Parts Page Reorder No. PD09•61
Effective December, 2009

.4 hp Vacuum Drill

Pistol Grip / Central Vacuum / Rear Exhaust

Air Tool Manual – Safety, Operation and Maintenance

SAVE THIS DOCUMENT, EDUCATE ALL PERSONNEL

Models: 1/4" Drill Chuck

52903 – 500 RPM
52904 – 1,000 RPM
52905 – 2,400 RPM
52906 – 3,600 RPM
52907 – 5,500 RPM



Model 52906 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 Safety 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.

SAFETY LEGEND



⚠ WARNING

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

⚠ WARNING

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





⚠ WARNING

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

⚠ WARNING

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





⚠ WARNING

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

⚠ WARNING

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



⚠ WARNING

Some dust created by 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 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: Pistol Grip Drills are used for drilling holes in wood, plastics, fiberglass, laminates, hard and soft materials, ceramics, aluminum and steel. An appropriate external vacuum source is required that is suitable for material being processed.

Do Not use tool for anything other than intended applications.

Training: Proper care, maintenance, and storage of your tool will maximize performance.

- Employer's Responsibility – Provide Pistol Grip Drill operators with safety instructions and training for safe use of tools and accessories.

Warning: Remove chuck key before turning on the tool. Side handle must be used for maximum control over torque reaction or kick-back on 500 & 1,000 RPM models.

(continued on next page)

SAFETY INSTRUCTIONS CONTINUED

Accessory Selection:

- Abrasive/accessory RPM (speed) rating MUST be approved for AT LEAST the tool RPM rating.
- Before mounting an accessory, visually inspect for defects. Do not use defective accessories.
- Use only recommended accessories. See back page of manual and Dynabrade catalog.
- Follow tool specifications before choosing size and type of accessory.
- Only use recommended fittings and air line sizes. Air supply hoses and air hose assemblies must have a minimum working pressure rating of 150 PSIG (10 Bars, g) or 150 percent of the maximum pressure produced in the system, whichever is higher. (See tool Machine Specifications table.)

OPERATING INSTRUCTIONS

Warning: Always wear eye protection. Operator of tool is responsible for following: accepted eye, face, respiratory, hearing and body protection.

Caution: Hand, wrist and arm injury may result from repetitive work, motion and overexposure to vibration.

- Tool RPM must never exceed abrasive/accessory RPM rating. Check accessory manufacturer for details on maximum operating speed or special mounting instructions.

Warning: Keep hand and clothing away from working end of the air tool.

Warning: Unexpected tool movement or breakage of inserted tool may cause injury.

Caution: Release throttle in case of an interruption of the energy supply.

Caution: Use only recommended lubricants.

Warning: Be sure that any loose clothing, hair and all jewelry is properly restrained.

- Secure inlet bushing on air tool with a wrench before attempting to install the air fitting to avoid damaging housing assembly.
- BEFORE MOUNTING AN ACCESSORY, after all tool repairs and whenever a drill is issued for use, check tool RPM (speed) with tachometer with air pressure set at 90 PSIG while the tool is running. If tool is operating at a higher speed than the RPM marked on the tool housing, or operating improperly, the tool must be serviced and corrected before use.

DRILL ACCESSORY MOUNTING INSTRUCTIONS

Warning: Disconnect power source before removing inserted tool.

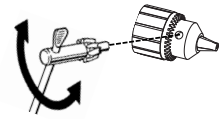
- Loosen locking knob and remove vacuum shroud/base.
- Open chuck jaws wide enough to install bit. Be sure the bit shank and chuck jaws are clean. Dirt particles may prevent the bit from lining up properly.
- Insert the bit into the chuck. Center the bit in the chuck jaws and lift it about 1/16" off the bottom. Tighten the chuck jaws by the hand to align the bit.
- Place the chuck key in each of the three holes in the chuck, turning it clockwise. Tighten securely.

Caution: Remove adjusting keys or wrenches before turning the tool on. A wrench or a key is left attached to a rotating part of the tool may result in personal injury.

- Reinstall vacuum shroud/base and tighten locking knob.
- Optimal vacuum is accomplished when the tip of the drill bit is flush with the end of the shroud. When the bit extends beyond shroud some vacuum capture is lost. When the bit is too short alignment may be difficult. The shroud position may be adjusted by loosening the clamp and sliding the shroud along the base and then retightening clamp.
- Connect air tool to power source. Be careful NOT to depress throttle in the process. Do not expose air tool to inlet pressure above 90 PSIG or (6.2 Bars).

