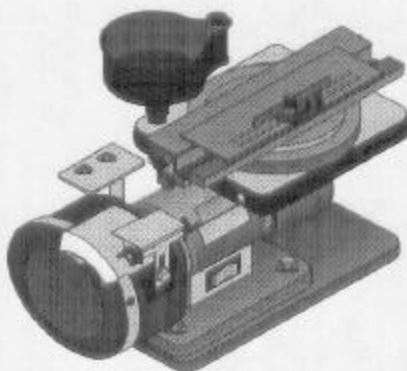


CENTRAL MACHINERY®

WET GRINDER

Model 33867

ASSEMBLY & OPERATING INSTRUCTIONS



Distributed Exclusively by



3491 Mission Oaks Blvd. / Camarillo, CA 93011

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For technical questions and replacement parts, please call 1-800-444-3353.

SPECIFICATIONS

Item #	33867
Volts	110 VAC
Input	2 amps
Dry Wheel RPM	2850-3450
Wet Wheel RPM	320-400
Horsepower	1/4

SAVE THIS MANUAL

You will need this manual for the safety instructions , operating instructions, and parts list. Put it in a safe, dry place for future reference. **Keep your invoice with this manual. Write the invoice number on the inside front cover.**

**READ ALL INSTRUCTIONS
BEFORE ASSEMBLING OR
OPERATING THE GRINDER.**

SAFETY WARNINGS & CAUTIONS

Make sure the grinding wheels are of the proper speed (RPM) rating.

When using the DRY GRINDING WHEEL, frequently quench the workpiece in water to prevent overheating.

Use the tool rest to steady the workpiece. If the tool rest is not used, the torque of the spinning grinding wheel may pull the workpiece from your grasp.

Do not use aluminum oxide grinding wheels when grinding nonferrous metals such as aluminum and brass. Use silicon carbide grinding wheels for all nonferrous metals

WARNING: When using electric tools, machines or equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury.

READ ALL INSTRUCTIONS BEFORE USING THIS TOOL

1. **KEEP WORK AREA CLEAN.** Cluttered areas invite injuries.
2. **CONSIDER WORK AREA CONDITIONS.** Don't use machines or power tools in damp, wet, or poorly lit locations. Don't expose to rain. Keep work area well lit. Don't use tools in the presence of flammable gases or liquids.
3. **KEEP CHILDREN AWAY.** All children should be kept away from the work area. Don't let them handle machines, tools or extension cords.
4. **STORE IDLE EQUIPMENT.** When not in use, tools should be locked up in a dry location to inhibit rust. If possible, store in an area out of reach of children.
5. **DON'T FORCE THE MACHINE OR TOOL.** It will do the job better and more safely at the rate for which it was intended.
6. **USE THE RIGHT TOOL.** Don't force a small tool or attachment to do the work of a larger industrial tool. Don't use a tool for a purpose for which it was not intended.
7. **DRESS PROPERLY.** Don't wear loose clothing or jewelry. They can be caught in moving parts. Protective, electrically non-conductive gloves and non-skid footwear are recommended when working. Wear protective hair covering to contain long hair, preventing it from getting caught in machinery.

