

3420 HANDHELD GRINDER INSTRUCTION MANUAL

FOR USE WITH 3420 MACHINE ONLY



Read Manual Before Operating Machine

402586 Rev A

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Features and Specifications



Handheld grinder with a convertible dust shroud to work all the way up to the edge.

FEATURES

Polyurethane Convertible Dust Shroud - Allows machine to work all the way to the edge.

Loop Handle - Provides a comfortable, secure grip for working in confined spaces.

Vacuum Dust Port - Allows machine to work in conjunction with dust collectors; offers a more comfortable work environment while reducing jobsite cleanup.

7" Disk Size - Accommodates 5/8 arbor disks up to 7".

Product Specifications

Length	Weight	Disk Size	Voltage	Amps	RPM
19" (48.26 cm)	16 lb (7.25 kg)	7" (17.78 cm)	115	15	6,600

Safety

GENERAL RULES FOR SAFE OPERATION

Before use, anyone operating or performing maintenance on this equipment must read and understand this manual, as well as any labels packaged with or attached to the machine and its components. Read the manual carefully to learn equipment applications and limitations, as well as potential hazards associated with this type of equipment. Only qualified or trained personnel should operate this machine. Keep manual near machine at all times. If your manual is lost or damaged, contact National Flooring Equipment (NFE) for a replacement.

Personal

Dress properly and use safety gear.

Do not wear loose clothing, and tie back long hair, as these may be caught in moving parts. Anyone in the work area must wear safety goggles or glasses, hearing protection during extended use, and a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be worn when specified or necessary.

Maintain control; stay alert.

Keep proper footing and balance, and maintain a firm grip. Observe surroundings at all times and use common sense. Do not use when tired, distracted, or under the influence of drugs, alcohol, or any medication that may cause decreased control.

Keep hands away from all moving parts and tooling.

Wear gloves when changing tooling. Remove tooling when machine is not in use and/or lower cutting head to the floor.

Do not force equipment.

Equipment will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear, and reduced control.

Environment

Avoid use in dangerous environments.

Do not use in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust, or flammable materials). Remove materials or debris that may be ignited by sparks. Keep work area tidy and well-lit - a cluttered or dark work area may be prone to accidents.

Protect others in the work area.

Provide barriers or shields as needed to protect others from debris and machine operation. Children and other bystanders should be kept at a safe distance from the work area to avoid distracting the operator and/or coming into contact with the machine. Operator should be aware of who is around them and their proximity. Support personnel should never stand next to, in front of, or behind the machine while the machine is running.

Guard against electric shock.

Ensure that machine is connected to a properly grounded outlet. Prevent bodily contact with grounded surfaces, e.g. pipes, radiators, ranges, and refrigerators. When scoring or making cuts, always check the work area for hidden wires or pipes.

Maintenance & Repairs

Begin maintenance work only when the machine is shut down, unplugged, and cooled down.

Use proper cleaning agents.

Ensure that all cleaning rags are fiber-free; do not use any aggressive cleaning products.

Schedule regular maintenance check-ups.

Ensure machine is properly cleaned and serviced.

Remove all traces of oil, combustible fuel, or cleaning fluids from the machine and its connections and fittings. Retighten all loose fittings found during maintenance and repair work. Loose or damaged parts should be replaced immediately; use only NFE parts.

Do not weld or flame-cut on the machine during repairs without authorization from NFE.

Equipment

Use proper parts and accessories.

Only use NFE-approved or recommended parts and accessories. Using any that are not recommended may be hazardous.

Ensure accessories are properly installed and maintained.

Do not permanently remove a guard or other safety device when installing an accessory or attachment.

Inspect for damaged parts.

Check for misalignment, binding of moving parts, improper mounting, broken parts, and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the machine off immediately. Do not use damaged equipment until repaired. Do not use if the power switch does not turn the machine on and off. For all repairs, insist on only identical NFE replacement parts.

