

# Pencil Grinder

## Turbine-Driven Air Motor

**SAFETY, OPERATION AND MAINTENANCE - SAVE THIS DOCUMENT, EDUCATE ALL PERSONNEL**

Model	RPM	Insert	Style
51622	35,000	1/8"	Central Vacuum
51623	35,000	1/8"	Central Vacuum, Ext.
51624	35,000	3 mm	Central Vacuum
51629	50,000	1/8"	Central Vacuum
51630	50,000	1/8"	Central Vacuum, Ext.
51631	50,000	3 mm	Central Vacuum
51632	60,000	1/8"	Central Vacuum
51633	60,000	1/8"	Central Vacuum, Ext.
51634	60,000	3 mm	Central Vacuum
51700	60,000	1/8"	Standard
51701	60,000	3 mm	Standard
51702	60,000	3/32"	Standard
51703	50,000	1/8"	Standard
51704	50,000	3 mm	Standard
51705	50,000	3/32"	Standard
51706	35,000	1/8"	Standard
51707	35,000	3 mm	Standard
51708	35,000	3/32"	Standard
51730	50,000	1/8"	Ceramic Bearing
51731	60,000	1/8"	Ceramic Bearing
51732	50,000	3 mm	Ceramic Bearing
51733	60,000	3 mm	Ceramic Bearing
51750	60,000	1/8"	Extension
51753	50,000	1/8"	Extension
51756	35,000	1/8"	Extension



Model 51706  
Shown



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## ! WARNING

Read and understand this tool manual before operating your air tool. Follow all safety rules for the protection of operating personnel as well as adjacent areas. Always operate, inspect and maintain this tool in accordance with the American National Standards Institute (ANSI) Safety Code for Portable Air Tools – B186.1. For additional safety information, refer to Safety Requirements for the Use, Care and Protection of Abrasive Wheels – ANSI B7.1, Code of Federal Regulation – CFR 29 Part 1910, European Committee for Standards (EN) Hand Held Non-Electric Power Tools – Safety Requirements and applicable State and Local Regulations.



Read and understand tool manual before work starts to reduce risk of injury to operator, visitors, and tool.

Practice safety requirements. Work alert, have proper attire, and do not operate tools under the influence of alcohol or drugs.



Eye protection must be worn at all times, eye protection to conform to ANSI Z87.1.

Ear protection to be worn when exposure to sound, exceeds the limits of applicable Federal, State or local statutes, ordinances and/or regulations.



Respiratory protection to be used when exposed to contaminants that exceed the applicable threshold limit values required by law.

Air line hazard, pressurized supply lines and flexible hoses can cause serious injury. Do not use damaged, frayed or deteriorated air hoses and fittings.



Some dust created by sanding, grinding, drilling, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints
- Crystalline silica from bricks and cement and other masonry products
- Arsenic and chromium from chemically treated lumber

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

## SAFETY INSTRUCTIONS



**CAREFULLY READ AND UNDERSTAND PNEUMATIC TOOL SAFETY GUIDELINES (P/N 00001676) BEFORE HANDLING OR USING TOOL.**

Carefully Read all instructions before operating or servicing any Dynabrade® Abrasive Power Tool.  
Products offered by Dynabrade are not to be modified, converted or otherwise altered from the original design.

**Tool Intent:** Pencil Grinders are ideal for light deburring, deflashing, surface preparation, cleaning and finishing using proper accessories.

**DO NOT USE tool for anything other than its intended applications.**

**Training:** Proper care, maintenance, and storage of your air tool will maximize tools performance and reduce chance for accident.

**Employer's Responsibility:** Provide operators with safety instructions and training for safe use of tools and accessories.

**REPORT TO YOUR SUPERVISOR ANY CONDITION OF THE TOOL, ACCESSORIES, OR OPERATION YOU CONSIDER UNSAFE.**

# OPERATING & MAINTENANCE INSTRUCTIONS

**Important:** To keep tool safe, a Preventative Maintenance Program is recommended. The program should include inspection of the tool and all related accessories and consumables, including air lines, pressure regulators, filters, oilers, etc. refer to ANSI B186.1 for additional maintenance information. If accessory or tool breakage occurs, investigate failure to determine the cause and correct before issuing tool for work. Use the following schedule as a starting point in developing a Preventative Maintenance Program. If tool does not operate properly (RPM, Vibration, Start/Stop) after these scheduled checks or at any time, the tool must be repaired and corrected before returning tool to use.

