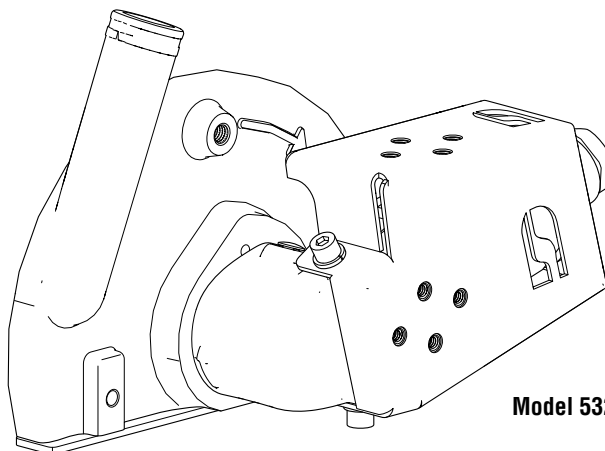


Robotic Rebel Series Diamond Cut-Off 7" Diameter, Right Angle

Safety, Operation and Maintenance – Save This Document and Educate All Personnel

Model	RPM	Power	Description
53291B	8,500	2.8 hp	Tool Only
53291BK			Kit

GRINDER



Model 53291B

LIMITED
LIFETIME
WARRANTY

Find The Most Current Offering of Support Documents and Accessories at www.Dynabrade.com

⚠ 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 abrading materials with coated abrasive systems – 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.



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

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 and OPERATING INSTRUCTIONS



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

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

Tool Intent: Rebel Series Diamond Cut-Off tool is intended for use as a robot end-effector and to be integrated into a robotic system for industrial applications only. Use as a portable hand-held power tool can cause serious injury. It is the responsibility of the system Integrator to perform an independent risk assessment when using this robotic tool in applications. The risk assessment must consider the risks of the entire robot application, including the robot, robotic tool, workpieces, fixturing, and all tasks associated with the application. The System Integrator should consult with the user, identify reasonably foreseeable hazards, and apply appropriate risk reduction measures where necessary. Tools are intended to be used by professional operators and is ideal for cutting and trimming applications using metal centered diamond abrasive wheels with a 7/8" center hole. Maximum metal thickness of wheel is 0.085", maximum diamond abrasive thickness is 0.135".

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.

Important: To keep tool safe, a Preventative Maintenance Program is recommended. The program should include inspection of the tool and all related accessories and consumables, including air lines, pressure regulators, filters, oilers, etc. (refer to CAGI 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.

- To ensure long life and dependable service, use a Closed Loop Air System and Filter-Regulator-Lubricator (FRL) as diagramed below.
- Each tool should have its own dedicated hose connected to an air supply FRL. Quick disconnects should be installed at the FRL in an effort to reduce contamination into the tool. Securely affix all fittings and hose assemblies.
- 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: **10690 Air Line Filter-Regulator-Lubricator** — Provides accurate air pressure regulation, two-stage filtration of water contaminants and micro-mist lubrication of pneumatic components.

Maintenance schedules depend on the type and style of tool. Refer to page 3 to reference symbols associated with specific maintenance items/areas. Match maintenance schedules accordingly. See page 4 for any additional maintenance information.

- Inspect tool and accessories for damage or broken parts. Replace items as necessary to ensure proper operation and safety.
- Lubricate motor as recommended. Use **95842** Dynabrade Air Lube (10W/NR). Apply 1 drop/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.)
- Check tool for proper operation: If operating improperly or demonstrates unusual vibration, the tool must be serviced and problem corrected before further use.

- Measure RPM (speed) by setting air pressure to 90 PSIG (6.2 Bar) at tool inlet, without accessory mounted, while the tool is running. Using a tachometer, check spindle speed of the tool. Unless otherwise stated the no-load speed may not exceed the rated speed. If tool speed exceeds maximum rated RPM, service as required and correct before use.
- If tool is running too fast: look for worn, damaged or missing governor and silencer(s). Service as required.

