

1Hp Extension Dynastraight Governor Controlled

Air Tool Manual – Safety, Operation and Maintenance

SAVE THIS DOCUMENT, EDUCATE ALL PERSONNEL

Models:

- | | |
|---|---|
| 13511 – 1,800 RPM
with 5/8" or 1" Combination Arbor | 13520 – 4,500 RPM
with 5/8"-11 Threaded Arbor |
| 13512 – 3,400 RPM
with 1/2" Diameter Arbor | 13531 – 1,800 RPM
with 5/8"-11 Threaded Arbor |
| 13515 – 3,400 RPM
with 5/8"-11 Threaded Arbor | |
| 13516 – 3,400 RPM
with 5/8" or 1" Combination Arbor | |
| 13517 – 4,500 RPM
with 1/2" Diameter Arbor | |
| 13518 – 4,500 RPM
with 5/8" or 1" Combination Arbor | |
| 13519 – 6,000 RPM
with 5/8"-11 Threaded Arbor | |



! 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 statutes, ordinances and/or regulations.	
	! WARNING Respiratory protection to be used when exposed to contaminants 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.	

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: Extension Dynastraight Finishing Tools are ideal for surface preparation, cleaning and finishing using abrasive wheels, discs and related 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 Extension Dynastraight 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.
- Mount 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 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.)
- DO NOT use – Grinding wheels, cut-off wheels, saw blades or other products outside tool intent.

(continued on next page)

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.

- 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 onto arbor assembly.
- When mounting abrasive or accessory on arbor be sure to follow recommended procedure of the manufacturer.
- Connect air tool to power source. Be careful NOT to depress throttle lever in the process.

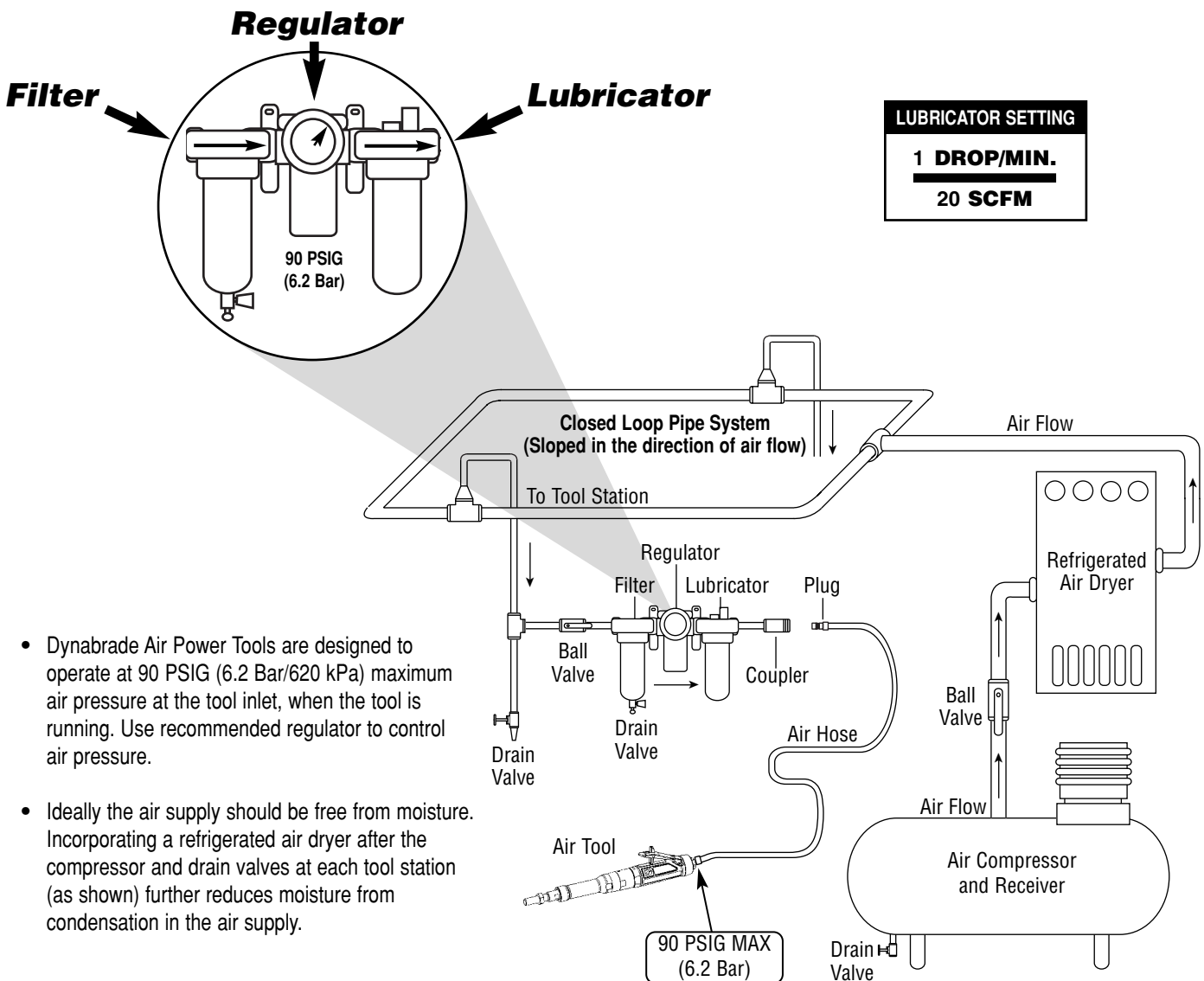
Do not expose air tool to inlet pressure above 90 PSIG or (6.2 Bars).

