

PNEUMATIC TOOL SAFETY & OPERATING GUIDELINES



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DO NOT DISCARD!

**MAKE ACCESSIBLE TO ALL
PERSONNEL INVOLVED IN
THE CARE AND USE OF
POWER TOOLS.**





GENERAL AND TOOL SPECIFIC SECTIONS MUST BE READ AND UNDERSTOOD BEFORE OPERATING ANY PORTABLE PNEUMATIC TOOL!

This document must be read and understood by operating personnel and safety manager. Protection to operating personnel, as well as adjacent areas, shall be maintained at all times. The user and/or the user's employer shall conduct a risk assessment of workplace hazards including exposure limits.

Always comply with: General Industry Safety & Health Regulations (www.osha.gov), EN Standards for Hand Held Non-Electric Power Tools (www.cen.eu), American National Standards Institute (www.ansi.org), Compressed Air and Gas Institute (www.cagi.org), International Organization for Standardization (www.iso.org) and Regional Regulations.

ADDITIONAL SAFETY REFERENCE MATERIALS ARE AVAILABLE AT WWW.DYNABRADE.COM




SAFETY SIGNAL WORDS

 DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.
 WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury. It may also be used without the safety alert symbol as an alternative to "NOTICE."
 NOTICE	Is the preferred signal word to address practices not related to personal injury. The safety alert symbol shall not be used with this signal word. As an alternative to "NOTICE", the word "CAUTION" without the safety alert symbol may be used to indicate a message not related to personal injury.

SAFETY SYMBOLS

Dynabrade Inc. safety labels/symbols follow the guidelines outlined in ISO 3864. In order to help users understand the meaning of the safety labels/symbols, the standard allows the reproducing of the figures and captions below. Some colored symbols are reproduced in this document in grayscale. A complete color version may be found at www.dynabrade.com.

Geometric surround shapes:

	Warning - A black graphical symbol inside a yellow triangle with a black triangular band defines a safety sign that indicates a hazard.		Prohibition - A black graphical symbol inside a red circular band with a red diagonal bar defines a safety sign that indicates that an action shall not be taken or shall be stopped.		Mandatory Action - A white graphical symbol inside a blue circle defines a safety sign that indicates that an action shall be taken to avoid a hazard.
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For consistency Dynabrade Inc. also uses the above symbols and word definitions in collateral material, which includes this Pneumatic Tool Safety Guidelines. For product safety information in Product Manuals, Instructions, and other Collateral Materials, Dynabrade Inc. adheres to ANSI Z535.6-2006.

	Refer to instruction manual/booklet		Hearing protection must be worn
	Eye protection must be worn		Respiratory protection must be worn
	Electric shock hazard		Safety Alert
	Vibration hazard		Air hose hazard
	Fire hazard		Entanglement hazard
	Explosion hazard		Crush hazard

GENERAL - All Tools



Always wear personal protective equipment.
User of tool is responsible for following regional safety regulations. For overhead work, wear a safety helmet.

Some dust and fumes created by sanding, grinding, drilling, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm.



Some examples are:

- Lead from lead-based paints
- Crystalline silica from bricks, 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, vacuum tools and dust masks specially designed to filter out microscopic particles.

Creation of or disturbance of existing dust may be hazardous.

Airborne dust and fumes may be harmful to respiratory health.

Collect dust and/or fumes at the point of emission through use of extraction, suppression or integrated features. Direct the exhaust to minimize disturbance of dust.



Only qualified and trained operators should install, adjust or use a power tool.

Operating a tool with spindle speed exceeding rated speed may be hazardous.

A tool operating with spindle speed exceeding rated speed may cause accessory product to explode or malfunction, resulting in injury or death.



Tool must be tested. Check spindle speed of tool regularly with 90 PSIG (6.2 Bar) at tool inlet without accessory mounted. Unless otherwise stated the no-load speed may not exceed the rated speed.

Accessories running at speeds greater than manufacturer rating may be hazardous.

Operating accessories above their rated speed may cause malfunction or excessive vibration.



Tool speed must never exceed accessory speed rating. Check accessory manufacturer for details on maximum operating speed or special mounting instructions.



Carrying tools by air hose may be hazardous.

Tools may accidentally start and cause injury, or damage to tool or accessory.

DO NOT carry tool by air hose.