- If tool is running too slow: look for malfunctioning governor, clogged inlet screen, silencer(s) or air stream. Service as required.
- Governors are not serviceable, replace complete **54998** Governor Assemblies; do not try to repair. Do not pull on springs in effort to adjust governor.

Note: Special care must be taken when servicing governors. Refer to specific tool manual for governor instructions and/or speed control devices. Governor assemblies made from molded plastic components are non-serviceable and must be replaced.

Gears are greased for the life of the tool. Replace if grease is hard packed or full of debris. Install 14 grams of **96664** Grease on pinion gear and in cavities on either side of top spindle bearing. Keep grease out of top spindle bearing pocket as it may prevent ability to seat bearing in cavity.

- 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.
- A Motor Tune-Up Kit is available which includes high wear and medium wear motor parts.
- Air tool markings must be kept legible at all times, if not, reorder labels and replace. User is responsible for maintaining specification information.

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After maintenance is performed on tool, add a few drops of **95842** Dynabrade Air Lube 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.

- 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 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.

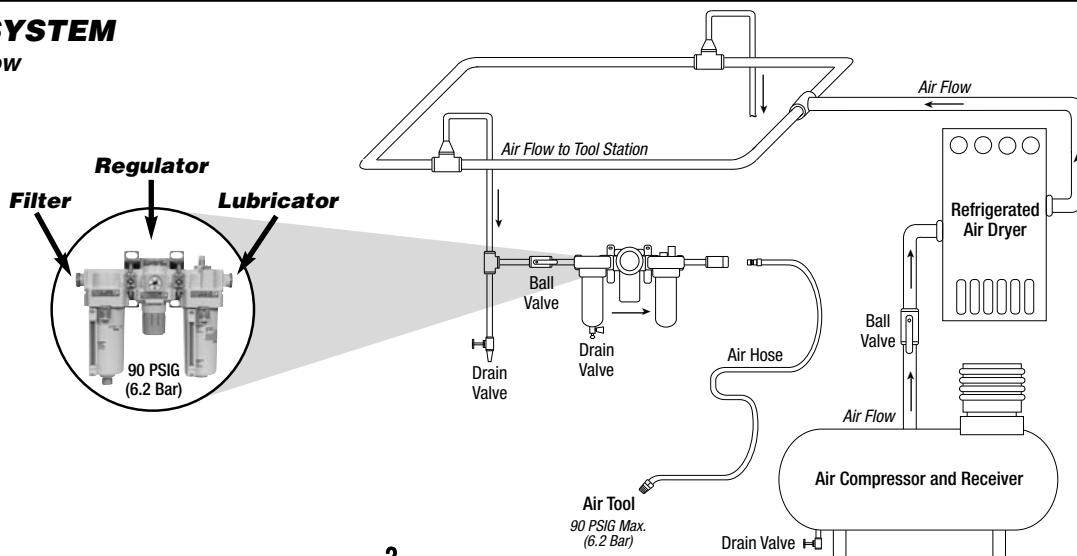
When tool has reached its end of useful service, disassemble tool into its primary components (i.e. steel, aluminum and plastic) and recycle or discard per local, state and/or federal regulations as to not harm the environment.

All Dynabrade air motors use the highest quality parts available and are manufactured to exacting tolerances. Air motor failures are often traced to lack of lubrication or unclean air supply. Compressed air can force dirt and other contaminants into motor bearings causing early failure. Contaminants can score cylinder wall and vanes resulting in reduced efficiency and power. Our warranty obligation is contingent upon proper use of our tools. Air motors which have been subjected to misuse, contaminated air or lack of lubrication will void warranty.

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.

1 Drop/Minute per 20 SCFM



ASSEMBLY INSTRUCTIONS FOR DYNABRADE ROBOT END-EFFECTORS

TYPE: Rebel Series Diamond Cut-Off

MODELS: 53291B, 53291BK

IMPORTANT SAFETY INSTRUCTIONS:

- This tool is intended for use as a robot end-effector and to be integrated into a robotic system for industrial applications only. Use as a hand-held power tool can cause serious injury.
- It is the responsibility of the System Integrator to perform an independent risk assessment when using this robotic tool in applications. The risk assessment must consider the risks of the entire robot application, including the robot, robotic tool, workpieces, fixturing, and all tasks associated with the application. The System Integrator should consult with the user, identify reasonably foreseeable hazards and apply appropriate risk reduction measures where necessary.