Caution: After installing the accessory, before testing or use and/or after assembling tool, the Pistol Grip Drill must be started at a reduced speed to check for good balance. Gradually increase tool speed. DO NOT USE if tool vibration is excessive. Correct cause, and retest to insure safe operation.

- To remove the bit, insert the chuck key into the holes in the chuck and turn counterclockwise.



Bit Selection:

- Vacuum is most effective using drill bits ranging from 4-6 inches.
- Use sharp bits. Sharp bits are less likely to bind when drilling. Use the proper bit for the job.
- Check the information on the bit's packaging for proper usage. Do not use bits larger than the rated capacity of the drill.

Caution: If the bit binds, the drill will suddenly react in the opposite direction of the rotation of the bit. The operator should prepare for a sudden reaction by holding the tool securely.

- Use proper speed for the size of bit. larger bits should be run at the lower speed. Driving larger bits at the high speeds will increase the chance of reaction.
- Avoid drilling warped, wet, knotty, and pitchy materials if possible.
- When removing the bit from the tool avoid contact with the skin and use proper protective glove when grasping the bit or accessory. Accessories may be hot after prolonged use.
- Make sure that work area is uncluttered, and visitors are at a safe range from the tools and debris.
- A moving drill accessory that snags or catches within work piece may cause tool to stop unexpectedly or move erratically, which may cause injury.

Warning: Air tools are not intended for use in explosive atmospheres and are not insulated for contact with electric power sources.

- Use a vise or clamping device to hold work piece firmly in place. Do not apply excessive force on tool or apply “rough” treatment to it.

Warning: Always work with a firm footing, posture and proper lighting.

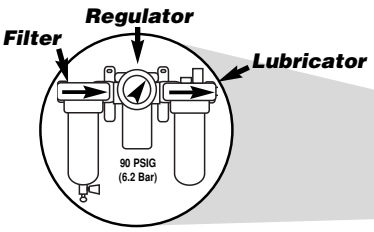
- Ensure that sparks and debris resulting from work do not create a hazard.
- This tool is rear exhaust. Exhaust may contain lubricants, vane material, bearing grease, and other materials flushed through the tool.

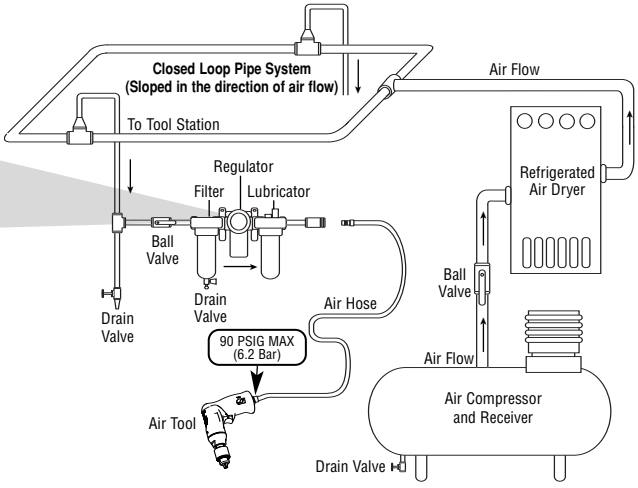
Warning: Drilling certain materials can create explosive dust. It is the employer's responsibility to notify the user of acceptable dust levels.

- Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.
- Certain materials can cause sparks which can cause fires or explosions. It is the user's responsibility to make sure the work is done on spark free materials.

Report to your supervisor any condition of the tool, accessories, or operation you consider unsafe.

Air System





- Dynabrade Air Power Tools are designed to operate at 90 PSIG (6.2 Bar/620 kPa) 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.

LUBRICATOR SETTING
1 DROP/MIN.
20 SCFM

Preventative Maintenance Schedule

Pistol Grip Drill – All Models

This service chart is published as a guide to expectant life of component parts. The replacement levels are based on average tool usage over one year. Dynabrade Inc. considers one year usage to be 1,000 hours.