CENTRAL MACHINERY

8. **USE EYE AND EAR PROTECTION.** Use a full face mask if the work you're doing produces metal filings, dust or wood chips. Goggles are acceptable in other situations. Wear a clean dust mask if the work creates a lot of fine or coarse dust. When operating for extended periods of time, use approved ear protection. Safety goggles and ear protectors are available from Harbor Freight Tools.
9. **DON'T ABUSE THE POWER CORD.** Do not yank it to disconnect it from receptacle. Do not move bench-mounted or floor-standing machines with the power cord in the outlet. Keep cord away from heat, oil, and sharp edges.
10. **SECURE WORK.** Use clamps or a vise to hold the work if possible. It's safer than using your hands and it frees both hands to operate the tool.
11. **DON'T OVERREACH.** Keep proper footing and balance at all times. Do not reach over or across machines that are running.
12. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have them repaired by an authorized service facility. Keep handles dry, clean, and free from oil and grease.
13. **DISCONNECT POWER.** Unplug when not in use, before servicing, and when changing accessories such as blades, bits, and cutters.
14. **OUTDOOR EXTENSION CORDS.** When the equipment is operated outdoors, use only extension cords intended for outside use. See chart under "Extension Cords" for the proper AWG rating depending upon length of the cord.
15. **STAY ALERT.** Watch what you are doing, use common sense. Don't operate any tool when you are tired.
16. **CHECK DAMAGED PARTS.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and other conditions that may affect its operation. Any part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in the instruction manual. Have defective switches replaced by an authorized service center. Don't use the tool if switch does not turn on and off properly.
17. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces: pipes, radiators, ranges, and refrigerator enclosures.
18. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
19. **DO NOT OPERATE TOOL IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate machine.
20. **NEVER LEAVE TOOL RUNNING UNATTENDED.** Always turn off power. Do not leave tool until it comes to a complete stop.
21. **DO NOT DISASSEMBLE EXCEPT TO REPLACE CARBON BRUSHES.** Consult an authorized service agent in the event of power tool failure.
22. **DO NOT CLEAN PLASTIC PARTS WITH SOLVENTS.** Solvents may crack or damage plastic parts. Wipe plastic parts with a soft cloth lightly dampened with soapy water.

VOLTAGE WARNING

Before connecting the tool to a power source (receptacle, outlet, etc.) be sure the voltage supplied is about the same as that specified on the nameplate of the tool. If one says 120V and the other says 110V then there will be no complications. Never try to plug a 110V tool into a 230V outlet, or the other way around. The plug and outlet have completely different shapes. This is because a power source with a voltage greater than that specified on the tool can result in a **SERIOUS INJURY** to the user as well as damage to the tool. If in doubt, **DO NOT PLUG IN THE TOOL.** Using a power source with voltage (115V) less than the nameplate rating (230V) is harmful to the motor.

EXTENSION CORDS

You may use either a two- or three-prong extension cord. If your tool has a grounded, three-prong plug, you must use a three-prong extension cord with three-prong receptacles. Only use rounded jacket extension cords, preferably listed by the Underwriters Laboratories (UL). Make sure the cord is rated for outdoor use if you plan on using the tool outside; if you plan on indoor use, you may also use an outdoor rated cord. Extension cords rated for outdoor use have the letters "WA" on the cord jacket.

The extension cord must have a minimum wire size depending on the amperage of the tool and the length of the extension cord. This size is signified by its AWG (American Wire Gauge) rating; the smaller the gauge, the greater the cable's capacity. If you are using two or more cords, the total length of the combined cords must be used to determine the minimum AWG rating. Each of the cords used must meet this rating.

The chart below is used to determine the rating required according to the length of the cord(s). The amps of your tool are found either in this manual, or on the nameplate of the tool.

AMP RATING TOTAL EXTENTION CORD(S) LENGTH IN FEET

	25	50	75	100	125	150	175	200
0-10	18	18	16	16	14	14	12	12
10.1-13.0	16	16	14	14	14	12	12	12
13.1-15	14	14	12	12	12	12	12	—

Always inspect extension cords for any damage. If there are any loose, frayed or exposed wires, damaged insulation, or defective connections, replace the cord. Harbor Freight Tools can supply UL listed and outdoor rated cords in multiple AWG ratings if needed.

UNPACKING

If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual.

Ref	Item Description	Quantity
N/A	Bench Grinder Unit	1
N/A	Hardware	lot
10	Tool Rest	1
13	Bracket	1
17	Eye Shield Holder	1
22	Eye Shield	1
52	Water Hose	1
55	Water Reservoir	1
56	Water Valve	1
60	Wrench	1
61	Locking Knob	2
65	Rest Holder	1
66	Tool Rest (Wet Wheel)	1

ASSEMBLY

Your Wet Grinder will require minor assembly before use. Refer to the Parts List and Assembly Drawing, at the back of this manual, for the location of individual parts.

Wet Wheel Tool Rest Assembly

Step 1: Place the BENCH GRINDER UNIT on a stable workplace.

Step 2: Attach HOLDER (#62) to TOOL REST (#65) using the KNOB (#64) and SCREW (#63). See Figure 1.

