

#3435 5" VARIABLE SPEED GRINDER & SHROUD KIT

INSTRUCTION MANUAL

Read Manual Before Operating Machine



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INTRODUCTION

This GRINDER-VAC is designed for simple operation and has been proven to be extremely useful and versatile. A 5" diamond cup wheel or a 5" Zec disk may be mounted on the saw if it is rated and approved for operation at 8,500 RPM. READ AND CAREFULLY FOLLOW THE OPERATING AND SAFETY INSTRUCTIONS OF THIS OPERATING AND SAFETY INSTRUCTION MANUAL BEFORE USING THIS PRODUCT. Since safety regulations can vary between different countries and states, you must contact proper authorities and follow all appropriate regulations.

IMPORTANT SAFETY INSTRUCTIONS

No person should attempt to operate this machine without first being trained in the operation of industrial cutting and grinding tools. These instructions are not intended as a substitute for training and experience. The operator must observe safeguards that include, but are not limited, to the following:

- DO NOT MODIFY ANY MACHINE FROM ITS ORIGINAL DESIGN WITHOUT THE WRITTEN PERMISSION OF THE MANUFACTURER. UNAUTHORIZED MODIFICATIONS CAN LEAD TO SERIOUS INJURY OR DEATH TO YOURSELF OR OTHERS.
- DO NOT use any cup wheel or grinding disk marked for less than 8,500 RPM.
- DO NOT service the machine or change cup wheel or grinding disk without first disconnecting the power.
- DO NOT install a cup wheel or grinding disk before inspecting the part for damage.
- DO NOT operate with a damaged cup wheel or grinding disk. A damaged cup wheel or grinding disk may fly apart and cause serious injury or death.
- DO NOT use a cup wheel or grinding disk that wobbles when mounted.
- Verify cup wheel or grinding disk is correct for application before use.
- Verify cup wheel or grinding disk rotation matches the direction arrow on the grinder motor.
- DO NOT apply power to the machine before spinning the cup wheel or grinding disk by hand to check alignment.
- DO NOT operate with any loose nuts or bolts. Check all nuts and bolts for tightness.
- DO NOT operate without appropriate ear, eye, foot, hand and breathing protection.
- DO NOT operate around any loose or foreign objects that may damage system.
- DO NOT operate if arbor shaft has excessive end play.
- DO NOT grind material that the cup wheel or grinding disk is not designed for.
- DO NOT operate machine near combustible material or fumes.
- DO NOT operate without appropriate dust collection system.
- DO NOT force cup wheel or grinding disk through material to be ground. Always ease cup wheel or grinding disk through material.
- DO NOT operate on non-horizontal work surfaces.

GRINDER-VAC OPERATING INSTRUCTIONS

A. ASSEMBLY OF DUST SHROUD ONTO GRINDER

- 1 Place dust shroud and adaptor around the grinder arbor.
- 2 Hose nozzle should be at upper right (when looking down on grinder).
- 3 Slowly tighten the three (3) set screws on the adaptor ring in small increments. Make sure that the spacer washer is centered around the blade nut. Tightening one screw all the way down before the other two may cause interference.
- 4 Ensure the nozzle does not touch the handle mounting bolt. Leave $\frac{1}{4}$ " gap.

B. ASSEMBLY AND REMOVAL OF CUP WHEEL OR DISK

- 1 Using the wrench provided, or a $1\frac{1}{2}$ " box wrench, remove the blade nut.
- 2 Depress the spindle lock on the grinder to stop the spindle from rotating while tightening and loosening the blade nut.
- 3 Note: both the blade nut and arbor nut vary in length, depending on the type of wheel to be used.



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General Equipment Guidelines

1 **KNOW YOUR EQUIPMENT.**

Do not operate this machine unless you have read and understand the operations and maintenance manual. Read and understand any additional instructions included from other components manufacturers and organizations such as the Masonry and Concrete Saw Manufacturers Institute. Observe all applicable local, state and federal safety regulations. Learn the applications and limitations as well as the specific potential hazards related to this tool.

