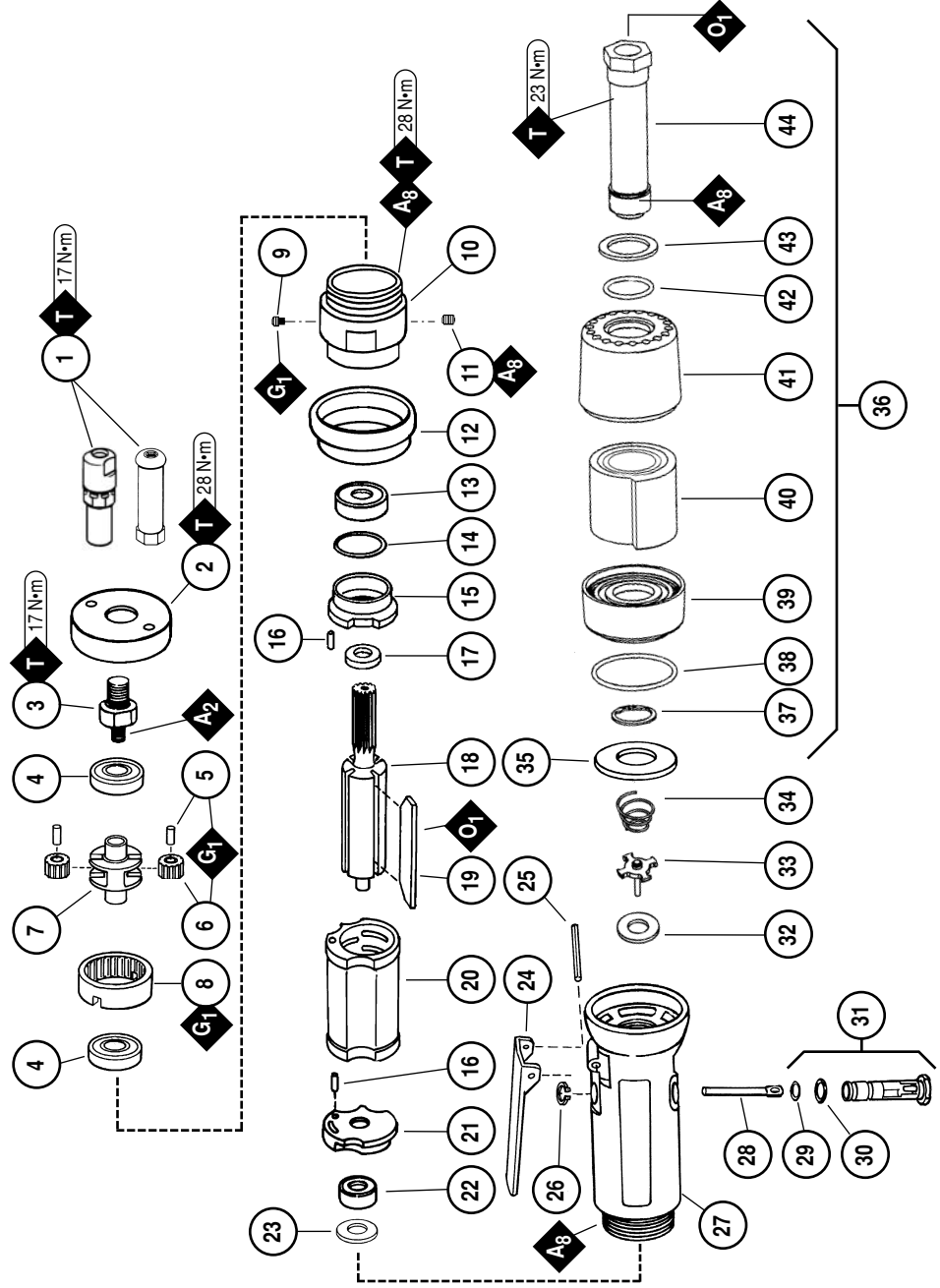
# Lightweight Dyninger

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	50010 1/4" Collet Assy.
2	50015 6mm Collet Assy.
3	12980 1/2" Arbor
4	50781 Rear Exhaust Cover
5	50782 Adapter
6	54520 Bearing (2)
7	54472 Gear Shaft (2)
8	54519 Gear (2)
9	50786 Planetary Carrier
10	54468 Ring Gear
11	01041 Grease Fitting
12	53152 Gear Case
13	50784 Lock Screw
14	01547 Rubber Collar
15	02649 Bearing
16	54529 Shim (3/pkg.)
17	01478 Front Bearing Plate
18	50767 Pin (2)
19	01479 Rotor Spacer
20	54554 Rotor
21	01480 Blades (4/pkg.)
22	01476 Cylinder
23	02676 Rear Bearing Plate
24	02696 Bearing
25	02679 Shield
26	01448 Throttle Lever
27	01462 Safety Lock Lever
28	12132 Pin
29	95558 Retaining Ring
30	02130 Housing - 52050
31	02131 Housing - 52051
32	02132 Housing - 52052
33	01449 Valve Stem
34	95730 O-Ring
35	01024 O-Ring
36	01469 Speed Regulator Assy.
37	01464 Seal
38	01472 Tip Valve
39	01468 Spring
40	01564 Air Control Ring
41	94519 Muffler Assy.
42	95711 Retaining Ring
43	95438 O-Ring
44	94521 Muffler Base
45	94528 Felt Muffler
46	94522 Muffler Cap
47	95375 O-Ring
48	94526 Spacer
49	94523 Inlet Adapter



