

1 hp Die Grinder

Governor Controlled

Air Tool Manual – Safety, Operation and Maintenance

SAVE THIS DOCUMENT, EDUCATE ALL PERSONNEL

Models:

- 52660 – 950 RPM, 1/4"
- 52661 – 1,800 RPM, 1/4"
- 52662 – 3,400 RPM, 1/4"
- 52663 – 4,500 RPM, 1/4"
- 52664 – 6,000 RPM, 1/4"



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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 Requirements for the Use, Care and Protection of Abrasive Wheels – ANSI B7.1, Compressed Air and Gas Institute (CAGI) Safety Code for Portable Air Tools – B186.1, Code of Federal Regulation – CFR 29 Part 1910, International Organization for Standardization (ISO) Hand Held Non-Electric Power Tools – Safety Requirements and applicable State and Local Regulations.



Carefully read and understand the General and Die Grinder sections found in Tool Safety & Operating Guidelines (PN00001676) before handling or using tool.



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.



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



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.

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 without expressed written consent from Dynabrade, Inc.

Tool Intent: Planetary geared die grinders are ideal for removal and polishing of materials using properly speed-rated (RPM) deburring, cleaning and polishing accessories.

Do Not Use Tool For Anything Other Than Its Intended Applications.

This power tool is not intended for use in potentially explosive atmospheres and is not insulated against contact with electrical power.

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

- Employer's Responsibility – Provide planetary geared die grinder operators with safety instructions and training for safe use of tools and accessories.

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 literature.
- Follow tool specifications before choosing size and type of accessory.
- Only use recommended fittings and air line sizes. Air supply hose and air hose accessories 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.)
- DO NOT use – cut off wheels or router bits.

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.

(continued on next page)

OPERATING INSTRUCTIONS (continued)

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

Operation: 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.
- 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.

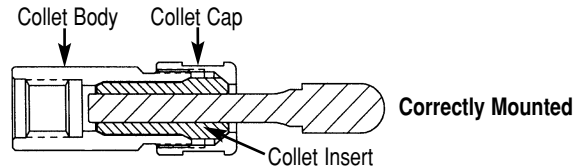
Caution: Tool RPM must never exceed abrasive/accessory RPM rating. Check accessory manufacturer for details on maximum operating speed or special mounting instructions.

- With power source disconnected from air tool, mount recommended accessory into collet assembly.
- The mandrel diameter of the abrasive/accessory must insert freely, but not loosely, all the way to the base of the collet body before tightening the collet cap. Use wrenches provided.

Caution: The mandrel shall be inserted to the full depth of the gripping jaws of the collet. At least one-half the mandrel length shall be inserted into the collet to prevent excessive overhang. Refer to accessory manufacturer's instructions for proper overhang. (Ref. ANSI B7.1)

Warning: Sliding the accessory's mandrel out from the collet insert creates an "OVER HANG" condition. This practice is NOT recommended, reducing the free speed of the tool by reducing the air pressure must be done to avoid cutting tool breakage and serious injury.

MANDREL MOUNTING



- Connect air tool to power source. Be careful NOT to depress throttle lever 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 grinder 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.