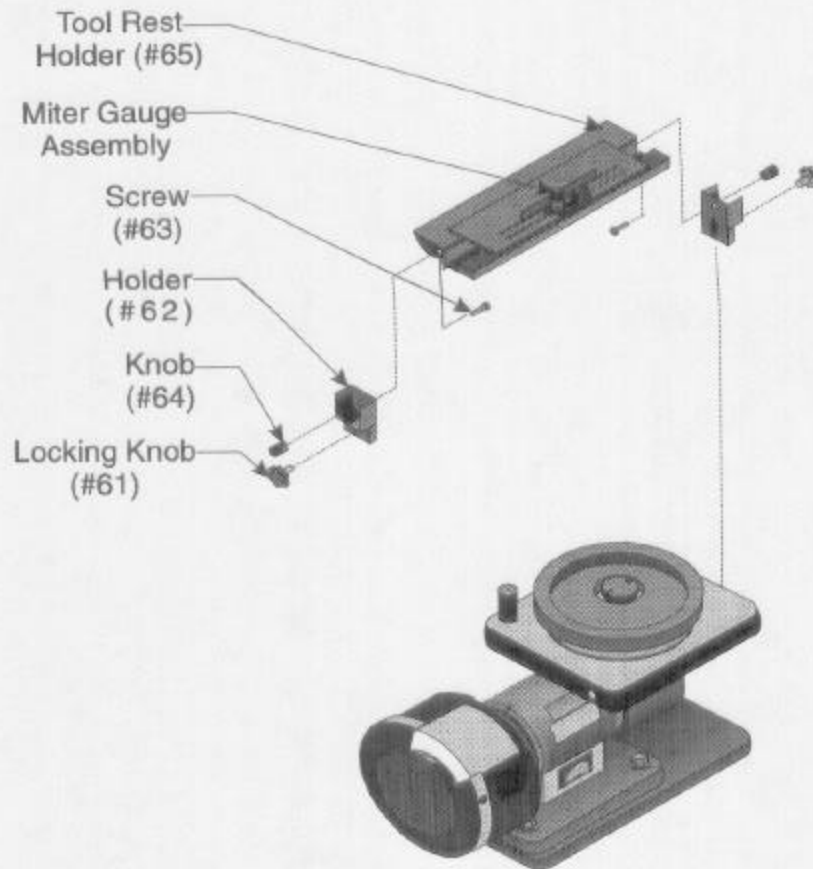


Figure 1 -- Adjustment of Rest Holder (#65)

Step 3: Facing the front of the BENCH GRINDER UNIT, place the TOOL REST HOLDER (#65) over the WET GRINDING WHEEL (#58) and adjust to the desired height.

Step 4: Secure using the two LOCKING KNOBS (#61).

Step 5: Slide the TOOL REST (#66) onto the REST HOLDER channel.

Dry Wheel Tool Rest Assembly

Step 1: Place the BRACKET (#13) onto the TOOL REST (#10) and secure using both WINGNUTS (#12), LOCK WASHERS (#15), WASHERS (#11). Assemble as shown in Figure 2.