ANNEX 1 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS TO BE ADDRESSED BY THE SYSTEM INTEGRATOR:

1.2.4.3 EMERGENCY STOP

- The emergency stop must stop the supply of compressed air to the tool.

1.2.6 FAILURE OF THE POWER SUPPLY

- The compressed air supply control must be reset after power failure to prevent unexpected tool start.

1.3.3 RISKS DUE TO FALLING OR EJECTED OBJECTS

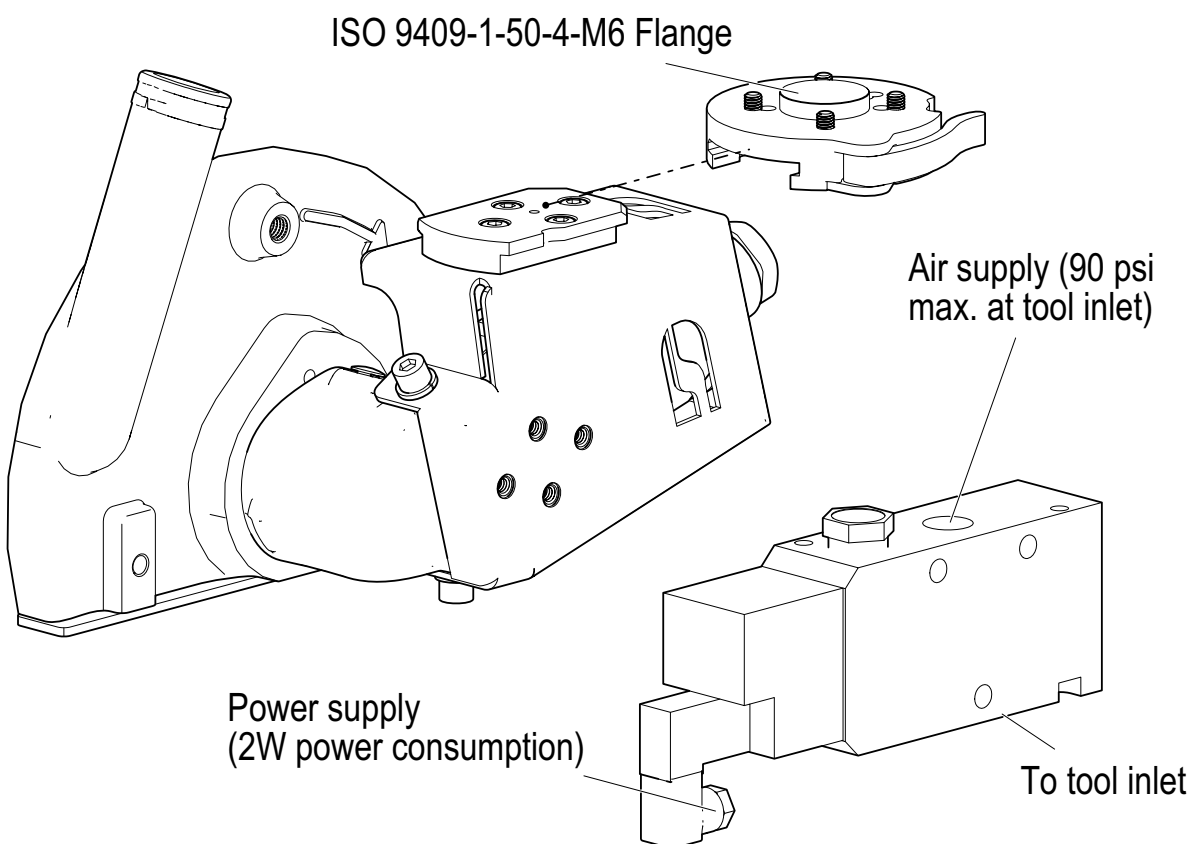
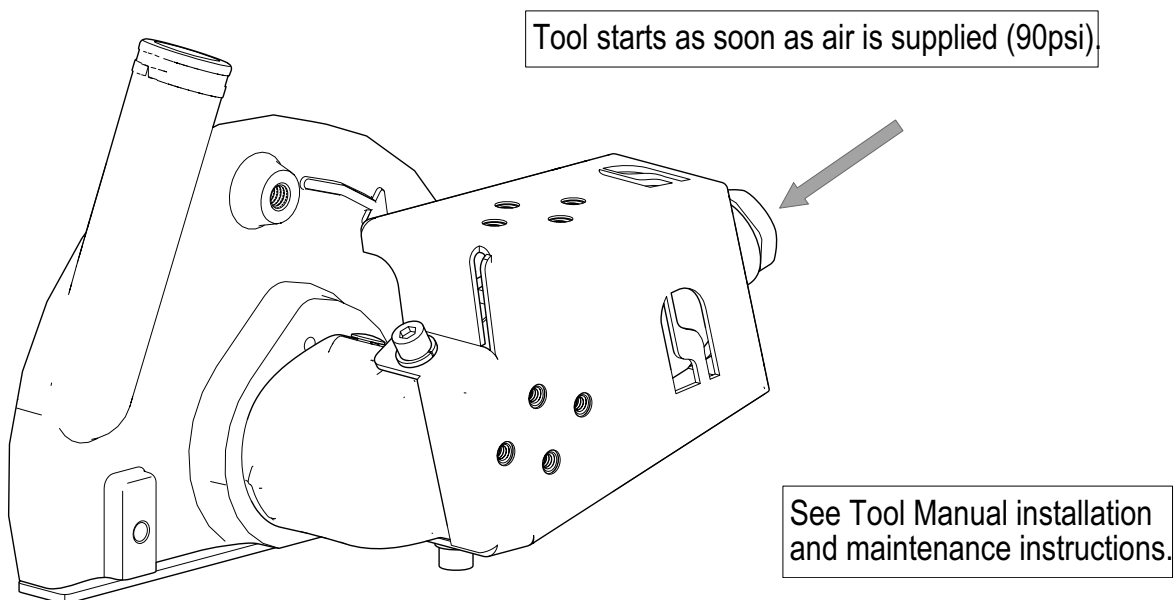
- Ejected abrasive can cause serious impact injury and must be appropriately guarded against.

