.4 hp Die Grinder

Ergo-Grip, Right Angle

PD12•04
February, 2012

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

Model	RPM	Exhaust	Muffler	Insert Size
46000	12,000	Rear	Extended	1/4" & 6 mm
46001	15,000	Rear	Extended	1/4" & 6 mm
46002	20,000	Rear	Extended	1/4" & 6 mm
47800	12,000	Front	Front	1/4" & 6 mm
47801	15,000	Front	Front	1/4" & 6 mm
47802	20,000	Front	Front	1/4" & 6 mm
48315	12,000	Rear	Standard	1/4" & 6 mm
48316	15,000	Rear	Standard	1/4" & 6 mm
48317	20,000	Rear	Standard	1/4" & 6 mm
49425	3,200	Rear	Standard	1/4" & 6 mm



Model 46002

DIE GRINDER

DYNABRADE® LIFETIME WARRANTY MADE IN USA

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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 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.


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 statues, 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 INSTRUCTIONS


Carefully Read and Understand the General and Die 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: .4 hp Die Grinder is ideal for deburring, deflashing, surface preperation, cleaning and finishing using proper abrasive stones, abrasive mounted wheels, molded abrasives and carbide burrs. Intended for use with abrasives less than 2" (50 mm) diameter.

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 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.

INSTALLATION

- 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: **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 1 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). **95842** Dynabrade Air Lube is recommended.

MAINTENANCE SCHEDULE

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.

Note: *Turbine style air motors do not require oil.*

Daily (every 8 hours):

- Inspect tool and accessories for damage or broken parts. Replace items as necessary to ensure proper operation and safety.

◆ O — 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.)

◆ W — Lubricate wick system and right angle gears through gear case fitting. Apply 3 plunges of **95848** Gear Oil. Use **95541** Lubricant Gun (Prime lubricant gun before use).

- 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/Once a Week (which ever comes first):

- 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 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, air control rings 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.

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.*

Every 50 Hours:

◆ G — Lubricate planetary gears through gear case fitting with 3 plunges of **95542** Grease. Use **95541** Lubricant Gun. (Prime lubricant gun before use).

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.
- 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 housing and replace. User is responsible for maintaining specification information.

◆ O — 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.

HANDLING & 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 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) and recycle or discard per local, state and/or federal regulations as to not harm the environment.

NOTICE

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.

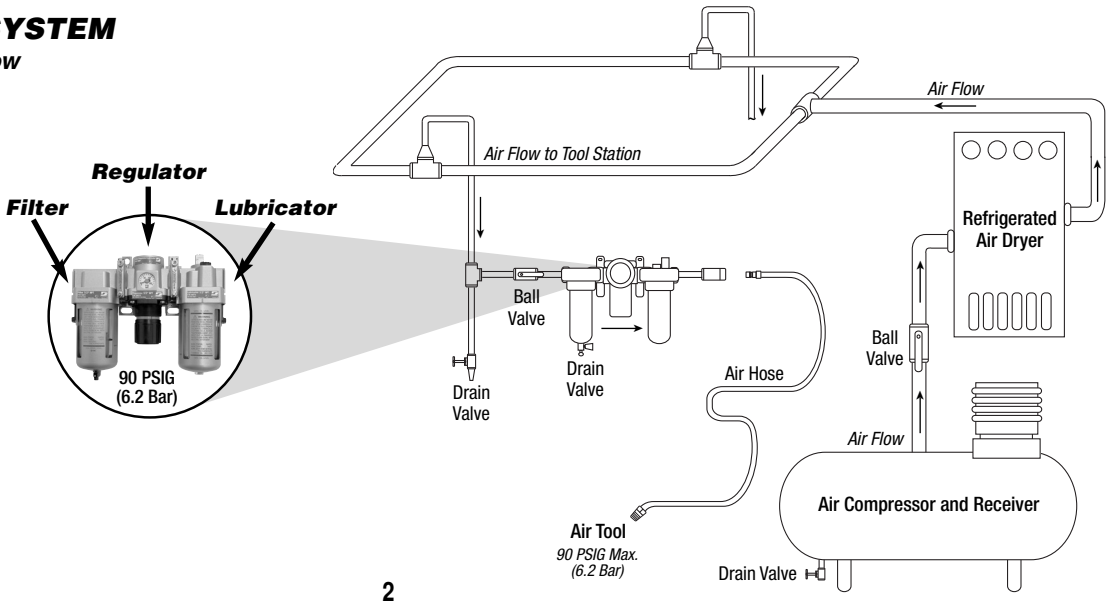
CLOSED LOOP AIR SYSTEM

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.