## INSTALLATION:

- To ensure long life and dependable service, use a Closed Loop Air System and Filter-Regulator as diagramed below.
- Each tool should have its own dedicated hose connected to an air supply manifold. Quick disconnects should be installed at the manifold in an effort to reduce contamination into the tool.
- It is strongly recommended that all Dynabrade air tools be used with a Filter-Regulator to minimize the possibility of misuse due to unclean air, wet air. Dynabrade recommends the following: **10677 Air Line Filter-Regulator** — Provides accurate air pressure regulation, two-stage filtration of water contaminants.
- This tool should use filtered and regulated air, but does not require lubricated air. Lubricated air is not detrimental to tool life.

## MAINTENANCE:

Daily (every 8 Hours):

- Inspect tool and accessories for damage or broken parts. Replace items as necessary to ensure proper operation and safety.
- Check air line pressure with a gage. (MAX. 90 PSIG or 6.2 Bar operating pressure at the air inlet of the tool.)
- Check tool for proper operation: If operating improperly or demonstrates unusual vibration, the tool must be serviced and problem corrected before further use.

Every 20 hours or once a week whichever comes first:

- Check free speed of tool without the abrasive accessory mounted. Measure RPM (speed) with tachometer and with an air pressure gage connected at the air inlet of the tool. Maximum air pressure while the tool is running should read 90 PSIG (6.2 Bar). If a governed tool is operating at a higher speed than the RPM marked on the tool housing, the tool must be serviced and corrected before use. A non-governed tool may exceed the RPM marked on the tool by 10% when operated at free speed with no accessories.

## REPAIR:

- Use only genuine Dynabrade replacement parts to ensure quality. To order replacement parts, specify Model#, Serial# and RPM of your air tool.
- 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.
- DO NOT clean or maintain tools with chemicals that have a low flash point (example: WD-40®).
- Air tool markings must be kept legible at all times, if not, reorder housing and replace. User is responsible for maintaining specification information.
- After maintenance is performed on tool verify RPM (per 20 hr maintenance schedule), vibration and operation.

## HANDLING & STORAGE:

- Use of tool rests, hangers and/or balancers is recommended.
- Protect tool inlet from debris (see Notice).
- DO NOT carry tool by air hose or near the tool throttle lever.
- Store accessories in protective racks or compartments to prevent damage.
- Follow the handling instructions outlined in the operating instructions when carrying the tool and when changing accessories.
- Protect accessories from exposure to water, solvents, high humidity, freezing temperature and extreme temperature changes.

## END OF USE/DISPOSAL:

When tool has reached its end of useful service, disassemble tool into its primary components (i.e. steel, aluminum and plastic part) and recycle or discard per local, state and/or federal regulations as to not harm the environment.

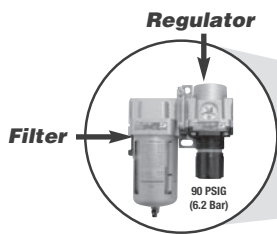
## NOTICE:

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.

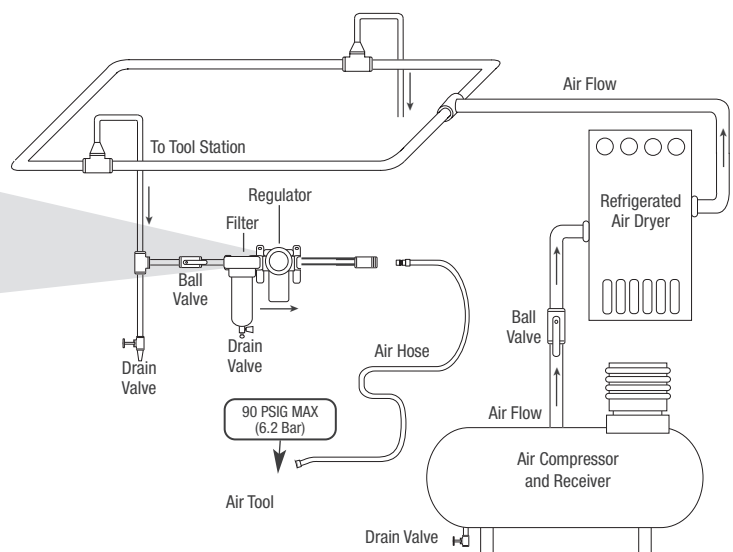
## AIR SYSTEM

*Closed loop pipe system, Sloped in direction of air flow*

**DO NOT  
Lubricate**



- Dynabrade Air Power Tools are designed to operate at 90 PSIG (6.2 Bar) maximum air pressure at the tool inlet, when the tool is running. Use recommended regulator to control air pressure.
- Ideally the air supply should be free from moisture. To facilitate removing moisture from air supply, the installation of a refrigerated air dryer after the compressor and the use of drain valves at each tool station is recommended.