1.3.7 RISKS RELATED TO MOVING PARTS

- Contact with moving abrasive belts or rotating abrasive disks can cause abrasion or entrapping injury and must be prevented.

1.5.13 EMISSIONS OF HAZARDOUS MATERIALS AND SUBSTANCES

- Contact with sparks or inhalation of hazardous or toxic dust generated by grinding or sanding applications can cause injury and must be prevented.

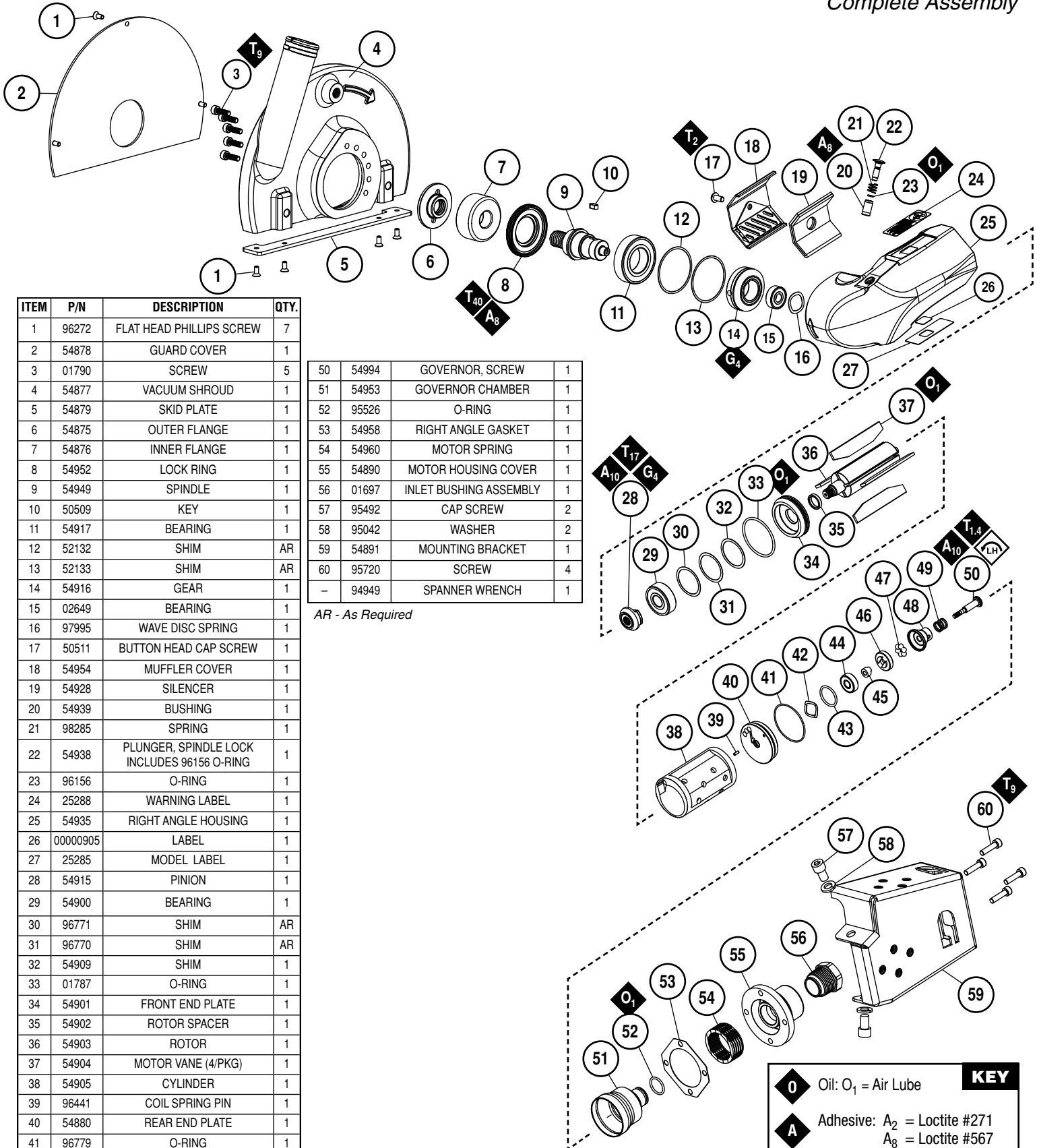


Model

53291B - 7" Dia., 8,500 RPM, Tool Only

Robotic Rebel Series Diamond Cut-Off

Complete Assembly



ITEM	P/N	DESCRIPTION	QTY.
1	96272	FLAT HEAD PHILLIPS SCREW	7
2	54878	GUARD COVER	1
3	01790	SCREW	5
4	54877	VACUUM SHROUD	1
5	54879	SKID PLATE	1
6	54875	OUTER FLANGE	1
7	54876	INNER FLANGE	1
8	54952	LOCK RING	1
9	54949	SPINDLE	1
10	50509	KEY	1
11	54917	BEARING	1
12	52132	SHIM	AR
13	52133	SHIM	AR