## **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 @ 90 PSIG has 3/8" NPT female ports.
5. Use only genuine Dynabrade replacement parts. To reorder replacement parts, specify the **Model #**, **Serial #** and **RPM** of your machine.
6. A Motor Tune-Up Kit (P/N **96173**) 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.
7. 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.

### **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.

Machine Number	Motor HP (W)	Motor RPM	Sound Level	Air Flow Rate CFM/SCFM (LPM)	Spindle Thread	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
52050, 52051	.4 (298)	0-3,200	81 dB(A)	3/22 (623)	3/8"-24 male	2.2 (1.0)	9-1/4 (235)	1-5/8 (40)
52052	.4 (298)	0-3,200	81 dB(A)	3/22 (623)	3/8"-24 male	2.2 (1.0)	8-3/4 (222)	1-5/8 (40)

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

## **Disassembly/Assembly Instructions – .4Hp/Straight-Line/Planetary/Rear Exhaust**

**Important:** The Manufacturer's warranty is void if the tool is disassembled before the warranty expires.

**Notice:** Dynabrade recommends the use of the 52296 Repair Collar (sold separately) during the disassembly and assembly of this sander. All of the special repair tools referred to in these instructions can be ordered from Dynabrade. Please refer to this parts page for the proper part identification.

### **Motor Disassembly:**

1. Shut the air supply and disconnect the sander from the air supply hose.
2. Remove the mandrel and abrasive.
3. Use the 52296 Repair Collar to hold the housing in a vise.
4. Remove the 53152 Gear Case from the housing by turning it counterclockwise.
5. Pull the air motor from the housing.
6. Fasten the 96346, 2" 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, #2 Arbor Press so that the pinion is pointing down.
7. Use a 3/16" dia. flat end drive punch as a press tool and push the rotor out of the 02696 Bearing.
8. Remove the 02696 Bearing from the 02676 Rear Bearing Plate with the 96210 Bearing Removal Tool and the arbor press.
9. Position the 01478 Front Bearing Plate against the flat side of the bearing separator with the pinion pointing up. Place these on the arbor press and push the rotor from the 02649 Bearing.
10. Push the 02649 Bearing out of the 01478 Front Bearing Plate and remove the shims.
11. Slip the 01479 Spacer off the rotor.

### **Motor Disassembly Complete.**

### **Gear Case Disassembly:**

1. Shut the air supply and disconnect the sander from the air supply hose.
2. Remove the mandrel and abrasive.
3. Use the 52296 Repair Collar to hold the 53456 Housing in a vise.
4. Remove the 53152 Gear Case from the housing by turning it counterclockwise.
5. Remove the 01547 Insulator Collar and hold the wrench flats of the gear case in a vise with aluminum or bronze jaws so that the collet or arbor assembly is pointing up.
6. Use a 2.5mm adjustable pin spanner wrench or the 50971 Lock Ring Wrench to remove the 50781 Rear Exhaust Cover by turning it counterclockwise.
7. Use the 96401, 2mm Hex Key to remove the 50784 Lock Screw from the 53152 Gear Case.
8. Pull the planetary gear assembly from the 53152 Gear Case.
9. Fasten the 96346, 2" Bearing Separator between the rear 54520 Bearing and the 54468 Ring Gear so that the flat side of the separator is against the ring gear. To remove the bearing from the planetary carrier, place the separator on the table of the 96232 #2 Arbor Press so that the pinion gear is pointing down. Use a 3/8" dia. flat end drive punch as a press tool to push the planetary carrier from the 54520 Bearing.
10. Remove the shafts and gears from the planetary carrier.
11. Carefully hold the 56786 Planetary Carrier in a vise with aluminum or bronze jaws. Apply localized heat to the 50782 Adapter to soften the thread adhesive. Use an adjustable wrench to remove the adapter by turning it counterclockwise.
12. Use the bearing separator and the arbor press to remove the front 54520 Bearing.

