Parts Page Reorder No. PD00•82
Effective November, 2000
Supersedes PD96•57

Models:

51300 – 15,000 RPM, 1/4" - Collet
51301 – 18,000 RPM, 1/4" - Collet
51302 – 20,000 RPM, 1/4" - Collet
51303 – 24,000 RPM, 1/4" - Collet
51310 – 15,000 RPM, 6mm - Collet
51311 – 18,000 RPM, 6mm - Collet
51312 – 20,000 RPM, 6mm - Collet
51313 – 24,000 RPM, 6mm - Collet

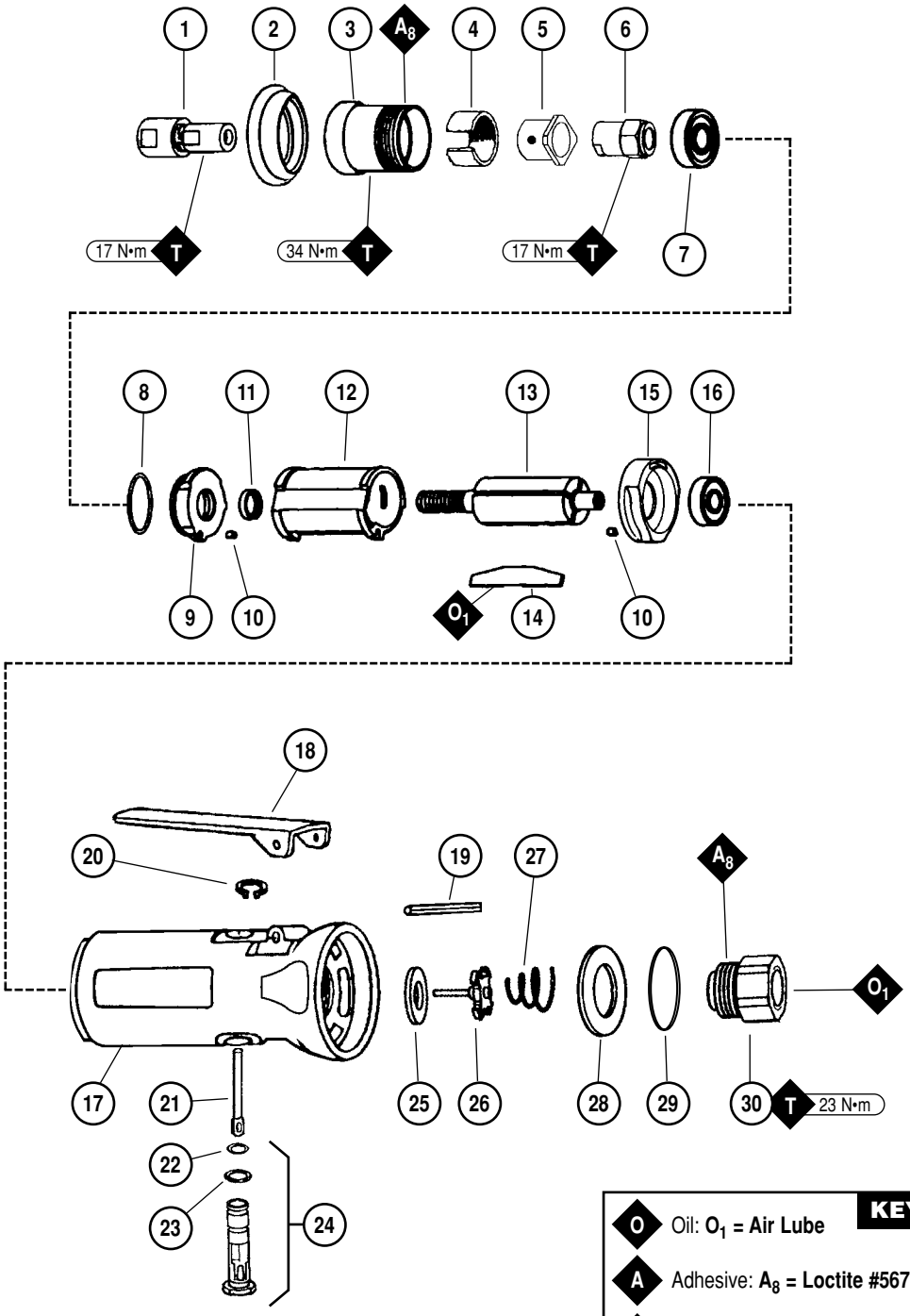
.5 Hp/Straight-Line/Front Exhaust Die Grinder

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	50010	1/4" Collet Assy.
	50015	6mm Collet Assy.
2	53175	Insulator Collar
3	04102	Lock Ring
4	04078	Felt Silencer
5		**Air Control Ring**
	01124	15,000 RPM
	01125	18,000 RPM
	04084	20,000 RPM
	01126	24,000 RPM
6	04081	Rotor Nut
7	01007	Bearing
8	01121	Shim Pack (3/pkg.)
9	01008	Bearing Plate
10	50767	Pin (2)
11	01010	Rotor Spacer
12	01013	Cylinder
13	01120	Rotor
14	01011	Blade (4/pkg.)
15	01244	Bearing Plate
16	01015	Bearing
17	30423	Housing – 51300
	30424	Housing – 51301
	30425	Housing – 51302
	30426	Housing – 51303
	30431	Housing – 51310
	30432	Housing – 51311
	30433	Housing – 51312
	30434	Housing – 51313
18	57342	Throttle Lever
	01089	Safety Lock Lever (optional)
19	01017	Pin
20	95558	Retaining Ring
21	01477	Valve Stem
22	95730	O-Ring
23	01024	O-Ring
24	01247	Speed Regulator Assy.
25	01464	Seal
26	01472	Tip Valve
27	01468	Spring
28	53190	Block Plate
29	96065	O-Ring
30	01494	Inlet Adapter



KEY

- O — Oil: O_1 = Air Lube
- A — Adhesive: A_8 = Loctite #567
- T — Torque: N•m x 8.85 = In. - lbs.