14	54916	GEAR	1
15	02649	BEARING	1
16	97995	WAVE DISC SPRING	1
17	50511	BUTTON HEAD CAP SCREW	1
18	54954	MUFFLER COVER	1
19	54928	SILENCER	1
20	54939	BUSHING	1
21	98285	SPRING	1
22	54938	PLUNGER, SPINDLE LOCK INCLUDES 96156 O-RING	1
23	96156	O-RING	1
24	25288	WARNING LABEL	1
25	54935	RIGHT ANGLE HOUSING	1
26	00000905	LABEL	1
27	25285	MODEL LABEL	1
28	54915	PINION	1
29	54900	BEARING	1
30	96771	SHIM	AR
31	96770	SHIM	AR
32	54909	SHIM	1
33	01787	O-RING	1
34	54901	FRONT END PLATE	1
35	54902	ROTOR SPACER	1
36	54903	ROTOR	1
37	54904	MOTOR VANE (4/PKG)	1
38	54905	CYLINDER	1
39	96441	COIL SPRING PIN	1
40	54880	REAR END PLATE	1
41	96779	O-RING	1
42	96772	WAVE SPRING WASHER	1
43	96773	O-RING	1
44	54907	BEARING	1
45	54881	GOVERNOR SPACER	1
46	54992	GOVERNOR BASE	1
47	54997	BALL	6
48	54993	GOVERNOR CAP	1
49	54996	GOVERNOR SPRING	1

