WARNING

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

Some dust created by sanding, grinding, drilling, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
- Lead from lead-based paints
- Crystalline silica from bricks and cement and other masonry products
- Arsenic and chromium from chemically treated lumber

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

SAFETY INSTRUCTIONS

Carefully Read and Understand the Sander/Polisher sections found in Tool Safety and Operating Guidelines (PN00001676) Before Handling or Using Tool.

Tool Intent: Dynorbital-Spirit® Random Orbital Sander is used for sanding and finishing a variety of materials including wood, metal, plastic, fiberglass, solid surfaces, composites, rubber, glass and stone.

DO NOT USE Tool for Anything Other Than Its Intended Applications.

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

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

Report to Your Supervisor any Condition of the Tool, Accessories or Operation you Consider Unsafe.
MAINTENANCE INSTRUCTIONS

Important: To keep tool safe, a Preventative Maintenance Program is recommended. The program should included inspection of the tool and all related accessories and consumables, including air lines, pressure regulators, filters, oilers, etc. refer to ANSI B186.1 for additional maintenance information.

If accessory or tool breakage occurs, investigate failure to determine the cause and correct before issuing tool for work. Use the following schedule as a starting point in developing a Preventative Maintenance Program. If tool does not operate properly (RPM, Vibration, Start/Stop) after these scheduled checks or at any time, the tool must be repaired and corrected before returning tool to use.

INSTALLATION

• To ensure long life and dependable service, use a Closed Loop Air System and Filter-Regulator-Lubricator as diagrammed below.
• Each tool should have its own dedicated hose connected to an air supply manifold. Quick disconnects should be installed at the manifold in an effort to reduce contamination into the tool.
• It is strongly recommended that all Dynabrade 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 Line Filter-Regulator-Lubricator — Provides accurate air pressure regulation, two-stage filtration of water contaminants and micro-mist lubrication of pneumatic components.
• 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: 1pt/473ml) is recommended.

MAINTENANCE SCHEDULE

Daily (every 8 hours):
• Inspect tool and accessories for damage or broken parts. Replace items as necessary to ensure proper operation and safety.
• Lubricate motor as recommended. Use Dynabrade Air Lube (P/N 95842: 1pt/473ml) 10W/NR. (1 Drop per minute of air lube per 20 SCFM.)
• Check air line pressure with a gage. (MAX. 90 PSIG or 6.2 Bar operating pressure at the air inlet of the tool.)
• Right angled gear and wick system through gear case grease fitting with a Filter-Regulator-Lubricator to 2 drops per minute. Use Dynabrade Air Lube (P/N 95842: 1pt/473ml) is recommended.
• Check tool for proper operation: If operating improperly or demonstrates unusual vibration, the tool must be serviced and problem corrected before further use.

Every 20 Hours or Once a Week Which Ever Comes First:
• Check free speed of tool without the abrasive accessory mounted. Measure RPM (speed) with tachometer and with air pressure set at 90 PSIG while the tool is running. If a governed tool is operating at a higher speed than the RPM marked on the tool housing, the tool must be serviced and corrected before use. A non-governed tool may exceed the RPM marked on the tool by 10% when operated at free speed with no accessories.
• If tool is running fast look for worn, damaged or missing governors, air control rings and silencers. Special care must be taken when servicing governors and speed control devices. Injection molded governor assemblies are non-serviceable and must be replaced.

• If tool is running slow look for clogged inlet screen, air stream, silencer(s) or a malfunctioning governor (see concerns for servicing governors). Service as required.

Every 50 Hours:
• Lubricate planetary gears through gear case grease fitting with 3 plunges of grease (P/N 95542) and grease gun (P/N 95541). (Prime grease gun prior to greasing.)

REPAIR

• Use only genuine Dynabrade replacement parts to ensure quality. To order replacement parts, specify Model#, Serial# and RPM of your air tool.
• Mineral spirits are recommended when cleaning the tool and parts. Do not clean tool or parts with any solvents or oils containing acids, esters, ketones, chlorinated hydrocarbons or nitro carbons.
• DO NOT clean or maintain tools with chemicals that have a low flash point (example: WD-40®).
• Motor Tune-Up Kit are available (when applicable) which includes high wear and medium wear motor parts.
• Air tool markings must be kept legible at all times. If not, reorder housing and replace. User is responsible for maintaining specification information.
• After maintenance is performed on tool, add a few drops of Dynabrade Air Lube (P/N 95842) to the tool inlet and start the tool a few times to lubricate air motor. Verify RPM (per 20 hr maintenance schedule), vibration and operation.

HANDLING & STORAGE

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

END OF USE/DISPOSAL

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

NOTICE

All Dynabrade motors use the highest quality parts and metals available and are machined to exacting tolerances. The failure of quality pneumatic motors can most often be traced to an unclean air supply or the lack of lubrication. Air pressure easily forces dirt or water contained in the air supply into motor bearings causing early failure. It often scores the cylinder walls and the rotor blades resulting in limited efficiency and power. Our warranty obligation is contingent upon proper use of our tools and cannot apply to equipment which has been subjected to misuse such as unclean air, wet air or a lack of lubrication during the use of this tool.