See reverse side for Accessories and 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.
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. 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, specify the **Model #**, **Serial #**, and **RPM** of your machine.
6. A Motor Tune-Up Kit (P/N 95600) 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, keytones, chlorinated hydrocarbons or nitro carbons.
8. 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, sanding pads, 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)
51300/51310	.5 (373)	15,000	1/4" NPT	80 dB(A)	3/24 (680)	90 (6.2)	3/8"-24 male	1.5 (.7)	7 (178)	1-7/8 (48)
51301/51311	.5 (373)	18,000	1/4" NPT	81 dB(A)	3/24 (680)	90 (6.2)	3/8"-24 male	1.5 (.7)	7 (178)	1-7/8 (48)
51302/51312	.5 (373)	20,000	1/4" NPT	82 dB(A)	4/25 (708)	90 (6.2)	3/8"-24 male	1.5 (.7)	7 (178)	1-7/8 (48)
51303/51313	.5 (373)	24,000	1/4" NPT	84 dB(A)	4/26 (736)	90 (6.2)	3/8"-24 male	1.5 (.7)	7 (178)	1-7/8 (48)

Additional Specifications: Hose I.D. Size 3/8" (10mm)

Disassembly/Assembly Instructions - .5 Hp Front Exhaust

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

Motor Disassembly:

1. Disconnect tool from power source.
2. Secure air tool in soft jaw.
3. Remove collet from rotor by inserting a 3/16" hex key through the collet body and into the end of the rotor shaft.
4. Use an adjustable pin wrench or 50971 Lock Ring Tool to remove 04102 Lock Ring by turning it counter-clockwise. Remove 04078 Felt Silencer and air control ring.
5. Pull motor assembly from housing and fasten a bearing separator around the end of the cylinder nearest the 01244 Rear Bearing Plate.
6. Place bearing separator on the table of a (#2) arbor press and push the rear rotor shaft out of the rear motor bearing. **Note:** A 3/16" diameter flat nose drive punch can be used as a press tool.
7. With cylinder and blades removed, secure the rotor body in a soft jaw vise and remove 04081 Rotor Nut, turning it counter-clockwise.
8. Press 01015 Rear Bearing out of 01244 Rear Bearing Plate with 96211 Bearing Removal Tool.

Motor Disassembly Complete.

Valve Disassembly:

1. Position motor housing in vise by holding on wrench flats, and with air inlet facing up.
2. Secure 01494 Inlet Adapter with a wrench and remove air fitting. Also, remove 01494 Inlet Adapter.
3. Remove 53190 Block Plate and 96065 O-Ring.
4. Remove 01468 Spring, 01472 Tip Valve and 01464 Seal.
5. Use a 2.5mm drive punch to remove 01017 Pin and throttle lever from housing.
6. Remove 95558 Retaining Ring with external ring pliers and push 01247 Regulator from housing.

Valve Disassembly Complete.

Motor Assembly:

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

1. Place rotor in soft jaw vise with a threaded spindle pointing up.
2. Slip 01010 Spacer onto rotor.
3. Place a .002" shim into front bearing plate as an initial spacing and slip 01007 Bearing into plate.
   Note: 01121 Shim Pack contains .001" and .002" shims.
4. Install bearing/bearing plate assembly onto rotor.
5. Install 04081 Rotor Nut 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 01011 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 front bearing plate.
9. Press 01015 Rear Bearing into 01244 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. 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. A loose fit will not achieve the proper preload of motor bearings.
10. Secure motor housing in padded vise so motor cavity faces upwards.
11. Install motor assembly into housing, making sure motor drops all the way into housing.
    Note: Align the rear bearing plate node with the notch inside the housing.
12. Insert air control ring and 04078 Felt Silencer into 04102 Lock Ring and install onto motor housing (torque 34 N•m/300 in. - lbs.).
13. Motor adjustment can 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.

Valve Body Assembly:

1. Insert 01247 Speed Regulator Assembly with o-rings into valve body. Secure with 95558 Retaining Ring.
2. Secure valve body in vise with air inlet pointing up.
3. Insert 01464 Seal into housing.
4. 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).
5. Install 96065 O-Ring onto 53190 Block Plate.
6. Install 53190 Block Plate into housing.
7. Apply Loctite® #567 PST Pipe Sealant to threads of 01494 Inlet Adapter and install onto valve body (torque 23 N•m/200 in. - lbs.).
8. Install 57342 Throttle Lever and 01017 Pin.

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 l.ever 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

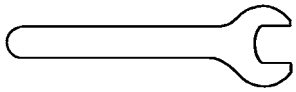
53032 – 1/4" Drill Chuck
Includes: 53052 Mated Chuck Key

Collet Inserts
- 50065 – 1/8"
- 50039 – 8mm

Dynaswivel®
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

95600 **Motor Tune-Up Kit:**
- Includes assorted parts to help maintain and repair motor.

Wrenches



95262 – 14mm open-end.
95281 – 19mm open-end.

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

PRINTED IN USA
PD00.82_Rev.1_04/04

Buy parts on line at https://Dynashop.co.uk/ for all things Dynabrade