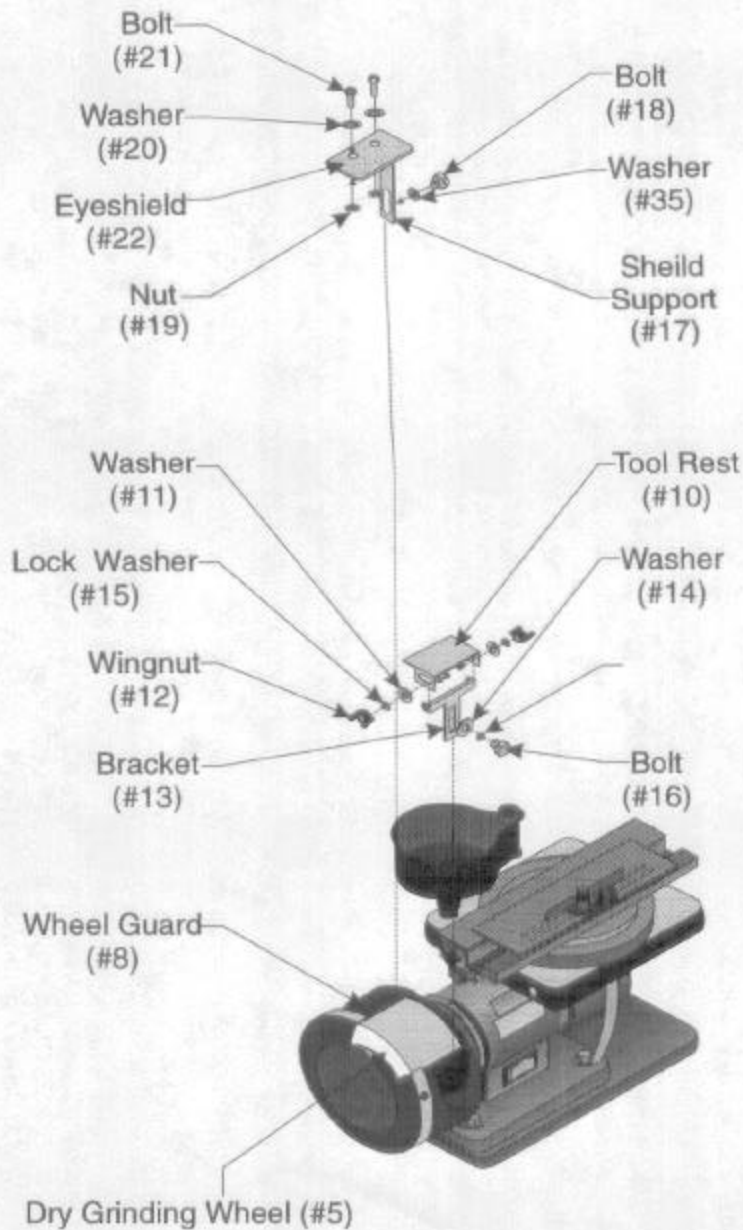


Figure 2 -- Assembly of Tool Rest

Step 2: Attach the Tool Rest Assembly to the WHEEL GUARD (#8) using the BOLT (#16), LOCK WASHER (#15), and WASHER (#14).

Step 3: Adjust to no more than 1/16" from the DRY GRINDING WHEEL (#5).

Eye Shield Assembly

- Step 1: Attach the EYE SHIELD (#22) to the SHIELD SUPPORT (#17) using the BOLT (#21), NUT (#19), and WASHER (#20).
- Step 2: Place the Eye Shield Assembly on the right side of the WHEEL GUARD and secure using the BOLT (#18) and WASHER (#35).
- Step 3: Adjust the EYE SHIELD to the desired position

Water Reservoir Assembly

- Step 1: Place the WATER RESERVOIR (#55) onto the WATER TRAY (#53) and push firmly into place.
- Step 2: Place the WATER VALVE (#56) in the WATER RESERVOIR.
- Step 3: Attach the WATER HOSE (#52) to the bottom of the WATER TRAY (#53) so that water drains away from the working area.

GRINDING WHEEL ASSEMBLY

Remove Wet Grinding Wheel

Step 1: Using the included WRENCH (#60), remove the WHEEL MOUNTING NUT (#59) by turning it in a clockwise direction while holding the WET GRINDING WHEEL (#58) in place as shown in Figure 3.