Index #	Part Number	Description	Number Required	High Wear 100%	Medium Wear 70%	Low Wear 30%	Non-Wear 10%
1	53030	1/4" Drill Chuck	1				X
2	52954	Nut	1				X
3	97445	Retaining Nut	1				X
4	01139	Bearing	1		X		
5	13059	Collar	1				X
6	95042	Washer	1			X	
7	53113	Handle	1				X
8	See pg 4	Nose Cover	1				X
9	97922	Wave Spring	1			X	
10	02698	Bearing	1		X		
11	See pg 4	Carrier	See pg 4				X
12	See pg 4	Gear	See pg 4			X	
13	See pg 4	Pin	See pg 4			X	
14	97443	Retaining Ring	1			X	
15	52966	Washer	1				X
16	See pg 4	Carrier Adapter	1				X
17	54468	Ring Gear	1			X	
18	50778	Spacer	1				X
19	52949	Ring Gear	1			X	
20	52967	Spacer	1				X
21	02649	Bearing	1		T		
22	54529	Shim Pack (3/Pkg.)	1		T		
23	02038	Front Bearing Plate	1			X	
24	01479	Spacer	1				T
25	See pg 4	Rotor	1			X	
26	01480	Vane (4/Pkg.)	1	T			
27	01476	Cylinder	1			X	
28	50767	Pin	1				T
29	02673	Rear Bearing Plate	1			X	
30	02696	Bearing	1		T		
31	97807	O-Ring	1			T	
32	01041	Grease Fitting	1			X	
33	See pg 4	Housing	1				X
34	50936	Pin	1			X	
35	52942	Grip	1			X	
36	01696	Felt Ring	See pg 4		T		
37	52958	Aspirator	1			X	
38	52960	Sleeve Adapter	1				X
39	01464	Seal	1			T	
40	01472	Tip Valve	1			T	
41	52943	Spring	1			T	
42	97444	Retaining Ring	1			X	
43	52959	Inlet Adapter	1				X
44	50784	Set Screw	1			X	
45	52955	Trigger Assembly	1			X	
46	96077	O-Ring	1			X	
47	52984	Baffle	1			X	
48	52753	Flexible Vac. Drill Shroud	1			X	
49	97029	Clamp	1				X
50	02276	Shroud Base	1				X
51	53219	Locking Knob	1				X
52	40029	Cam Lock	1				X
53	96071	Set Screw	2				X
54	See pg 4	Sleeve	1				X
55	31900	Hose Cuff	1			X	
56	31926	Vacuum Hose	1			X	
57	97206	Hex Nut	1				X
58	95758	Washer	2				X
59	52751	Inlet Adapter	1				X
60	31905	1-1/4" Swivel Cuff	1			X	
61	50584	Hose Holder	1				X

LEGEND	
T	Included in Tune-Up Kit
X	Type of wear, no other comments apply.
L	Easily lost. Care during assembly/disassembly.
D	Easily damaged during assembly/disassembly.
R	Replace each time tool is disassembled.



Tune-Up Kit

Part No. 96067

Disassembly/Assembly Instructions – Vacuum Pistol Grip Drills (Cont.)

9. A snug fit will trap the cylinder while still allowing it to be shifted from side to side with a slight amount of finger pressure. A loose fit will not achieve proper preload of the motor bearings.

Motor Assembly Complete:

Tool Assembly:

For All Models:

1. Secure the wrench flats of the **52960** Sleeve Adapter in a vise with aluminum or bronze jaws. Install the **01464** Seal, **01472** Tip Valve and the small end of **52943** Spring against the tip valve. Apply a small amount of Loctite #271 (or equivalent) to the external threads of the **52959** Inlet Adapter, and install it to the **52960** Sleeve Adapter. (Torque to 17 N•m/150 in. lbs.)
2. Use the exploded view of the muffler components for the correct order of assembly and install these onto the inlet bushing sub assembly from step 1. **Note:** For drill models **52903**/**04**/**05**/**06**/**07** - slide **52958** Aspirator as shown and install **97444** Retaining Ring in grove closest to thick hex head. Slide (4) **01696** Felt Rings, align felt rings so that all the tabs are inline and orientated with the cutout in the handle grip. For models **52905** slide **52958** Aspirator as shown and install (2) **01696** Felt Rings. Slide **52984** Baffle as shown up and inside felt rings. Install **97444** Retaining Ring in groove below the **52984** Baffle. Install **96077** O-Ring into the handle at the base of the oval shape counter bore.
3. Secure the housing in a vise with aluminum or bronze jaws. Pull trigger apply a small amount of the Loctite #567 (or equivalent) to the external threads of the **52960** Sleeve Adapter and install it onto the housing. (Torque to 17 N•m/150 in. lbs.)
4. After threaded surfaces have been properly cleaned and primed, apply a small amount of Loctite #567 (or equivalent) to **52751** Inlet Adapter before assembling to **52959** Inlet Bushing Assembly. Hold the **52959** Inlet Bushing Assembly stationary with an adjustable wrench when installing the air connection fitting.
5. With the housing secured in the vise, install the **52955** Trigger Assembly. Be sure to locate the notched area of the valve stem so that the **50936** Pin will retain the trigger assembly. **Note:** Left side of housing has a slip fit to pin and right side will retain pin.
7. Install the motor assembly into the housing. Insure **97807** O-Ring is properly secured before installing motor.
8. Install the correct spacer for the specific model tool.
9. Use the **96239** Bearing Press Tool and arbor press to install the **02698** Bearing onto the spindle/carrier. (Place the press tool against the inside race of the bearing.)

