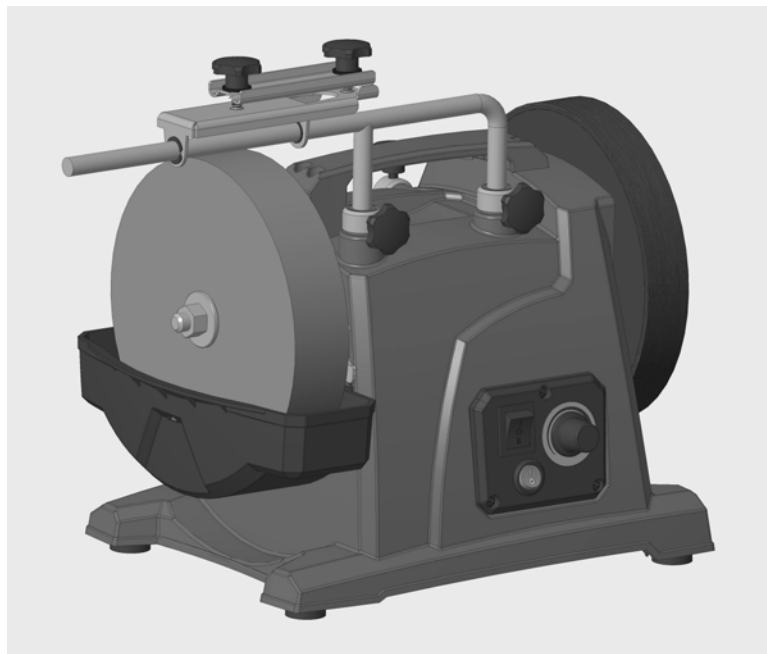


WET GRINDER

HS200A

ASSEMBLY AND OPERATING INSTRUCTIONS



Due to continuing improvements, actual product may differ slightly from the product described herein.

**TO PREVENT SERIOUS INJURY,
READ AND UNDERSTAND ALL WARNINGS
AND INSTRUCTIONS BEFORE USE.**

PRODUCT SPECIFICATIONS

Item	Description
Electrical Requirements	230 VAC / 50 Hz / 120W / 50-180 RPM

SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

GENERAL SAFETY RULES

 **WARNING!**
READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury.
SAVE THESE INSTRUCTIONS

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep bystanders and visitors away while operating a power tool.** Distractions can cause you to lose control. Protect others in the work area from debris such as chips and sparks. Provide barriers or shields as needed. Keep children away from Grinder at all times.

ELECTRICAL SAFETY

4. **Grounded tools must be plugged into an outlet properly installed and**

grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.

5. **Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
6. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
7. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
8. **Do not abuse the Power Cord. Never use the Power Cord to carry the tools or pull the Plug from an outlet. Keep the Power Cord away from heat, oil, sharp edges, or moving parts. Replace damaged Power Cords immediately.** Damaged Power Cords increase the risk of electric shock.
9. **When operating a power tool outside, use an outdoor extension cord marked “W-A” or “W”.** These extension cords are rated for outdoor use, and reduce the risk of electric shock.

PERSONAL SAFETY

10. **Stay alert. Watch what you are doing, and use common sense when operating this product. Do not use the Wet Grinder while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating this product may result in serious personal injury.
11. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
12. **Avoid accidental starting.** Make sure the Power Cord remains unplugged from its electrical outlet until this product is completely assembled, filled with water, and ready to use.
13. **Do not overreach. Keep proper footing and balance at all times.** Proper

footing and balance enables better control of this product in unexpected situations.

14.  **Use safety equipment. Wear eye protection when assembling and using this product.**


TOOL USE AND CARE



15. **Disconnect the Power Cord Plug from the power source before making any adjustments, changing accessories, or storing the Wet Grinder.** Such preventive safety measures reduce the risk of starting the unit accidentally.
16. **Store idle equipment out of reach of children and other untrained persons.** Electrically powered products are dangerous in the hands of untrained users.
17. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect this product's operation. If damaged, have the Wet Grinder serviced before using.** Many accidents are caused by poorly maintained equipment.

SERVICE



18. **Service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
19. **When servicing this product, use only identical replacement parts. Follow instructions in the “*Inspection, Maintenance, And Cleaning*” section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

SPECIFIC SAFETY RULES

1. **Maintain labels and nameplates on the Wet Grinder.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
2.  **Wear ANSI approved safety impact eye glasses under a full face shield when using the Wet Grinder.** Using personal safety devices reduce the risk for injury. Safety impact eye glasses and full face shields are available from Harbor Freight Tools.