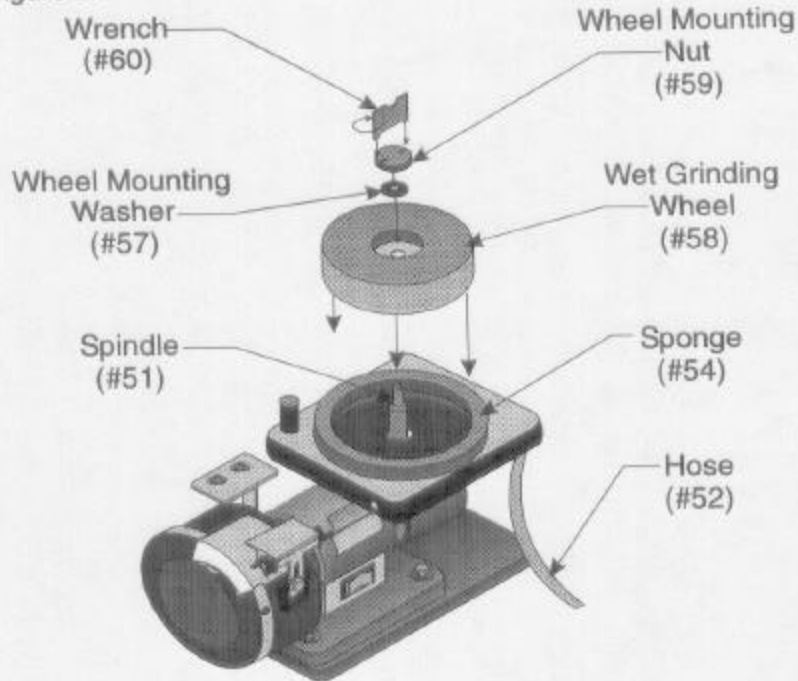


Figure 3 -- Removing Grinding Wheel

Step 2: Slide the WHEEL MOUNTING WASHER (#57) off of the SPINDLE (#51).

Step 3: Slide the WET GRINDING WHEEL off of the SPINDLE.

Installing Wet Grinding Wheel

Step 1: Make sure that the working surface of the WET GRINDING WHEEL (#58) is facing up and place it on the SPINDLE (#51).

Step 3: Center the WHEEL MOUNTING WASHER (#57) on the SPINDLE with its concave side facing down.

Step 4: Place the WHEEL MOUNTING NUT (#59) on the SPINDLE and tighten.

CAUTION

Do not over tighten the WHEEL MOUNTING NUT as it can crack the GRINDING WHEEL.

Removing Dry Grinding Wheel

Step 1: Remove the SIDE WHEEL GUARD (#1) by unscrewing its SCREWS (#2) as shown in Figure 4.

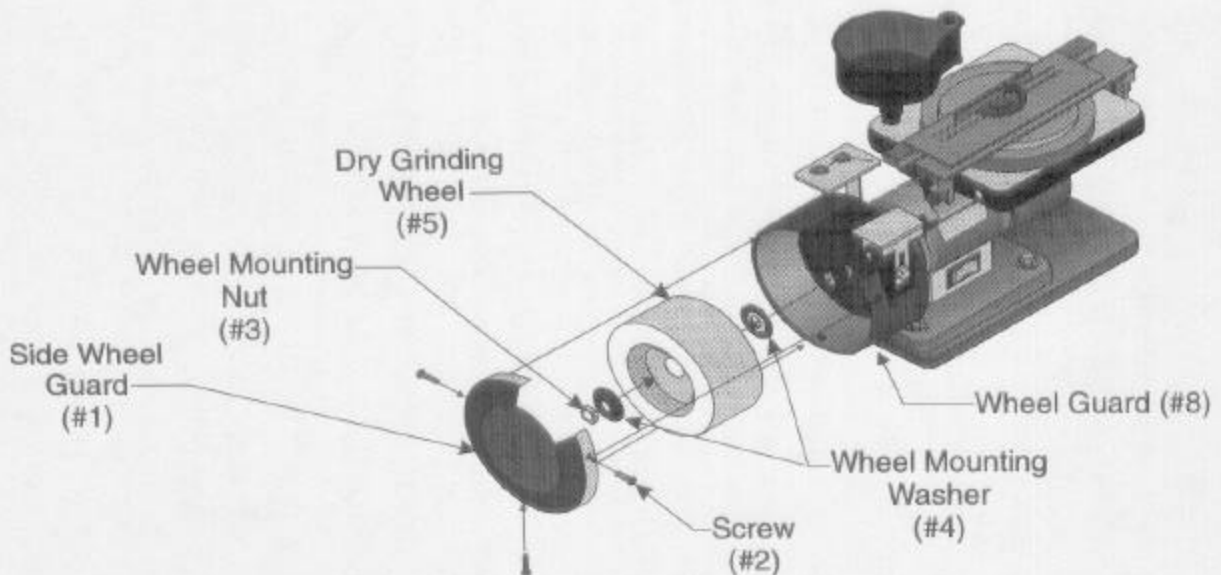


Figure 4 – Removing Dry Grinding Wheel

Step 2: Using a wrench, remove the WHEEL MOUNTING NUT (#3) by turning it in a clockwise direction while holding the DRY GRINDING WHEEL (#5) in place .

