



MODELS
405GERS
400GER
400GERS
REAR
EXHAUST
Series



General Safety and Maintenance Manual



1.2 H.P. REAR EXHAUST DIE GRINDER



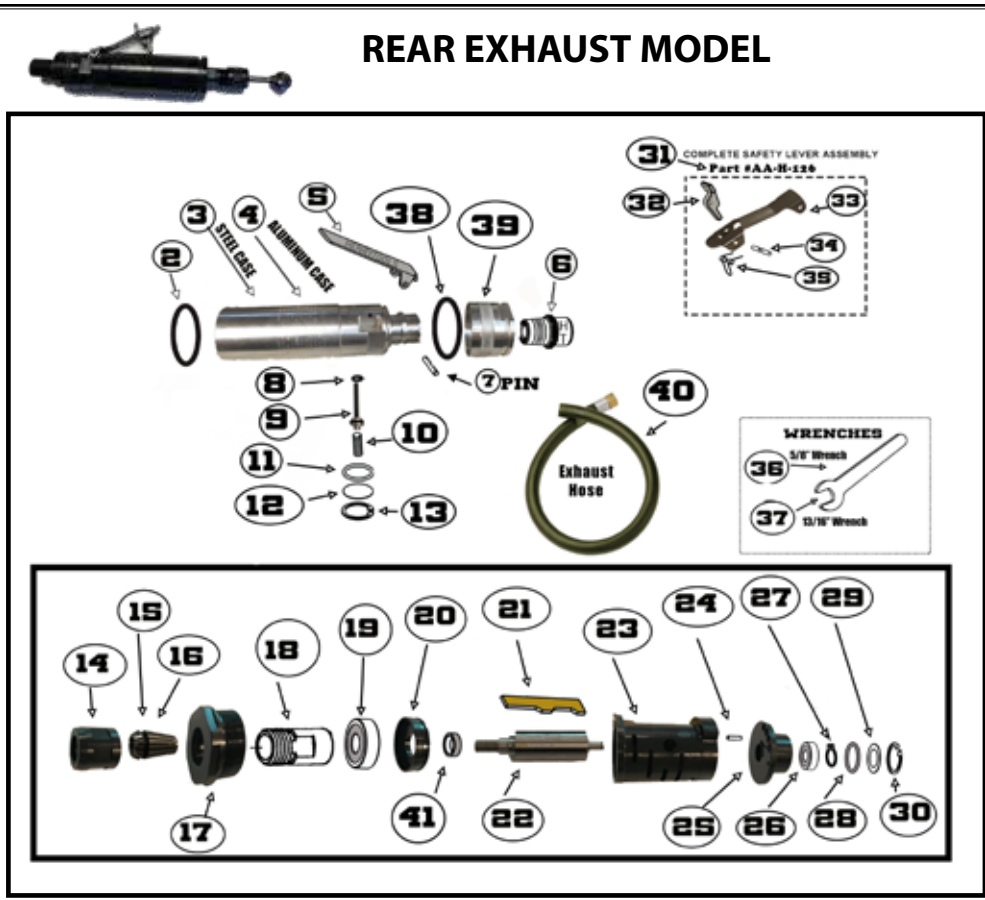
1.2 H.P. REAR EXHAUST DIE GRINDER

Model Number	Exhaust Direction	Throttle Type	Speed	Power Output	Case Material	Weight		Length	Diameter	Air Consumption	Collet Sizes
						Aluminum	Steel				
400GER	REAR EXHAUST	(L) Lever	18000 R.P.M	1.2 H.P. 900 W	Alum.	1.8 lb. (0.8 Kg)	2.6 lb. (1.2 Kg)	7.52 Inch (191 mm)	1.6 inches 41.1 mm	35 CFM (16.5 L/S) Max.	1/4 Inch Collet 3/8 Inch Collet
400GERS			20000 R.P.M			1.8 lb. (0.8 Kg)	2.6 lb. (1.2 Kg)	7.52 Inch (191 mm)			

