

**Models:**

- 52200 — 25,000 RPM, 1/4" Collet**
- 52202 — 30,000 RPM, 1/4" Collet**
- 52230 — 25,000 RPM, 6mm Collet**
- 52232 — 30,000 RPM, 6mm Collet**

# .4 Hp/Front Exhaust Die Grinder

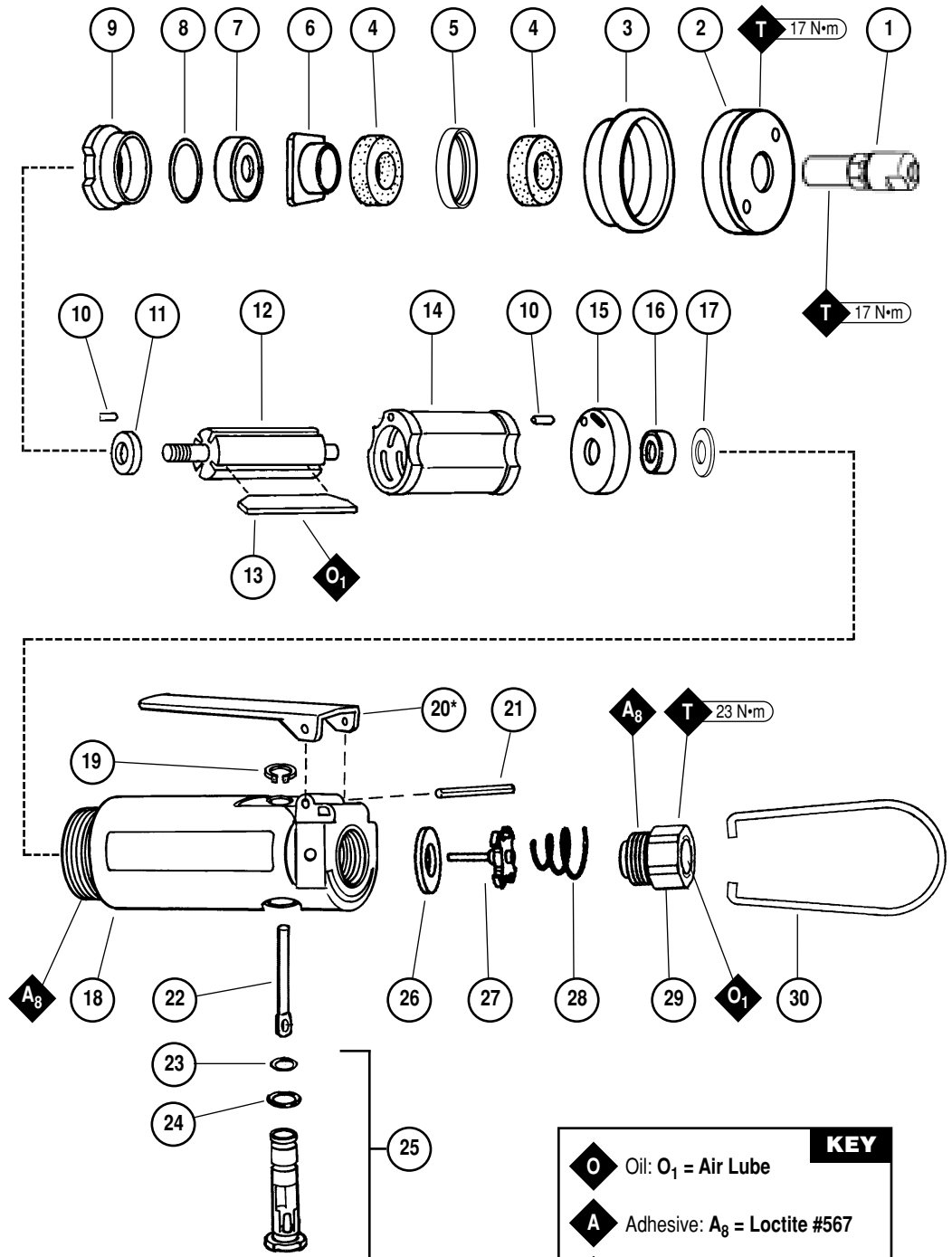
Air Motor and Machine Parts

## ! 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.

### Index Key

No.	Part #	Description
1	<b>Collet Assembly</b>	
	50080	1/4"
	50079	6mm
2	01498	Exhaust Cover
3	01547	Rubber Collar
4	01486	Muffler Insert
		25,000 RPM (Qty. 4)
		30,000 RPM (Qty. 2)
5	01482	Baffle
6	<b>Air Control Ring</b>	
	01471	25,000 RPM
	01481	30,000 RPM
7	02649	Bearing
8	54529	Shim Pack (3/pkg)
9	01478	Front Bearing Plate
10	50767	Pin (2)
11	01479	Spacer
12	01475	Rotor
13	01480	Blades (4/pkg.)
14	01476	Cylinder
15	02673	Rear Bearing Plate
16	02696	Bearing
17	02679	Shield
18	01463	Housing
19	95558	Retaining Ring
20	01448	Throttle Lever
21	12132	Pin
22	01449	Valve Stem
23	95730	O-Ring
24	01024	O-Ring
25	01469	Speed Reg. Assy.
26	01464	Seal
27	01472	Tip Valve
28	01468	Spring
29	01494	Inlet Adapter
30	50033	Hanger



Please indicate:  
**Model #, Serial #, and RPM** when ordering replacement parts.

KEY	
<b>O</b>	Oil: O <sub>1</sub> = Air Lube
<b>A</b>	Adhesive: A <sub>3</sub> = Loctite #567
<b>T</b>	Torque: N•m x 8.85 = In. - lbs.

\*Optional 01462 Safety-Lock Lever available.

See inside for Important Operating, Maintenance and Safety Instructions.

# 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 specification states 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. Use only genuine Dynabrade replacement parts. To reorder replacement parts, please specify the **Model #**, **Serial #** and **RPM** of your machine.
6. A Motor Tune-Up Kit (P/N 96048) is available which includes assorted parts to help maintain motor in peak operating condition.