Caution: After installing the accessory, the Extension Dynastraight 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.
- Do not apply excessive force on tool or apply "rough" treatment to it.
- Always work with a firm footing, posture and proper lighting.

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 power tools are used.

- 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: **11405** Air Filter-Regulator-Lubricator (FRL) – Provides accurate air pressure regulation and two stage filtration of water contaminants. Operates 55 SCFM/1,558 LPM @ 90 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.
- Grease the planetary gear assembly with **95542** Grease by applying 2-3 Plunges with **95541** Grease Gun every 50 of use, to achieve maximum gear life.

Routine Preventative Maintenance: Check free speed of Extension Dynastraight using a tachometer. This governor controlled grinder should be speed checked every 20 hours of use or weekly, whichever occurs more frequently.

- **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)
- **DO NOT** carry tool by air hose or near the throttle lever.
- 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 (see Notice below).
- **DO NOT** carry tool by air hose or near the throttle lever.
- Protect abrasive accessories from exposure to water, solvents, high humidity, freezing temperature and extreme temperature changes.
- Store accessories in protective racks or compartments to prevent damage.

Machine Specifications

Model Number	Motor HP (W)	Motor RPM	Sound Level	Air Flow Rate CFM/SCFM (LPM)	Air Pressure PSIG (Bars)	Wheel Arbor Diameter Inch	Weight Pound (kg)	Length Inch (mm)	Height Inch (mm)
13511	1 (745)	1,800	82 dB(A)	5/36 (1,019)	90 (6.2)	5/8 or 1	4.6 (2.0)	17-5/16 (440)	1-7/8 (48)
13512	1 (745)	3,400	80 dB(A)	6/41 (1,161)	90 (6.2)	1/2	4.4 (2.0)	18-5/8 (475)	1-7/8 (48)
13515	1 (745)	3,400	80 dB(A)	6/41 (1,161)	90 (6.2)	5/8-11 Thread	4.2 (1.8)	18-5/8 (475)	1-7/8 (48)
13516	1 (745)	3,400	80 dB(A)	6/41 (1,161)	90 (6.2)	5/8 or 1	4.7 (2.0)	18-5/8 (475)	1-7/8 (48)
13517	1 (745)	4,500	80 dB(A)	6/41 (1,161)	90 (6.2)	1/2	4.4 (1.9)	18-5/8 (475)	1-7/8 (48)
13518	1 (745)	4,500	80 dB(A)	6/41 (1,161)	90 (6.2)	5/8 or 1	4.7 (2.0)	18-5/8 (475)	1-7/8 (48)
13519	1 (745)	6,000	83 dB(A)	6/44 (1,256)	90 (6.2)	5/8-11 Thread	4.4 (2.0)	18-5/8 (475)	1-7/8 (48)
13520	1 (745)	4,500	80 dB(A)	6/41 (1,161)	90 (6.2)	5/8-11 Thread	4.4 (2.0)	18-5/8 (475)	1-7/8 (48)
13531	1 (745)	1,800	82 dB(A)	5/36 (1,019)	90 (6.2)	5/8-11 Thread	4.2 (1.8)	17-5/16 (440)	1-7/8 (48)