Lubricator Setting

1 Drop/Minute per 20 SCFM



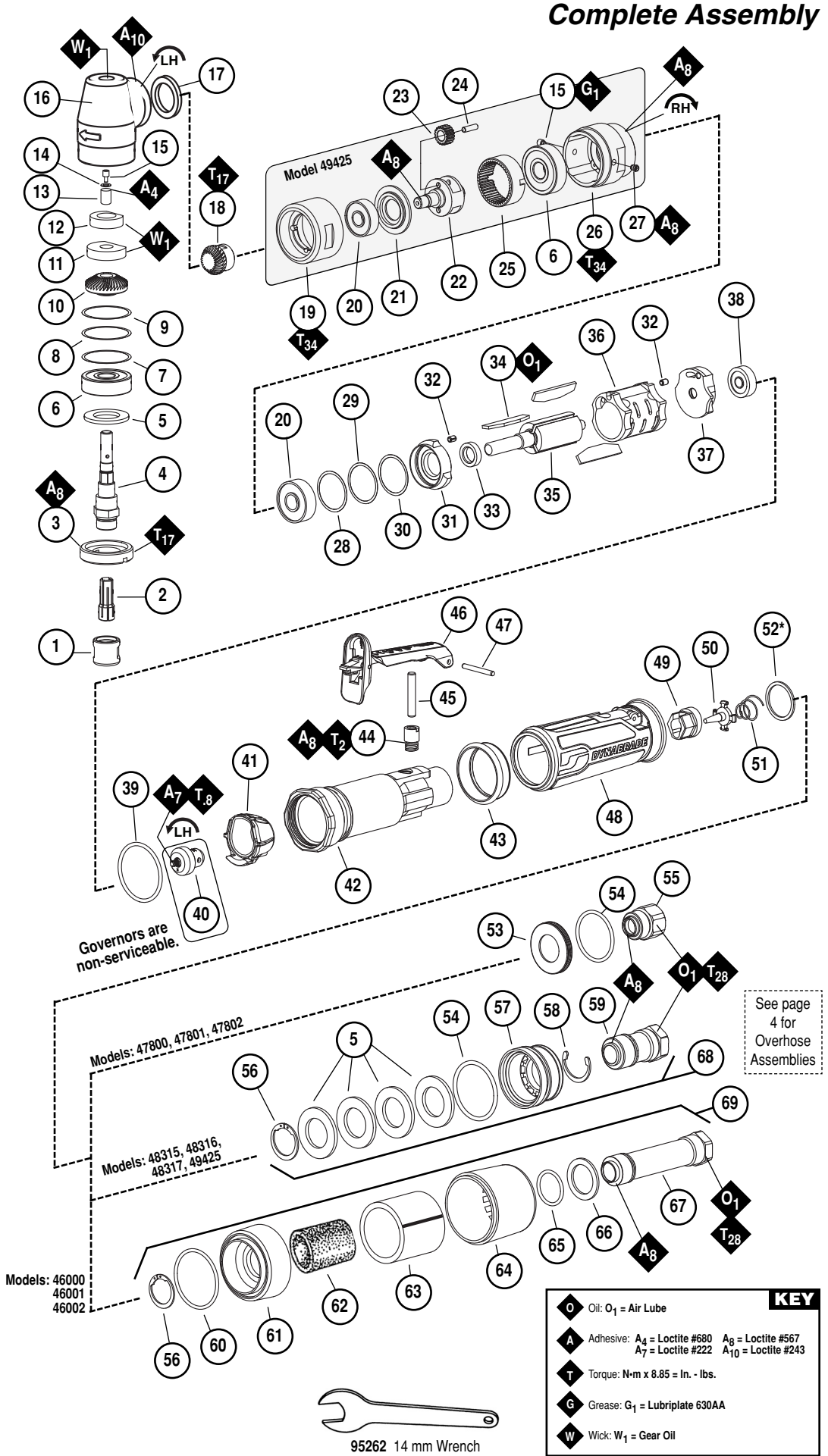
.4 hp Die Grinder
Complete Assembly

Models
46000, 46001, 46002, 47800, 47801, 47802, 48315, 48316, 48317, 49425

Index Key

No.	Part #	Description
1	**01484**	Collet Cap
2	**Collet Insert**	
	01485	1/4"
	01497	6 mm
3	**02035**	Lock Nut
4	**02032**	Collet Body - Spindle
5	**01486**	Felt Silencer (5 - Rear Exht.)
6	**54520**	Bearing (2 - Mdl: 49425)
7	**97116**	Shim .001" (As Required)
8	**97117**	Shim .002" (As Required)
9	**97118**	Shim .005" (As Required)
10	**Gear**	
	02623	12,000 RPM
	02597	15,000 RPM
	02599	3,200 & 20,000 RPM
11	**Wick - Bottom**	
	02042	12,000 RPM
	02044	3,200, 15K, 20K RPM
12	**Wick - Top**	
	02043	12,000 RPM
	02045	3,200, 15K, 20K RPM
13	**02033**	Needle Bearing
14	**02041**	Gear Oil Plate
15	**01041**	Lube Fitting (2 - Mdl: 49425)
16	**Right Angle Housing**	
	02052	Front Exhaust Models
	02031	Rear Exhaust Models
17	**01728**	Felt Silencer (Front Exhaust)
18	**Pinion**	
	02624	12,000 RPM
	02598	15,000 RPM
	02600	3,200 & 20,000 RPM
19	**50019**	Lock Nut
20	**02649**	Bearing
21	**50022**	Spacer
22	**50023**	Planetary Carrier
23	**06213**	Gear (2)
24	**54472**	Pin (2)
25	**54468**	Ring Gear
26	**50024**	Gear Case
27	**50784**	Set Screw
28	**54543**	Shim - .001" (As Required)
29	**54544**	Shim - .002" (As Required)
30	**54551**	Shim - .003" (As Required)
31	**01478**	Front Bearing Plate
32	**50767**	Pin (2)
33	**01479**	Spacer
34	**01480**	Vane Set (4/Pkg.)
35	**Rotor**	
	45291	3,200 RPM
	45293	12K, 15K, 20K RPM
36	**01476**	Cylinder
37	**02676**	Rear Bearing Plate