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, 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.

Model Number	Motor HP (W)	Motor RPM	Air Inlet Thread	Sound Level	Air Flow Rate CFM/SCFM (LPM)	Air Pressure PSIG (Bars)	Spindle Thread	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
52200	.36 (268)	25,000	1/4" NPT	77 dB(A)	3/20 (566)	90 (6.2)	M8 x 1.0 male	.8 (.4)	5-1/8 (130)	1-5/8" (41)
52202	.41 (306)	30,000	1/4" NPT	88 dB(A)	3/20 (566)	90 (6.2)	M8 x 1.0 male	.8 (.4)	5-1/8 (130)	1-5/8" (41)
52230	.36 (268)	25,000	1/4" NPT	77 dB(A)	3/20 (566)	90 (6.2)	M8 x 1.0 male	.8 (.4)	5-1/8 (130)	1-5/8" (41)
52202	.41 (306)	30,000	1/4" NPT	88 dB(A)	3/20 (566)	90 (6.2)	M8 x 1.0 male	.8 (.4)	5-1/8 (130)	1-5/8" (41)

Additional Specifications: Hose I.D. Size 1/4" (8mm)

# **Disassembly/Assembly Instructions - .4 Hp/Front Exhaust**

**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.

## **To Disassemble:**

1. Secure air tool in vise using 52296 Repair Collar or padded jaws.
2. Remove collet cap and insert.
3. With an adjustable pin wrench, remove 01498 Exhaust Cover by turning counter-clockwise. Remove air control ring, muffler insert and 01482 Baffle.
4. Pull motor assembly from housing.
5. Reposition motor housing in vise so inlet bushing is facing upward.
6. Unscrew 01494 Inlet Bushing turning counter-clockwise.
7. Using needle nose pliers, remove 01468 Spring, 01472 Tip Valve and 01464 Seal.
8. Resecure housing in vise so throttle lever and 12132 Pin are accessible.
9. Using a 2.5mm diameter drift pin and a hammer, tap 12132 Pin out from housing and remove throttle lever.
10. Remove 95558 Retaining Ring and push 01469 Speed Regulator from housing.