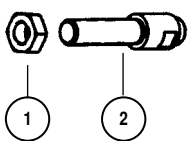
Additional Specifications: Air Inlet Thread 3/8" NPT • Hose I.D. Size 3/8" or 10mm • Air Flow Rate Based At Max HP. • Air Pressure 90 PSIG Max

Notice

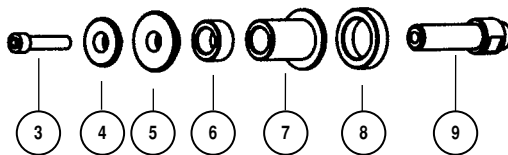
All Dynabrade motors use the highest quality parts and metals available and are machined to exacting tolerances. The failure of quality pneumatic motors can most often be traced to an unclean air supply or the lack of lubrication. Air pressure easily forces dirt or water contained in the air supply into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

Extension Dynastraight® Arbors

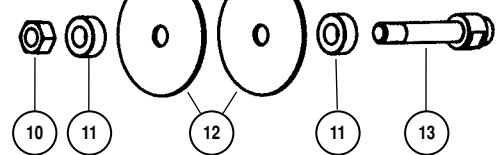
5/8 - 11 Threaded Arbor



5/8" or 1" Combination Arbor



1/2" Diameter Arbor



Index Key

No. Part # Description

1	95274	Hex Nut	6	13063	Spacer	11	13018	Spacer
2	53626	5/8" - 11 Threaded Arbor	7	13062	Rear Flange	12	13021	Wheel Flange (2)
3	95764	Screw	8	13067	Spacer	13	53627	Arbor 1/2" Diameter
4	13066	Front Flange 5/8"	9	53628	Arbor 5/8" or 1" Diameter			
5	13065	Front Flange 1"	10	95138	Hex Nut			

For Models:

