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.

### Models:
- **51470** - 2,000 RPM, Dry
- **51472** - 3,100 RPM, Dry

### Key
- **A2** = Loctite #271
- **A8** = Loctite #567
- **W1** = Wicking Gear Oil
- **O1** = Air Lube
- **G1** = Lubriplate 630AA
- **A9** = Loctite #567
- **T** = Torque: N·m x 8.85 = In.·lbs.

#### Index Key

<table>
<thead>
<tr>
<th>No.</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50963</td>
<td>Retainer</td>
</tr>
<tr>
<td>2</td>
<td>50899</td>
<td>Shaft Seal</td>
</tr>
<tr>
<td>3</td>
<td>50982</td>
<td>Spindle Assembly</td>
</tr>
<tr>
<td>4</td>
<td>50867</td>
<td>Bearing</td>
</tr>
<tr>
<td>5</td>
<td>50997</td>
<td>Bevel Gear - 2,000 RPM</td>
</tr>
<tr>
<td>6</td>
<td>50996</td>
<td>Bevel Gear - 3,100 RPM</td>
</tr>
<tr>
<td>7</td>
<td>96306</td>
<td>Shim (as req.)</td>
</tr>
<tr>
<td>8</td>
<td>96307</td>
<td>Shim (as req.)</td>
</tr>
<tr>
<td>9</td>
<td>02048</td>
<td>Wick</td>
</tr>
<tr>
<td>10</td>
<td>96325</td>
<td>Shell Bearing</td>
</tr>
<tr>
<td>11</td>
<td>53163</td>
<td>Handle Assembly</td>
</tr>
<tr>
<td>12</td>
<td>50980</td>
<td>Head Assembly (Incl. 01041 Lube Fitting)</td>
</tr>
<tr>
<td>13</td>
<td>01041</td>
<td>Gear Lubrication Fitting (2)</td>
</tr>
<tr>
<td>14</td>
<td>99339</td>
<td>Retaining Ring</td>
</tr>
<tr>
<td>15</td>
<td>52158</td>
<td>Retaining Ring</td>
</tr>
<tr>
<td>16</td>
<td>50355</td>
<td>Pinion Shaft</td>
</tr>
<tr>
<td>17</td>
<td>07154</td>
<td>Shim (as req.)</td>
</tr>
<tr>
<td>18</td>
<td>07155</td>
<td>Shim (as req.)</td>
</tr>
<tr>
<td>19</td>
<td>50986</td>
<td>Spacer</td>
</tr>
<tr>
<td>20</td>
<td>53551</td>
<td>Coupling Nut</td>
</tr>
<tr>
<td>21</td>
<td>50951</td>
<td>Coupler</td>
</tr>
<tr>
<td>22</td>
<td>50956</td>
<td>Adapter</td>
</tr>
<tr>
<td>23</td>
<td>50967</td>
<td>Lock Ring</td>
</tr>
<tr>
<td>24</td>
<td>50970</td>
<td>Gear Casing Assembly (Incl. 01041 Grease Fitting)</td>
</tr>
<tr>
<td>25</td>
<td>04014</td>
<td>Screw</td>
</tr>
<tr>
<td>26</td>
<td>02552</td>
<td>Bearing (2)</td>
</tr>
<tr>
<td>27</td>
<td>93191</td>
<td>Ring Gear</td>
</tr>
<tr>
<td>28</td>
<td>53180</td>
<td>Planetary Carrier</td>
</tr>
<tr>
<td>29</td>
<td>53193</td>
<td>Gear (2)</td>
</tr>
<tr>
<td>30</td>
<td>53182</td>
<td>Gear Shaft (2)</td>
</tr>
<tr>
<td>31</td>
<td>04026</td>
<td>Bearing (4)</td>
</tr>
<tr>
<td>32</td>
<td>01007</td>
<td>Bearing</td>
</tr>
<tr>
<td>33</td>
<td>01121</td>
<td>Shim Pack (as req.)</td>
</tr>
<tr>
<td>34</td>
<td>53183</td>
<td>Front Bearing Plate</td>
</tr>
<tr>
<td>35</td>
<td>01010</td>
<td>Spacer</td>
</tr>
<tr>
<td>36</td>
<td>01028</td>
<td>Cylinder</td>
</tr>
<tr>
<td>37</td>
<td>01017</td>
<td>Rotor</td>
</tr>
<tr>
<td>38</td>
<td>01185</td>
<td>Blades (4/pk)</td>
</tr>
<tr>
<td>39</td>
<td>01266</td>
<td>Bearing (2)</td>
</tr>
<tr>
<td>40</td>
<td>04115</td>
<td>Tip Valve</td>
</tr>
<tr>
<td>41</td>
<td>95558</td>
<td>Retaining Ring</td>
</tr>
<tr>
<td>42</td>
<td>95435</td>
<td>Key</td>
</tr>
<tr>
<td>43</td>
<td>01872</td>
<td>Retaining Ring</td>
</tr>
<tr>
<td>44</td>
<td>01873</td>
<td>Retaining Ring</td>
</tr>
<tr>
<td>45</td>
<td>01874</td>
<td>Nut</td>
</tr>
<tr>
<td>46</td>
<td>01875</td>
<td>Pin</td>
</tr>
<tr>
<td>47</td>
<td>01876</td>
<td>Spacer</td>
</tr>
<tr>
<td>48</td>
<td>01877</td>
<td>Rear Bearing Plate</td>
</tr>
<tr>
<td>49</td>
<td>01878</td>
<td>Shoulder Nut</td>
</tr>
<tr>
<td>50</td>
<td>01879</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>51</td>
<td>01880</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>52</td>
<td>01881</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>53</td>
<td>01882</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>54</td>
<td>01883</td>
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</tr>
<tr>
<td>55</td>
<td>01884</td>
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</tr>
<tr>
<td>56</td>
<td>01885</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>57</td>
<td>01886</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>58</td>
<td>01887</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>59</td>
<td>01888</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>60</td>
<td>01889</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>61</td>
<td>01890</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>62</td>
<td>01891</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>63</td>
<td>01892</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>64</td>
<td>01893</td>
<td>Thrust Washer</td>
</tr>
<tr>
<td>65</td>
<td>01894</td>
<td>Thrust Washer</td>
</tr>
</tbody>
</table>