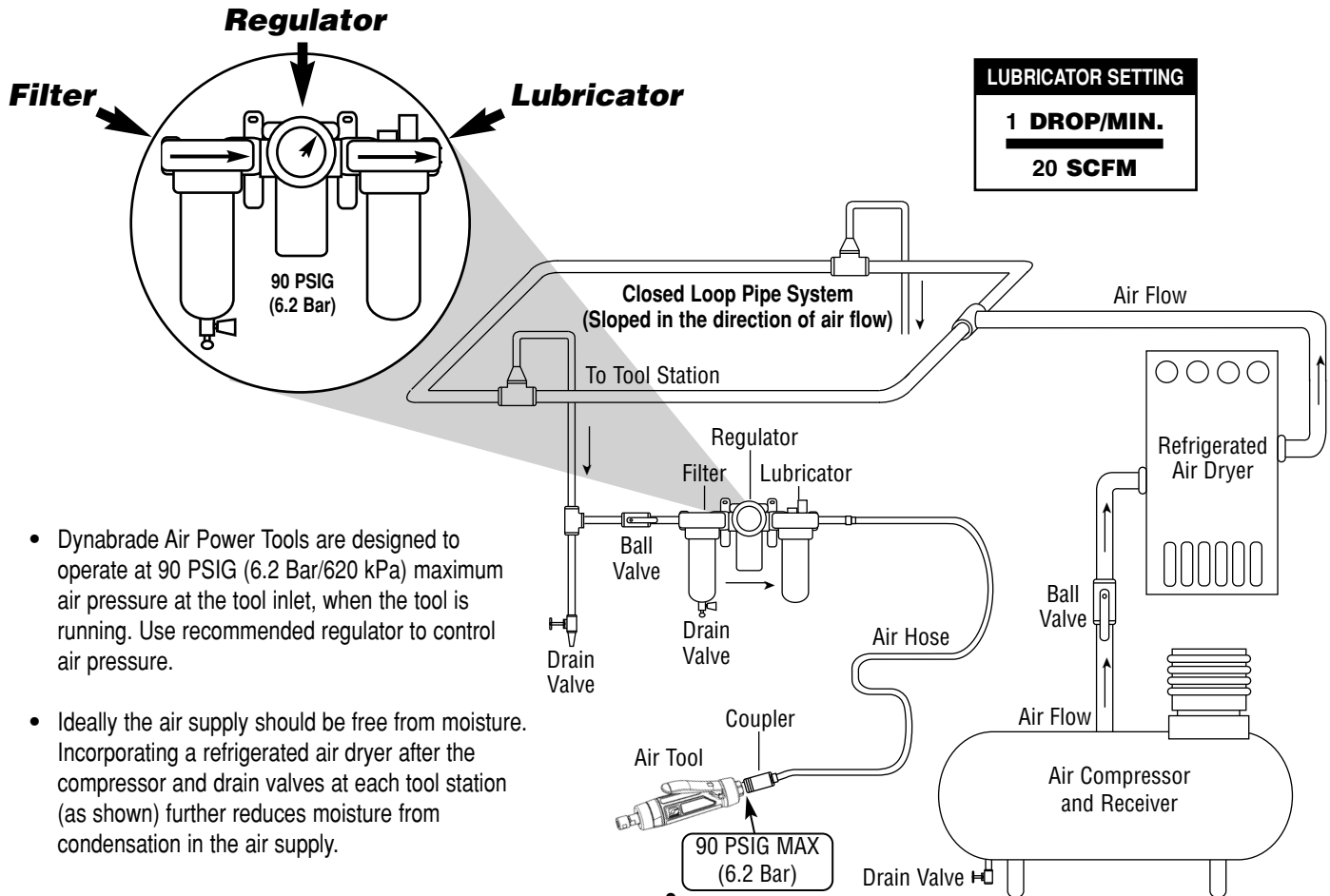
- Make sure that work area is uncluttered, and visitors are at a safe range from the tools and debris.
- Use a vise or clamping device to hold work piece firmly in place.
- Air tools are not intended for use in explosive atmospheres and are not insulated for contact with electric power sources.
- Do not apply excessive force on tool or apply "rough" treatment to it.
- Always work with a firm footing, posture and proper lighting.
- Ensure that sparks and debris resulting from work does not create a hazard.
- This tool has rear exhaust. Exhaust may contain lubricants, vane material, bearing grease, and other materials flushed thru the tool.

Warning: Grinding certain materials can create explosive dust. It is the employers responsibility to notify the user of acceptable dust levels.

- 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.

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. Incorporating a refrigerated air dryer after the compressor and drain valves at each tool station (as shown) further reduces moisture from condensation in the air supply.

Maintenance Instructions

Important: A Preventative Maintenance Program is recommended whenever portable planetary geared die grinders are used.