3. **Maintain a safe environment.** Keep the area well lit. Make sure there is adequate surrounding space. Always keep the area free of obstructions, grease, oil, trash, and other debris. Do not use an electrically powered product in areas near flammable chemicals, dusts, and vapors.
4. **Never leave the Wet Grinder unattended when it is plugged into an electrical outlet.** Turn off the Grinder and unplug the tool before leaving.
5. **Carefully inspect the condition of the Wet Grinder before use, and check the tool continually during use.** If any damage is noted, stop immediately and repair or replace the Grinder.
6.  **Avoid electrical shock.** Make sure the Wet Grinder is unplugged from its electrical outlet prior to performing any inspection, maintenance, or cleaning procedures. Do not use the Grinder/Buffer in the rain or in wet conditions.
7. **Use the right product for the job.** There are certain applications for which this product was designed. Do not use small tools, equipment, or accessories to do the work of larger industrial tools, equipment, or accessories. Do not use this product for a purpose for which it was not intended.
8. **Do not allow children or other unauthorized people to handle or play with this product.**
9. **Industrial applications must follow OSHA requirements.**
10. **Frequently immerse the workpiece in water to prevent overheating.**
11. **Use the Tool Attachments to steady the workpiece.** If the Tool Attachments are not used, the torque of the spinning Grinding/Polishing Wheel may pull the workpiece from your hands.
12. **Do not use aluminum oxide wheels when grinding nonferrous metals such as aluminum and brass.** Use silicon carbide wheels (not included) for nonferrous metals.
13. **Never install a Grinding Wheel on the polishing side of the tool.** Never use any accessory not specifically designed for this machine. Never attempt to install a wire brush, abrasive flap wheel, or sanding disc on this Wet Grinder.
14. **Performance of this tool (if powered by line voltage) may vary depending on variations in local line voltage.** Extension cord usage may also affect tool performance.
15.  **WARNING!** Some dust created by power sanding, sawing, grinding, drilling,

and other construction activities, contain chemicals known (to the State of California) 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 or 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. (California Health & Safety Code 25249.5, et seq.)

16.  **WARNING!** People with pacemakers should consult their physician(s) before using this product. Operation of electrical equipment in close proximity to a heart pacemaker could cause interference or failure of the pacemaker.
17.  **WARNING!** The warnings and cautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

GROUNDING

WARNING!

Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

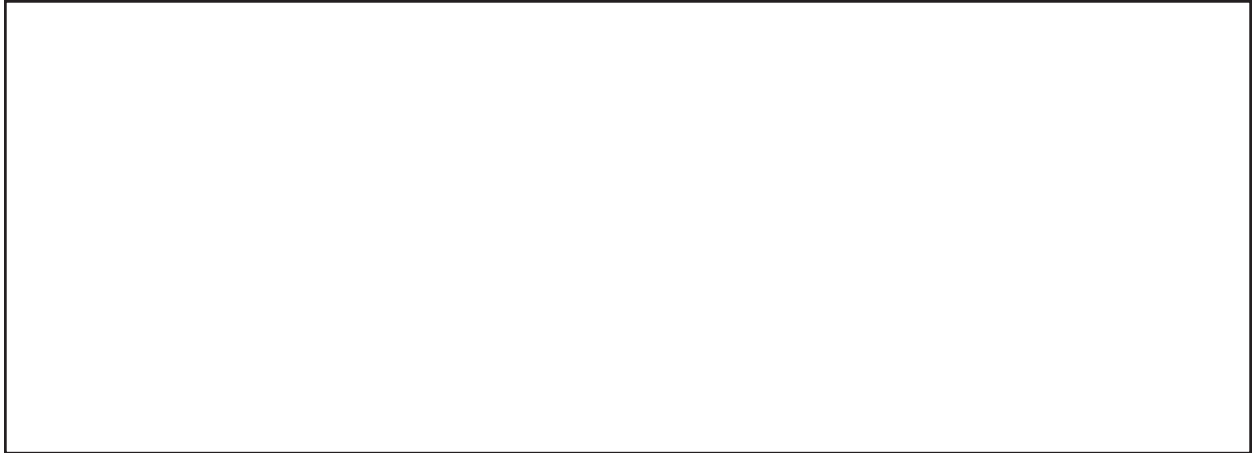
EXTENSION CORDS

1. **Grounded** tools require a three wire extension cord. **Double Insulated** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Figure C.)**
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Figure C.)**
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Figure C.)**
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Figure C.)**
6. If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.
7. Make sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* - (120 VOLT)					
NAMEPLATE AMPERES (At Full Load)	EXTENSION CORD LENGTH				
	25 Feet	50 Feet	75 Feet	100 Feet	150 Feet
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-

FIGURE C *Based on limiting the line voltage drop to five volts at 150% of the rated amperes.