**13511, 13512, 13515
13516, 13517, 13518
13519, 13520, 13531**

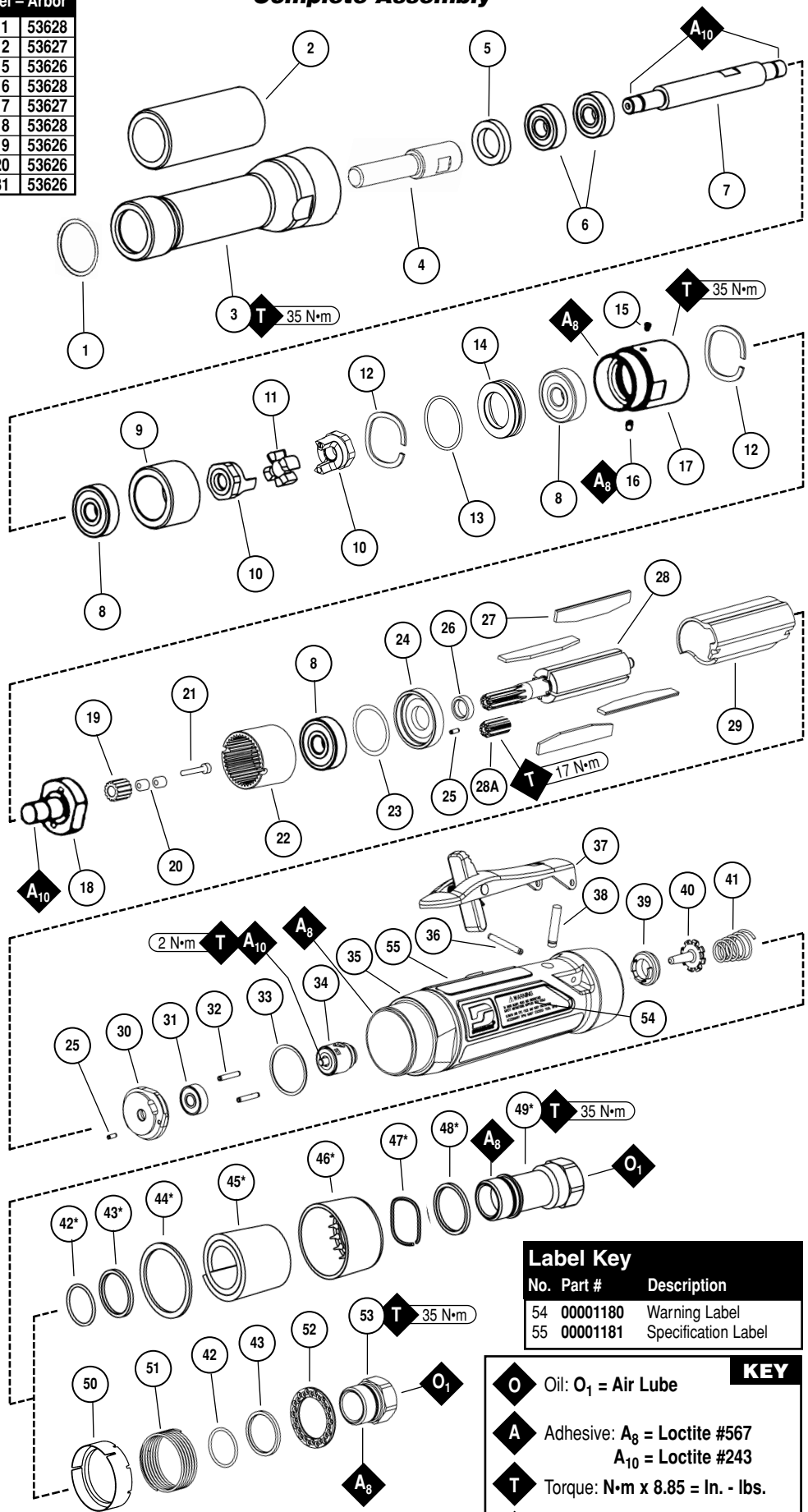
1 Hp Extension Dynastraight

Complete Assembly

Index Key

No.	Part #	Description
1	96524	Retaining Ring
2	53690	Grip
3	51952	Extension Handle
4	Arbor	(See Chart)
5	51956	Felt Seal
6	01007	Bearing (2)
7	51955	Spindle Extension
8	54520	Bearing (3)
9	51982	Spacer
10	51935	Coupling (2)
11	51936	Insert
12	96498	Wave Spring (2)
13	95438	O-Ring
14	53620	Adapter
15	01041	Grease Fitting
16	04014	Set Screw
17	53695	Adapter
18	Carrier	
	53676	1,800 & 3,400 RPM
	53669	4,500 RPM
	53668	6,000 RPM
19	Planetary Gears	
	53193	1,800 & 3,400 RPM
	53195	4,500 RPM
	53661	6,000 RPM
20	04026	Needle Bearing (4)
	96528	Bearing (3) 6,000 RPM Only
21	53679	Shaft (2) (Qty. 3 for 6,000 RPM)
22	Ring Gear	
	53665	1,800, 3,400, 4,500 RPM
	53663	6,000 RPM
23	51951	Shim Pack (3/pkg.)
24	51922	Front Bearing Plate
25	96441	Pin (2)
26	51927	Spacer
27	51926	Blade (4/pkg.)
28A	53660	Pinion (6,000 RPM Only)
28	Rotor	
	53667	1,800 & 3,400 RPM
	53666	4,500 RPM
	53680	6,000 RPM
29	51925	Cylinder
30	51923	Rear Bearing Plate
31	02057	Bearing
32	96445	Pin (2)
33	51924	Gasket
34	Governor Assembly	
	51953	1,800 RPM
	51933	3,400, 4,500, 6,000 RPM
35	All Housings Include:	
	Warning & Specification Labels	
	53711	Housing - Model 13511
	53712	Housing - Model 13512
	53715	Housing - Model 13515
	53716	Housing - Model 13516
	53717	Housing - Model 13517
	53718	Housing - Model 13518
	53719	Housing - Model 13519
	53796	Housing - Model 13520
	53794	Housing - Model 13531
36	96444	Pin
37	51949	Safety Lock Lever
38	51946	Valve Stem Assembly (Incl. 96443 O-Ring)
39	51945	Valve Seat
40	51944	Tip Valve
41	51943	Spring
42	96442	O-Ring
43	51940	Spacer
44	53682	Gasket
45	94528	Felt Silencer
46	53686	Muffler Cap
47	94924	Wave Spring
48	53683	Spacer
49	53681	Inlet Bushing (Incl. 2 - 51938 Screens)
50	51942	Baffle
51	51941	Spring
52	51939	Silencer plate
53	51937	Inlet Bushing (Incl. 2 - 51938 Screens)