- Use only genuine Dynabrade replacement parts to insure quality. To order replacement parts, specify **Model#**, **Serial#** and **RPM** of your air tool.
- All Dynabrade Rotary Vane air tools must be used with a Filter-Regulator-Lubricator to maintain all warranties. Dynabrade recommends the following: **11411** Air Filter-Regulator-Lubricator (FRL) – Provides accurate air pressure regulation and two stage filtration of water contaminants. Operates 55 SCFM/1,558 LPM @ 100 PSIG with 1/2" NPT female ports.
- 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.
- Lubricate the planetary gears through the grease fitting(s) located in the gear/planetary cover. Apply 2-3 plunges* for every 50 hours of use, to achieve maximum gear life. (*order **95544** Grease and **95541** Gun)

Routine Preventative Maintenance:

- **DO NOT** disassemble the governor for any reason. Reorder correct speed – governor assembly (See Assembly Breakdown) and recheck free speed of tool with a tachometer.
- 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®).
- A Motor Tune-Up Kit (P/N **96532**) is available which includes high wear and medium wear motor parts.
- Air tool labels must be kept legible at all times, if not, reorder label(s) 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.
- **DO NOT** carry tool by air hose or near the tool throttle lever.
- Visually inspect air hoses and fittings for frays, visible damage and signs of deterioration. Replace damaged or worn components.
- Periodically remove the collet insert and clean the inside diameter and slots from debris to keep accessories secure and reduce vibration.

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 grinding wheels from exposure to water, solvents, high humidity, freezing temperatures and extreme temperature changes.
- **DO NOT USE** grinding wheels that have been dropped or show signs of cracks, nicks or other defects.
- Store accessories in protective racks or compartments to prevent damage.

Machine Specifications

Model Number	Motor HP (W)	Motor RPM	Air Inlet Thread	Maximum Air Flow CFM/SCFM (LPM)	Spindle Thread	Air Pressure PSIG (Bars)	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
52660	1 (744)	950	3/8" NPT	6/43 (1218)	1/2"-20 Male	90 (6.2)	3.6 (1.6)	13-5/8 (345)	1-7/8 (48)
52661	1 (744)	1,800	3/8" NPT	5/34 (963)	1/2"-20 Male	90 (6.2)	3.1 (1.4)	12-1/2 (315)	1-7/8 (48)
52662	1 (744)	3,400	3/8" NPT	6/43 (1218)	1/2"-20 Male	90 (6.2)	3.1 (1.4)	12-1/2 (315)	1-7/8 (48)
52663	1 (744)	4,500	3/8" NPT	6/41 (1161)	1/2"-20 Male	90 (6.2)	3.1 (1.4)	12-1/2 (315)	1-7/8 (48)
52664	1 (744)	6,000	3/8" NPT	6/44 (1256)	1/2"-20 Male	90 (6.2)	3.1 (1.4)	12-1/2 (315)	1-7/8 (48)

Additional Specifications: Hose Size 3/8" or 10 mm • Air Flow Rate based at max hp • Visit dynamabrade.com for your model's vibration and sound data.

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. Dirt and water 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.