THE HENRY TOOL CO., MANUFACTURED BY HENRY TOOLS
498 SO. BELVOIR BLVD., SOUTH EUCLID, OH 44121 U.S.A.
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REAR EXHAUST MODEL

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NO.	PART NUMBER	DESCRIPTION
1	N/A	N/A
2	H42	O-RING
3	H130-SR	STEEL EXHAUST CASE (REAR)
4	H130-R	ALUMINUM CASE (REAR)
5	H26	LEVER
6	841552	3/8 NPT TO 3/8 NPT BUSHING
7	H37	PIN
8	H32	O-RING
9	H41A	THROTTLE VALVE
10	400-G-34	SPRING
11	320-9R	O-RING
12	320-9F	VALVE COVER
13	592067	SNAP RING
14	HC-2	COLLET NUT
15	HC-3-1/4"	1/4" INSERT
16	HC-3-3/8"	3/8" INSERT
17	H38A	MOTOR RETAINER
18	H209B	COLLET BODY
19	H11	BEARING
20	H7R	FRONT END PLATE(Rear Exhs)
21	H60	ROTOR BLADE (5 are req'd)

NO.	PART NUMBER	DESCRIPTION
22	HB50	ROTOR
23	H2R	CYLINDER (For Rear Exhaust Model)
24	400-44	PIN
25	H3-R	REAR EXHAUST PLATE (rear exhs)
26	H9	BEARING
27	592016	SNAP RING
28	H23	O-RING
29	H24	BEARING COVER
30	H25	SNAP RING
31	AAH-126	COMPLETE SAFETY LEVER Assmb
32	H127	SAFETY LATCH
33	H126	SAFETY LEVER (BARE)
34	H128	PIN
35	H129	LEVER SPRING
37	1100-081	13/16" WRENCH
38	1100-063	5/8" WRENCH
39	H4A-S	EXHAUST DIFFUSER
40	H57	HOSE with Zip Tie
41	G50R	SPACER

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MODELS 405GERS 400GER 400GERS REAR EXHAUST Series

Model 400GERS Rear Exhaust die Grinder. 1.2 H.P. with an Erickson style collet.

REPAIR KIT	
510284	REPAIR KIT: (Includes: Bearings, Blades, Snap rings.
INCLUDES:	
1	H11 FRONT BEARING
5	ROTOR BLADES
1	H9 BEARING
1	592016 SNAP RING
1	H23 O-RING
1	H24 BEARING COVER
1	H25 SNAP RING
1	H32 O-RING

GRINDER SAFETY

ALWAYS COMPLY WITH:

1. General Industry Safety & Health Regulations, Part 1910, OSHA 2206, available from: Sup't of Documents; Government Printing Office; Washington DC 20402
2. Safety Code for Portable Air Tools, ANSI B186.1 available from: American National Standards Institute, Inc.; 1430 Broadway; New York, NY 10018
3. State and Local regulations.
4. Portions of the above codes and regulations are listed below for quick reference.

THESE EXCERPTS ARE NOT INTENDED TO BE ALL INCLUSIVE - STUDY AND COMPLY WITH ALL REGULATIONS!

1. Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.
2. After mounting a wheel or other abrasive accessory, the Grinder shall be run in a protected enclosure, at gradually increasing speed, for at least 60 seconds. When starting work with a cold wheel, apply it gradually to the workpiece until it becomes warm. Do not continue to use a grinder if:
 - The speed rating of the accessory is less than the speed of the grinder
 - If tool vibrates repair immediately.

- You sense changes in tool speed or an unusual increase in noise that would indicate tool is running at excessive speed.
- You notice excessive end play in spindle
- You hear any unusual sound from grinder

RETURN THE TOOL TO THE TOOL CRIB FOR SERVICE IMMEDIATELY.