Model	Arbor
13511	53628
13512	53627
13515	53626
13516	53628
13517	53627
13518	53628
13519	53626
13520	53626
13531	53626



No.	Part #	Description
54	00001180	Warning Label
55	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

* Note: All parts indicated by an asterisk are included in 53655 Muffler Assembly.

Disassembly Instructions - 1 Hp Extension Dynastraight

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

Disconnect tool from power source before tool repair.

Motor Disassembly:

1. Remove abrasive accessory and hardware from arbor/threaded spindle.
2. Using **51989** Repair Collar (**order separately**) or padded vise, secure front end of housing using machined flats on the silver ring.
3. Remove **51952** Extension Handle from **53695** Gear Casing (twist counterclockwise).
4. Slide **51982** Bearing Spacer and spindle assembly through rear of **51952** Extension Handle.
5. Remove **96524** Retaining Ring from front of extension handle if necessary.
6. Secure **51955** Spindle at wrench flats, and remove arbor/threaded spindle, **51956** Felt Ring and **51935** Coupler.
7. Secure **01007** Bearing and press **51955** Spindle through both **01007** Bearings.
8. Secure **54520** Bearing and press **51955** through **54520** Bearing.
9. Remove **53695** Gear Casing (twist counterclockwise).
10. Secure planetary Carrier using **53698** Wrench (**order separately**) and remove **51935** Coupling (twist counterclockwise).
11. Remove **04014** Set Screw(s) and pull planetary carrier assembly(s) from planetary gear casing.
12. Press planetary carrier assembly through **54520** Bearing.
13. Remove **96498** Wave Spring.
14. Remove ring gear and press retainer pins and gears from planetary carrier.
15. Remove remaining tool assembly from vise.
16. Pull motor assembly from housing assembly.
17. Remove governor assembly by using a slotted screw driver. (**LEFT HAND** thread)
18. Secure **51925** Cylinder and place a 1/8" (3mm) drift pin to the base of the internal thread and press the **51921** Rotor from the **02057** Rear Bearing.
19. Slide **02057** Rear Bearing from **51923** Rear Bearing Plate.
20. Remove **51925** Cylinder and **51926** Blades.
21. Press rotor through **54520** Bearing, **51922** Front Bearing Plate and **51927** Rotor Spacer.
22. Slide **54520** Bearing and shims from **51922** Front Bearing Plate.

Motor and Extension Disassembly Complete.

Housing Disassembly:

1. Secure housing using **51989** Repair Collar (**see back cover for Optional Accessories**).
2. Remove inlet bushing with muffler assembly (twist counterclockwise).
3. Remove **53682** Gasket, **51943** Spring, **96442** O-Ring, **51940** Spacer, **94528** Felt Silencer, **53686** Muffler Cap, **94924** Wave Spring and **53683** Spacer from **53681** Inlet Bushing.
4. Remove **51944** Tip Valve and **51945** Valve Seat.

Housing Disassembly Complete.

Assembly Instructions - 1 Hp Extension Dynastraight

Motor Assembly:

Important: Be sure parts are clean and in good repair before assembling. Follow grease, oil and torque specifications.