Maintain equipment and labels.

Keep handles dry, clean, and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Motor and switches should be completely enclosed at all times with no exposed wiring. Inspect cord regularly. Labels carry important information; if unreadable or missing, contact NFE for a free replacement.

Avoid accidental starting; store idle equipment.

When not in use, ensure that the machine is unplugged; do not turn on before plugging in. Store in a dry, secured place. Remove tooling when storing, and keep away from children.



CAUTION! ENSURE PROPER USE OF EXTENSION CORDS. IF AMP DRAW IS HIGHER THAN SHOWN ON TABLE OR CORD IS LONGER THAN 50 FT, SEE AN ELECTRICIAN.

ASSUMPTIONS: 3% ALLOWABLE VOLTAGE DROP, COPPER CONDUCTORS RATED FOR 75°C, 1.25 SAFETY FACTOR, CORD VOLTAGE RATING OF 600VAC, PROPER CORD TYPES (STO, STOW, SOOW).

Amp Draw	Gauge
0-12	14
13-16	12
14-24	10
25-40	8

Safety

HAND GRINDER SAFETY GUIDELINES

Before use, anyone operating this equipment must read and understand these safety instructions.

Grinding

Beware of hidden obtrusions.

Watch out for hidden dangers and obtrusions in flooring. Do not use on largely uneven surfaces.

Avoid contact with hot tooling and shroud.

Do not touch the tooling or shroud without proper hand protection. Both become hot during operation and remain hot after stopping the machine.

Use correct tooling and accessories.

Provide barriers or shields as needed to protect others from debris. After mounting tooling, rotate by hand to check for proper alignment.

Use for correct applications.

Do not force equipment to do heavier duty work than it was made for.

Blow compressed air through ventilation slots.

During use, conductive dust can form deposits inside the machine. This can mean a temporary danger of electric shock. When the machine is running, blow compressed air through the rear ventilation frequently and thoroughly. The machine must be held firmly while doing this.

Dust Collection

Use with appropriate dust collecting system.

Do not operate machine designed for use with a dust collector without the dust collector. Ensure dust collector is on and operating properly while grinding.

Use with appropriate dust collection hose.

Do not operate the machine without the hose securely attached to the inlet of the dust collector and the outlet of the grinder. In order to maintain system efficiency, do not use a damaged hose.

Dispose of collected waste.

Do not leave the dust collector bag full of waste. Handle and dispose of bag and waste in accordance with all applicable local, state, and federal regulations. Dispose of waste prior to transport.

Equipment

Use a Ground Fault Circuit Interrupter (GFCI).

Using a stationary extraction system with a Ground Fault Circuit Interrupter (GFCI) downstream is recommended. If the machine is deactivated by the GFCI, the machine must be checked and cleaned. If operating the equipment in damp locations is unavoidable, a GFCI must be used to supply the power. Electrician's rubber gloves and footwear will further enhance your personal safety.

Check for damaged wheels.

Carefully handle machine and wheels to avoid damage. Install a new wheel if machine is dropped during operation. Fragments from a wheel that burst during operation will fly away very quickly and dangerously, which could cause injury. Before operation, inspect the wheel for chips and cracks; remove bad wheels immediately. Run the tool at no load for one minute, holding the tool away from any people. Wheels with flaws will normally break apart during this time.

Always use handle and inspect regularly.

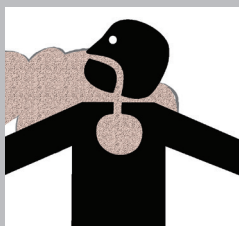
Use auxiliary handle for maximum control. A damaged or cracked side handle must be replaced immediately. Never operate a machine with a defective side handle.

Use proper accessories.

When using wheel attachments, the guard must always be attached and positioned so the least amount of wheel is exposed on the side that the machine is being operated. All accessories must have a maximum safe operation speed greater than the "no load RPM," which can be found on the machine's nameplate.