50	54994	GOVERNOR, SCREW	1
51	54953	GOVERNOR CHAMBER	1
52	95526	O-RING	1
53	54958	RIGHT ANGLE GASKET	1
54	54960	MOTOR SPRING	1
55	54890	MOTOR HOUSING COVER	1
56	01697	INLET BUSHING ASSEMBLY	1
57	95492	CAP SCREW	2
58	95042	WASHER	2
59	54891	MOUNTING BRACKET	1
60	95720	SCREW	4
-	94949	SPANNER WRENCH	1

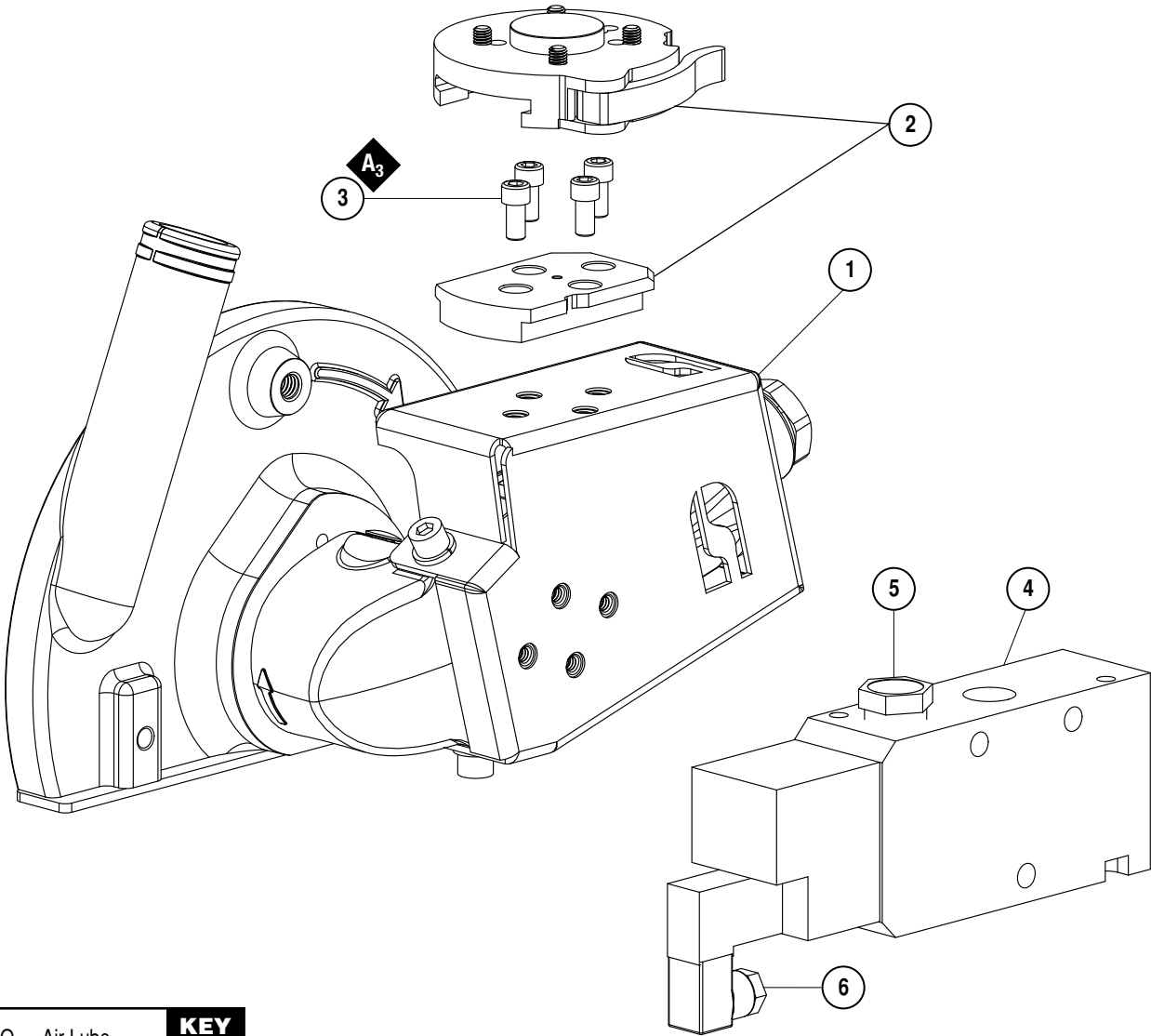
AR - As Required

KEY	
O	Oil: O ₁ = Air Lube
A	Adhesive: A ₂ = Loctite #271 A ₈ = Loctite #567 A ₁₀ = Loctite #243
G	Grease: G ₄ = 96664
T_x	X = Torque Value (N•m) (N•m x 8.85 = lb•in.)
Always follow adhesive manufacturers cleaning and priming recommendations.	

Models
53291BK - 7" Dia., 8,500 RPM, Kit

Robotic Rebel Series Diamond Cut-Off
Complete Assembly

ITEM	P/N	DESCRIPTION	QTY.
1	53291B	ROBOTIC 7" DIAMOND CUT-OFF TOOL	1
2	58160	MILLIBAR TOOL CHANGER	1
3	95535	SCREW	4
4	98523	3-WAY SOLENOID VALVE	1
5	98533	BREATHER VENT	1
6	98525	COIL CONNECTOR	1



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Oil: O₁ = Air Lube

A

Adhesive: A₁₀ = Loctite #243

T

Torque: N•m x 8.85 = lb•in.

KEY

Always follow adhesive manufacturers cleaning and priming recommendations.

LIMITED LIFETIME WARRANTY

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

MACHINE SPECIFICATIONS

Model	Speed	Power	Air Consumption	Diameter	Weight	Length	Height