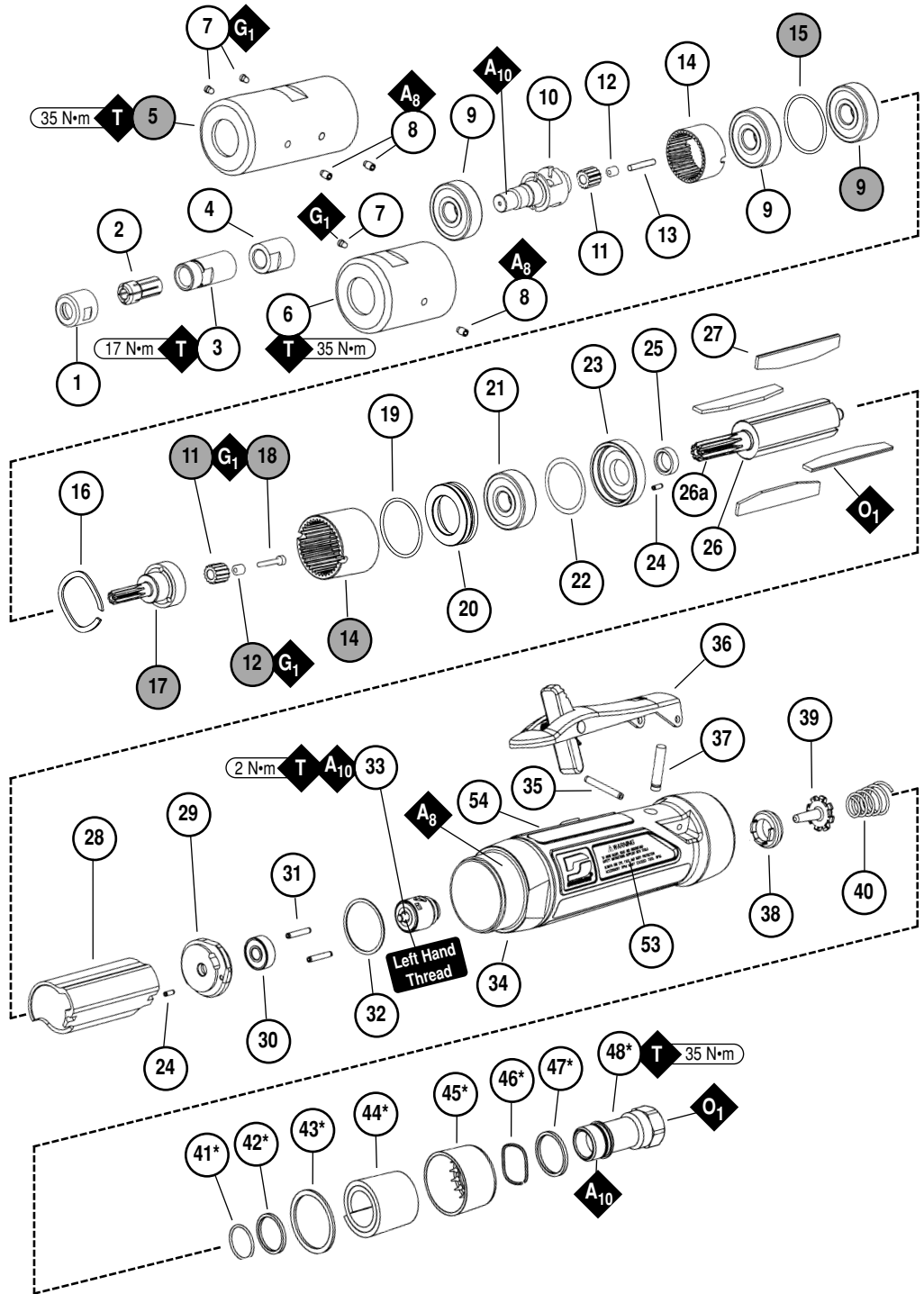
Lifetime Warranty

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.dynamabrade.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.