For Models: 52903/04/05/06/07

10. Install planet gears and pins into the carrier(s). Use external retaining ring pliers to install the **97443** Retaining Ring.
11. Install ring gear into the housing so that the notches in the ring gear align with openings for the set screw and lubricant fitting. **Important:** For Models **52903** and **52904** install the **52966** Washer (2) between the planetary carrier and motor, assemblies.
12. Apply a small amount of Loctite #567 (or equivalent) to the threads of the **50784** Set Screw and install flush with outer housing surface, Do Not over tighten.
13. Lubricate the planetary gears through the lubricant fitting. **Initially apply 3 plunges of lubricant.** (Apply 1 plunge at intervals of every 50 hours of use there after.) Order and use the recommended Dynabrade **95542** Grease and the **95541** Lubricant Gun to ensure maximum gear life.

For All Models:

14. Use the **96240** Bearing Press Tool to install the **01139** Bearing into the nose cover. (Place the press tool against the outside race of the bearing.)
15. Use internal retaining ring pliers to install the **97445** Retaining Ring into the nose cover.
16. Install the spindle/carrier adapter assembly into the nose cover.
17. Use the 16 mm crowfoot and torque wrench and a 3/16" hex key to install the **52954** Spindle Nut turning it clockwise. (Torque to 17 N•m/150 in. lbs.)
18. Carefully secure the housing in a vise so that the motor opening is facing up. To avoid damaging the housing do not over tighten the vise.
19. Apply a small amount of Loctite #567 to the housing threads and carefully align the nose cover, spindle or planetary gear assembly(ies) with the housing and the air motor assembly turning it clockwise. Use a 26 mm crowfoot and torque wrench. (Torque to 17 N•m/150 in. lbs.)
20. Use the **96453** Open-end Wrench (16 mm) and a hex key wrench secured in the jaws. (Hand Tight)

Tool Assembly Complete:

Special Repair Tooling Referenced: *Use to remove bearings, gears, and other components.*

96210 Bearing Removal Tool
96239 Bearing Press Tool
96240 Bearing Press Tool
96241 Bearing Press Tool
96242 Bearing Press Tool
96346 (2") Bearing Separator
96232 Arbor Press

Gear Lubricant Maintenance Instructions:

Lubricate the planetary gears through the grease fitting. Apply 1 plunge at intervals of every 50 hours of use. Order and use the recommended Dynabrade **95542** Grease and the **95541** Lubricant Gun to ensure maximum gear life.

Maintenance Instructions

Important: To keep tool safe a preventative maintenance program is recommended whenever portable power tools are used. The program should include inspection of air supply lines, air line pressure, proper lubrication and repair of tools. Refer to ANSI B186.1 for additional maintenance information.

- Use only genuine Dynabrade replacement parts to insure quality. To order replacement parts, specify **Model#**, **Serial#** and **RPM** of your air tool.
- 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: **10681** Air Filter-Regulator-Lubricator (FRL) – Provides accurate air pressure regulation and two stage filtration of water contaminant's.
- Grease the planetary gear assembly with the **95542** Grease by applying **2-3 plunges** with the **95541** Grease Gun after **every 50 hours** of use for maximum gear life.
- Dynabrade recommends one drop of air lube per minute for each 20 SCFM (example: if the tool specification states 40 SCFM, set the drip rate on the filter-lubricator to 2 drops per minute). Dynabrade Air Lube (P/N **95842**: 1 pt 473 ml) is recommended.

Routine Preventative Maintenance:

- Check free speed of Pistol Grip Drill using a tachometer after every service or repair.

Caution: 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.

Caution: DO NOT clean or maintain tools with chemicals that have a low flash point (example: WD-40®).