SYMBOLGY





UNPACKING

When unpacking, check to make sure all the parts shown on the **Parts List on page 18** are included. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

OPERATING INSTRUCTIONS

NOTE:

For additional information regarding the parts listed in the following pages, refer to the **Assembly Diagram on page 19**.

1.  **CAUTION!** Always make sure the Wet Grinder is disconnected from its electrical outlet prior to assembling the tool, changing accessories, or performing service to the product.
2.  **Wear ANSI approved safety impact eye glasses under a full face shield when assembling and operating the Wet Grinder.**
3. Make sure the workbench you intend to position the Wet Grinder upon is flat, level, and sturdy enough to bear the weight of the Grinder, any additional tools and accessories, and workpieces.
4. The Tool Support (23) may be attached to the Wet Grinder for *vertical* grinding/honing or *horizontal* grinding/honing, depending on the application.
5. To attach the Tool Support for *vertical* grinding/honing, insert the Tool Support

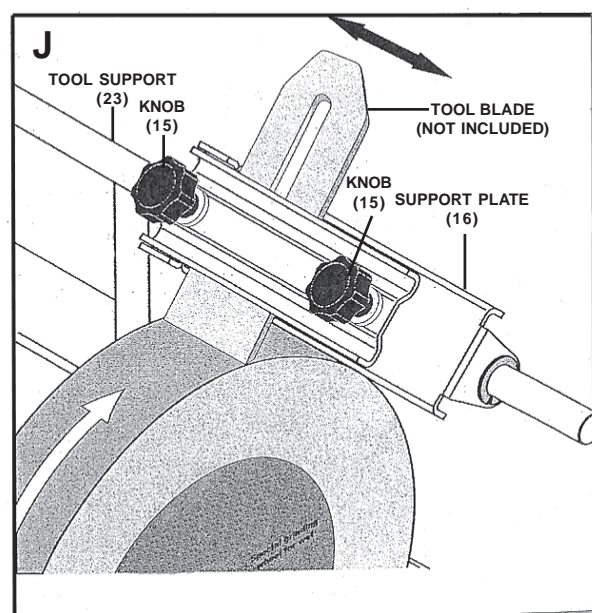
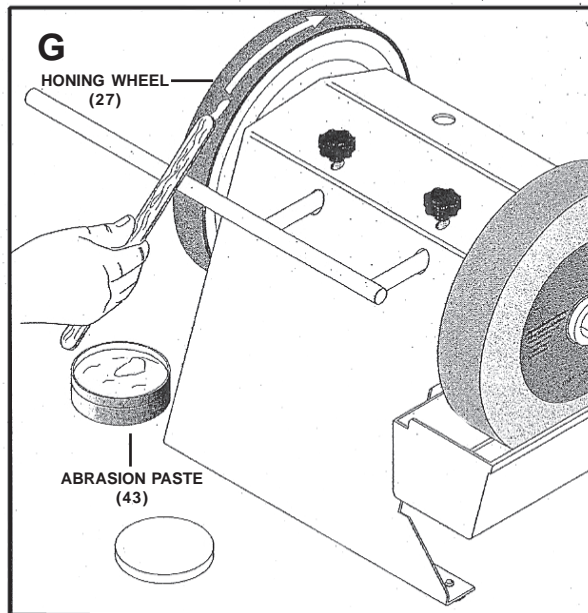
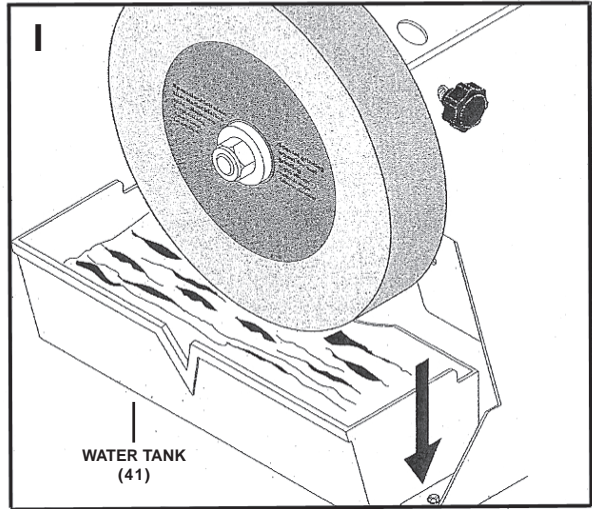
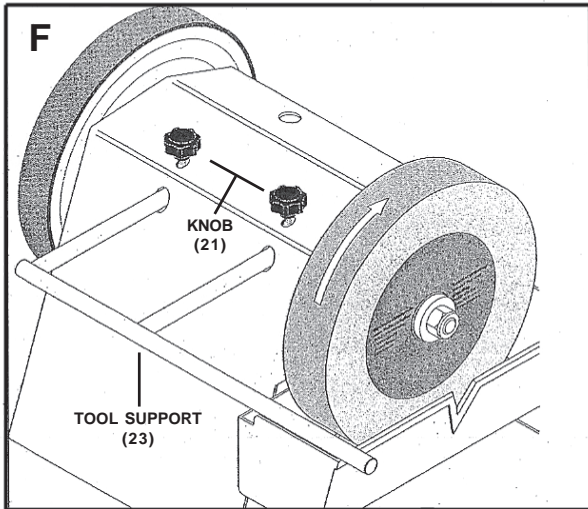
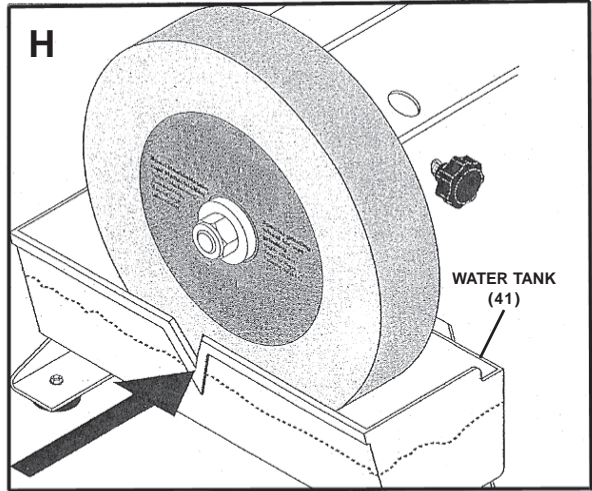
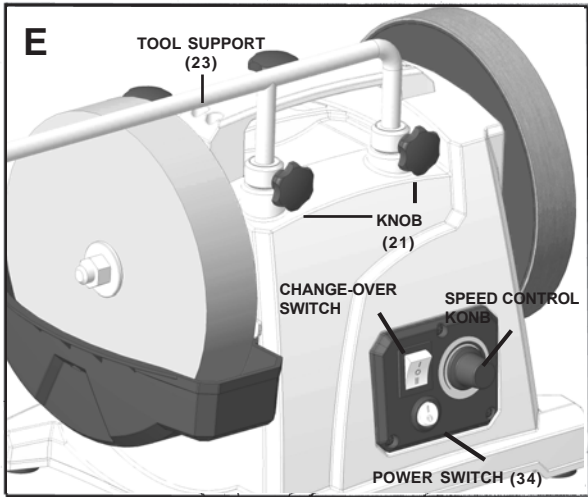
into the two mounting holes located at the top of the Wet Grinder. Adjust the Tool Support to the desired height. Then tighten the two Knobs (21) to secure the Tool Support in place. **(See Figure E, next page.)**