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 UNFAMILIAR 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 AUTHORITIES ON HAZARDOUS MATERIALS. CALIFORNIA AND SOME 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.

Components and Assembly



FIG. 1

SAFETY SWITCH AND LOCK

The machine is equipped with a momentary-contact (“deadman”) switch. Press to start; release to stop.

The machine is also equipped with a spindle locking device (Figure 1). Never turn on the machine while the spindle lock is engaged. Allow machine to come to a complete stop before engaging spindle lock.



FIG. 2

HANDLES

Swivel Rear Handle

After pressing the button on the handle, the handle can be turned 90° in either direction and will click into place in the required position.

Note: Make sure the handle clicks into place (the button will snap back into position) before turning on the machine.

Front Handles

There are two additional handle options: a single side handle and one that is connected on both sides of the machine. Always have one of these handles connected while using the machine. Handles are interchangeable and can be used or changed as needed. Both handles must be screwed in manually; with the largest side opposite the vacuum port.

Unplug machine from power source before changing the handle.



FIG. 3

HAND GUARD

To fit a hand guard on the tool, unscrew the side handle and place the hand guard so that the rectangular plate of the guard is between the wheel or pad and the handle.

REMOVING AND RE-INSTALLING THE SHROUD

1. To remove, unscrew screws on the metal housing between the shroud and the grinder (Figure 2).
2. To re-install, place shroud on machine with convertible cutout facing the front; screw bolts back into place.



WARNING: WHEN ASSEMBLING THE MACHINE OR INSTALLING ACCESSORIES, ALWAYS ENSURE THAT THE MACHINE IS UNPLUGGED FROM THE POWER SOURCE. FAILURE TO DO SO COULD RESULT IN DAMAGE TO MACHINE OR CAUSE SERIOUS BODILY INJURY.

VACUUM PORT

The vacuum port is attached to the shroud (Figure 3). Use a vacuum hose that snugly fits either on the outside or the inside of the port. The outside diameter of the port is 2”; the inside diameter is 1-3/4”. This port will pick up dust but not all heavy or large particles.



WARNING: MAKE SURE YOU ARE USING THE PROPER STYLE OF VACUUM FOR WHAT YOU ARE GRINDING, SCRAPING OR SANDING. FAILURE TO DO SO COULD CAUSE EMISSIONS OF HAZARDOUS PARTICULATES OR EXPLOSION DUE TO FINE DUST (IE, WOOD SANDING), WHICH IS FLAMMABLE. MAKE SURE THE SYSTEM YOU ARE USING COMPLIES OR EXCEEDS OSHA RECOMMENDED STANDARD. MAKE SURE THE RUBBER DUST GUARD IS COVERING ALL THE WAY TO THE FLOOR SURFACE.

Components and Assembly



FIG. 4



FIG. 5



FIG. 5.1



FIG. 5.2

CUP WHEEL INSTALLATION AND REMOVAL

Threaded Cup Wheels

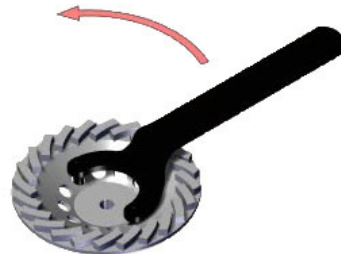
If the nuts and washers that came with the grinder are still attached to the spindle, remove them.

1. Place one 5/8 washer (5200-400-4) on the spindle.
2. Ensure spindle lock is depressed; thread the wheel onto the spindle by hand (Figure 4). Hand tighten only.



CAUTION: THERE IS A RISK OF THE WHEEL LOCKING WHILE THE MACHINE IS RUNNING, WHICH COULD CAUSE DAMAGE TO THE MACHINE. TURN MACHINE OFF IMMEDIATELY AND LOOSEN WHEEL WITH SPANNER WRENCH BEFORE CONTINUING WORK.