- A Motor Tune-Up Kit (P/N **96067**) is available which includes high wear and medium wear motor parts.
- Air tool laser etch information must be kept legible at all times, if not, reorder housing and replace. User is responsible for maintaining specification information i.e.: Model #, S/N, and RPM. (See Assembly Breakdown)
- Blow air supply hose out prior to initial use.
- Visually inspect air hoses and fittings for frays, visible damage and signs of deterioration. Replace damaged or worn components.
- Refer to Dynabrade's Warning/Safety Operating Instructions Tag (Reorder No. **95903**) for safety information.

After maintenance is performed on tool, add a few drops of Dynabrade Air Lube (P/N **95842**) to the air line and start the tool a few times to lubricate air motor. Check for excessive tool vibration.

Handling and Storage:

- Use of tool rests, hangers and/or balancers is recommended.
- Protect tool inlet from debris.
- DO NOT carry tool by air hose, or near the trigger.
- Store accessories in protective racks or compartments to prevent damage.

Machine Specifications

Model Number	Motor hp (W)	Motor RPM	Chuck Size	Sound Level	Air Flow Rate SCFM (LPM)	Air Pressure PSIG (Bars)	Spindle Thread Size	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
52903	.4 (310)	500	1/4"	76 dB(A)	23 (651)	90 (6.2)	3/8"-24	3.7 (1.7)	10.6 (268)	11.8 (300)
52904	.4 (310)	1,000	1/4"	80 dB(A)	25 (708)	90 (6.2)	3/8"-24	3.7 (1.7)	10.6 (268)	11.8 (300)
52905	.4 (310)	2,400	1/4"	77 dB(A)	22 (623)	90 (6.2)	3/8"-24	3.1 (1.4)	10.6 (268)	11.8 (300)
52906	.4 (310)	3,600	1/4"	80 dB(A)	23 (651)	90 (6.2)	3/8"-24	3.1 (1.4)	10.6 (268)	11.8 (300)
52907	.4 (310)	5,500	1/4"	81 dB(A)	25 (708)	90 (6.2)	3/8"-24	3.1 (1.4)	10.6 (268)	11.8 (300)

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. 3/8" or 10 mm
Sound Level is the pressure measurement according to the method outlined in ISO regulation ISO-15744.

Notice

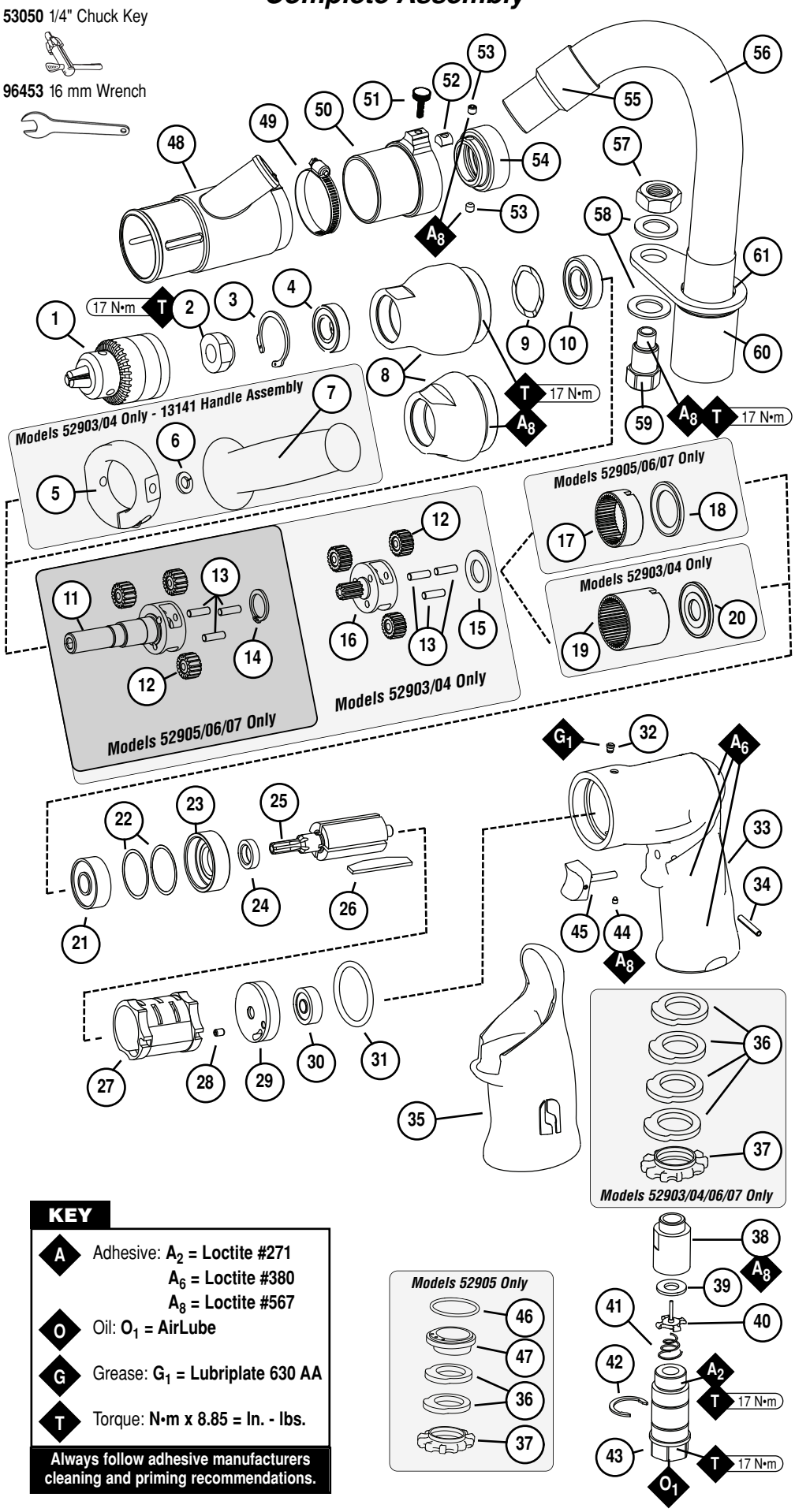
All Dynabrade motors use the highest quality parts and materials available and are machined to exacting tolerances. The failure of quality pneumatic motors can most often be traced to an unclean air supply or the lack of lubrication. Air pressure easily forces dirt or water contained in the air supply 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.

