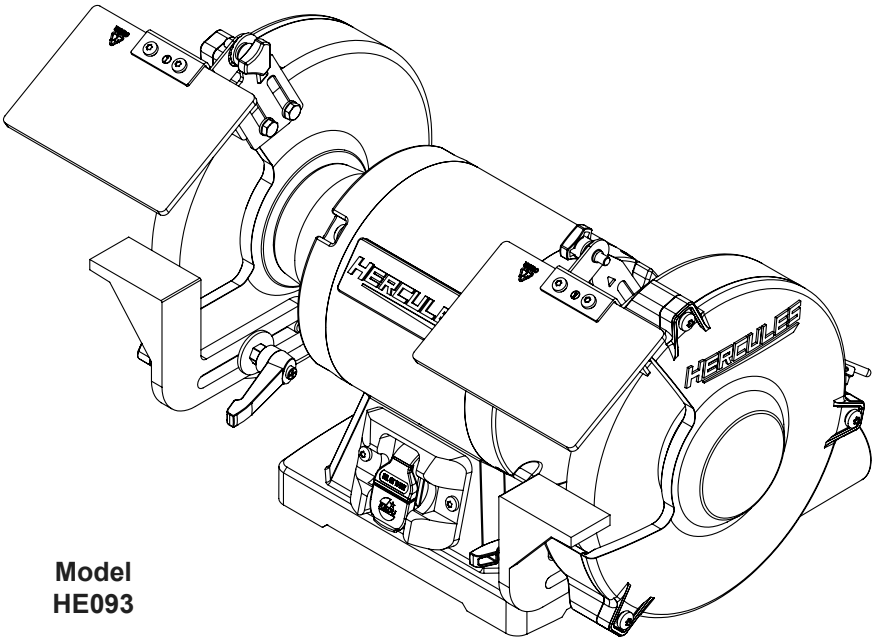
HERCULES

Owner's Manual & Safety Instructions

26j



Model
HE093

8" Heavy Duty Professional Bench Grinder

⚠WARNING: To prevent serious injury, User must read and understand Owner's Manual. SAVE THIS MANUAL.

When unpacking, make sure that the product is intact and undamaged.
If any parts are missing or broken, please visit harborfreight.com/customer-support/contact-us as soon as possible. Reference 70557.

IMPORTANT SAFETY INFORMATION

General Power Tool Safety Warnings

⚠WARNING

Read all safety warnings, instructions, illustrations and specifications provided with this power tool. *Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.*

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work Area Safety

1. **Keep work area clean and well lit.** *Cluttered or 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 children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*

Electrical Safety

1. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*
2. **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is earthed or grounded.*
3. **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
4. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*
5. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
6. **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** *Use of a GFCI reduces the risk of electric shock.*

Personal Safety

1. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*
2. **Use personal protective equipment. Always wear eye protection.** *Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
3. **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** *Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.*
4. **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
5. **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*
6. **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*
7. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** *Use of dust collection can reduce dust-related hazards.*
8. **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** *A careless action can cause severe injury within a fraction of a second.*
9. **Only use safety equipment that has been approved by an appropriate standards agency.** *Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.*
10. **Avoid unintentional starting.** *Prepare to begin work before turning on the tool.*
11. **Do not leave the tool unattended when it is plugged into an electrical outlet.** *Turn off the tool, and unplug it from its electrical outlet before leaving.*
12. **This product is not a toy.** *Keep it out of reach of children.*

13. **People with pacemakers should consult their physician(s) before use.** *Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:*
    • Avoid operating alone.
    • Do not use with Switch locked on.
    • Properly maintain and inspect to avoid electrical shock.
    • Properly ground power cord. Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.
14. **The warnings, precautions, and instructions discussed in this instruction 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.*

Power Tool Use and Care

1. **Do not force the power tool. Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*
2. **Do not use the power tool if the switch does not turn it on and off.** *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
3. **Disconnect the plug from the power source and/ or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.** *Such preventive safety measures reduce the risk of starting the power tool accidentally.*
4. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*
5. **Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*
6. **Keep cutting tools sharp and clean.** *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*
7. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*
8. **Keep handles and grasping surfaces dry, clean and free from oil and grease.** *Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.*