38	**02696**	Bearing
39	**96077**	O-Ring
40	**Governor Assembly**	
	45269	3,200 RPM (Blue)
	45272	12K, 15K, 20K RPM (Green)
41	**45320**	Governor Chamber
42	**45305**	Housing Core (Mdl: 49425)
	45307	Housing Core (12,000 RPM & higher)
43	**01547**	Collar
44	**45315**	Throttle Bushing
45	**97045**	Pin
46	**45263**	Safety Throttle Lever
47	**97060**	Pin
48	**Exterior Housing** (Laser Etched)	
	45211	Model - 46000
	45212	Model - 46001
	45213	Model - 46002
	45214	Model - 47800
	45215	Model - 47801
	45216	Model - 47802
	45224	Model - 48315
	45225	Model - 48316
	45226	Model - 48317
	45230	Model - 49425
49	**45310**	Seal
50	**58365**	Tip Valve
51	**01468**	Spring
52*	**01564**	Air Control Ring
53	**53190**	Block Plate
54	**96065**	O-Ring
55	**01494**	Inlet Adapter Assembly
56	**95711**	Retaining Ring
57	**01446**	Air Deflector
58	**95620**	Retaining Ring
59	**01578**	Inlet Adapter Assembly
60	**95438**	O-Ring
61	**94521**	Muffler Base
62	**94524**	Sintered Bronze Muffler
63	**94525**	Felt Muffler
64	**94522**	Muffler Cap
65	**95375**	O-Ring
66	**94526**	Spacer
67	**94523**	Inlet Adapter Assembly
68	**94535**	Standard Muffler Assembly
69	**94520**	Extened Muffler Assembly

* Only for use with Models 47800, 47801 & 47802.



See page 4 for Overhose Assemblies

95262 14 mm Wrench

KEY

- O — Oil: O_1 = Air Lube
- A — Adhesive: A_4 = Loctite #680, A_8 = Loctite #567, A_7 = Loctite #222, A_{10} = Loctite #243
- T — Torque: N•m x 8.85 = In. - lbs.
- G — Grease: G_1 = Lubriplate 630AA
- W — Wick: W_1 = Gear Oil

Always follow adhesive manufacturers cleaning and priming recommendations.