3. Make certain no one is in front of or in line with the wheel or other abrasive accessory. Be aware that it may fail at this time if it is defective, improperly mounted or the wrong size and speed. Stop immediately if considerable vibration or other defects are detected. Shut off the air supply and determine the cause.
4. **OPERATOR PROTECTIVE EQUIPMENT** - Wear goggles or face shield at all times when the tool is in operation. Other protective clothing shall be worn, if necessary. SEE REGULATIONS.
5. Keep hands, loose clothing and long hair away from rotating end of tool.
6. Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.
7. Keep body stance balanced and firm. Do not overreach when operating this tool. High reaction torques can occur at or below the recommended air pressure.
8. Tool accessories may continue to rotate briefly after throttle is released.
9. Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.
10. This tool is not designed for working in explosive atmospheres. Do not use this tool on materials whose dust or fumes can cause a potentially explosive environment.
11. This tool is NOT insulated against electric shock.
12. Product Safety information - When Placing the Tool in Service
 - **NEVER MODIFY ANY PART OF THIS TOOL!!!!** Always install, operate, inspect and maintain this product in accordance with all applicable standards and regulations (local, state, country, federal, etc.).
 - Always use clean, dry air at 90 psig (6.2 bar/620 kPa) maximum air pressure at the inlet. Higher pressure may result in hazardous situations including excessive speed, rupture, or incorrect output torque or force.
 - Be sure all hoses and fittings are the correct size and are tightly secured.
 - Install a properly sized Safety Air Fuse upstream of air hose.

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Model 400GERS Rear Exhaust die Grinder. 1.2 H.P. with an Erickson style collet.

SAFETY FIRST!

ALWAYS COMPLY WITH:

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2.Safety Code for Portable Air Tools, ANSI B186.1 available from:

American National Standards Institute, Inc.; 1430 Broadway; New York, NY 10018

3.State and Local regulations.

Portions of the above codes and regulations are listed below for quick reference.

THESE EXCERPTS ARE NOT INTENDED TO BE ALL INCLUSIVE - STUDY AND COMPLY WITH ALL REGULATIONS! IMPORTANT SAFETY INFORMATION ENCLOSED.

READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING TOOL.

IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS MANUAL INTO THE HANDS OF THE OPERATOR.

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

PLACING TOOL IN SERVICE

- Always operate, inspect and maintain this tool in accordance with all regulations (local, state, federal and country), that may apply to hand held/hand operated pneumatic tools.
- Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.
- Do not use damaged, frayed or deteriorated air hoses and fittings.

A recommended spare part (or set) for every five (5) tools. Small, low cost or easily lost parts should be stocked as 3-4 per 10 tools.

WARNING': Disconnect the air supply hose before servicing the tool.

INSTALLATION

For most efficient operation, 90 psig (620 kPa) of clean dry air is required at the tool with the tool running, with-out extreme fluctuation. Minimum recommended hose size is 3/8" I.D. when the length of the hose is eight feet or less. An air line filter and lubricator, should be used. Hose should be blown out before attaching to the tool.

Loss of Power

A loss of power may not be related to the tool. First, check the air line pressure. It should be 90 psi at the tool while operating.

LUBRICATION

Lubricate the motor with an air line lubricator, using a light air motor oil. Adjust the lubricator to dispense one drop per cycle or three drops per minute.

CAUTION Do not use substitutes for oil and grease. This could result in damage to the tool.

MAINTENANCE

1. Proper and continuous lubrication.
2. Blow out air hose to assure a clean air supply.
3. Be sure the air filter and line lubricator are clean.
4. Fill the line lubricator before operation.
5. Place a few drops of oil into the air inlet of the tool before attaching the air line.

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6. Use moisture separators to remove water from the air line.

7. CAUTION Do not use solvent on bearings or on any parts made of a synthetic material.

8. Do not remove bearings unless replacement is necessary; bearings are a press fit.

Always wear eye protection when operating or performing maintenance on this tool.

Always wear hearing protection when operating this tool.

Keep hands, loose clothing and long hair away from rotating end of tool.

Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.

- Be sure all hoses and fittings are the correct size and are tightly secured. I Always use clean, dry air at 90 psig (6.2 bar/620 kPa) maximum air pressure. Dust, corrosive fumes and/or excessive moisture can ruin the motor of an air tool.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel.
- Do not remove any labels. Replace any damaged label.