Service

1. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** *This will ensure that the safety of the power tool is maintained.*
2. **Maintain labels and nameplates on the tool.** *These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.*

Bench Grinder Safety Warnings

1. **Do not use a damaged accessory. Before each use, inspect the accessory such as abrasive wheels for chips and cracks. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute.** *Damaged accessories will normally break apart during this test time.*
2. **The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool.** *Accessories running faster than their rated speed can break and fly apart.*
3. **Never grind on the sides of a grinding wheel.** *Grinding on the side can cause the wheel to break and fly apart.*

Vibration Safety

This tool vibrates during use.
Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders.
To reduce the risk of vibration-related injury:

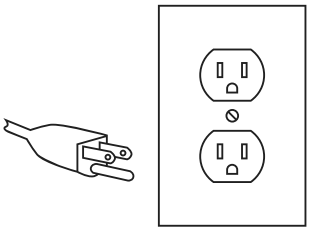
1. **Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use.** *Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.*
2. **Do not smoke during use.** *Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.*
3. **Wear suitable gloves to reduce the vibration effects on the user.**
4. **Use tools with the lowest vibration when there is a choice.**
5. **Include vibration-free periods each day of work.**
6. **Grip tool as lightly as possible (while still keeping safe control of it).** *Let the tool do the work.*
7. **To reduce vibration, maintain the tool as explained in this manual.** *If any abnormal vibration occurs, stop use immediately.*

GROUNDING

⚠WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION: 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.

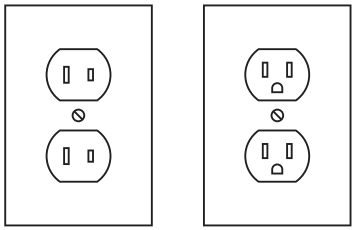
Grounded Tools: Tools with Three Prong Plugs



3-Prong Plug and Outlet

1. Tools marked "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. **(See 3-Prong Plug and Outlet.)**
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal. **(See 3-Prong Plug and Outlet.)**
3. The tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the preceding illustration. **(See 3-Prong Plug and Outlet.)**

Double Insulated Tools: Tools with Two Prong Plugs



Outlets for 2-Prong Plug

1. Tools marked "Double Insulated" do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code.
2. Double insulated tools may be used in either of the 120 volt outlets shown in the preceding illustration. **(See Outlets for 2-Prong Plug.)**

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 Table A.)**
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 Table A.)**
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 Table A.)**
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 Table A.)**
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 the 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 the extension cords from sharp objects, excessive heat, and damp or wet areas.

TABLE A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120/240 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	25´	50´	75´	100´	150´
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	-	-	-

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

Warning Symbols and Definitions

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER **Indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

WARNING **Indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

CAUTION **Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

NOTICE **Addresses practices not related to personal injury.**

Symbology

	Double Insulated
V	Volts
~	Alternating Current
A	Amperes
n_0 xxxx/min.	No Load Revolutions per Minute (RPM)
	WARNING marking concerning Risk of Eye Injury. Wear ANSI-approved safety goggles with side shields.
	Read the manual before set-up and/or use.
	WARNING marking concerning Risk of Fire. Do not cover ventilation ducts. Keep flammable objects away.
	WARNING marking concerning Risk of Electric Shock. Properly connect power cord to appropriate outlet.

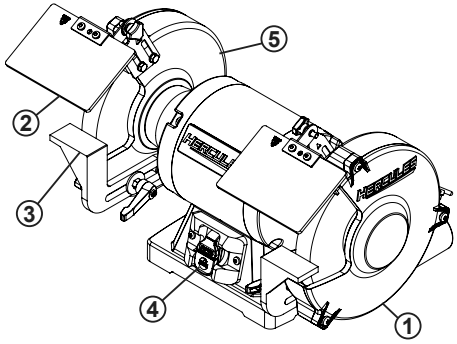
Specifications

Electrical Rating	120VAC / 60Hz / 8A
No Load Speed	n_0: 3,580/min
Min/Max. Accessory Diameter	5-1/2"-8"
Arbor Size	5/8"

Setup - Before Use:

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

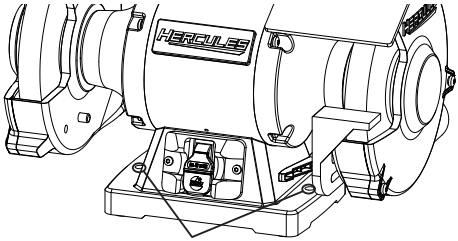
Functions



1. Wheel Cover
2. Eye Shield
3. Tool Rest
4. Power Switch with Safety Key
5. Grinding Wheel

Mounting

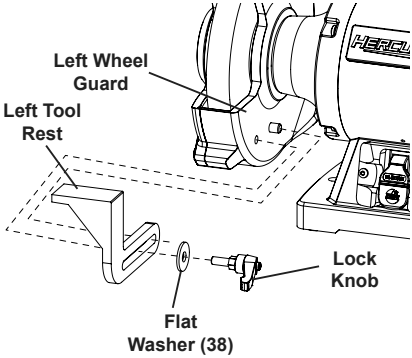
Mount Grinder to a stable workbench using two mounting holes and appropriate hardware (sold separately).



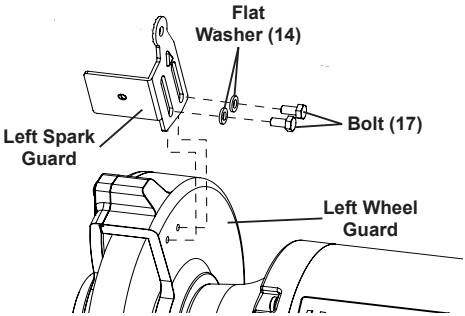
Mounting Holes

Assembly

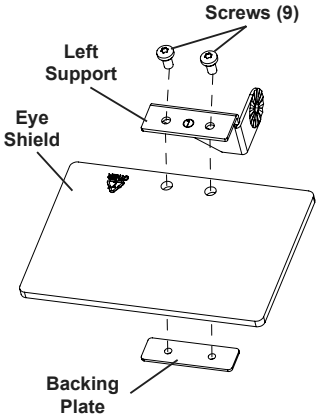
1. Install Left Tool Rest to the Left Wheel Guard. Adjust Tool Rest to within 1/16" of the Grinding Wheel. Secure with Lock Knob and Flat Washer (38).
2. Install Right Tool Rest to the Right Wheel Guard. Adjust Tool Rest to within 1/16" of the Grinding Wheel. Secure with Lock Knob and Flat Washer (38).



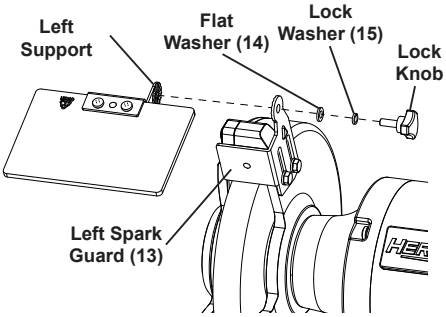
3. Attach Left Spark Guard to Left Wheel Guard. Adjust Spark Guard to within 1/16″ of Grinding Wheel. Secure with two Bolts (17) and Flat Washers (14).
4. Attach Right Spark Guard to Right Wheel Guard. Adjust Spark Guard to within 1/16″ of Grinding Wheel. Secure with two Bolts (17) and Flat Washers (14).



5. Attach Eye Shield to Left Support with Screws (9) and Backing Plate.
6. Attach Eye Shield to Right Support with Screws (9) and Backing Plate.



7. Attach Left Support to Left Spark Guard with Lock Knob, Lock Washer (15), and Flat Washer (14).
8. Attach Right Support to Right Spark Guard with Lock Knob, Lock Washer (15), and Flat Washer (14).



OPERATING INSTRUCTIONS

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING

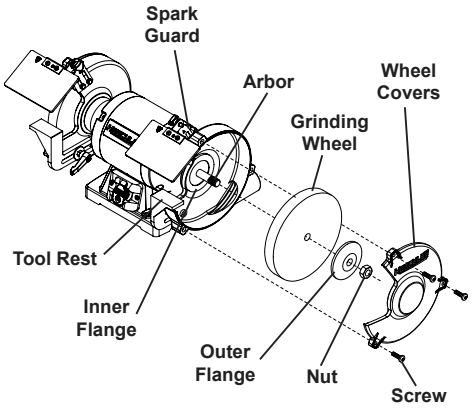
TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Make sure that the Switch is in the off-position and unplug the tool from its electrical outlet before performing any procedure in this section.