6. To attach the Tool Support for *horizontal* grinding/honing, insert the Tool Support into the two mounting holes located on the rear side of the Wet Grinder. Adjust the Tool Support to the desired height. Then tighten the two Knobs (21) to secure the Tool Support in place. **(See Figure F, next page.)**
7. **NOTE:** This Wet Grinder includes one Power Switch, one Reversing Control Switch, and Speed Control KNOB. The reversing control Switch can control the motor running clockwise or anticlockwise, to achieve the rotation of the grinding stone clockwise or anticlockwise. The speed control knob adjusts the speed from 50-180rpm.
(See Figure E.)
8. Plug the Power Cord (35) into the nearest 230 volt, grounded, electrical outlet. Then turn the Power Switch to its “ON” position. **(See Figure E.)**
9. While the Wet Grinder is running, apply a light coating of machine oil (not included) to the leather Honing Wheel (27). Then distribute the Abrasion Paste (43) evenly (with a stick, tool, etc.) by applying the Paste with circular movements on the Honing Wheel. These preparations are sufficient to hone five to ten tools. Then, repeat the machine oil and Abrasion Paste preparations. Doing so will increase the lifetime of the leather Honing Wheel and the quality of your tools.
(See Figure G, next page.)
10. Turn off the Wet Grinder, and unplug it from its electrical outlet. **(See Figure E.)**
11. Install the Water Tank (41) beneath the Grinding Stone (19). Then fill the Water Tank with clean water up to the fill line indicated on the Tank. When operating, the Grinding Stone will become saturated with water. Make sure to refill the Water Tank when necessary. Otherwise, excessive particles of steel and trimmed stone will accumulate in the Water Tank. Such accumulations can be reduced by placing a magnet into the Water Tank. **NOTE: Do not grind without water. (See Figures H and I, next page.)**

OPERATIONS INSTRUCTIONS

To Grind/Hone A Tool Blade:

1. If grinding/honing a tool blade, slide the Support Plate (16) onto the Tool Support (23). Position the Support Plate directly above the Grinding Stone (19) or Honing Wheel (27). Loosen the two Knobs (15) on the Support Plate. Insert the tool



blade (sharp end downward) in the Support Plate. Then firmly tighten the two Knobs to secure the tool blade in place. **(See Figure J, previous page.)**

2. Adjust the Tool Support (23) so that the Support Plate (16) is no more than **1/16"** from the Grinding Stone (19) or Honing Wheel (27). Then loosen the two Knobs (15) on the Support Plate to adjust the tool blade so that its sharp edge lightly touches the Grinding Stone or Honing Wheel.
3. Turn on the Wet Grinder, and slowly move the Support Plate back and forth along the Tool Support to grind the tool blade. When necessary, loosen the two Knobs (15) on the Support Plate to readjust (downward) the tool blade.
4. When finished grinding/honing the tool blade, turn off the Wet Grinder. Wait until the machine comes to a complete stop. Then remove the tool blade. Then remove the Support Plate (16) from the Tool Support (23). **(See Figure J.)**

To Grind/Hone A Small Knife Blade:

1. If grinding/honing tools such as small knife blades, loosen the two Knurled Screws (2) on the Holder (6). Center the Tension Plate (5) along the top edge of the knife blade. Then firmly tighten the two Knurled Screws to secure the knife blade in place. **(See Figure K.)**
2. Set the Holder (6) on the Tool Support. Adjust the Tool Support (23) downward so that the knife blade lightly touches the Grinding Stone (19) or Honing Wheel (27). Then temporarily remove the Holder from the Tool Support. **(See Figure K.)**
3. Turn on the Wet Grinder. Grip the Holder firmly with both hands, and place the Holder (6) on the Tool Support (23). Then slowly move the Holder back and forth along the Tool Support to grind/hone the knife blade. **(See Figure K.)**