Lifetime Warranty

All Dynabrade portable pneumatic power tools are rigorously inspected and performance tested in our factory before shipping to our customers. If a Dynabrade tool develops a performance problem and an inherent defect is found during normal use and service, Dynabrade will warrant this tool against defects in workmanship and materials for the lifetime of the tool. Upon examination and review at our factory, Dynabrade shall confirm that the tool qualifies for warranty status, and will repair or replace the tool at no charge to the customer. Normally wearable parts and products are NOT covered under this warranty. Uncovered items include bearings, contact wheels, rotor blades, regulators, valve stems, levers, shrouds, guards, O-rings, seals, gaskets and other wearable parts. Dynabrade's warranty policy is contingent upon proper use of our tools in accordance with factory recommendations, instructions and safety practices. It shall not apply to equipment that has been subjected to misuse, negligence, accident or tampering in any way so as to affect its normal performance. To activate lifetime warranty, customer must register each tool at www.dynabrade.com. Dynabrade will not honor lifetime warranty on unregistered tools. A one-year warranty will be honored on all unregistered portable pneumatic power tools. Lifetime warranty applies only to portable pneumatic tools manufactured by Dynabrade, Inc. in the USA. Lifetime warranty applies only to the original tool owner; warranty is non-transferable.

Vacuum Pistol Grip Drill

Complete Assembly



Index Key

No.	Part #	Description
1	**53030**	1/4" Drill Chuck (Includes Key)
2	**52954**	Spindle Nut
3	**97445**	Retaining Ring
4	**01139**	Bearing
5	**13059**	Collar
6	**95042**	Washer
7	**53163**	Handle Assy.
8	**52952**	Nose Cover - **52905/06/07**
	52953	Nose Cover - **52903/04**
9	**97922**	Wave Spring
10	**02698**	Bearing
11	**52950**	Carrier - **52905/06**
	52951	Carrier - **52903/04/07**
12	**54519**	Gear (3) - **52903/05/06**
	06213	Gear (3) - **52903/07**
		Gear (6) - **52904** (Includes **01033** Bearing)
13	**54472**	Pin (3) - **52905/06/07**
		Pin (6) - **52903/04**
14	**97443**	Retaining Ring
15	**52966**	Washer
16	**52962**	Carrier Adapter - **52903**
	52963	Carrier Adapter - **52904**
17	**54468**	Ring Gear - **52905/06/07**
18	**50778**	Spacer - **52905/06/07**
19	**52949**	Ring Gear - **52903/04**
20	**52967**	Spacer - **52903/04**
21	**02649**	Bearing
22	**54551**	Shim Pack (3/Pkg.)
23	**02038**	Front Bearing Plate
24	**01479**	Spacer
25	**52947**	Rotor - **52903/05/06**
	52948	Rotor - **52904/07**
26	**01480**	Vane (4)
27	**01476**	Cylinder
28	**50767**	Pin
29	**02673**	Rear Bearing Plate
30	**02696**	Bearing
31	**97807**	O-Ring
32	**01041**	Grease Fitting
33	**Housing Assembly**	
	52912	Model - **52903**
	52913	Model - **52904**
	52926	Model - **52905**
	52927	Model - **52906**
	52928	Model - **52907**
		*Housing Includes **52942** Grip & **01041** Grease Fitting*
34	**50936**	Pin
35	**52942**	Grip
36	**01696**	Felt Ring (4) - **52903/04/06/07**
		Felt Ring (2) - **52905**
37	**52958**	Aspirator
38	**52960**	Sleeve Adapter
39	**01464**	Seal
40	**01472**	Tip Valve
41	**52943**	Spring
42	**97444**	Retaining Ring
43	**52959**	Inlet Adapter (Incld: **56022** Screen)
44	**50784**	Set Screw