1. Place Rotor into padded vise with male thread or spline facing upwards.
2. Slip **51927** Rotor Spacer over rotor shaft and down against rotor body face.
3. Press **96441** Coiled Pin into **51922** Front Bearing Plate. Make certain, coiled pin does not protrude beyond internal bearing surface.
4. Place a .002" shim into the base of **51922** Front Bearing Plate as an initial spacing and slide **54520** Bearing to the front plate base. **Note:** **51951** Shim Pack contains .001" and .002" shims.
5. Press bearing/bearing plate assembly onto rotor. (For 1,800, 3,400, & 4,500 RPM Models) Slide bearing/bearing plate onto rotor and thread pinion into place. Torque to 17 N•m (For 6,000 RPM Model.)
6. Check clearance between rotor and front bearing plate by using a .001" feeler gauge. Clearance should be between .001" – .0015". Adjust clearance by repeating steps 4 and 5 with different shims if necessary.
7. Once proper rotor gap clearance is achieved, install well lubricated **51926** Blades (4) into rotor slots. Dynabrade recommends lubricating blades with **95842** Air Lube. **Important:** Make certain beveled edge of blade follows rotor outside diameter.
8. Install **51925** Cylinder over rotor and front plate raised boss. Align coiled pin on front to cylinder slot.
9. Press **96441** Coiled Pin into blind hole on **51923** Rear Bearing Plate. Press (2) **96445** Coiled Pins into the back side of rear bearing plate.
10. Peel backing off **51924** Gasket and align it firmly in place onto **51923** Rear Bearing Plate.
11. Place **51923** Rear Bearing Plate over rotor mandrel and insert raised boss on rear bearing plate into cylinder diameter, while inserting short coiled pin into cylinder slot. Be sure inlet slot on rear bearing plate line up with inlet slot on cylinder. Flip cylinder end to end and repeat step 8 for correct assembly.
12. Press **02057** Bearing onto rotor and onto **51923** Rear Bearing Plate until it is seated. **Important:** Cylinder must fit snug between bearing plates. If too tight, rotor will not turn freely. Rotor must be lightly tapped at press fit end until rotor spins freely while still maintaining a snug fit. A loose fit will not achieve the proper preload on motor bearing. While pressing **02057** Bearing, make certain to contact inner race of bearing only.
13. Add one drop of #243 Loctite® (or equiv.) to governor assembly male thread and screw governor assembly onto place (**LEFT HAND** thread) with a slotted screw head. Torque to 2 N•m (18 lb.-in.).

(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.

14. Install motor assembly into housing, making sure motor drops all the way into housing. **Note:** Align both **96445** Coiled Pins to slots in insert and against **51924** Gasket.

Motor Assembly Complete.

Gear Casing Assembly:

1. Press Front **54520** Bearing onto front end of **53695** Gear Casing.
2. Install gears with needle bearings and assemble onto planetary carrier by pressing retainer shafts into place.
3. Place **96498** Wave Spring at the base of **53695** Gear Casing.
4. Slide planetary carrier assembly into **53695** Gear Casing and through **54520** Bearing.
5. Apply one drop of #243 Loctite® to threads of **51935** Coupling and thread onto planetary carrier. Torque to 17 N•m (150 lb.-in.). Using **53698** Carrier Wrench (*order separately*).
6. Install Ring Gear over **54520** Front Motor Bearing, keep 2 machined slots facing outward.
7. Apply a small amount of #567 Loctite® Loctite to the male thread of the housing and thread **53695** Gear Casing over ring gear in place. **Important:** Align rotor spline to planetary gears to allow carrier to spin freely.
8. When slots from ring gear line up with set screw hole. Apply a small amount of #567 Loctite® to **04014** Set Screw and install to lock ring gear in place.
9. Torque **53695** Gear Casing to 35 N•m (310 lbs.-in.).
10. Place **51936** Coupling insert into **51935** Coupling. Make certain insert radii aligns with radii in coupling base, to correct alignment remove insert and rotate 90°.
11. Press one **01007** Bearing on end of **51955** Extension Spindle that is further from the wrench flats, then repeat with second **01007** Bearing on the same end of the spindle. **Important:** While pressing **01007** Bearings, make certain to contact inner race of bearing only.
12. Press **54520** Bearing onto end of spindle that is closer to wrench flats. **Important:** While pressing **54520** bearing, make certain to contact inner race of bearing only.
13. Secure **51955** Extension Spindle and apply #243 Loctite® (or equiv.) to external threads then torque **51935** Coupling on single bearing end to 17 N•m (150 lbs.-in.).
14. Install **51956** Felt Ring over small boss on the arbor/spindle selected.
15. On double bearing end of **51955** Extension Spindle, apply #243 Loctite® (or equiv.) to external threads and torque arbor/spindle with **51956** Felt Ring to 17 N•m (150 lbs.-in.).
16. Install **96524** Retaining Ring into groove inside **51952** Extension Handle.
17. Insert spindle assembly, with arbor/spindle first, into larger diameter end of **51952** Extension Handle.
18. Insert **51982** Bearing into larger diameter end of extension handle.
19. Pull **51936** Coupling Insert half way off of **51935** Coupling, to insure proper alignment.
20. Apply a small amount of #567 Loctite® (or equiv.) to external threads just above machined flats on **53695** Gear Casing.
21. Align **51936** Coupling Insert onto **51935** Coupling in **51952** Extension Handle.
22. Thread gear casing/housing assembly onto extension handle.
23. Secure front end of housing using **51989** Repair Collar (*order separately*) or padded vase, align the vise jaws with machined flat on the silver ring. Torque **51952** Extension Handle onto gear casing to 35 N•m (310 lbs.-in.).