Tool Changing

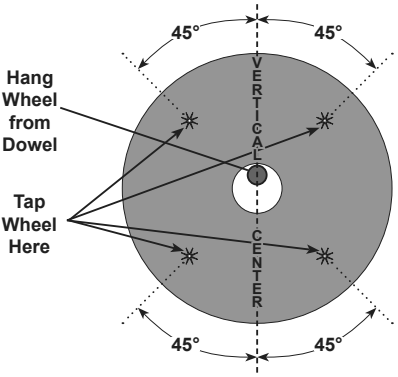
Replacing a Grinding Wheel

1. The Grinding Wheel MUST be:
- rated to at least 3,580 RPM.
- no smaller than 5-1/2″ (139.7mm) in diameter
- no larger than 8″ (203.2 mm) in diameter.
- fitted with a 5/8″ round arbor hole.
- 1″ thick.
- suitable for edge grinding, not surface grinding.
- dry and clean.
- proven undamaged by inspection and by the ring-test explained below.

2. Disconnect Bench Grinder from power source.
3. Loosen Spark Guards and move them away from Grinding Wheels.
4. Loosen Tool Rests and move them away from Grinding Wheels.
5. Remove Wheel Covers.
6. Prevent the Grinding Wheel from turning by holding the opposite Wheel firmly.
7. Remove Nut from Grinding Wheel.
   a. Turn right side Grinding Wheel Nut COUNTERCLOCKWISE.
   b. Turn left side Grinding Wheel Nut CLOCKWISE.
8. Remove Outer Flange and Grinding Wheel. Keep Inner Flange in position on the Arbor.



9. Closely inspect new Grinding Wheel before mounting. Perform a ring test on Wheel as follows:
   a. Suspend wheel using a dowel or finger through the Arbor hole.



   b. Tap the flat side of the wheel with a light non metallic object, such as a screwdriver handle, at a point 45° from the vertical center line on each side of the wheel and 1–2 inches from the edge of the wheel (see Illustration).
   c. Rotate the wheel and repeat the test until the entire wheel has been checked.
   d. An undamaged wheel will give a clear tone. If cracked, there will be a dead sound and not a clear ring.

10. For wheels with paper gaskets (blotters) or metal gaskets: Slip the wheel onto the Arbor with the gasket first. The gasket should be centered on the wheel and the wheel and gasket should rest flat against the Flange.

    ⚠WARNING: To prevent serious injury, gaskets must be used for all grinding wheels they are provided with. Gaskets help prevent grinding wheel damage and wheel slippage, causes of wheel failure.

11. Place the Grinding Wheel with the Outer Flange onto the Arbor.
12. Thread the Nut onto the Arbor with its flat side against the Outer Flange. Wrench tighten only enough so that the Wheel is securely held on the Arbor.

    ⚠WARNING: To prevent serious injury, do not overtighten Nut. Overtightening can damage the wheel, causing wheel failure.

Correcting Wheel Balance

Confirm Wheel balance by spinning the Wheel by hand and observing the Wheel distance from the Tool Rest as it spins; variations in this distance indicates the Wheel balance needs to be corrected:

1. Loosen Nut, and manually (if possible) adjust the Wheel closer to the Arbor centerline; hold in place while tightening the Nut.
2. Use a wheel dresser to remove the outermost layer and/or high spots of the Wheel to achieve Wheel balance. Follow the Wheel Dresser Manufacturer's instructions.

Note: If Wheel still vibrates excessively after the Wheel has been dressed or adjusted to center as described above, and Wheel does not exhibit wobble from side to side at speed, Wheel is likely out of balance and should be replaced.