LIFETIME WARRANTY

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

MACHINE SPECIFICATIONS

Model	Speed	Power	Sound	Air Consumption	Collet Size	Weight	Length	Height
46000	12,000 RPM	.4 hp (298 W)	78 db(A)	23 SCFM 651 (LPM)	1/4" & 6 mm	1.2 lb. (.55 kg)	8" (203 mm)	2.9" (73 mm)
46001	15,000 RPM	.4 hp (298 W)	75 db(A)	23 SCFM 651 (LPM)	1/4" & 6 mm	1.2 lb. (.55 kg)	8" (203 mm)	2.9" (73 mm)
46002	20,000 RPM	.4 hp (298 W)	78 db(A)	23 SCFM 651 (LPM)	1/4" & 6 mm	1.2 lb. (.55 kg)	8" (203 mm)	2.9" (73 mm)
47800	12,000 RPM	.4 hp (298 W)	84 db(A)	25 SCFM 708 (LPM)	1/4" & 6 mm	1 lb. (.46 kg)	6" (150 mm)	2.9" (73 mm)
47801	15,000 RPM	.4 hp (298 W)	86 db(A)	25 SCFM 708 (LPM)	1/4" & 6 mm	1 lb. (.46 kg)	6" (150 mm)	2.9" (73 mm)
47802	20,000 RPM	.4 hp (298 W)	85 db(A)	25 SCFM 708 (LPM)	1/4" & 6 mm	1 lb. (.46 kg)	6" (150 mm)	2.9" (73 mm)
48315	12,000 RPM	.4 hp (298 W)	81 db(A)	23 SCFM 651 (LPM)	1/4" & 6 mm	1 lb. (.47 kg)	6.5" (164 mm)	2.9" (73 mm)
48316	15,000 RPM	.4 hp (298 W)	79 db(A)	23 SCFM 651 (LPM)	1/4" & 6 mm	1 lb. (.47 kg)	6.5" (164 mm)	2.9" (73 mm)
48317	20,000 RPM	.4 hp (298 W)	83 db(A)	23 SCFM 651 (LPM)	1/4" & 6 mm	1 lb. (.47 kg)	6.5" (164 mm)	2.9" (73 mm)
49425	3,200 RPM	.4 hp (298 W)	81 db(A)	23 SCFM 651 (LPM)	1/4" & 6 mm	1.5 lb. (.68 kg)	7.7" (196 mm)	2.9" (73 mm)

Additional Specifications: Air Inlet Thread 1/4" NPT • Hose I.D. 1/4" (6 mm)
Sound Level is the pressure measurement according to the method outlined in ISO regulation ISO-15744

OPTIONAL ACCESSORIES



Motor Tune-Up Kit
- Includes assorted parts to help maintain and repair motor.

Part No. 96541



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. 5842: 1pt. (473 ml)
Part No. 5843: 1gal. (3.8 L)

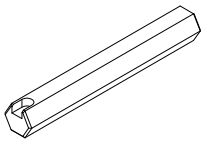


Overhose Assembly
- Redirects exhaust away from operator.

Part No. 94994
- For use with standard exhaust models only.

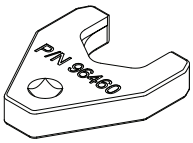
Part No. 94995
- For use with extended exhaust models only.

SPECIAL REPAIR TOOLS



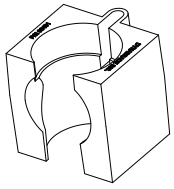
Hex Key Wrench
- 12 mm hex
- Use in housing core or air inlet.

Part No. 96399



Crowfoot Wrench
- 3/8" Drive
- 34 mm
- Use on throttle body, housing core and lock nuts.

Part No. 96460



Repair Collar
- Used to protect right angle and 7˚ offset housings when placed in a vise.

Part No. 96461

REFERENCE CONTACT INFORMATION

American National Standards Institute (ANSI)
1899 L Street, NW, 11th Floor • Washington, DC 20036 • Tel: 1 (202) 293-8020

Compressed Air & Gas Institute
1300 Sumner Ave. • Cleveland, OH 44115-2851
Tel: 1 (216) 241-7333 • Fax. (216) 241-0105

European Committee for Standardization
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International Organization of Standards
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