Gear Casing and Extension Assembly Complete.

Housing Assembly:

1. Secure housing using **51989** Repair Collar (*see back cover for Optional Accessories*). With extension facing downward.
2. Install **51945** Valve Seat by aligning 3 male prongs with three deep slots on insert. Make certain valve seat is pressed flat against base of pocket. **Note:** Add a few drops of Dynabrade Air Lube (P/N **95842**) to pocket walls before inserting **51945** Valve Seat.
3. Install **51944** Tip Valve as shown.
4. Slide **51942** Baffle into housing long end in first, and place **51941** Spring into shallow wall end of baffle.
5. Pre-assemble muffler, slide **53683** Spacer over **53681** Inlet Bushing and up against the hex head base. Slide **94924** Wave Spring over **53681** Inlet Bushing and up against spacer. Pre roll **94528** Felt Silencer and install it in **53686** Muffler Cap. Support felt/muffler cap assembly and slide **53681** Inlet Bushing thru the inside until the muffler cap assembly seats against the **94924** Wave Spring. Flare the felt and place **51940** Spacer over male thread and set **96442** O-Ring into groove at the base of thread. Return felt to unflared form. Slide **51943** Spring into bushing and up to the two **51938** Screens.
6. Place **53682** Gasket over felt silencer and against **53686** Muffler Cap.
7. Apply one drop of Loctite® #243 (or equiv.) to **51937** Inlet Bushing thread.
8. Align small inside diameter of **51943** Spring to cone point on **51944** Tip Valve and thread **51937** Inlet Bushing and sub-assembly into place. Torque bushing to 35 N•m (310 lb.-in.).
9. Slide **96443** O-Ring onto **51946** Valve Stem and slide sub-assembly until o-ring passes through housing hole. Make certain valve stem assembly slides freely after the o-ring passes through the hole.
10. Remove housing from **51989** Repair Collar and replace repair collar onto the bench top with the part number identifier against the bench. Align the throttle lever holes to housing pin hole and rest the housing and throttle lever onto the legs of the repair collar. Press **96444** Coiled Pin into lever hole and center into housing.

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 1Hp Extension Dynastraights