1.TOOL INTENT -Henry Tools Grinders are designed for heavy material removal. For consistent, quality performance in foundries, welding shops, fabrication facilities, steel mills and shipyards. Tools shall be used only for purposes intended in their design (refer to product catalog).

2.AIR SUPPLY - Test and operate tools at 90 PSIG (6.2 bar/620 kPa) maximum air pressure at the inlet with 3/8" (10 mm) inside diameter air supply hose. Use recommended airline filters-regulators-lubricators. Choose tools with enough horsepower to drive the abrasive material you are using, and allow the grinder's speed to work for you.

3.UNUSUAL SOUND or VIBRATION - If tool vibrates or produces an unusual sound, repair immediately for correction.

4.OPERATOR PROTECTIVE EQUIPMENT - Wear goggles or face shield at all times tool is in operation. Other protective clothing shall be worn, if necessary. SEE REGULATIONS.

5.SAFETY MAINTENANCE PROGRAM - Employ a safety program to provide inspection and maintenance of all phases of tool operation and air supply equipment in accordance with "Safety Code for Portable Air Tools."

WARNING: The signal word "Warning" identifies all notes on safe work practices in this operating instruction, alerting to hazards for life and health of people. Observe these notes and proceed with special care in the cases described. Pass all safety instructions on to other operators. In addition to the safety instructions in this operating instruction, the general local safety and accident prevention rules must be observed.

Important Notes
CAUTION The signal word "caution!" identifies all portions of this operating instruction meriting special attention to ensure that guidelines, rules, hints and the correct work procedures are observed; and, to prevent damage to and destruction of the grinder and/or parts.

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A recommended spare part (or set) for every five (5) tools.

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Model 400GERS Rear Exhaust die Grinder. 1.2 H.P. with an Erickson style collet.

Small, low cost or easily lost parts should be stocked as 3-4 per 10 tools.

WARNING: Disconnect the air supply hose before servicing the tool.

INSTALLATION

For most efficient operation, 90 psig (620 kPa) of clean dry air is required at the tool with the tool running, with-out extreme fluctuation. Minimum recommended hose size is 3/8" I.D. when the length of the hose is eight feet or less. An air line filter and lubricator, should be used. Hose should be blown out before attaching to the tool.

Loss of Power

A loss of power may not be related to the tool. First, check the air line pressure. It should be 90 psi at the tool while operating.

LUBRICATION

Lubricate the motor with an air line lubricator, using a light air motor oil. Adjust the lubricator to dispense one drop per cycle or three drops per minute.

CAUTION Do not use substitutes for oil and grease. This could result in damage to the tool.

MAINTENANCE

1. Proper and continuous lubrication.
 2. Blow out air hose to assure a clean air supply.
 3. Be sure the air filter and line lubricator are clean.
 4. Fill the line lubricator before operation.
 5. Place a few drops of oil into the air inlet of the tool before attaching the air line.
 6. Use moisture separators to remove water from the air line.
 7. **CAUTION** Do not use solvent on bearings or on any parts made of a synthetic material.
 8. Do not remove bearings unless replacement is necessary; bearings are a press fit.
- Always wear eye protection when operating or performing maintenance on this tool.
- Always wear hearing protection when operating this tool.
- Keep hands, loose clothing and long hair away from rotating end of tool.
- Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.
- Keep body stance balanced and firm. Do not overreach when operating this tool. High reaction torques can occur at or below the recommended air pressure.
- Tool accessories may continue to rotate briefly after throttle is released.
- Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs.
- Seek medical advice before resuming use.
- Use accessories recommended by Henry Tools.
- This tool is not designed for working in explosive atmospheres. This tool is not insulated against electric shock.

WARNING

General Product Safety Information

- IT IS YOUR RESPONSIBILITY TO MAKE THIS SAFETY

INFORMATION AVAILABLE TO OTHERS THAT WILL OPERATE THIS PRODUCT.

- Failure to observe the following warnings could result in injury.