**Tool Disassembly Complete.**

## **Motor Disassembly:**

1. Press rotor from 02696 Rear Bearing. Press 02696 Bearing from 02673 Rear Bearing Plate.
2. Remove 01435 Collet Body from rotor shaft. Twist collet body counter clockwise from shaft.
3. Remove 01478 Front Bearing Plate, cylinder, blades (4) and 01479 Spacer from rotor. **Note:** 02649 Bearing is a slip fit into 01478 Front Bearing.

**Motor Disassembly Complete.**

## **Motor Assembly:**

**Important:** Be sure parts are clean and in good repair before assembling.

1. Place 01475 Rotor in padded vise with threaded spindle facing upward.
2. Slip 01479 Spacer onto rotor.
3. Place a .002" shim into 01478 Front Bearing Plate as an initial spacing (**Note:** 54529 Shim Pack contains .001", .002", and .003" shims) and slip 02649 Bearing into plate.
4. Install bearing/bearing plate assembly onto rotor.
5. Tighten 01435 Collet Body onto rotor (torque to 17 N•m/150 in. - lbs.).
6. 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 1-5 with different shim if necessary.
7. Once proper rotor/gap clearance is achieved, install well lubricated 01480 Blades (4) into rotor slots. Dynabrade Air Lube P/N 95842 is recommended for lubrication.
8. Install cylinder over rotor. Be sure air inlet holes of cylinder face away from bearing plate and that the pin in the front bearing plate aligns correctly with the pin-hole in the cylinder.
9. Press 02696 Rear Bearing into 02673 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. **Important:** Fit must be snug between bearing plates and cylinder. A loose fit will not achieve the proper pre-load of motor bearings. If too tight, rotor will not turn freely. Rotor must then be lightly tapped at press fit end so it will turn freely while still maintaining a snug fit.
10. Secure housing in vise using 52296 Repair Collar.
11. Install motor assembly into housing. Be sure motor drops all the way into housing.
12. Assemble baffle, muffler insert and air control ring into 01498 Exhaust Cover and install onto motor housing (torque 17 N•m/150 in. - lbs.).
13. Motor adjustment must now be checked. With motor housing still mounted in vise, pull end of rotor and twist (10-15 lbs. force), rotor should turn freely without drag. If drag or rub is felt, then increase preload or remove shim. Also, push end of rotor and twist (10-15 lbs. force), rotor should turn freely without drag. If drag or rub is felt, then deload or add shim.

**Motor Assembly Complete.**

## **Valve Body Assembly:**

1. Insert 01469 Speed Regulator Assembly with 01449 Valve Stem with o-rings installed into housing. Secure with 95558 Retaining Ring.
2. Secure valve body in vise using 52296 Repair Collar with air inlet facing upward.
3. Insert 01464 Seal into housing.
4. Line-up the hole in the 01449 Valve Stem with the hole in the 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 first).
5. Apply Loctite® #567 PST Pipe Sealant (or equivalent) to threads of 01494 Inlet Adapter and install onto valve body (torque 23.0 N•m/200 in. - lbs.).
6. Install throttle lever and 12132 Pin. Remove from vise.

**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.

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## Optional Accessories



### Dynamswivel®

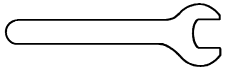
Swivels 360° at two locations which allows an air hose to drop straight to the floor, no matter how the tool is held.

- 94300 1/4" NPT.



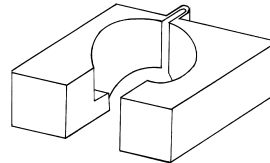
### 96048 Motor Tune-Up Kit

- Includes assorted parts to help maintain and repair motor.



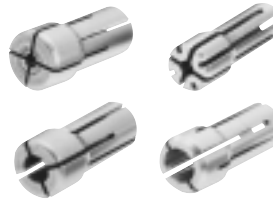
### Open-End Wrenches

- 96076 – 12mm open-end.
- 95262 – 14mm open-end.



### 52296 Repair Collar

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



### Collet Inserts

- 01485 – 1/4"
- 01497 – 6mm
- 01495 – 1/8"
- 01496 – 3mm

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