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	96524	Retaining Ring	1		L		
2	53690	Grip	1			X	
3	51952	Extension Handle	1				X
4	Arbor	(See Chart)	1				X
5	51956	Felt Seal	1	X			
6	01007	Bearing	2		X		
7	51955	Spindle Extension	1			X	
8	54520	Bearing	3		T		
9	51982	Spacer	1				X
10	51935	Coupling	2				X
11	51936	Insert	1				X
12	96498	Wave Spring	2				T, X
13	95438	O-Ring	1		T		
14	53620	Adapter	1				X
15	01041	Grease Fitting	1			X	
16	04014	Set Screw	1		L		
17	53695	Adapter	1				X
18	See Note	Carrier	1			X	
19	See Note	Planetary Gears	1			X	
20	04026	Needle Bearing	4			X	
	96528	Bearing	3			X	
21	53679	Shaft	See Note			X	
22	See Note	Ring Gear	1			X	
23	51951	Shim Pack (3/pkg.)	1		T		
24	51922	Front Bearing Plate	1			X	
25	96441	Pin	2			X	
26	51927	Spacer	1		T		
27	51926	Blade (4/pkg.)	1	X			
28A	53660	Pinion	1			X	
28	See Note	Rotor	1			X	
29	51925	Cylinder	1			X	
30	51923	Rear Bearing Plate	1			X	
31	02057	Bearing	1		T		
32	96445	Pin	2			X	
33	51924	Gasket	1		T		
34	See Note	Governor Assembly	1				X
35	See Note	Housing	1				X
36	96444	Pin	1		T		
37	51949	Safety Lock Lever	1			X	
38	51946	Valve Stem Assembly	1		T		
39	51945	Valve Seat	1				X
40	51944	Tip Valve	1		T		
41	51943	Spring	1				X
42	96442	O-Ring	1		T		
43	51940	Spacer	1				X
44	53682	Gasket	1				X
45	94528	Felt Silencer	1		T		
46	53686	Muffler Cap	1			X	
47	94924	Wave Spring	1		X		
48	53683	Spacer	1				X
49	53681	Inlet Bushing (Incl. 51938 Screen (2))	1				X
50	51942	Baffle	1				X
51	51941	Spring	1				X
52	51939	Silencer plate	1				X
53	51937	Inlet Bushing (Incl. 51938 Screen (2))	1				X

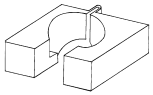
Note: Please refer to page 4 of tool manual for specific part number.

Optional Accessories



Dynamswivel®

- 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: 1pt. (473 ml)

95843: 1 gal. (3.8 L)



95542 Grease 10 oz.

- 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.

95541 Push-type Grease Gun

- One-hand operation.



53698 Carrier Wrench

- Carrier Wrench has a 3/8 in. square socket for use with 3/8 in. drive; breaker bar, ratchet head, or torque wrenches.

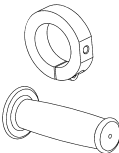


Bearing Press Tools

- Used to install bearings.

96243: For installing **02057** Bearing.

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



53199 Handle Mount

53163 Handle Assembly

- Improved ergonomic feel with grip-traction to reduce hand fatigue.



96532 Motor Tune-Up Kit

- Includes assorted parts to help maintain and repair motor.

Drop-In Motor

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

01903 – 6,000 RPM

01904 – 4,500 RPM

01905 – 1,800 & 3,400 RPM



53621 Over Hose Assembly

- Over Hose Assembly directs exhaust away from operator.



94465 Wheel Inflation Tool

- Controlled inflation/deflation of pneumatic wheel.
- Has 1/4" female thread; fits 1/4" air hose.
- **95633** Nozzle replacement available.



94472 Pneumatic Wheel

- Easily regulate hardness by air pressure.
- Inflates to 20 PSI maximum.



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.

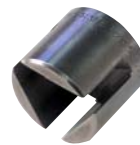


96005 Male Plug

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



95281 – 19mm Open-end Wrench.



53699 Carrier Wrench

- 3 Sided wrench to for use with 6,000 RPM models.

One Year Warranty

Following the reasonable assumption that any inherent defect which might prevail in a product will become apparent to the user within one year from the date of purchase, all equipment of our manufacture is warranted against defects in workmanship and materials under normal use and service. We shall repair or replace at our factory, any equipment or part thereof which shall, within one year after delivery to the original purchaser, indicate upon our examination to have been defective. Our obligation is contingent upon proper use of Dynabrade tools in accordance with factory recommendations, instructions and safety practices. It shall not apply to equipment which has been subject to misuse, negligence, accident or tampering in any way so as to affect its normal performance. Normally wearable parts such as bearings, contact wheels, rotor blades, etc., are not covered under this warranty.

Reference Contact Information

1. American National Safety Institute – ANSI

25 West 43rd Street
Fourth 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

Visit Our Web Site: www.dynabrade.com

Email: Customer.Service@Dynabrade.com



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.à.r.l., Zone Artisanale • L-5485 Wormeldange—Haut, Luxembourg • Telephone: 352 76 84 94 1 • Fax: 352 76 84 95 1

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