53291B	8,500 RPM	2.8 hp (2,088 W)	115 SCFM (4,406 LPM)	7" (180 mm)	8.4 lb. (3.8 kg)	16.2" (411 mm)	7.6" (193 mm)
53291BK							

Additional Specifications: Air Inlet Thread 1/2" NPT • Hose I.D. 1/2" (10 mm) • Spindle Thread 5/8"-11

Visit dynabrade.com for your model's current vibration and sound data.

Wheel Specifications: Maximum metal thickness of wheel is 0.085", maximum diamond abrasive thickness is 0.135".

OPTIONAL ACCESSORIES



Whip Hose

- 1/2" diameter air line with 1/2" NPT female fitting, and 1/2" NPT male Mega Flow Plug.

Part No. 94825: 5 feet



Tune-Up Kit

- Contains high and medium wear parts.

Part No. 96644



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. 95842: 1 pt. (473 ml)

Part No. 95843: 1 gal. (3.8 L)



Ultra Grease

- For use when current grease is hard packed or full of debris.
- Apply every 1,000 hours of tool use or everytime tool is rebuilt.

Part No. 96664: 45 grams

REFERENCE CONTACT INFORMATION

American National Standards Institute (ANSI)

www.ansi.org

Compressed Air & Gas Institute (CAGI)

www.cagi.org

European Committee for Standardization (PNEUROP)

www.pneurop.org

International Organization of Standards (ISO)

www.iso.org

U.S. Government Publishing Office (GPO)

www.gpo.gov

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