Tools are intended to be turned on to do work. After work is complete turn tool off.



Tools may cause hazardous situations.

Improper use of tool could cause injury or death.

Read and understand all instructions before operating/servicing any Dynabrade product.



Damaged tools and accessories may cause hazardous situations.

A tool or accessory that has been dropped or damaged by mishandling may not be able to withstand pressurized air.

Always visually inspect tool and accessory before use. DO NOT use tool if it appears damaged. DO NOT use an accessory that has been dropped.



Tools and the work they perform may produce hazardous sound levels.

Hearing damage and loss of hearing may result when not wearing proper hearing protection.

Approved hearing protection must be worn when exposure to sound exceeds regional limits.



Flying particles and debris may be discharged when operating tools.

High velocity particles and debris may cause injury or death.

Approved personal protective equipment including impact resistant eye protection must be worn at all times. The grade of protection required should be assessed for each use.

GENERAL - All Tools



Illegible or missing specification markings may be hazardous.

Illegible or missing specifications do not provide necessary tool identification, which may lead to injury or death.

Specification markings must be kept legible at all times. Employer is responsible for maintaining specification information.



Modifying tools may create hazardous situations.

Operating modified tools may cause injury or death.

DO NOT modify Dynabrade products, they must be used as intended.



Too firm of a grip, especially with a heavy tool, can cause a higher level of vibration transmission to the hand.

A tight grip can increase vibration to the hand and can cause damage to nerves and blood vessels.

Hold the tool with a light but safe grip taking into account the reaction forces or use a tool balancer or support to avoid injury due to vibration.



DO NOT allow the inserted accessory to chatter on the workpiece, as this is likely to cause a substantial increase in vibration.

Cold air shall be directed away from the hands.



If tool has silencer, always ensure that it is in place and in good working order.



Operating tool with air inlet pressure greater than tool's PSIG (Bar) rating will increase tool speed.

Operating accessories above the rated speed indicated by manufacturer may cause malfunction or excessive vibration.

DO NOT expose air tool to inlet pressure above tool's PSIG (Bar) rating.



Tools and moving parts create vibration.

Vibration may cause disabling damage to the nerves and blood supply of the hands and arms.

Limit exposure to vibration based on regional guidelines. Wear warm clothing when working in cold conditions and keep hands warm and dry. If discomfort occurs stop using the tool, notify supervisor and consult physician.



Accessories not properly mated with tools may cause a hazard.

Use of improperly sized or type of accessory may cause excessive vibration or create an unstable working environment.

Follow tool specifications before choosing size and type of accessory.

Operators and maintenance personnel shall be physically able to handle the bulk, weight, and power of the tool. Work in a well-lit organized environment with firm footing and good posture.

Improper use of a tool or use of a poorly maintained tool or accessory may create a hazard.

Poorly maintained tool or accessory could cause reduced power, performance, or unsafe conditions; unnecessary vibration, noise, dust or fumes may be generated which may cause injury or death.

Properly select, use and maintain tool and accessories. Use only recommended lubricants.

Guards shall be securely in place and in good functional condition. Damaged, bent or severely worn guards shall be replaced with the tool manufacturer's recommended guards.

Applying excessive force to accessory or tool may be hazardous.

Using excessive force may lead to lack of control, increased vibration, or component failure, which may cause injury or death.

DO NOT use excessive force.



Use of a damaged or defective accessory is hazardous.

Damaged or defective accessories may fail, detach or increase vibration.

Inspect accessories for damage or defects prior to installation on tools.

Worn accessories require excessive force and may be hazardous.

Compensating for a worn accessory with excessive force may cause the accessory to fail, which may cause injury or death.

DO NOT use worn or damaged accessories.

GENERAL - All Tools



Unintentional tool starting may create a hazard.

If throttle is activated as tool is connected to air supply, tool operation will begin immediately.

DO NOT activate throttle when connecting tool to air supply.

Tools attached to air supply may start unintentionally, creating a hazard.

Unintentional tool starting may cause injury or death.

Fully depressurize air supply when tool is idle or when changing accessories.

All tool maintenance must be done with tool disconnected from air supply.

If throttle remains activated during an interruption to air supply; tool operation will begin immediately when air supply resumes.

Unintentional tool stop and start may cause injury or death.

Release throttle lever in the case of an interruption to air supply. Put in off position.