3. If wheel locks up or needs to be replaced, ensure the spindle lock is depressed and use a spanner wrench (402556) to unthread the wheel.



Note: To get better leverage on the machine, it may need to be held between the legs or against another object.

Knockout Cup Wheels

NFE recommends the use of knockout cup wheels. For installation, use the nuts, washers, and spanner wrench (402554) that were provided with the machine.

1. Remove shroud (See Removing and Re-Installing the Shroud).
2. Ensure spindle lock is depressed to keep the spindle from rotating.
3. Thread on nut; use a 1" wrench to tighten (Figure 5).
4. Re-install shroud.
5. Place two washers on the spindle above the nut (Figure 5.1).
6. Remove brass bushing from wheel; place wheel on spindle.
7. Place flat nut on spindle above the wheel; tighten with spanner wrench (Figure 5.2).
8. To remove or replace wheel, ensure the spindle lock is depressed and reverse these steps.



FIG. 6



FIG. 7



FIG. 7.1

TEST RUN

Before using a newly fitted wheel or accessory, complete a test run to check it for safety. Run the machine with the fitted wheel or accessory for about 1 minute to make sure no issues are present.

MACHINE STARTUP PROCEDURE

1. Machine must be off before plugging machine into power source.
2. Plug power cord into proper size extension cord.
3. Plug extension cord into outlet.
4. Keep grinding disk off the surface until the machine is on.
5. Depress lever on handle for motor to run. The machine will run as long as the lever is depressed.
6. Release lever for motor to stop.
7. Once machine is running, gently lower disk to the surface. Guide machine with both hands.



WARNING: DO NOT LOCK LEVER ON HANDLE INTO A PERMANENT POSITION. IF OPERATOR SHOULD LOSE CONTROL OR BE DISABLED, MACHINE CONTINUES TO OPERATE. DO NOT DEFEAT A SWITCH OR SAFETY DEVICE.

Do not allow the machine to draw in additional dust and shavings. When switching the machine on and off, keep it away from dust deposits.

OPERATING MODES

Grinding

Ensure plate or cup wheel is completely covered and not protruding out from the shroud (Figure 6). Shroud should suction to the floor when vacuum is turned on. Do not have plate exposed when using the machine in grinder mode. Failure to do so could cause severe bodily injury or property damage.

Edging

When using machine as an edger, lift nose of shroud to expose cup wheel (Figure 7); place machine against wall and grind (Figure 7.1).

Maintenance

GENERAL MAINTENANCE

A well-maintained machine is a productive machine. If not properly maintained, it could be unsafe or break down. Schedule regular maintenance check-ups to ensure efficient performance and a long life. The following maintenance should be performed by a NFE service center:

- Mechanical inspection and cleaning (pulleys, belts, bearings, nuts, bolts, housing, labels, etc.).
- Replacing worn or damaged parts (switches, guards, belts, etc.).
- Electrical inspection (switch, cord, plugs, etc.).
- Testing to assure proper mechanical and electrical operation.
- Replacing labeling.



WARNING: BEFORE PERFORMING ANY MAINTENANCE WORK, DISCONNECT THE TOOL FROM THE POWER SOURCE.



WARNING: NEVER DISASSEMBLE THE TOOL OR TRY TO DO ANY REWIRING ON THE TOOL'S ELECTRICAL SYSTEM. CONTACT NATIONAL FLOORING EQUIPMENT FOR ALL REPAIRS.



WARNING: TO REDUCE THE RISK OF INJURY, ELECTRIC SHOCK AND DAMAGE TO THE MACHINE, NEVER IMMERSE YOUR MACHINE IN LIQUID OR ALLOW A LIQUID TO FLOW INSIDE THE MACHINE.

MOTOR CLEANING

Blow compressed air through the rear ventilation sides of the machine thoroughly on a regular basis and frequently during usage. The machine must be held firmly while being cleaned.





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