### **Gear Case Disassembly Complete.**

### **Valve Disassembly:**

1. Use the 52296 Repair Collar to hold the housing in a vise. Position the air inlet so that it is pointing up.
2. Hold the 94523 Inlet Adapter stationary with an adjustable wrench and remove the air fitting with another wrench by turning it counterclockwise.  
**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 by turning it counterclockwise. **Note:** Carefully remove the 01564 Air Control Ring saving it to avoid loss. Refer to the exploded view to identify muffler components and the order of disassembly/assembly.
4. 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.
5. Use a 2.5mm flat end drive punch to remove the 12132 Pin and throttle lever.
6. Use the retaining ring pliers to remove 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 hold 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 Spring so that the small end of the spring fits against the tip valve.
6. Assemble the 94519 Muffler Assembly and install the 01564 Air Control Ring onto the inlet opening of the housing.
7. Apply a small amount of the Loctite® #567 (or equivalent) to the male threads of the 94523 Inlet Adapter.
8. Install the muffler assembly onto the housing. (Torque to 23 N•m/200 in. lbs.)

### **Valve Assembly Complete.**

## **Important: Clean and inspect parts before assembling.**

### **Motor Assembly:**

1. Install the 01479 Spacer onto the rotor.
2. Place .003" (.08mm) thickness shims from the 54529 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.
3. Check the clearance between the rotor and the bearing plate by using a .001" (.03mm) to .0015" (.04mm) thick feeler gauge. The clearance should be .001" (.03mm) to .0015" (.04mm). If necessary, adjust the clearance by repeating steps 1-3 changing shims as required. Once the proper rotor/bearing plate 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. Use the 96216 Bearing Press Tool against the outer race of the bearing to press the 02696 Bearing into the 02676 Rear Bearing Plate. Use the 96216 Bearing Press Tool against the inner race of the bearing to press this assembly onto the rotor. **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.

- Install the motor assembly into the housing making sure that the motor fits all the way into the housing.

**Note:** Align the Rear Bearing Plate node with the notch on the inside of the Housing.

**Motor Assembly Complete.**

**Gear Case Assembly:**

- Use the raised center portion of the **96239** Bearing Press Tool and the **96232**, #2 Arbor Press to push the front **54520** Bearing onto the female threaded end of the **50786** Planetary Carrier.
- Hold the planetary carrier in a vise with aluminum or bronze jaws. Apply one drop of Loctite® #271 (or equivalent) to the threads of the **50782** Adapter and install the adapter onto the planetary carrier. (Torque to 17 N•m/150 in. lbs.)
- 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.
- 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 **53152** Gear Case.
- Use the raised center portion of the **96239** Bearing Press Tool and the arbor press to push the rear **54520** Bearing onto the **50786** Planetary Carrier until the outer race of the bearing touches the ring gear. Important: The fit should be snug between the bearings and the ring gear. If it is too tight the carrier will not turn freely. The carrier must turn freely while still maintaining a snug fit. A loose fit will not achieve proper preload of the bearings.
- Install the complete planetary gear assembly into the **53152** Gear Case. Apply a small amount of the Loctite® #567 (or equivalent) to the **50784** Set Screw and install it.
- Install the **01547** Insulator Collar onto the **53152** Gear Case.
- 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.)
- Lubricate planetary gears through the 01041 Grease Fitting, applying 2-3 plunges of the **95542** Grease with the **95541** Grease Gun initially, and there after for every 50 hours of use. **Gear Case Assembly Complete.**

**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 the Loctite Corp.

**Eyelet Sanding Stars/Mandrels**

**4" Diameter Arbor-Mount Sanding Stars**

Grit	Part Number
80	93392
120	93393
150	93394
180	93395
220	93396
320	93397
400	93398

Unit = 40 Stars each

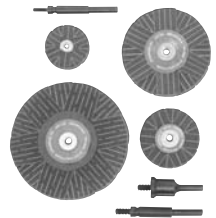
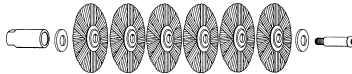
**Options for Arbor Mount Stars**

- Grit and spacing determine sanding aggressiveness.

**Least Aggressive/Most Flexible**



**Most Aggressive/Least Flexible**



**4" Diameter Spindle-Mount Sanding Stars**

Grit	Part Number
80	93166
120	93167
150	93168
180	93169
220	93171
320	93172
400	93173

Unit = 10 Stars each

3/4", 1", 1-1/2", 2", 3" and 4" Diameter Eyelet Stars and Mandrels

**General Purpose Metalworking**

**General Purpose Woodworking/Metalworking**

Grit	3/4" Diameter P/N	1" Diameter P/N	1-1/2" Diameter P/N	2" Diameter P/N	3" Diameter P/N	4" Diameter P/N
80	93579	93586	93541	93551	93558	93565
120	93580	93587	93542	93552	93559	93566
150	93581	93588	93543	93553	93560	93567
180	93582	93589	93544	93554	93561	93568
220	93583	93590	93545	93555	93562	93569
320	93584	93591	93546	93556	93563	93570
400	93585	93592	93547	93557	93564	93571

**Optional Accessories**



**Dynaswivel®**

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



**96173 Motor Tune-Up Kit**

- Includes assorted parts to help maintain and repair motor.



**Grease**

- 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-handed operation).

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



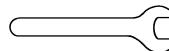
**52296 Repair Collar**

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

**Open-End Wrenches**

**95262** – 14mm open-end.

**95281** – 19mm open-end.



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