WARNING

Product Safety information - When Placing the Tool in Service

- NEVER MODIFY ANY PART OF THIS TOOL!!!! Always install, operate, inspect and maintain this product in accordance with all applicable standards and regulations (local, state, country, federal, etc.).
- Always use clean, dry air at 90 psig (6.2 bar/620 kPa) maximum air pressure at the inlet. Higher pressure may result in hazardous situations including excessive speed, rupture, or incorrect output torque or force.
- Be sure all hoses and fittings are the correct size and are tightly secured.
- Install a properly sized Safety Air Fuse upstream of hose and use an anti-whip device across any hose coupling without internal shut-off, to prevent hose whipping if a hose fails or coupling disconnects.
- Ensure an accessible emergency shut off valve has been installed in the air supply line, and make others aware of its location.
- Do not use damaged, frayed or deteriorated air hoses and fittings.
- Keep clear of whipping air hoses. Shut off the compressed air before approaching a whipping hose.
- Always turn off the air supply, bleed the air pressure and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool or any accessory.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel. Use only recommended lubricants.
- Use only proper cleaning solvents to clean parts. Use only cleaning solvents which meet current safety and health standards. Use cleaning solvents in a well ventilated area.
- Keep work area clean, uncluttered, ventilated and illuminated.
- Do not remove any labels. Replace any damaged label.
- For those grinders designed for use with wheels of four inches diameter and larger, separate the grinder from any quick-disconnect couplings by a hose whip. Never install a quick-disconnect directly into these tools.

WARNING

PRODUCT SAFETY INFORMATION - WHEN USING THE TOOL:

- Always wear eye protection when operating or performing maintenance on this tool.
- Always wear hearing protection when operating this tool.
- Always use Personal Protective Equipment appropriate to

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the tool used and material worked. This may include dust mask or other breathing apparatus, safety glasses, ear plugs, gloves, apron, safety shoes, hard hat and other equipment. When wearing gloves always be sure that the gloves will not prevent the throttle mechanism from being released.

- Prevent exposure and breathing of harmful dust and particles created by power tool use.
- Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains 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, and 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.
- Keep others a safe distance from your work area, or ensure they use appropriate Personal Protective Equipment.
- This tool is not designed for working in explosive environments, including those caused by fumes and dust, or near flammable materials.
- This tool is not insulated against electric shock.
- Be aware of buried, hidden or other hazards in your work environment. Do not contact or damage cords, conduits, pipes or hoses that may contain electrical wires, explosive gases or harmful liquids.
- Keep hands, loose clothing, long hair and jewelry away from working end of tool.
- Power tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.
- Keep body stance balanced and firm. Do not overreach when operating this tool. Anticipate and be alert for sudden changes in motion, reaction torques, or forces during start up and operation.
- Tool and/or accessories may briefly continue their motion after throttle is released.
- To avoid accidental starting - ensure tool is in "off" position before applying air pressure, avoid throttle when carrying, and release throttle with loss of air.
- Ensure work pieces are secure. Use clamps or vises to hold work piece whenever possible.
- Do not carry or drag the tool by the hose.
- Do not use power tools when tired, or under the influence of medication, drugs, or alcohol.
- Never use a damaged or malfunctioning tool or accessory.
- **DO NOT MODIFY THE TOOL, SAFETY DEVICES, OR ACCESSORIES.**
- Do not use this tool for purposes other than those recommended.
- Use accessories recommended by Henry tools.