Eliminating Wheel Wobble (Side to Side)

Note: Slight side to side wobble may exist as the Wheel spins up or down from full speed, but this will not affect normal operation. Follow the instructions below to remove excessive side to side wobble:

1. Loosen Nut and rotate Outer Flange slightly. Snug the Nut and rotate the Wheel by hand to confirm wobble is eliminated.
2. If wobble still exists, continue repeating step 1 in slight increments in the same direction, making sure Wheel is in the same orientation as it was in step 1.
3. If wobble is still not eliminated, continue holding Wheel in same orientation as it was in step 1, and rotate Inner Flange 90°. Repeat Steps 1-2. Continue this sequence of Inner and Outer Flange movements until wobble is eliminated.

Note: If necessary, a shim made of paper/card stock may be placed between the Inner or Outer Flange and Wheel. If excessive wobble still exists, see Troubleshooting on page 12, remembering these possible sources of imbalance:

- Wheel is not balanced or is out-of-round.
- Wheel Arbor bushing has excessive play.
- Wheel is of poor quality.
- Inner or Outer Flanges are warped.

Workpiece and Work Area Set Up

1. Designate a work area that is clean and well lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
3. There must not be objects, such as utility lines, nearby that will present a hazard while working.
4. You must use personal safety equipment including, but not limited to, ANSI-approved eye and hearing protection, as well as heavy-duty work gloves.
5. Before beginning work, provide for sparks and debris that will fly off the work surface.

General Instructions for Use

1. Make sure that the Switch is in the off-position, then plug in the tool.
2. Adjust the Spark Guard and Tool Rest frequently to compensate for Wheel wear.
3. Keep the distance between the Spark Guard, Tool Rest, and Wheel as small as possible and in any case not greater than 1/16″. Always adjust the Tool Rest so that the angle between the Tool Rest and Wheel is always greater than 85°.

WARNING! TO PREVENT SERIOUS INJURY: Replace worn Wheel when these gaps are no longer able to be maintained. Replace damaged or deeply grooved Wheels.

4. Use the tool with Wheels on both Spindles to limit the risk of contact with rotating Spindle.

WARNING! TO PREVENT SERIOUS INJURY: Always use Spark Guard and Tool Rest.

5. Insert the Safety Key and turn the Power Switch on.
6. Allow tool to come up to full speed before applying workpiece to Wheel.
7. Hold the workpiece using both hands.
8. Apply workpiece to Wheel, allowing tool to operate at full speed. If the tool bogs down, use lighter pressure.
9. To create a smoother surface, keep workpiece moving over the Wheel.
10. When finished, turn Power Switch off, remove Safety Key and store out of reach of children.

WARNING! TO PREVENT SERIOUS INJURY: The tool will restart automatically if stalled.

11. To prevent accidents, turn off the tool and unplug it after use. Clean, then store tool indoors out of children's reach.

Maintenance And Servicing Instructions

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Make sure that the Switch is in the off-position and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment.
If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - damaged cord/electrical wiring,
   - cracked or broken parts, and
   - any other condition that may affect its safe operation.
2. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
3. **PERIODICALLY,** blow dust and grit out of the motor vents using dry compressed air. Wear ANSI-approved safety goggles and NIOSH-approved breathing protection while doing this.
4. **PERIODICALLY,** remove Wheel Covers and wipe out wheel chambers with a brush or rag. Wear ANSI-approved safety goggles and NIOSH-approved breathing protection while doing this.
5. **⚠WARNING! TO PREVENT SERIOUS INJURY: If the plug or the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

Accessory Storage and Handling

1. Handle accessories carefully to prevent dropping or bumping. Do not use wheels that have been dropped or bumped.
2. Store accessories in shelves, racks, boxes, or drawers. Keep storage area dry and above freezing. Any wheels exposed to humidity or freezing temperatures must not be used.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Tool will not start.	1. Cord not connected. 2. No power at outlet. 3. Tool's thermal reset breaker tripped (if equipped). 4. Internal damage or wear. (Carbon brushes or Switch, for example.)	1. Check that cord is plugged in. 2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads. 3. Turn off tool and allow to cool. Press reset button on tool. 4. Have technician service tool.
Tool operates slowly.	1. Forcing tool to work too fast. 2. Extension cord too long or cord diameter too small.	1. Allow tool to work at its own rate. 2. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See *Extension Cords on page 5*.
Excessive noise or rattling.	Internal damage or wear. (Bearings, for example.)	Have technician service tool.
Overheating.	1. Forcing tool to work too fast. 2. Blocked motor housing vents. 3. Motor being strained by long or small diameter extension cord.	1. Allow tool to work at its own rate. 2. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. 3. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See *Extension Cords on page 5*.

Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply before service.

Problem	Possible Causes	Likely Solutions
Tool does not grind, sand or brush effectively.	1. Disc accessory may be loose on Spindle. 2. Disc accessory may be damaged, worn or wrong type for the material.	1. Be sure disc accessory is of correct dimension and Flange Arbor Nut is tight. 2. Check condition and type of disc accessory. Use only proper type of disc accessory in good condition.
Grinding Wheels do not spin true	1. Too much play in the Grinding Wheel bushings. 2. Inner and/or Outer Flanges are warped, damaged, or worn. 3. Arbor Nut is too tight.	1. Replace the bushings or install a new Grinding Wheel. 2. Replace Inner and/or Outer Flanges. 3. Loosen Arbor Nut. Do not overtighten.
Excessive Grinding Wheel vibration	1. Grinding Wheels not balanced. 2. Too much play in the Grinding Wheel bushings. 3. Inner and/or Outer Flanges are warped, damaged, or worn. 4. Incorrect type/size Wheel(s). 5. Worn Bearings in Bench Grinder.	1. Balance Grinding wheels and correct side to side wobble as described in Replacing a Grinding Wheel and Eliminating Wheel Wobble (Side to Side) on page 9. 2. Replace the bushings or install a new Grinding Wheel. 3. Replace Inner and/or Outer Flanges. 4. Use correct type/size Wheel(s) as described under Replacing a Grinding Wheel on page 8 5. Have qualified technician replace bearings.

Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply before service.

PLEASE READ THE FOLLOWING CAREFULLY

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COMPONENT LIST AND DIAGRAM

Component List

Part	Description	Qty
1	Hex Socket Screw M6x25	6
2	Left Wheel Cover	1
3	Star Washer M5	6
4	Nut M16 Left	1
5	Flange	4
6	Grinding Wheel	2
7	Nut M16 Right	1
8	Right Wheel Cover	1
9	Hex Socket Screw M5x10	4
10	Left Eye Shield Support	1
11	Eye Shield	2
12	Backing Plate	2
13	Left Spark Guard	1
14	Flat Washer M6	6
15	Lock Washer M6	2
16	Lock Knob M6x17	2
17	Hex Bolt M6x12	4
18	Right Spark Guard	1
19	Right Eye Shield Support	1
20	Hex Socket Screw M6x18	6
21	Left Wheel Guard	1
22	Hex Socket Screw M6x20	8
23	End Cap	2
24	Wave Spring	1
25	Ball Bearing	2
26	Stator	1
27	Strain Relief Pressure Plate	1
28	Strain Relief Plate	1
29	Hex Socket Screw M4x16	2
30	Power Cord	1