1 hp Planetary Geared Die Grinder Complete Assembly

Index Key

No.	Part #	Description
1	50063	Collet Cap
2	Collet Insert	
	50013	1/4"
	50016	6mm
3	50069	Collet Body
4	04032	Spindle Nut
5	53694	Planetary Cover
6	51971	Gear Casing
7	01041	Grease Fitting (950 RPM - QTY 2)
8	04014	Set Screw (950 RPM - QTY 2)
9	02552	(2) Bearing (3) Bearing - 950 RPM Models
10	53165	Planetary Carrier
	53685	6,000 RPM
	Planetary Gear	
	53193	3,400 RPM (2)
	53195	4,500 RPM (2)
	53661	6,000 RPM (3)
		950 RPM (4)
12	04026	Needle Bearing (4) Note: 950 RPM (8)
	96528	6,000 RPM (3)
13	53182	Gear Shaft (2) 6,000 RPM (3)
14	53191	Ring Gear
	53664	6,000 RPM
15	53188	Spacer (950 RPM Only)
16	96498	Wave Spring
17	53673	Carrier (950 RPM Only)
18	53678	Gear Retainer Shaft (2) (950 RPM Only)
19	95438	O-Ring
20	53620	Adapter
21	54520	Bearing
22	51951	Shim Pack
23	51922	Front Bearing Plate
24	96441	Pin
25	51927	Rotor Spacer
26	Rotor	
	53666	950 RPM
	51977	1,800 & 3,400 RPM
	51976	4,500 RPM
	51921	6,000 RPM
26a	53659	Pinion (6,000 RPM)
27	51926	Blade (4/pkg.)
28	51925	Cylinder
29	51923	Rear Bearing Plate
30	02057	Bearing
31	96445	Pin (2)
32	51924	Gasket
33	Governor Assembly	
	51953	1,800 RPM
	51933	950, 3,400, 4,500 & 6,000 RPM
34	All Housings Include:	
	Warning & Specification Labels	
	53746	Housing - Model 52660
	53747	Housing - Model 52661
	53748	Housing - Model 52662
	53749	Housing - Model 52663
	53750	Housing - Model 52664
35	96444	Pin
36	51949	Safety Lever Assembly
37	51946	Valve Stem Assembly (Incl. 96443 O-Ring)
38	51945	Valve Seat
39	51944	Tip Valve
40	51943	Spring
41*	96442	O-Ring
42*	51940	Spacer
43*	53682	Gasket
44*	94528	Felt Silencer
45*	53686	Muffler Cap
46*	94924	Wave Spring
47*	53683	Spacer
48*	53681	Inlet Bushing (Incl. 2 - 51938 Screens)



Note: Shaded index numbers represent specific parts for 950 RPM models.

Note: All index numbers with an asterisk are included in P/N 53655 Muffler Assembly.

Label Key

No.	Part #	Description
53	00001180	Warning Label
54	00001181	Specification Label

KEY	
O	Oil: O ₁ = Air Lube
A	Adhesive: A ₈ = Loctite #567 A ₁₀ = Loctite #243
T	Torque: N·m x 8.85 = In. - lbs.
G	Grease: G ₁ = Lubriplate 630 AA
Always follow adhesive manufacturers cleaning and priming recommendations.	

Disassembly Instructions - 1 hp Straight-Line Planetary Geared Die Grinders

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

Disconnect tool from power source before tool repair.

Motor Disassembly:

(The special repair tools referred to in the instructions can be obtained from dynabrade.)

1. Remove the collet assembly from the tool.
2. Fit the **51989** Repair Collar to the wrench flats on the aluminum part of the motor housing and secure the tool in a vise.
3. Remove the gear casing/planetary cover from the housing. (**Right Hand Threads**)
4. Remove the **04014** Set Screw(s) and the planetary gear assembly(ies) from the gear casing/planetary cover.
5. Fasten the **96346** Bearing Separator between the **53191** Ring Gear and the rear **02552** Bearing. Place the separator on the **96232** Arbor Press so that the threaded male spindle is pointing down. Use the largest diameter end of the **96214** Bearing removal tool to push against the planetary carrier and press the planetary carrier from the bearing.
6. Secure the **53165** Planetary Carrier in a soft aluminum or bronze jaw vise and remove the **04032** Spindle Nut.
7. Press the planetary carrier from the front **02552** Bearing.

Note: The following instructions only apply to the double planetary models.

Remove the **02552** Bearing and the **53673** Carrier from the **53694** Planetary Cover. Press the carrier from the bearing by using the **96232** Arbor Press. Press the **53678** Shafts from the **53673** Carrier and remove the **53193** Gears. Remove the ring gear from the motor housing.

8. Remove the **96498** Wave Spring and the **53620** Adapter along with the **95438** O-Ring.
9. Pull the motor out of the housing.
10. Carefully hold the rotor stationary and remove the governor assembly with a flat blade screw driver. (**Left Hand Thread**)
11. Fasten the **96209** Motor Repair Clamp around the **51925** Cylinder. Position the motor repair clamp on the table of the arbor press so that the rotor pinion gear is pointing down. Use a 1/8" dia. drive punch as a press tool and push the rotor out of the **02057** Bearing.
12. Remove the **02057** Bearing from the **51923** Rear Bearing Plate.
13. Press the rotor out of the **54520** Bearing. Also remove the **51922** Front Bearing Plate and the **51927** Spacer from the rotor.
14. Remove the **54520** bearing and shims from the front bearing plate.