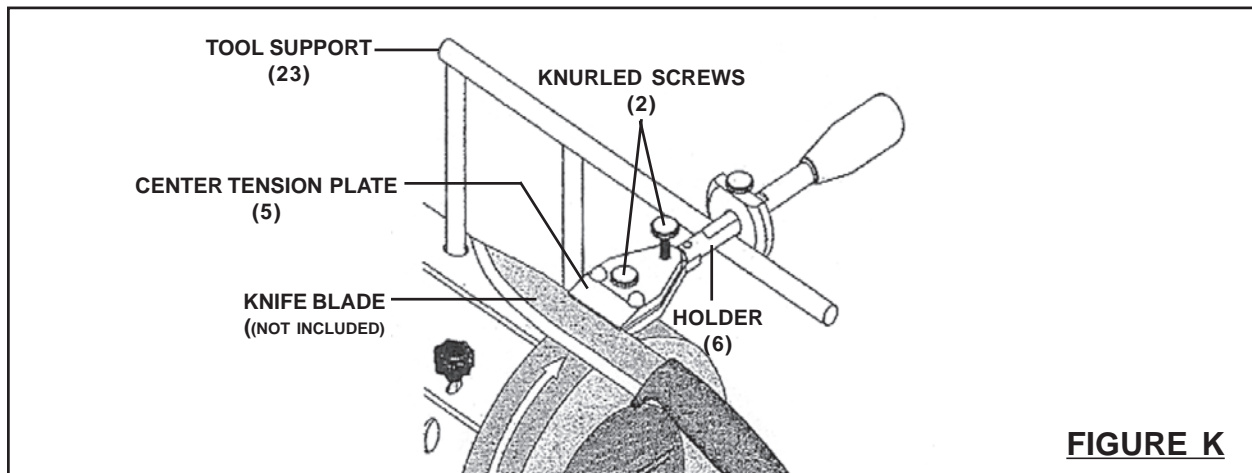
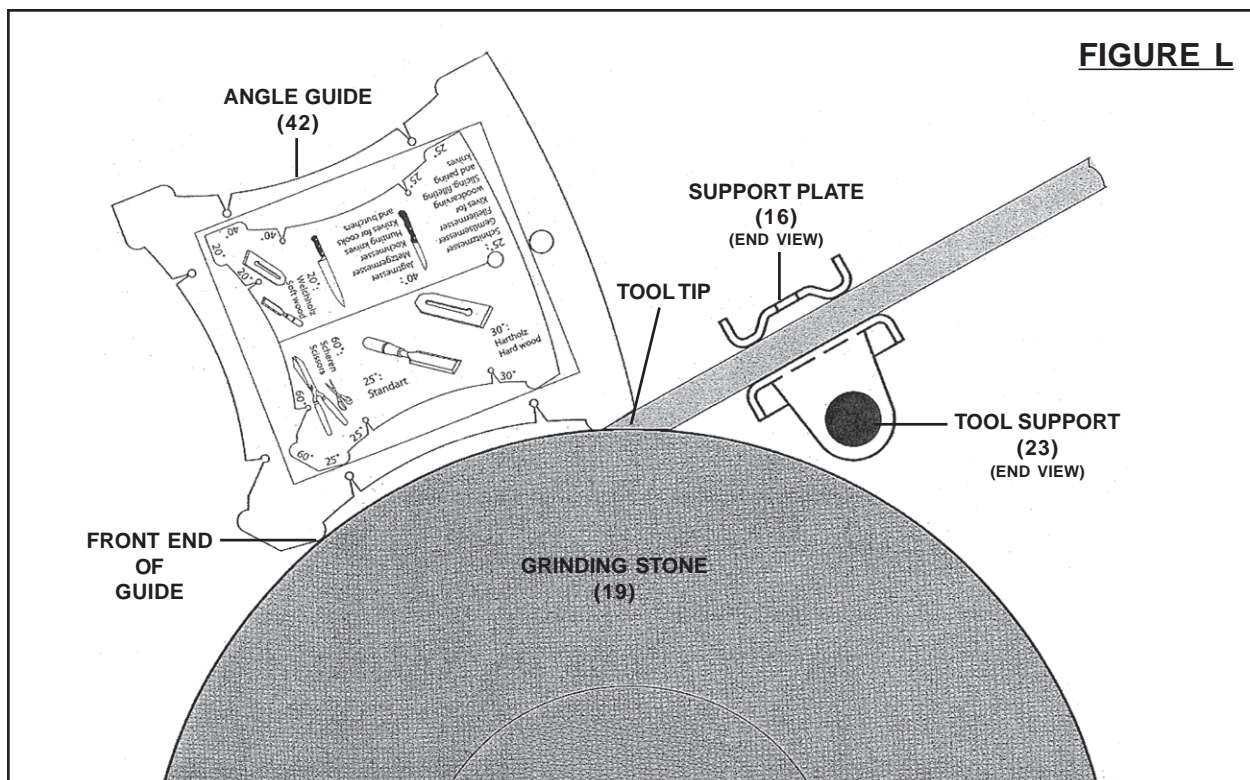


FIGURE K

- When necessary, remove the Holder (6) from the Tool Support and readjust (downward) the Tool Support (23) so that the knife blade again lightly touches the Grinding Stone (19) or Honing Wheel (27). **(See Figure K, previous page.)**
- When finished grinding/honing the knife blade, remove the Holder (6) from the Tool Support (23). Turn off the Wet Grinder. Wait until the machine comes to a complete stop. Then remove the knife blade from the Holder. **(See Figure K.)**

To Use The Angle Guide:

- The Angle Guide (42) is used to determine the cutting edge angle of a tool. To do so, clamp the tool into the Support Plate (16). Then install the Support Plate onto the Tool Support (23). **(See Figure L.)**
- Hold the Angle Guide (42) with the desired angle (as indicated on the Angle Guide) at the tool tip. **(See Figure L.)**
- Adjust the height of the Tool Support (23) so that the front end of the Angle Guide (42) touches the Grinding Stone (19). Make sure the Angle Guide continues to touch the tool tip. **(See Figure L.)**
- Once the desired angle is achieved, firmly lock the Tool Support (23) in place and remove the Angle Guide. **(See Figure L.)**




Grinding Tips:


1. After you have set the angle, turn on the Wet Grinder and begin the grinding process.
2. Press the tool evenly onto the Grinding Stone (19) near the cutting edge, and move the tool crosswise across the Stone. Make sure that at least half the width of the cutting edge comes into contact with the Grinding Stone at any time to avoid damage to the Stone.
3. Allow the Grinding Stone (19) to do the cutting. Do not apply excessive downward pressure on the tool when grinding.
4. Make sure the level of water in the Water Tank (41) is adequate. Do not attempt to dry grind.
5. When finished, turn off the Wet Grinder. Wait until the machine has completely stopped. Unplug the machine from its electrical outlet. Then, remove the tool.

Honing Tips:

1. Never hone *against* the direction of the rotating Honing Wheel (27). Otherwise, the tool will cut into the leather Honing Wheel.
2. Although you can work “free hand” for the honing process, you will achieve more precise results by securing the tool with the Support Plate (16) or Holder (6) and setting the honing angle to the angle used when grinding the tool.
3. Press the tool evenly onto the Honing Wheel (27) near the cutting edge, and move the tool crosswise across the Wheel. Make sure that at least half the width of the cutting edge comes into contact with the Wheel at any time to avoid damage to the Wheel.
4. Allow the Honing Wheel (27) to do the honing. Do not apply excessive downward pressure on the tool when honing.
5. Always keep the Honing Wheel (27) saturated with machine oil and Abrasion Paste (43) for optimum results.
6. When finished, turn off the Wet Grinder. Wait until the machine has completely stopped. Unplug the machine from its electrical outlet. Then, remove the tool.