AIR SYSTEM

Closed Loop Pipe System, Sloped in Direction of Air Flow

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

[Diagram of Air System including regulator, filter, lubricator, air compressor, and air dryer]
 dynorbital-spirit®
complete assembly

models:
58054, 59000, 59003, 59004, 59005, 59008, 59009, 59010, 59013, 59014, 59015, 59018, 59019, 59020, 59023, 59024, 59025, 59028, 59029, 59030, 59033, 59034, 59038, 59039, 59040, 59043, 59044, 59100, 59103, 59104, 59105, 59108, 59109, 59110, 59113, 59114

note: to order replacement parts specify the model # and serial # of your machine.

index key

no. part # description
1 back-up pads - see chart below
2 non-vacuum shroud
3 vacuum shroud
4 balancer shaft
5 snap ring
6 v-seal
7 bearing
8 motor shaft balancer
9 key
10 lock ring
11 "top hat" seal
12 felt
13 bearing (2)
14 front bearing plate
15 rotor/blade set
16 cylinder
17 seal
18 rear bearing plate
19 retaining ring
20 drop-in motor assembly
21 housing
22 throttle lever - 3/8"
23 throttle lever - 3/16"
24 throttle lever - 3/32"
25 motor assembly
26 housing
27 throttle lever - 3/8"
28 throttle lever - 3/16"
29 throttle lever - 3/32"
30 housing
31 housing
32 housing
33 housing
34 housing
35 housing
36 housing
37 housing
38 housing
39 housing
40 housing
41 housing
42 housing
43 housing
44 housing

note:

to order replacement parts specify the model # and serial # of your machine.

models:
58054, 59000, 59003, 59004, 59005, 59008, 59009, 59010, 59013, 59014, 59015, 59018, 59019, 59020, 59023, 59024, 59025, 59028, 59029, 59030, 59033, 59034, 59038, 59039, 59040, 59043, 59044, 59100, 59103, 59104, 59105, 59108, 59109, 59110, 59113, 59114

note: to order replacement parts specify the model # and serial # of your machine.

key

o1 oil: o1 = air lube
a2 adhesive: a2 = loctite #271
a8 = loctite #567
torque: n-m x 8.85 = in. - lbs.

speed regulator flow control

maximum flow: turn clockwise.
minimum flow: turn counter-clockwise.

pad chart - vinyl face

max flow:
turn clockwise.

minimum flow:
turn counter-clockwise.

exhaust assemblies
(see below)

optional: 30 quantity muffler insert available, p/n 56054.

self generated vacuum

non-vacuum

central vacuum
### MACHINE SPECIFICATIONS

<table>
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<tr>
<th>Model Number</th>
<th>Vacuum Style</th>
<th>Tool Dia. (mm)</th>
<th>Dia. Orbit (mm)</th>
<th>Sound Level</th>
<th>Weight (kg)</th>
<th>Length (mm)</th>
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### REPLACEMENT HOUSINGS

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### OPTIONAL ACCESSORIES

- **96510 Tune-Up Kit**
  - Tune-Up Kit contains high and medium wear parts.

### Drop-in Motor Assemblies

**Orbit 3” 3-1/2” 5” 6”**

- 3/8” (9.5 mm): 59485, 59450, 59453, 59457
- 3/16” (4.76 mm): 59489, 59451, 59454, 59456
- 3/32” (2.38 mm): 59490, 59452, 59455, 59459

**Note:** 59058 Lock Ring ONLY included with 3/8” Orbit Drop-in Motors.

### Non-Vacuum to Vacuum Conversion Kits

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<th>Converts to</th>
<th>Kit Number</th>
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<tr>
<td>3-1/2” (89mm) Central Vac-Ready</td>
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<tr>
<td>5” (127mm) Self-Generated Vac-Ready</td>
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<tr>
<td>5” (127mm) Central Vac-Ready</td>
<td>57211</td>
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<tr>
<td>6” (152mm) Self-Generated Vac-Ready</td>
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<tr>
<td>6” (152mm) Central Vac-Ready</td>
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</table>

### REFERENCE CONTACT INFORMATION

1. American National Standards Institute – ANSI
   - 1899 L Street, NW
   - Washington, DC 20036
   - Tel: (202) 642-4900
2. Government Printing Office – GPO
   - Superintendent of Documents
   - Attn: New Orders
   - P.O. Box 371954
   - Pittsburgh, PA 15250-7954
   - Tel: (202) 512-1803
3. Power Tool Institute, Inc.
   - 5600 Central Drive
   - Yachata, Oregon 97498-0818
   - Tel: (503) 547-3185
4. European Committee for Standardization
   - Rue de Stassart 36
   - B- 1050 Brussels, Belgium

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