Silencer Disassembly/Assembly:

Note: Refer to the exploded view of the tool on page 4 to identify the correct silencer assembly and parts. Follow the view to determine the correct sequence of assembly, adhesive required, and torque specification.

Motor Disassembly Complete.

Assembly Instructions - 1 hp Straight-Line Planetary Geared Die Grinders

Motor Assembly:

Important: Clean and inspect parts before assembling.

(The special repair tools referred to in the instructions can be obtained from Dynabrade.)

1. Install the **51927** Spacer onto rotor.
2. Place a .004" thickness of shims into the **51922** Front Bearing Plate and install the **54520** Bearing into the bearing plate.
3. Use the **96232** Arbor Press and the **96244** Bearing Press Tool to install the front bearing/plate assembly onto the front of the rotor. (The bearing press tool should push against the inner race of the bearing when it is being installed onto the rotor.)
4. The clearance between the rotor and the front bearing plate can be checked with a .001" feeler gauge. The clearance should be between .001" -.0015". If a change in the adjustment is required repeat steps 2-4 removing or adding shims as required.
5. Once the proper rotor gap clearance is achieved, install the **51926** Blades (4) that have been lubricated with **95842** Dynabrade Air Lube.
6. Install the **51925** Cylinder over the rotor so that it will seat with the raised bearing plate boss. Also, align the pin with the notch in the cylinder.
7. Peel the backing off the **51924** Gasket. Align and adhere it to the **51923** Rear Bearing Plate.
8. Place the **51923** Rear Bearing Plate over the bearing journal of the rotor so that the raised boss on the bearing plate will seat with the cylinder. Align the pin with the notch in the cylinder. Be sure that the air inlet opening in the rear bearing plate aligns with the air inlet opening in the cylinder. If these do not align, then the cylinder must be flipped end to end. (Repeat steps 6-8.)

(continued on next page)

Assembly Instructions - (Continued)

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

Please refer to parts breakdown for part identification.

9. Use the **96232** Arbor Press and the **96243** Bearing Press Tool to install the rear bearing onto the rotor. Carefully press the bearing until a snug fit is achieved between the bearing plates and cylinder. If the fit is too tight the rotor will not turn freely. If the fit is too loose then the proper preload of the motor bearings will not be achieved. (The bearing press tool should push against the inner race of the bearing when it is being installed onto the rotor.)
10. Apply a small amount of Loctite® #243 (or equivalent) to the male thread of the governor assembly (**Left Hand Thread**) and install the governor onto the rotor. (Torque to 2 N•m/18 in.-lbs.)
11. Carefully install the motor assembly into the housing. Be sure to align and fit both of the **96445** Pins into the slots in the housing.
12. Install the **95438** O-Ring onto the **53620** Adapter and place these into the housing.
13. Place the **96498** Wave Spring onto the **53620** Adapter. **Note:** On the double planetary models, the ring gear replaces the **53620** Adapter and the **95438** O-Ring. The **96498** Wave Spring is installed in the gear casing assembly.

Motor Assembly Complete.

Gear Casing and Planetary Cover Assembly:

1. Press the front **02552** Bearing onto the male thread front end of the **53165** Planetary Carrier.
2. Apply a small amount of Loctite® #243 (or equivalent) to the area of the male threads of the planetary carrier where the **04032** Spindle Nut fastens. (Torque to 17 N•m/150 in.-lbs.)
3. Apply some of the **95542** Grease to the planetary gears, needle bearings and shafts and install these onto the planetary carrier.
4. Place the **53191** Ring Gear over this assembly so that the two notches face away from the **04032** Spindle Nut.
5. Press the second **02552** Bearing onto the rear of the planetary carrier until it touches the ring gear.
6. Install the planetary carrier assembly into the gear casing/planetary cover so that the notches in the ring gear align with the grease fitting and set screw openings.
7. Apply a small amount of Loctite® #567 (or equivalent) to the threads of the **04014** Set Screw(s) and install.

Note: The following instructions only apply to the double planetary models.