INSPECTION, MAINTENANCE, AND CLEANING

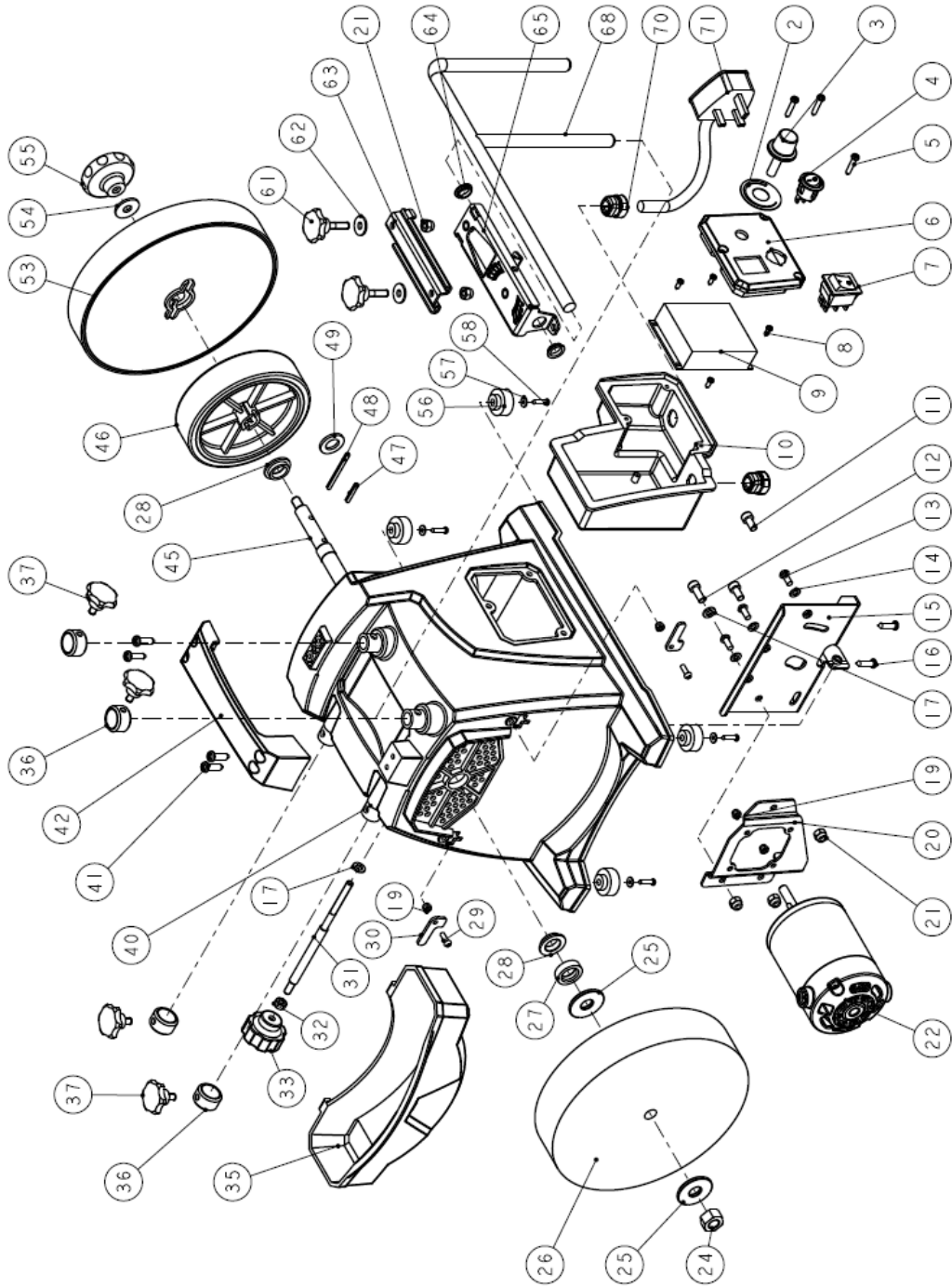
1.  **WARNING!** Make sure the Wet Grinder is disconnected from its electrical outlet prior to performing any inspection, maintenance, or cleaning procedures.
2. **Before each use:** Inspect the general condition of the Wet Grinder. Check for cracked or broken parts, damaged electrical wiring, damaged Grinding Stone or Honing Wheel, and any other condition that may affect safe operation. If abnormal noise or vibration occurs, have the problem corrected before further use.
Do not use damaged equipment.
3. **To dress the Grinding Stone:** New Grinding Stones frequently are not true and during operation often become grooved, glazed (build-up), out of round, or misshapen. To correct this situation, you will need a grinding stone dresser (available from Harbor Freight Tools).
 - A. Make sure to stand at the side of the Grinding Stone (19) for this operation.
 - B. If the Grinding Stone (19) is new, allow it to spin for a minute with no load. If the Grinding Stone spins straight and true, you will not need to dress it prior to operation. If it does not spin straight and true, proceed with the following instructions:
 - C. **If you are using a “pistol grip” dresser**, grip the handle firmly with one hand and the arm of the dresser with the other hand. Allow the Grinding Stone to reach full speed. Use the Tool Support (23) to support your hand and the dresser, and evenly apply the dresser to all surfaces of the Grinding Stone. The Grinding Stone can be dressed in a few minutes.
 - D. **If you are using an “inline dresser”**, hold the handle firmly. Place the dresser on the Tool Support (23) so that its wheels can move freely (i.e., the exposed part of the wheel should be facing up). Let the Grinding Stone reach full speed, and apply the dresser to all surfaces of the Grinding Stone.
4. **To install a new Grinding Stone:** Unscrew and remove the Nut (17) and Washer (18) that secures the Grinding Stone in place. Then, remove the old Grinding Stone. Install a new Grinding Stone of the same type and size. Then secure the Grinding Stone in place with the Nut and Washer.
(See Assy. Diagram.)
5. **To install a new Honing Wheel:** Unscrew and remove the Nut (26) and Washer (25) that secures the Honing Wheel in place. Then, remove the old Honing Wheel. Install a new Honing Wheel of the same type and size. Then secure the Honing Wheel in place with the Nut and Washer.
(See Assy. Diagram.)

6. **To clean:** Use a mild detergent or mild solvent to clean the exterior of the Wet Grinder. Do not immerse the machine in liquid.
7. **When storing,** make sure to store the Wet Grinder in a clean, dry, safe location out of reach of children and other unauthorized people.
8.  **CAUTION! All maintenance, service, or repairs not mentioned in this manual must only be performed by a qualified service technician.**

PLEASE READ THE FOLLOWING CAREFULLY
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THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISKS AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

ASSEMBLY DIAGRAM



NOTE:

Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.