### Part Reorder No.
- **PD02·11**
- **PD98·34**

### Effective Date:
- **February, 2002**

### Supercedes:
- **PD98·34**

### Index Key:
- **Left Hand Threads**

### Key Notes:
- **O** = Oil: **O1** = Air Lube
- **W** = Wicking: **W1** = Wicking Gear Oil
- **G** = Grease: **G1** = Lubriplate 630AA
- **A** = Adhesive: **A2** = Loctite #271
- **T** = Torque: N·m x 8.85 = In.·lbs.
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 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.

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).
4. An Air Line Filter-Regulator-Lubricator must be used with this air tool to maintain all warranties. Dynabrade recommends the following: 11411 Air Line Filter-Regulator-Lubricator — Provides accurate air pressure regulation, two-stage filtration of water contaminants and micro-mist lubrication of pneumatic components. Operates up to 55 SCFM @ 100 PSIG has 1/2” 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. Lubricate Wick System through the angle gear head 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).
7. Use only genuine Dynabrade replacement parts. To reorder replacement parts, specify the Model #, Serial # and RPM of your machine.
8. A Motor Tune-Up Kit (P/N 96178) 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.
9. A Lubrication Accessory Kit (P/N 50790) is available which contains Dynabrade’s 95542 Grease, 95541 Lubrication Gun (2) and 95848 Gear Oil.
10. 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.

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.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Motor HP (W)</th>
<th>Motor RPM</th>
<th>Sound Level</th>
<th>Air Flow Rate CFM/SCFM (LPM)</th>
<th>Air Pressure PSI (Bars)</th>
<th>Spindle Thread</th>
<th>Weight (kg)</th>
<th>Length (mm)</th>
<th>Height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51470</td>
<td>.7 (522)</td>
<td>0-2,000</td>
<td>82 dBA</td>
<td>6/43 (1,218)</td>
<td>90 (6.2)</td>
<td>5/8”-11 male</td>
<td>4.8 (2.2)</td>
<td>13 (330)</td>
<td>3-1/8 (79)</td>
</tr>
<tr>
<td>51472</td>
<td>.7 (522)</td>
<td>0-3,000</td>
<td>80 dBA</td>
<td>6/41 (1,161)</td>
<td>90 (6.2)</td>
<td>5/8”-11 male</td>
<td>4.8 (2.2)</td>
<td>13 (330)</td>
<td>3-1/8 (79)</td>
</tr>
</tbody>
</table>

Additional Specifications: Air Inlet Thread 1/4” NPT • Hose I.D. Size 3/8” (10 mm)
Motor Disassembly Complete.

Angle-Housing Disassembly Complete.