2 **RECEIVE PROPER TRAINING.**

Do not operate or maintain this machine unless you have received operational and maintenance training from a National representative or from an authorized distributor for National.

3 **PROTECT YOUR FEET.**

Wear OSHA approved foot protection.

4 **PROTECT YOUR EYES.**

Wear OSHA approved safety glasses.

5 **PROTECT YOUR LUNGS.**

Wear appropriate respiratory protection when using or servicing the machine. Breathable (respirable) silica dust may be generated by use of this product and can cause severe and permanent lung damage, cancer, and other serious diseases. Do not breathe the dust. Do not rely on your sight or smell to determine if silica dust is in the air. Silica dust may be in the air without a visible dust cloud. If air monitoring equipment for silica is not provided by your employer at your worksite, consult your employer and OSHA regarding the appropriate respiratory protection or permissible alternate protection methods such as air monitoring and warning equipment.

6 **PROTECT YOUR HEARING.**

Wear OSHA approved hearing protection.

7 **DRESS PROPERLY.**

Do not wear loose clothing, rings, watches or jewelry that can be caught in moving parts. Wear protective hair covering to contain long hair. Keep hair away from air vents. Rubber gloves and non-skid footwear are recommended when working outdoors.

8 **AVOID A DANGEROUS ENVIRONMENT.**

Do not expose machine to rain. Do not use machine in wet conditions. Keep work area well lit. When working at an elevated location, pay attention to articles and persons below.

9 **KEEP WORK AREA CLEAN. DO NOT RUN OVER ANYTHING.**

Do not run over any loose objects. Loose objects could be thrown by the machine. Make sure work area is clear of people and any loose objects, nuts, bolts, etc.

10 **KEEP CHILDREN AND VISITORS AWAY.**

Do not allow anyone to stand in the machine work path. Do not let children or visitors contact machine or extension cord. Keep children and visitors away from the work area.

11 **KEEP FIRM GRIP ON MACHINE.**

Hold on to the handle grips and maintain control of the machine until the machine completely stops.

12 **STORE IDLE EQUIPMENT.**


Do not store equipment within reach of any children. Keep the machine and tools in a dry and secure location when not in use.

13 **OBTAIN MATERIAL SAFETY DATA SHEET (MSDS) FOR ALL WORK SURFACE MATERIALS.**

Do not attempt to cut, clean out or remove material without reviewing MSDS information and using any applicable protection. Be aware that some materials are explosive as a dust and may contain lead or asbestos. This includes primers, all coatings, adhesives, tile and crack filling materials, etc. Consult MSDS sheet for detailed hazards information.

14 **BEWARE OF HOT, FLAMMABLE OR COMBUSTIBLE MATERIALS**

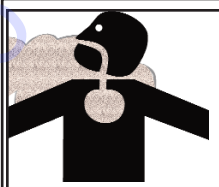
Do not vacuum materials that are hot, burning, or smoldering such as cigarettes, matches, or hot ashes. Do not vacuum any flammable or combustible materials. Some materials are explosive as a dust.

 **WARNING:** Exposure to dust may cause respiratory ailments. Use approved NIOSH or OSHA respirators, safety glasses or face shields, gloves and protective clothing. Provide adequate ventilation to eliminate dust, or to maintain dust level below the Threshold Limit Value for nuisance dust as classified by OSHA.