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- Do not use this tool if the actual free speed exceeds the rated rpm. Check the free speed of the Grinder before mounting a wheel, after all tool repairs, before each job and after every 8 hours of use. Check speed with a calibrated tachometer, without the abrasive product installed.
- Do not use any wheel or other abrasive accessory whose maximum operating speed, as defined by its manufacturer, is less than the rated speed of the Grinder.
- Inspect all grinding wheels for chips or cracks prior to mounting. Do not use a wheel that is chipped, cracked or otherwise damaged.
- Inspect arbor, threads & clamping devices for damage & wear prior to mounting wheel or other abrasive accessory.
- Do not use a grinding wheel that has been exposed to freezing temperatures, extreme temperature changes, high humidity, solvents, water or other liquids.
- Make certain grinding wheel or other abrasive accessory properly fits the spindle. The wheel should not fit too snugly or too loosely. Plain hole wheels should have about .007" (0.17 mm) maximum diametral clearance. Do not use reducing bushings to adapt a wheel to any arbor unless such bushings are supplied by and recommended by the wheel manufacturer.
- Blotters shall always be used between flanges and abrasive wheel surfaces to ensure uniform distribution of flange pressure (except type 27 & 28 wheels) and shall cover the entire contact area of the wheel flange.
- Always use the wheel flanges furnished by the manufacturer and appropriate for the wheel size and type. Never use a makeshift flange or plain washer. Flanges should be in good condition and free of nicks, burrs and sharp edges.
- Ensure that the thread type and size of the threaded abrasive product exactly matches the thread type and size of the spindle.
- Prevent the spindle end from touching the bottom of the hole of cups, cones or plugs with threaded holes, intended to be mounted on machine spindles, by comparing dimensions and other relevant data for them.
- Ensure that the grinding wheel or other abrasive accessory is correctly mounted and tightened before use.
- Before starting this tool, the operator shall make sure that no one is in the plane of rotation.
- Wear Personal Protective Equipment and remove flammable objects from the work area to ensure that sparks and debris do not create a hazard when using this tool.
- After mounting a wheel or other abrasive accessory, the Grinder shall be run in a protected enclosure, at gradually increasing speed, for at least 60 seconds. Make certain no one is in front of or in line with the wheel or other abrasive accessory. Be aware that it may fail at this time if it is defective, improperly mounted or the wrong size and speed. Stop immediately if considerable vibration or other defects are detected. Shut off the air supply and determine the cause.

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- Do not use this tool on materials whose dust or fumes can cause a potentially explosive environment.
- When starting a cold wheel, apply it to the work slowly until the wheel gradually warms up. Make smooth contact with the work, and avoid any bumping action or excessive pressure.
- If the grinder is dropped or bumped, turn off the air supply and carefully examine the grinding wheel or other abrasive accessory. Discard it if damaged, chipped or cracked. Before reuse, run the grinder in a protected enclosure following the same precautions used after first mounting.
- Before a grinder is put down, the throttle shall be released and the wheel or other accessory shall come to a stop. Tool rests, hangers, and balancers are recommended.

Additional Warnings for Guarded Grinders

- Do not use this Grinder without the furnished Wheel Guard.
- Incorrect combinations of grinder wheel, wheel guard and tool speed could result in injury. Ensure that combinations are correct per the Product Specifications.
- Always replace a damaged, bent or severely worn wheel guard. Do not use a wheel guard that has been subjected to wheel failure.

- Guard opening must face away from the operator. Bottom of wheel must not project beyond guard.

Additional Warnings for Use of Cut-off Wheels (Type 1 and 27A)

- When cutting, support the workpiece so the slot is kept at constant or increasing width during the whole operation.
- If the abrasive product gets jammed in a cut slot, shut off the grinder and ease the wheel free. Check that the wheel is still correctly secured and not damaged before continuing the operation.
- A cut-off wheel shall not be used for side grinding.

Additional Warnings for Unguarded Grinders

- Do not use an unguarded grinder unless used for internal work and only operated when the work offers protection.
- Do not use any Type 1 wheels that are larger than 2 inches (50mm) in diameter or more than 1/2 inch (13mm) thick, or that operate at peripheral speeds greater than 1800 Surface Feet Per Minute (9 Surface Meters per Second).
- Do not use any small cones and plugs and threaded hole pot balls unless their size does not exceed 3 inches (75mm) in diameter by 5 inches (125mm) long. (Please see your Product Specifications).
- Do not use other types of grinding wheels. Do not use wire wheels with a diameter that is greater than 2 inches (50mm) or cut-off wheels with this unguarded grinder.

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