Motor Housing Disassembly Complete.

Important: Manufacturer’s warranty is void if tool is disassembled before warranty expires.

Please refer to parts breakdown for part identification.

Motor and Gear Casing Disassembly:

1. **Important:** Inlet adapter must be secured before attempting to remove air fitting to avoid damaging composite motor housing.
2. Disconnect tool from power source, and secure motor housing, using the two molded flats, in a padded vise.
3. Remove 50970 Gear Casing Assembly using 40 mm wrench flats provided.
4. Remove 04014 Set Screw from gear casing.
5. Push 50956 Hex Adapter through 50970 Gear Casing Assembly.
6. Remove 02552 Bearing from planetary assembly (opposite end from hex adapter).
7. Remove 53191 Ring Gear and spur gears from 53180 Planetary Carrier.
9. Grab onto pinion gear and pull 53169 Motor Assembly from motor housing.
10. Secure 01028 Cylinder and press 04017 Rotor through 01721 Rear Bearing Plate.
11. Press 04017 Rotor through 53183 Front Bearing Plate and remove 01010 Spacer, 01007 Bearing and shims.

Motor Disassembly Complete.

Motor Housing Disassembly:

1. Secure motor housing, using the two molded flats in a padded vise, with the air inlet facing upwards.
2. Remove 94519 Muffler Assembly from motor housing.
3. Remove 01564 Air Control Ring, 01468 Spring, 01472 Tip Valve and 01464 Seal from motor housing.
4. Using a 2.5 mm drift pin, tap 01017 Spring from housing and remove 01089 Throttle Lever and 01477 Valve Stem.
5. Remove 95558 Retaining Ring. Push 01247 Speed Regulator Assembly from housing.

Motor Housing Disassembly Complete.

Right-Angle Housing and Spindle Disassembly:

1. Secure housing in a padded vise, and remove 50987 Lock Ring (left-hand thread) using 44 mm wrench flats.
2. Remove 50951 Coupler and pull 53351 Coupling Nut and pinion assembly from housing.
3. Secure pinion in a padded vise and remove 53551 Coupling Nut, remove 01266 Bearing, 50986 Spacer and shims.
4. Secure 01266 Bearing and push 50985 Pinion Shaft through pinion and bearing, remove 50435 Key.
5. Secure housing in a padded vise with spindle facing upwards.
6. Remove 50963 Retainer using an adjustable pin wrench (left-hand thread).
7. Pull spindle assembly from angle-housing. Remove shims and 02048 Wick from housing.
8. Secure 50887 Bearing and push spindle through bevel gear and bearing.
9. Remove 96325 Shell Bearing using 57099 Bearing Puller.

Angle-Housing Disassembly Complete.

Motor and Gear Casing Assembly:

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

1. Place 04017 Rotor in padded vise with threaded spindle facing upwards.
2. Slip 01010 Spacer onto 04017 Rotor.
3. Place a .002” shim into 53183 Front Bearing Plate as an initial spacing and slip 01007 Bearing into plate. **Note:** 01121 Shim Pack contains .001” and .002” shims.
4. Press bearing/bearing plate assembly onto rotor.
5. Check clearance between rotor and bearing plate by using a .001” feeler gauge. Clearance should be at .001” to .0015”. Adjust clearance by repeating steps 2-4 with different shim if necessary.
6. Once proper rotor gap clearance is achieved, install well lubricated 01185 Blades (4) into rotor slots. Dynabrade recommends using their 95842 Air Lube.
7. Install cylinder over rotor/pinion. Be sure air inlet holes of cylinder face away from 53183 Front Bearing Plate.
8. Press 02549 Rear Bearing into rear bearing plate. Press bearing/bearing plate assembly onto rotor. Be sure that pin and air inlet holes line up with pin slot and air inlet holes in cylinder.
9. Secure motor housing in padded vise so motor cavity faces upwards. Install motor assembly into housing. Be sure motor inlet is facing the handle and it drops all the way into housing.
11. Apply #271 Loctite® to 50956 Hex Adapter and install onto 53180 Planetary Carrier (torque 17.0 N•m/150 in.- lbs.).
12. Install 53193 Gears, 04026 Bearings and 53182 Gear Shafts onto planetary carrier.
14. Install planetary carrier assembly into 50970 Gear Casing by aligning the slot in 53191 Ring Gear with set screw hole.
15. Apply #567 Loctite® (or equivalent) to 04014 Set Screw and install into 50970 Gear Casing.
16. Apply two drops of #271 Loctite® adhesive to motor housing threads.
17. Install gear casing sub-assembly onto motor housing to secure motor, torque 28 N•m/250 in-lbs.
Disassembly/Assembly Instructions - Sander / Polisher (continued)