# Pencil Grinder Complete Assembly

**KEY**

**O** Oil: O<sub>1</sub> = Air Lube

**A** Adhesive: A<sub>7</sub> = Loctite #222  
A<sub>8</sub> = Loctite #567  
A<sub>17</sub> = Loctite #454

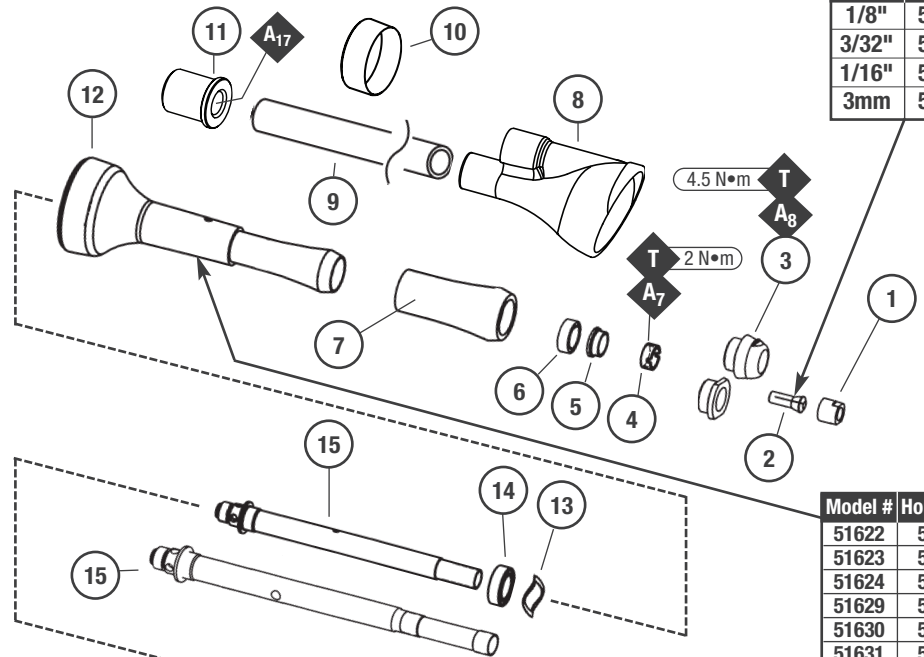
**T** Torque: N•m x 8.85 = In. - lbs.

Always follow adhesive manufacturers cleaning and priming recommendations.

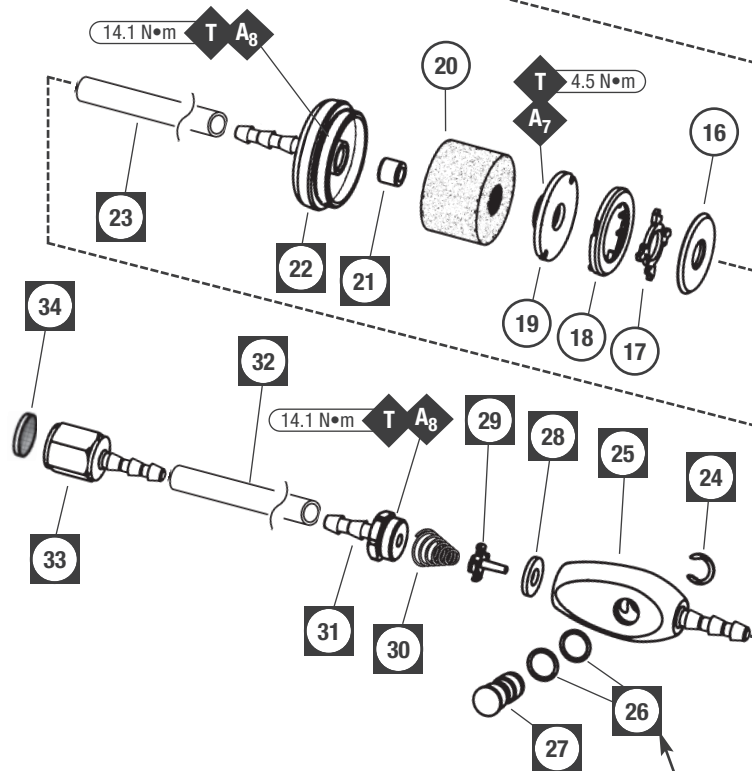
Insert	Part #
1/8"	51659
3/32"	51674
1/16"	51780
3mm	51673