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- 15 **AVOID FLAMMABLE LIQUIDS OR GASES.**
Do not use machines in dangerous sites containing flammable, combustible or explosive materials such as lacquer, paint, benzene, thinner, gasoline, gases, and adhesive agents. Machines produce heat and sparks during operation.
- 16 **MAINTAIN SECURE FOOTING AND BALANCE**
Do not overreach and risk slipping or loss of balance. Instability may lead to loss of control of equipment.
- 17 **MAINTAIN MACHINE CLEANLINESS**
Keep handles dry, clean, and free from oil and grease. Keep machine clean for better and safer performance.
- 18 **REMOVE ADJUSTING TOOLS.**
Do not start the engine until you make sure any loose tools such as adjusting wrenches are properly stored.
- 19 **STAY ALERT.**
Do not operate machine when you are tired or fatigued. Watch what you are doing. Use common sense.
- 20 **DO NOT USE DRUGS, ALCOHOL, OR MEDICATION.**
Do not operate machine while under the influence of drugs, alcohol, or any medication.
- 21 **KEEP THE RIGHT PARTS IN THE RIGHT POSITIONS.**
Do not operate machine with parts missing or improperly mounted.
- 22 **CHECK DAMAGED PARTS.**
Do not operate machine if electric motor on/off switch, engine on/off switch, or deadman lever does not function properly. Verify all machine guards are in place and functioning properly before using the machine. Check for proper alignment and mounting of moving parts, binding of moving parts, damaged parts, broken parts and any other conditions that may affect machine safety. Repairs or replacements should only be performed in accordance with paragraph # 2 in this guideline.
- 23 **SECURELY MOUNT ACCESSORIES AND BLADES TO THE MACHINE.**
Do not operate without fall protection for operator and debris protection for public. Use extra care when using saws on an elevated location to prevent injury to someone on a lower level in the event a tool, accessory or debris should drop.
- 24 **NEVER TOUCH THE MOVING PARTS.**
Do not touch moving parts such as blades, belts and others.
- 25 **STOP OPERATION IMMEDIATELY IF ANY ABNORMALITY IS DETECTED.**
Do not operate the machine if any abnormalities are observed or heard during operation. Examples of abnormalities include unusual noise and vibration.
- 26 **WHEN REPLACING A PART, USE THE SAME TYPE AND QUALITY.**
Do not replace worn component parts with part of unknown quality or design. Use only the same type and quality of new part. Do not attempt to repair a machine if you have not been trained in the proper procedures and techniques required.
- 27 **DO NOT MODIFY MACHINE.**
Do not modify machine from its original design without written permission from the manufacturer. Unauthorized modifications could lead to serious injury or death and void warranty.
- 28 **DEADMAN LEVER/SWITCH OPERATION.**
Do not modify, disable, or attempt to permanently engage the deadman lever/switch (if so equipped). Do not operate a machine if deadman lever/switch is not functioning. Check function of deadman lever/switch before beginning production. Failure to follow these steps could lead to serious injury or death.
- 29 **SAVE THESE INSTRUCTIONS.**
Do not permit anyone to operate the machine without proper instructions. Refer to the operations and maintenance manual as well as any additional instructions included from other component manufacturers and organizations such as the Masonry and Concrete Saw Manufacturers Institute.

⚠ WARNING: Failure to follow any of the above instructions could cause damage to machine, damage to property or serious bodily injury or death.



WARNING: SILICA DUST WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are familiar with the risks associated with the particular material being cut, review the material safety data sheet and/or consult you employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources of hazardous materials. California and some other other authorities, for instance, have published lists of

substances known to cause cancer, reproductive toxicity, or other harmful effects. Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturer/supplier, OSHA/NIOSH, and occupational and trade associations. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by OSHA/MSHA for the material being cut.

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Cutting and Grinding Equipment Guidelines