Install the needle bearing into the planetary gear and slide the **53678** Gear Shaft through the planetary gear. Next press the **53678** Gear Shaft into the planetary carrier hole. (Apply a small amount of the **95542** grease to these components during assembly.) Place the **96498** Wave Spring over the pinion gear of the carrier. Press the **02552** Bearing over the pinion trapping the **96498** wave Spring between the bearing and the planetary gears. Slip the countered bored end of the **53665** Ring gear into the motor housing and against the **54520** Bearing of the motor assembly. Install the planetary carrier assembly into the **53694** Planetary Cover. Align the notches in the ring gear with the set screw hole. Apply a small amount of Loctite® #567 to the threads of the motor housing and use the **50971** Lock Ring Tool to install the planetary cover onto the housing. When threading the **53694** Planetary Cover onto the housing, install the **04014** Set Screw (with a small amount of Loctite® #567 applied) once the notches in the ring gear are aligned. (The torque specification for the planetary cover to the housing is 35 N•m/300 in.-lbs.)

Important: Carefully align the rotor pinion to the planetary gears when threading the planetary cover onto the housing. Do not force this assembly. Be sure that the output shaft always turns freely during this process.

8. Apply a small amount of Loctite® #567 (or equivalent) to the threads of the housing. Use the **50971** Lock Ring Tool to carefully install the gear casing onto the housing.
Important: Carefully align the rotor pinion to the planetary gears when installing the gear casing onto the housing. Do not force this assembly. Be sure that the output shaft always turns freely during this process. (Torque to 35 N•m/300 in.-lbs.)

9. Install the collet assembly. (Torque to 17 N•m/150 in.-lbs.)

Gear Casing and Planetary Cover Assembly Complete.

Tool Assembly Complete. Please allow 30 minutes for adhesives to cure before operating tool.

Important: Before operating, place 2-3 drops of Dynabrade Air Lube (P/N **95842**) directly into inlet with throttle lever depressed. Operate tool for 30 seconds to allow Air Lube to properly lubricate internal motor components. Motor should now be tested for proper operation at 90 PSIG max. If tool operates at a higher RPM than marked on the tool or if vibration and sound levels seem abnormal, the tool should be serviced to correct the cause before use.

Loctite® is a registered trademark of Loctite Corp.

Preventative Maintenance Schedule

For All 1 hp Planetary Geared Die Grinders

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 or 50% of a man year.

Parts Common to all Models:

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.



96532 – 1 hp. Motor Tune-Up Kit

Index #	Part Number	Description	Number Required	High Wear 100%	Medium Wear 70%	Low Wear 30%	Non-Wear 10%
1	50063	Collet Cap	1				X
2	See Note	Collet Insert	1			X	
3	50069	Collet Body	1				X
4	04032	Spindle Nut	1				X
5	53694	Planetary Cover	1				X
6	51971	Planetary Gear Casing	1				X
7	01041	Grease Fitting	See Note			D	
8	04014	Set Screw	See Note			L	
9	02552	Bearing	See Note			X	
10	See Note	Planetary Carrier	1			X	
11	See Note	Planetary Gear	See Note			X	
12	See Note	Needle Bearing	See Note		X		
13	See Note	Gear Shaft	See Note			X	
14	See Note	Ring Gear	See Note			X	
15	53188	Spacer (950 RPM)	1				X
16	96498	Wave Spring	1		T, L		
17	53673	Carrier (950 RPM)	1			X	
18	53678	Gear Retaining Shaft	2			X	
19	95438	O-Ring	1		T		
20	53620	Adapter	1				X
21	54520	Bearing	1		T		
22	51951	Shim Pack	1		T, L		
23	51922	Front Bearing Plate	1			X	
24	96441	Pin	1			X	
25	51927	Rotor Spacer	1		T		
26	See Note	Rotor	1			X	
27	51926	Blade (4/pkg.)	1	T			
28	51925	Cylinder	1			X	
29	51923	Rear Bearing Plate	1			X	
30	02057	Bearing	1		T		
31	96445	Pin	1			X	
32	51924	Gasket	1		T		
33	See Note	Governor Assembly	1				X
34	See Note	Housing	1				X
35	96444	Pin	1		T, L		
36	51949	Safety Lock Lever Assembly	1			X	
37	51946	Valve Stem Assembly	1		T		
38	51945	Valve Seat	1				X
39	51944	Tip Valve	1		T		
40	51943	Spring	1				X
41	96442	O-Ring	1		T, L		
42	51940	Spacer	1				X
43	53682	Gasket	1				X
44	94528	Felt Silencer	1		T, R		
45	53686	Muffler Cap	1				X
46	94924	Wave Spring	1				X
47	53683	Spacer	1				X
48	53681	Inlet Bushing (Incl. 51933 Screen)	1				X