**INDEX KEY**

No.	Part #	Description
1	51657	Collet Cap
2	51659	1/8" Insert
	51674	3/32" Insert
	51780	1/16" Insert
	51673	3mm Insert
3	51658	Collet Guard
	51725	Ext. Collet Guard
4	51548	Bearing Retainer
5	94984	Debris Eliminator
6	51544	Bearing
	51685	Ceramic Bearing
7	51660	Grip (Non-Vac. Models)
8	51739	Vac. Shroud
	51785	Ext. Vac. Shroud
9	51791	Vac. Hose
10	96585	Rubber Band (3) (Vac. Models Only)
11	51790	Vac. Hose Adapter
12		Housing - See Chart
13	51661	Wave Spring
14	51651	Bearing
	51686	Ceramic Bearing
15	51654	Drive Shaft
	51724	Ext. Drive Shaft
16	51656	Turbine Base
17	51691	35K Governor
	51692	50K Governor
	51675	60K Governor
18	51678	Turbine
19	51655	Top Plate
20	51684	Muffler
21	51662	Air Bushing
22	51275	Cover-35,000 (Red)
	51274	Cover-50,000 (Gold)
	51273	Cover-60,000 (Teal)
23	51276	24" Air Hose*
24	51669	Retaining Ring
25	51272	Valve Body
26	95730	O-Ring (2)
27	51665	Valve
28	51664	Valve Seat
29	51663	Tip Valve
30	51676	Conical Spring
31	51271	Inlet Barb
32	51277	42" Air Hose*
33	51269	Fitting
34	56022	Inlet Screen



Model #	Housing #
51622	51635
51623	51636
51624	51637
51629	51638
51630	51639
51631	51640
51632	51641
51633	51642
51634	51645
51700	51695
51701	51696
51702	51697
51703	51698
51704	51699
51705	51646
51706	51647
51707	51648
51708	51649
51730	51737
51731	51738
51732	51795
51733	51796
51750	51741
51753	51744
51756	51747



- 51694 Shaft Lock Pin
- 95731 8 mm Wrench.

\*Hose Assemblies

Assy. #	RPM
51766	35,000
51767	50,000
51768	60,000

Parts Included in Hose Assemblies

The rated RPM of a mounted point is lowered if the overhang (end of collet to abrasive) exceeds .5 inches (12.7 mm). Refer to ANSI B 7.1 tables for overhang and additional information.

ANSI reference tables available at [www.dynabrade.com](http://www.dynabrade.com)

Find at Parts Page/Technical Document Page for each model.

# LIFETIME WARRANTY

To validate Dynabrade Lifetime Warrant, you must register each tool at: [www.dynabrade.com](http://www.dynabrade.com). Registration of each tool at website is required. Dynabrade will not honor Lifetime Warranty on unregistered tools. Please view the entire Lifetime Warranty Policy at : [www.dynabrade.com](http://www.dynabrade.com).

## MACHINE SPECIFICATIONS

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose Size 1/4" (6 mm)  
Sound Level is the pressure measurement outlined in ISO regulation ISO-15744