- 30 **CHECK BLADE AND MACHINE ROTATION DIRECTION.**
Do not operate a blade in the wrong rotation direction. Check the machine rotation direction and blade direction when mounting a blade.
- 31 **DO NOT FORCE SAW OR GRINDER INTO THE WORK SURFACE.**
The machine will cut faster, smoother and safer when used at the rate for which it was designed.
- 32 **BEWARE OF HIDDEN DANGERS IN CONCRETE.**
Do not cut through rebar without the proper blade. Check the blade manufacturer's guidelines for material to be cut. Do not cut through utility lines without confirming power is disconnected, locked-out and tagged-out. Clearly mark areas where buried items are to be avoided and not to be cut.
- 33 **AVOID CONTACT WITH HOT BLADE AND BLADE GUARD.**
Do not touch the blade and blade guard without proper hand protection. The blade and blade guard become hot during operation and remain hot after stopping the engine.
- 34 **CHECK BLADE MAXIMUM ALLOWABLE SPEED.**
Do not use a blade rated for less than the machine's maximum speed rating. Check the maximum operating speed of the machine and blade. Do not use a blade without a clearly marked speed rating.
- 35 **CHECK BLADE FOR CRACKS, DAMAGE, AND MISALIGNMENT.**
Do not use a cracked, damaged, or misaligned blade. After mounting blade, rotate by hand to check for proper alignment.
- 36 **CHECK DIAMOND BLADE FOR WARNINGS.**
Be aware that many diamond blades contain a chemical known to the state of California to cause cancer and/or birth defects or other reproductive harm.
- 37 **BLADE MOUNTING ONTO MACHINE.**
Do not force a blade onto the machine shaft or alter the size of the arbor-mounting hole. Do not add a drive pin hole or modify a blade. Be certain that the drive pin is in place through the blade when tightening the blade nut.
- 38 **USE CORRECT SAW AND ACCESORIES.**
Do not force a small light duty saw to do the job of a heavy-duty saw. Do not use the saw for improper applications. Do not cut material for which the blade was not designed. Check blade manufacturer's guidelines on material to be cut.

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Electric Equipment Guidelines

- 43 **GUARD AGAINST ELECTRIC SHOCK.**
Prevent body contact with grounded surfaces. Examples of grounded surfaces are pipes, radiators, ranges, and refrigerator enclosures.
- 44 **DO NOT ABUSE POWER CORD.**
Do not carry tool by power cord or pull the cord to disconnect from a receptacle. Pull the plug to disconnect the cord from a receptacle. Do not use tool if power cord is damaged. Keep power cord away from heat, oil and sharp edges.
- 45 **DISCONNECT TOOL FROM POWER SOURCE.**
Disconnect power cord from power source when not in use, before servicing and when changing accessories.
- 46 **AVOID UNINTENTIONAL STARTING.**
Do not carry or transport tool with finger or hand on the power switch while power cord is connected to power source.
- 47 **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.**
Do not leave tool until it comes to a complete stop. Reference guideline # 45.
- 48 **CHECK VOLTAGE.**
Do not plug machine into a power source with voltage greater than that specified for the tool. Serious injury to the user and damage to the tool can result. Before connecting tool to a power source, be sure the voltage supplied is the same as that specified on the nameplate of the tool. Using a power source with voltage less than the nameplate rating is also harmful to the motor.
- 49 **EXTENSION CORDS.**
Do not use cords without proper grounding-type plugs. Do not use damaged cords. Make sure your extension cord is in good condition. Replace damaged cords and plugs. Use an extension cord rated to carry the current your tool will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.
- 50 **OUTDOOR USE EXTENSION CORDS.**
Do not use extension cords rated for indoor use only. Use only outdoor rated extension cords.
- 51 **ALWAYS KEEP THE MOTOR AIR VENT FULLY OPENED.**
Do not allow motor air vent to become blocked. Keep motor air vent open to allow the motor to cool..

VENTILATION EQUIPMENT GUIDELINES

- 52 **USE WITH APPROPRIATE VACUUM SYSTEM.**
Do not operate equipment designed for use with a vacuum system without the vacuum system.
- 53 **USE WITH APPROPRIATE VACUUM HOSE.**
Do not operate the equipment without the inlet hose securely attached to the vacuum and the outlet hose securely attached to the saw or grinder. Do not use worn hose with holes that could cause a loss of vacuum system efficiency.
- 54 **DISPOSE OF VACUUM WASTE.**
Do not leave the vacuum collector bag full of waste. Handle and dispose of bag and waste in accordance with all applicable local, state and federal regulations.

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