45	**52955**	Trigger Assembly (Incld: **55035**, **50936** and **52952**)
46	**96077**	O-Ring - **52905**
47	**52984**	Baffle - **52905**
48	**52753**	Flexible Vacuum Drill Shroud
49	**97029**	Clamp
50	**02276**	Shroud Base
51	**53219**	Locking Knob
52	**40029**	Cam Lock
53	**96071**	Set Screw (2)
54	**52982**	Sleeve - **52905/06/07**
	52983	Sleeve - **52903/04**
55	**31900**	Hose Cuff
56	**31926**	Vacuum Hose
57	**97206**	Hex Nut
58	**95758**	Washer (2)
59	**52751**	Inlet Adapter
60	**31905**	1-1/4" Threaded Swivel Cuff
61	**50584**	Hose Holder

Disassembly/Assembly Instructions – Vacuum Pistol Grip Drills

Important: The Dynabrade Pneumatic Power Tool Lifetime Warranty Policy does NOT cover normally wearable parts and products. Before servicing this tool please contact Dynabrade Inc. or a Dynabrade Subsidiary for information regarding the Dynabrade Pneumatic Power Tool Lifetime Warranty Policy.

Notice: Special repair tooling referred to in these instructions can be ordered from Dynabrade. (See Page 6)

Disconnect tool from the air supply before servicing.

Tool Disassembly:

For All Models:

1. Use the **96453** Open-end Wrench (16 mm) and a hex key wrench secured into the jaws of the drill chuck. Remove the drill chuck turning it counterclockwise.
2. Carefully secure the tool in a vise with aluminum or bronze jaws so that the spindle is pointing up. To avoid damaging the housing, do not over tighten the vise.
3. Use an adjustable wrench to remove the **52852**/**52853** Nose Cover by turning it counterclockwise.
4. Use the **96453** Open-end Wrench (16 mm) and a 3/16" hex key to remove the **52954** Spindle Nut turning it counterclockwise.
5. Push the spindle out of the **01139** Bearing.
6. Use the **96232** Arbor Press and **96346** Bearing Separator (2") to remove the **02698** Bearing from the spindle.
7. Remove the **97922** Wave Spring from the nose cover.
8. Use internal retaining ring pliers to remove the **97445** Retaining Ring.
9. To remove the **01139** Bearing from the nose cover use the arbor press and the **96241** Bearing Press Tool. (Place the press tool against the inside race of the bearing.)

For Models: 52903/04/05/06/07

10. Use external retaining ring pliers to remove the **97443** Retaining Ring.
11. Use a 1/8" diameter drive punch to remove the **54472** Pin (3) and **06213** Gear (3) from the carrier spindle. **Note:** Follow similar disassembly procedure for models with double planetary gear reduction.
12. Use a 2 mm hex key to remove the **50784** Set Screw from the housing.

For All Models:

13. Use needle nose pliers to remove the spacer or ring gear.
14. Tap rim of housing against a wood block to remove the air motor.
15. Carefully secure the housing in a vise with aluminum or bronze jaws so that the air inlet is pointing up. To avoid damaging the housing, do not over tighten the vise.
16. Use a 19 mm socket and wrench to remove the inlet bushing turning it counterclockwise. Remove muffler parts.
17. Use a 3/32" diameter drive punch to remove the **50936** Pin and **52955** Trigger Assembly. Remove pin from right side of housing to left side.
18. Secure the hex portion of the air inlet bushing in a vise with aluminum or bronze jaws and use an adjustable wrench to access the valve assembly parts turning counterclockwise.