Step 3: Remove the WHEEL MOUNTING WASHER (#4).

Step 4: Remove the DRY GRINDING WHEEL.

Installing Dry Grinding Wheel

Step 1: Make sure that the inside WHEEL MOUNTING WASHER (#4) is placed on the spindle with its concave side facing out.

Step 2: Place the DRY GRINDING WHEEL (#5) on the spindle so that it fits inside the WHEEL GUARD (#8).

Step 3: Place the WHEEL MOUNTING WASHER (#4) on the spindle with its concave side facing in.

Step 4: Secure using the WHEEL MOUNTING NUT (#3).

Step 5: Replace the SIDE GUARD (#1) and secure using the SCREWS (#2).

Dressing the Wheel

Caution: The grinding wheels must always be checked for cracks or imperfections. This is done with the "ring test". Tap the wheel gently near the outer rim with the handle of a screwdriver; you should hear a clear bell-like ringing. **If a dull thud occurs do not use the wheel!** This means the wheel has been damaged and will, most likely, come apart during normal operations.

New wheels frequently are not true and during operation often become grooved, glazed, out of round, or misshapen. At these times, they will need dressing. You will need a grinding wheel dresser for this operation. Dressers are available from Harbor Freight Tools.

- Step 1: Standing to the side of the wheel, let the Bench Grinder run for a full minute with no load. If the GRINDING WHEEL runs straight and true, you will not need to dress it prior to operating. If it is not, proceed with the following steps.
- Step 2: With the Bench Grinder running, grip the handle of the dresser firmly with one hand and the arm of the dresser with the other.
- Step 3: Using the TOOL REST (#10 or #66) as support, apply the dresser evenly to all surfaces of the GRINDING WHEEL.
- Step 4: Continue step 3 until the GRINDING WHEEL is straight and true.

OPERATION

Operation Notes

The Wet Grinder comes assembled with a horizontal WET GRINDING WHEEL (#58) and a vertical DRY GRINDING WHEEL (#5). For the best results, use the DRY WHEEL for fast, coarse grinding and the WET WHEEL for fine, finish grinding.

When using the DRY GRINDING WHEEL (#5), the workpiece will quickly become heated. Frequently quench the workpiece in water during the grinding process. If the metal becomes heated so much that it gets blue-colored, it will be too soft to be useful. You must grind off the part that is colored, cool the workpiece, and start again.

Dry Grinding Operation

Step 1: Fill a tray with water that is large enough for the workpiece to fit into and place it near the Grinder.

Step 2: Position the EYE SHIELD (#22) and the TOOL REST(#10) and secure firmly in place as shown in Figure 5.

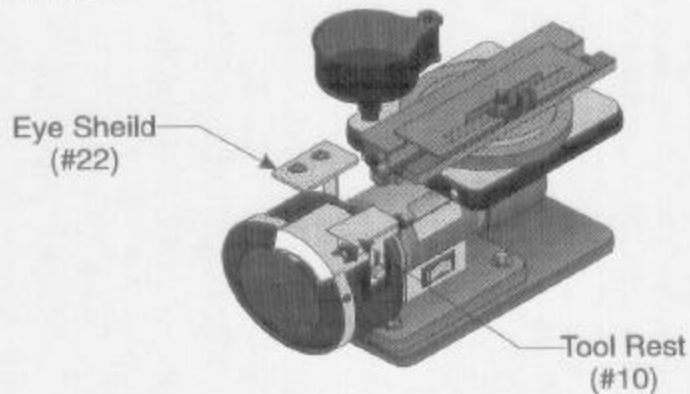


Figure 5 -- Dry Grinding

Step 3: Turn the Grinder on.

Step 4: Once the DRY GRINDING WHEEL (#5) has reached full speed, bring the workpiece up to the wheel gently and without jarring.

Step 5: Use the TOOL REST to steady the workpiece.

Step 6: The workpiece will become quickly heated. Frequently quench it in water.