Altering a tool so that it remains in the ON position may be hazardous.

Injury or death may occur as a result of not being able to turn the tool OFF in case of a sudden emergency.

DO NOT alter or lock tool in the ON position.

Setting a tool down while it is still in motion may create a hazard.

Setting a tool down while it is still in motion may cause it to move uncontrollably and may cause injury or death.

Never set a tool down while it is still in motion.

Operating tools when fatigued or under the influence of alcohol or drugs is hazardous.

Injury or death may occur.

DO NOT operate tools when fatigued or under the influence of alcohol or drugs.

If tool is equipped with a reverse mechanism, be aware of the direction of rotation before operating tool.



A tool with a malfunctioning, modified or removed governor may create a hazard.

Operating a tool with a missing or malfunctioning governor may cause injury or death.

DO NOT modify or remove tool's governor.



Tool is not insulated against contact with electric power. Tools coming in contact with electrical power may be hazardous.

Electrical power may cause injury or death.

DO NOT contact electrical power, either exposed or hidden.



Ensure that there are no electrical cables, gas pipes, etc., which can cause a hazard if damaged by use of the tool.



Tools used in flammable or explosive environments may be hazardous.

Sparks and debris may lead to fire or explosions which may cause injury or death.

DO NOT use tools in flammable or explosive environments.



Explosive atmospheres may create hazardous situations.

Sanding and grinding creates dust and fumes which may create an explosive atmosphere causing injury or death.

Always use dust extraction or suppression systems which are suitable for the material being processed.



A workpiece that is not secured properly may be hazardous.

A improperly secured workpiece may move, fall or create excessive noise; causing injury or death.

Use a vise or clamping device to secure workpiece. Put appropriate clamp in such a way as to dampen work piece to lessen noise hazard of "ringing".



Failure of the workpiece, accessories or even the inserted tool can generate high-velocity projectiles which may create a hazard.

High velocity projectiles may cause injury or death.

Always wear personal protective equipment including impact resistant eye protection when operating tools. The grade of protection required should be assessed for each use.



Unattended tools may be hazardous.

An unqualified person may operate an unattended tool.

DO NOT leave tools unattended, store in a safe, secure place.

GENERAL - All Tools



Use only recommended fittings and air line sizes. Air hose assemblies must have a minimum working pressure rating of 150 PSIG (10 Bar), or 150 percent of the maximum pressure produced in the system, whichever is higher. (See Tool Specification Table.)

Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whipcheck safety cables shall be used to safeguard against possible hose-to-tool or hose-to-hose connection failure.



Pressurized air supply hoses and fittings may be hazardous.
Injury or death may occur from free discharge of pressurized air or a whipping hose.

DO NOT use damaged, frayed or deteriorated air hoses and fittings. Always check for damaged or loose hoses and fittings.

Never direct high pressure air at yourself or anyone.



Low flash point chemicals may be hazardous.
Chemicals with a low flash point may ignite and cause injury or death.

DO NOT clean or maintain tools with chemicals that have a low flash point.

Accessories that have been rapidly cooled may create a hazard.
Rapidly cooling a hot accessory may make it brittle and cause it to fail in an unexpected manner causing injury or death.

Never rapidly cool a hot accessory by immersing in a liquid.



Use of non-Dynabrade parts may be hazardous.
Non-Dynabrade parts may fail prematurely and cause injury or death.

Use only genuine Dynabrade replacement parts.



Tools in operation have exposed moving parts which may be hazardous.
Placing body, clothing or jewelry near exposed moving parts of tool may have the potential to cut, sever or choke.

Always direct moving parts of tool away from operator. Avoid body contact with exposed moving parts of tool, and properly secure loose clothing, hair and jewelry.

Tools can create hazardous reaction torque at start-up and in use.
Reaction torque may cause the tool to twist, which may cause injury or death.

When provided always use side handle or additional hand grip to stabilize reaction torque.

When servicing tool take precautions to avoid exposure to hazardous substances that may remain deposited on tool due to work processes. NOTE: Skin exposure to hazardous dust can cause severe dermatitis. If dust is generated or disturbed during the maintenance procedure, it can be inhaled.

When a second handle is provided for the tool, ensure it is properly fastened. Use two hands to control and operate tool.