Model Number	RPM	hp (Watt)	Sound dB(A)	Air Consumption	Collet Size	Weight	Length	Height
51622	35,000	.1 (75)	74	8 SCFM (227 LPM)	1/8"	1.1 (.5)	5-1/4 (132)	1-7/8 (49)
51623	35,000	.1 (75)	76	8 SCFM (227 LPM)	1/8"	1.2 (.5)	6 (152)	1-7/8 (49)
51624	35,000	.1 (75)	74	8 SCFM (227 LPM)	3 mm	1.1 (.5)	5-1/4 (132)	1-7/8 (49)
51629	50,000	.1 (75)	76	8 SCFM (227 LPM)	1/8"	1.1 (.5)	5-1/4 (132)	1-7/8 (49)
51630	50,000	.1 (75)	73	8 SCFM (227 LPM)	1/8"	1.2 (.5)	6 (152)	1-7/8 (49)
51631	50,000	.1 (75)	76	8 SCFM (227 LPM)	3 mm	1.1 (.5)	5-1/4 (132)	1-7/8 (49)
51632	60,000	.1 (75)	72	8 SCFM (227 LPM)	1/8"	1.1 (.5)	5-1/4 (132)	1-7/8 (49)
51633	60,000	.1 (75)	72	8 SCFM (227 LPM)	1/8"	1.2 (.5)	6 (152)	1-7/8 (49)
51634	60,000	.1 (75)	72	8 SCFM (227 LPM)	3 mm	1.1 (.5)	5-1/4 (132)	1-7/8 (49)
51700	60,000	.1 (75)	69	8 SCFM (227 LPM)	1/8"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51701	60,000	.1 (75)	69	8 SCFM (227 LPM)	3 mm	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51702	60,000	.1 (75)	69	8 SCFM (227 LPM)	3/32"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51703	50,000	.1 (75)	64	8 SCFM (227 LPM)	1/8"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51704	50,000	.1 (75)	64	8 SCFM (227 LPM)	3 mm	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51705	50,000	.1 (75)	64	8 SCFM (227 LPM)	3/32"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51706	35,000	.1 (75)	65	8 SCFM (227 LPM)	1/8"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51707	35,000	.1 (75)	65	8 SCFM (227 LPM)	3 mm	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51708	35,000	.1 (75)	65	8 SCFM (227 LPM)	3/32"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51730	50,000	.1 (75)	69	8 SCFM (227 LPM)	1/8"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51731	60,000	.1 (75)	69	8 SCFM (227 LPM)	1/8"	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51732	50,000	.1 (75)	64	8 SCFM (227 LPM)	3 mm	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51733	60,000	.1 (75)	69	8 SCFM (227 LPM)	3 mm	.8 (.4)	5-1/4 (132)	1-1/2 (37)
51750	60,000	.1 (75)	69	8 SCFM (227 LPM)	1/8"	.8 (.4)	6 (152)	1-1/2 (37)
51753	50,000	.1 (75)	69	8 SCFM (227 LPM)	1/8"	.8 (.4)	6 (152)	1-1/2 (37)
51756	35,000	.1 (75)	69	8 SCFM (227 LPM)	1/8"	.8 (.4)	6 (152)	1-1/2 (37)

## OPTIONAL ACCESSORIES



**Model 10677:** Up to 55 SCFM @ 145 PSIG  
1/2" NPT Female ports, includes (2)  
3/8" NPT reducers.

- Filter-Regulator, provides accurate air pressure regulation and two stage filtration of water/contaminates.



**P/N 93351**

- 1/8" Carbide Burr Kit, includes 12 burrs for grinding, deburring, and finishing.



**P/N 51685 Ceramic Bearing (Front)**

**P/N 51686 Ceramic Bearing (Rear)**

- Provide better performance and durability in the face of the following environmental factors: high speeds, dirt, corrosion and extreme temperatures.

## SPECIAL REPAIR TOOLS

- 94999 – Air Bushing Tool
- 96406 – .18" Dia. Pilot Punch
- 96407 – Bearing Retainer Wrench
- 96408 – Top Plate Wrench
- 96418 – Bearing Press Tool  
.623" O.D., .375" I.D.
- 96419 – Bearing Press Tool  
.498" O.D., .315" I.D.
- 96479 – Extension Retainer Wrench
- 96483 – Sleeve Assembly Bullet
- 96486 – Collet Insert Removal Tool
- 96439 – Extension Collet Guard Wrench

## REFERENCE CONTACT INFORMATION

- American National Standards Institute – ANSI**  
25 West 43<sup>rd</sup> Street  
Fourth Floor  
New York, NY 10036  
Tel: 1 (212) 642-4900
- Government Printing Office – GPO**  
Superintendent of Documents  
Attn. New Orders  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
Tel: 1 (202) 512-1803
- Power Tool Institute, Inc.**  
P.O. Box 818  
Yachata, Oregon 97498-0818  
Tel: 1 (503) 547-3185
- European Committee for Standardization**  
Rue de Stassart 36  
B - 1050 Brussels, Belgium

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