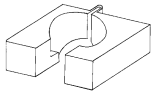
Note: Please refer to page 4 of tool manual for specific part number.

Optional Accessories



Dynamawivel®

- Swivels 360° AT TWO PIVOT POINTS allowing the air hose to drop directly to the floor while providing superb tool handling.
- 95461** – 3/8" NPT.



51989 Repair Collar

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

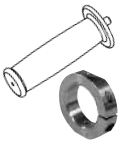


Dynabrade Air Lube

- 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.

95842: 1 pt. (473 ml)

95843: 1 gal. (3.8 L)



53163 Handle Assembly

53199 Collar



Bearing Press Tools

- Used to install bearings.

96243: For installing **02057** Bearing.

96244: For installing **01007** & **54520** Bearings.



96005 Male Plug

- Provides up to twice the air flow compared to standard plug design.
- Plug has "ported" design to prevent "starving" of the air tool.



95544 Grease 2.5 oz.

- Workable range 0°F to 300°F.
- High film strength; excellent resistance to water, steam, etc.

95541 Push-type Grease Gun

- One-hand operation.



96209 Motor Repair Clamp

- Specially designed clamp to secure motor cylinder before disassembly.

Special Repair Tools Used (Not Pictured)

96346 – Bearing Separator

96232 – Arbor Press



96532 Motor Tune-Up Kit

- Includes assorted parts to help maintain and repair motor.

01904 Drop-In Motor (950 RPM)

01888 Drop-In Motor (1,800 RPM)

01887 Drop-In Motor (4,500 RPM)

01886 Drop-In Motor (6,000 RPM)

- Allows quick and easy replacement. No motor adjustments needed.



Carbide Burr Kits

- Includes 12 burs for grinding, deburring and finishing metal.

93350 – 1/4" Kit

93380 – 6mm Kit

Collet Inserts

• **50013** – 1/4"

• **50014** – 3/8"

• **50016** – 6mm

• **50039** – 8mm

• **50066** – 1/4" Collet Assembly.

• **50073** – 6mm Collet Assembly.

53621 Over Hose Assembly

- Over Hose Assembly directs exhaust away from operator.

30335 Air Supply Hose

- 3/8 in. I.D. x 60 in. Wide air supply hose, includes: 3/8 in. NPT male and female threaded fittings.

Composite-Style Coupler

- Lightweight 1.4 oz. (.05 Kg), non-marring composite material.
- Easy connect/disconnect by single push-button action.
- Shock-proof, low-vibration, crush-resistant.

94960: 1/4" Female NPT

94980: 1/4" Male NPT



95262 – 14mm open-end.

95281 – 19mm open-end.

REFERENCE CONTACT INFORMATION

American National Standards Institute (ANSI) • www.ansi.org
25 West 43 Rd St., 4th Floor • New York, NY 10036 • Tel: 1 (202) 293-8020

Compressed Air & Gas Institute (CAGI) • www.cagi.org
1300 Sumner Ave. • Cleveland, OH 44115
Tel: 1 (216) 241-7333

European Committee for Standards (PNEUROP) • www.pneurop.org
rue de Drapiers 21 • 1050 Brussels, Belgium

International Organization for Standardization (ISO)
www.iso.org • PO Box 56 • Ch-1211 Geneva 20, Switzerland

U.S. Government Publishing Office (GPO) • www.gpo.gov
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