GENERAL - All Tools



Repetitive motions may be hazardous.
Injuries may result from repetitive work and motion.

Limiting repetitive motion may reduce potential for injury. If discomfort occurs notify supervisor and consult a physician.

Cluttered or slippery work areas may be hazardous.
Cluttered or slippery work areas may cause tripping or slipping, and impair visibility. Make sure that work area provides firm footing, is uncluttered and bystanders are at a safe distance.

During use air tools and accessories may become hot or cold. Protect against contact with hot or cold surfaces by using well fitted gloves.

To avoid burns and/or cuts never touch an accessory immediately after use.

The use of air tools can expose the operator's hands to hazards including crushing, impacts, cuts and abrasions and heat. Wear suitable gloves to protect hands.

Improperly suspended/supported tools may be hazardous.
Tools not properly secured may fall and injure operator or bystander.

When using a suspension/support make certain tool is properly attached.

DIE GRINDER - Straight-Line, Angle and Vertical



OPERATOR MUST FOLLOW ALL GENERAL SAFETY WARNINGS/CAUTIONS PG 2-6

Beware, that there is a running-on of the rotary inserted tool after the start-and-stop device has been released. For turbine die grinders, the stopping time can be of the order of several seconds

Operating a die grinder with a mandrel that does not match the collet insert diameter may be hazardous.

A mandrel diameter that does not match the collet insert may become dislodged from the collet insert which may cause injury or death.

With the air supply disconnected from the tool, tighten collet cap to ensure accessory is properly secured. Non-secured accessories must not be used.



The distance that an accessory extends from the collet "overhang" affects the speed rating of the accessory. Excessive overhang conditions may be hazardous.

Overextending an accessory may cause the mandrel to bend and malfunction which may result in injury or death.

Refer to accessory manufacturer's specifications on overhang. As an additional reference see ANSI B7.1 for charts showing the effects of overhang on the speed rating for various shaped accessories.

Operating a die grinder with an inappropriate accessory may be hazardous.

An inappropriate accessory may cause the tool to react erratically, which may result in injury or death.

DO NOT use inappropriate accessories such as grinding wheels, router bits, cut-off wheels, saws, etc. on a die grinder.



Operating a damaged or defective abrasive mounted wheel may be hazardous.

A damaged abrasive mounted wheel may explode and may cause injury or death.

Inspect the abrasive mounted wheel for chips, cracks or defects before use. DO NOT use an abrasive mounted wheel that has been dropped. Store and handle abrasive mounted wheel according to manufacturers' instructions.

Poorly maintained collets or inserts may be hazardous.

Collet assemblies may malfunction. Collet insert may not hold or release the inserted accessory, which may cause injury or death.

Regularly clean and inspect collet assembly parts for wear or damage.



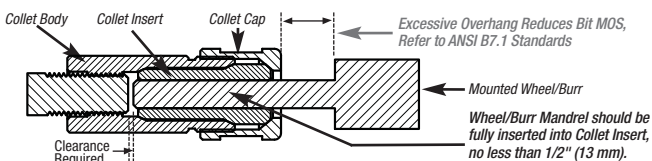
Operating mounted wheels carelessly or improperly may be hazardous.

Mounted wheels may explode during operation which may cause injury or death.

Make smooth contact with work surface. Avoid any bumping action or excessive pressure. When starting a wheel, work slowly until wheel gradually warms up.

PROPER DIE GRINDER ACCESSORY MOUNTING

With Power Source Disconnected from the Tool, Mount Compatible Accessory



Note: Intended for general reference use only. Always refer to ANSI B7.1, CAGI B186.1 and ISO 11148 for detailed requirements.



WARNING FAILURE TO COMPLY WITH ALL SAFETY REGULATIONS
MAY RESULT IN SERIOUS INJURY OR DEATH. REPETITIVE WORK
MOTIONS OR EXPOSURE TO VIBRATION MAY BE HARMFUL TO YOUR HANDS AND ARMS. SOME
DUST CREATED BY POWER SANDING, SAWING, GRINDING, DRILLING AND OTHER
CONSTRUCTION ACTIVITIES CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA,
USA, TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.



DYNABRADE

SOURCE MATERIALS

ISO 3864, ISO 7010, ANSI B7.1, ANSI Z535, ISO 11148,
CAGI B186.1, OSHA, Power Tool Institute

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