Motor Housing Assembly:
1. Insert 01247 Regulator with o-rings and valve stem, place into motor housing. Secure with 95558 Retaining Ring.
2. Secure valve body in padded vise with inlet facing upwards. Insert 01464 Seal.
3. 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).
4. Assemble felt muffler and place in 94522 Muffler Cap. Install 94521 Muffler Base onto muffler cap.
5. Install 94538 O-Ring into groove on muffler base. Place 95375 O-Ring and 94526 Spacing into recessed area of muffler cap.
6. Slip 94523 Inlet Adapter through muffler assembly and install 95711 Retainer Ring into groove on inlet adapter.
7. Install 01564 Air Control Ring into valve body housing.
8. Apply #567 Loctite® Pipe Sealant to threads of 94523 Inlet Adapter and install entire muffler assembly onto valve body (torque 23.0 N-m/200 in-lbs.).
9. Replace air fitting. Secure inlet adapter with a wrench before tightening air fitting. Install throttle lever and 01017 Pin.

Right-Angle Housing and Spindle Assembly:
1. Secure 50985 Pinion Shaft in padded vise with key slot end up. Install 02552 Bearing onto pinion shaft.
2. Press pinion gear onto pinion shaft with 50435 Key in key slot. Replace 95939 Retaining Ring.
3. Secure pinion in padded vise and install 50986 Spacer, 01266 Bearing and 53551 Coupling Nut.
4. The 50986 Spacer must fit snug between the two 01266 Bearings (shim required to achieve a snug fit).
5. Apply #271 Loctite® adhesive to spindle thread and install 53551 Coupling Nut (torque 17 N-m/150 in-lbs.).
6. Install 96235 Shell Bearing into angle housing and insert pinion/shaft assembly.
7. Apply #567 Loctite® to angle housing and install 50987 Lock Ring (left-hand thread, 44 mm wrench flats).
8. Insert 50951 Coupling over 53551 Coupling Nut.
9. Install 50987 Lock Ring and angle housing sub-assembly onto 50970 Gear Casing. Take care in the aligning of the two male hex adapters to the 50951 Coupling (torque 45 N-m/400 in-lbs.).
10. Press 50887 Bearing and bevel gear onto spindle assembly.
11. Secure angle housing with drive spindle cavity facing upward and install well lubricated 02048 Wick (wick must be completely saturated with 95848 Gear Oil before installation). Note: Do not contaminate wick with any other oil or grease product.
12. Insert spindle assembly and check for gear alignment and backlash. Install shims as required (Minimum backlash is recommended for maximum gear life. Make sure there is clearance throughout 360° revolution.).
13. Install 50963 Retainer with 50899 Shaft Seal in place (left-hand thread), torque 34 N-m/300 in-lbs.

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.

Loctite® is a registered trademark of Loctite Corp.

Accessories

96178 Motor Tune-Up Kit
• Includes assorted parts to help maintain and repair motor.

Dynabrade Air Lube (10W/NR)
• Formulated for pneumatic equipment.
• Absorbs up to 10% of its weight in water.
• Prevents rust and formation of gum/sludge for longer tool operation with greater power and less downtime.

95821: 4 oz. (118 ml).
95842: 1 pt. (473 ml).
95843: 1 gal. (3.8 L).

95848: 2 oz. (56.7 g) tube.
95849: 10 oz. (283.5 g) tube.

50790 Dynabrade Lubrication Accessory Kit
• Includes: 95848: Gear Oil 2 oz. tube.
• 95542: Grease 1 pt. (473 ml).
• 95541: Lubricant Gun (2).

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-hand operation).
95542: 10 oz. (283.5 g) tube.

50799 Bearing Puller
• This tool is designed to assist in removing the 96325 Bearing from the angle housing assembly.

Dry/Wet Disc Pads
50828 - 6” Dia, Soft, Rubber Face
50829 - 8” Dia, Soft, Rubber Face
50884 - 5” Dia, Rigid, Hook-Face
50946 - 6” Dia, Rigid, Hook-Face
50947 - 8” Dia, Rigid, Hook-Face
54337 - 8” Dia, Soft, Hook-Face
• 5/8” - 11 female thread.

50984 Top Handle Assy.

Visit Our Web Site: www.dynabrade.com
Email: Customer.Service@Dynabrade.com

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