Step 7: When the job is finished, immediately turn the Grinder off.

Wet Grinding Operation

- Step 1: Adjust the wet grinding TOOL REST angle by loosening the two KNOBS (#64), tilting the TOOL REST to the required angle, and tightening the two KNOBS.
- Step 2: Adjust the TOOL REST GUIDE (#67) by loosening the KNOB (#64), adjusting the GUIDE to the required angle, and tightening the KNOB.
- Step 3: Adjust the TOOL REST (#66) to the desired position (see Adjusting the Wet Grinding Tool Rest above).
- Step 4: Fill the WATER RESERVOIR (#55) with water and position its spout over the WET GRINDING WHEEL (#58).
- Step 5: Adjust the WATER VALVE (#56) by turning it until the desired rate of water has been reached.
- Step 6: Turn the Grinder on.
- Step 7: Once the WET GRINDING WHEEL (#58) has reached full speed, bring the workpiece up to the wheel gently and without jarring.

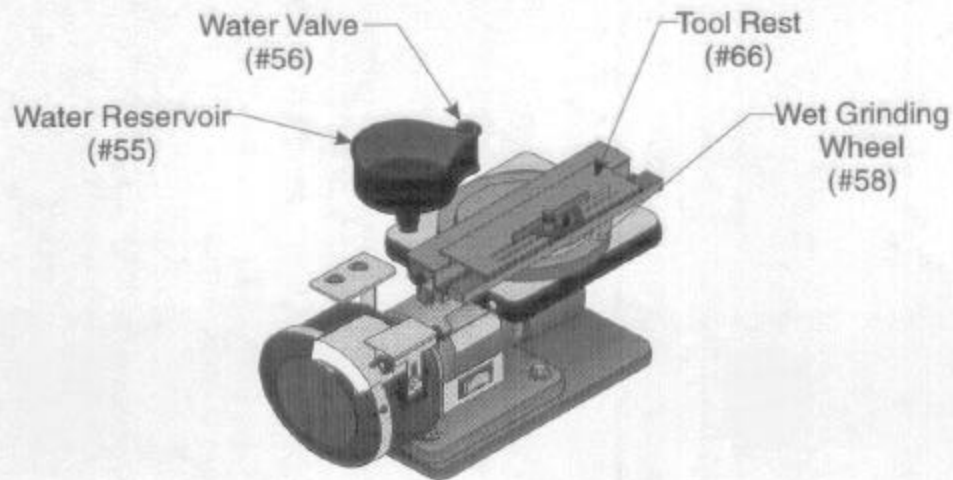


Figure 6 -- Wet Grinding

- Step 8: Use the TOOL REST to steady the workpiece.
- Step 9: When the job is finished, immediately turn the Grinder off.

PARTS LIST

Item#	Description
1	Side Guard
2	Screw
3	Nut
4	Wheel Flange
5	Dry Grinding Wheel
6	Screw
7	Washer
8	Wheel Guard
9	Screw
10	Tool Rest
11	Washer
12	Wing Nut
13	Bracket
14	Washer
15	Lock Washer
16	Bolt
17	Shield Support
18	Bolt
19	Nut
20	Washer
21	Bolt
22	Eye Shield
23	Bushing
24	Ball Bearing
25	Motor Stator
26	Motor Rotor
27	Terminal
28	Condenser
29	Plate
30	Rear Body
31	Strain Relief
32	Power Cord
33	Front Body
34	Bolt

Item#	Description
35	Washer
36	Screw
37	Power Switch
38	Base
39	Base Foot
40	Screw
41	Pin
42	Screw
43	Gear
44	Ring Plate
45	Ball Bearing
46	Gear Box
47	Screw
48	Pin
49	Gear
50	Gear Box Cover
51	Spindle
52	Water Hose
53	Water Tray
54	Sponge
55	Water Reservoir
56	Water Valve
57	Wheel Mounting Washer
58	Wet Grinding Wheel
59	Wheel Mounting Nut
60	Wrench
61	Locking Knob
62	Holder
63	Screw
64	Knob
65	Tool Holder
66	Tool Rest Wet Wheel
67	Guide

Assembly Diagram and Parts List