Tool Disassembly Complete:

Motor Disassembly:

1. Secure the **96346** Bearing Separator (2") around the end of the cylinder nearest the rear bearing plate. Place the separator on the table of the **96232** Arbor Press so that the front of the motor is pointing down.
2. Use a 5/32" diameter flat end drive punch as a press tool and push the rotor out of the **02696** Bearing.
3. Remove vanes from the rotor.
4. Use the arbor press and separator to remove the front bearing, plate and spacer from the rotor.
5. Remove the **02696** Bearing from the rear bearing plate with the **96210** Bearing Removal Tool and the arbor press.

Motor Disassembly Complete:

Important: Clean and inspect all parts before assembling.

Motor Assembly:

1. Install **01479** Spacer onto the rotor.
2. Install .003" thickness of shims into **02038** Front Bearing Plate. Install **02649** Bearing into the front bearing plate.
3. Use the **96240** Bearing Press Tool and arbor press to install the front bearing plate along with **02649** Bearing onto the rotor. (Place the press tool against the inside race of the bearing.)
4. Use a .001" feeler gauge to check clearance between the front of the rotor and the front bearing plate. That clearance must be .001"- .0015". If it is necessary to adjust the clearance, do this by adding or removing the appropriate shim thickness.
5. Apply Dynabrade Air Lube **95842** to the **01480** Vanes (4) and install these into the rotor slots.
6. Install the **01476** Cylinder so that the air inlet passage lines up with the air inlet holes in the rear bearing plate.
7. Use the **96242** Bearing Press Tool and arbor press to install the **02696** Bearing into the **02673** Rear Bearing Plate. (Place press tool against the outside race of the bearing.)
8. Use the **96242** Bearing Press Tool and arbor press to install the bearing/rear plate onto the rotor. (Place press tool against the inside race of the bearing.) **Important:** Carefully press the bearing/rear plate assembly onto the rotor to achieve a snug fit between the bearing plates and the cylinder.

(continued on next page)

Optional Accessories

FIND THE MOST CURRENT OFFERING OF SUPPORT DOCUMENTS AND ACCESSORIES @ WWW.DYNABRADE.COM



Dynaswivel®

- Swivels 360° AT TWO PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.

Part No. 94300 – 1/4" NPT



Motor Tune-Up Kit

- Includes assorted parts to help maintain and repair motor.

Part No. 96067



Dynabrade Air Lube

- Formulated for pneumatic equipment.
- Absorbs up to 10% of its weight in water.
- Prevents rust and formation of sludge.
- Keeps pneumatic tools operating longer with greater power and less down time.

Part No. 95821: 4oz. (118 ml)
Part No. 95842: 1pt. (473 ml)
Part No. 95843: 1gal. (3.8 L)



Bearing Removal Tool

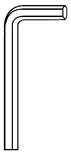
- This tool is designed to pass through the I.D. of the bearing plate and push against the I.D. of the bearing.

Part No. 96210



Portable Vacuum Systems

- Dynabrade offers a wide assortment of vacuuming options to choose from. To help make your selection please request the most current portable vacuum systems literature form your local representative or by searching our web site.



Hex Key

- This is used for the removal and installation of the **52954** Spindle Nut

Part No. 95049 – 3/16"



Open End Wrench

- This is used for removal and installation of drill chuck.

Part No. 96453 – 16 mm



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.

Part No. 95542: 10oz. Grease Tube
Part No. 95541: Push-Type Gear Oil Gun

- One-hand operation.



Bearing Press Tool

- Use with (#2) arbor press to achieve accurate press of bearings and motor parts.

Part No. 96240
Part No. 96244
Part No. 96216
Part No. 96239



2" Bearing Separator

- Used to remove bearings, gears, and other components.

Part No. 96346

Reference Contact Information

1. **American National Standards Institute – ANSI**
   25 West 43rd Street
   Forth Floor
   New York, NY 10036
   Tel: 1 (212) 642-4900
   Fax: 1 (212) 398-0023

2. **Government Printing Office – GPO**
   Superintendent of Documents
   Attn. New Orders
   P.O. Box 371954
   Pittsburgh, PA 15250-7954
   Tel: 1 (202) 512-1803

3. **European Committee for Standardization**
   Rue de Stassart 36
   B - 1050 Brussels, Belgium

4. **Power Tool Institute, Inc.**
   P.O. Box 818
   Yachata, Oregon 97498-0818
   Tel: 1 (503) 547-3185
   Fax: 1 (503) 547-3539

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