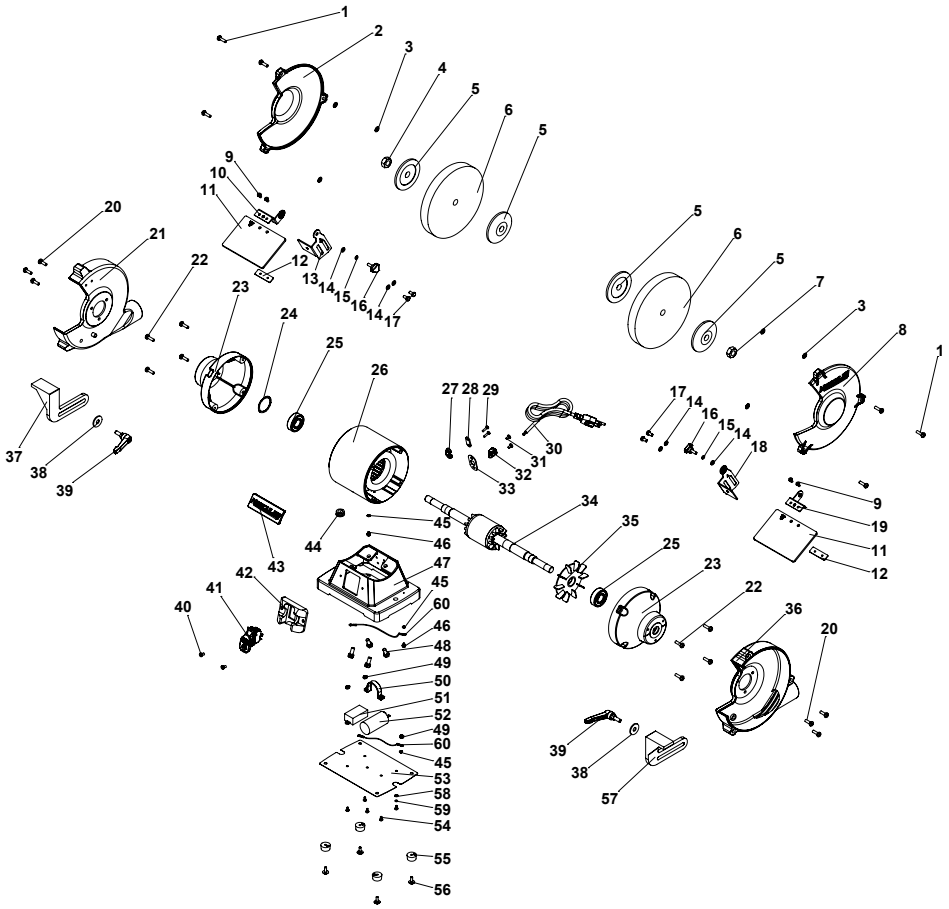
Part	Description	Qty
31	Hex Socket Screw M5x8	2
32	Power Cord Clip	1
33	Power Cord Mount Plate	1
34	Rotor	1
35	Impeller	1
36	Right Wheel Guard	1
37	Left Tool Rest	1
38	Flat Washer M10	2
39	Lock Knob L Type M10x20	2
40	Hex Socket Screw M5x10	2
41	Power Switch With Safety Key	1
42	Switch Board	1
43	Label	1
44	Power Cord Bushing	1
45	Star Washer M4	1
46	Screw M4x7	1
47	Base	1
48	Hex Bolt M8x20	4
49	Nut With Flange M4	2
50	Capacitor Stand	1
51	Centrifugal Switch	1
52	Capacitor	1
53	Base Plate	1
54	Hex Socket Screw M4x8	4
55	Rubber Foot	4
56	Hex Socket Screw M5x16	4
57	Right Tool Rest	1
58	Flat Washer	1
59	Lock Washer	1
60	Ground Lead	2

Record Product's Date Code Here:_____

Note: If product has no date code, record month and year of purchase instead.

Note: The component list and assembly diagram are shown for reference only.
To view all currently available replacement parts, please visit harborfreight.com/parts
Specify UPC 193175500069 when ordering parts.

Assembly Diagram



3-YEAR LIMITED WARRANTY

This HERCULES tool is warranted to the original purchaser to be free from defects in materials and workmanship for a period of three (3) years beginning on the date of purchase. To obtain warranty service, visit your local Harbor Freight retail store. Warranty registration is not required. The product or part must be returned to us with proof of purchase (e.g. in-store receipt or packing slip/invoice) and may require shipment by purchaser to a service center at purchaser's expense. If our inspection verifies a covered defect in materials or workmanship during the warranty period, we will, at our option, repair or replace the defective product. We will return repaired products within a reasonable time at our expense, but if we determine that there is no defect, or that the defect resulted from causes not within the scope of our warranty, then we will return the product to you if you pay return shipping costs.

This warranty does not cover any failure or damage that we determine is due directly or indirectly to normal wear and tear, misuse, use not for the intended purpose or not in accordance with the product manual, abuse, accident, rental, modification or alteration, unauthorized repair, improper installation, neglect, lack of maintenance, or any other failure not arising from defective materials or workmanship. Fraudulent returns or claims will be denied. The repair or replacement described in this warranty shall be your sole and exclusive remedy. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES, WRITTEN OR ORAL, AND ANY IMPLIED WARRANTIES ARE DISCLAIMED TO THE EXTENT PERMITTED BY LAW AND OTHERWISE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN. HARBOR FREIGHT SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES OR COSTS ARISING FROM THIS WARRANTY OR THE USE OF THIS PRODUCT. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THESE LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

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