

CHICAGO  ELECTRIC®
POWER TOOLS

3" MINI TOOL GRINDER

Model 94071

SET UP AND OPERATING INSTRUCTIONS



Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

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

Manual Revised 11a

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SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



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

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

WARNING

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

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

CAUTION

CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.

General Tool Safety Warnings



WARNING Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Save all warnings and instructions for future reference.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.

5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)				
NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH			
	25'	50'	100'	150'
0 – 6	18	16	16	14
6.1 – 10	18	16	14	12
10.1 – 12	16	16	14	12
12.1 – 16	14	12		
TABLE A				

9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
10. WEAR PROPER APPAREL. Do not wear loose clothing, neckties, rings, bracelets, or other

jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if grinding operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. DON'T OVERREACH. Keep proper footing and balance at all times.
13. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
14. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.
15. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.
16. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
17. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the grinding tool is unintentionally contacted.
18. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is 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 any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

19. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
20. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.**

GROUNDING INSTRUCTIONS

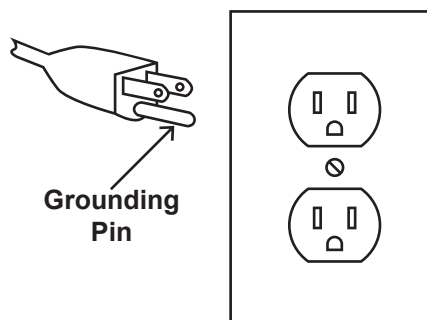
⚠ WARNING TO PREVENT ELECTRIC SHOCK



**AND DEATH FROM
INCORRECT GROUNDING
WIRE CONNECTION
READ AND FOLLOW THESE
INSTRUCTIONS:**

110-120 V~ Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.



125 V~ 3-Prong Plug and Outlet
(for up to 125 V~ and up to 15 A)

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 V~ 3-Prong Plug and Outlet**.
8. The tool has a grounding plug that looks like the plug illustrated above in **125 V~ 3-Prong Plug and Outlet**.

9. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
10. Do not use an adapter to connect this tool to a different outlet.
13. When servicing use only identical replacement parts.
14. 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.

Grinder Safety Warnings

For Your Own Safety Read Instruction Manual Before Operating Grinder

1. Wear eye protection.
2. Use grinding wheel suitable for speed of grinder.
3. Replace cracked wheel immediately.
4. Always use guards and eye shields.
5. Do not overtighten wheel nut.
6. Use only flanges furnished with the grinder.
7. Adjust distance between wheel and work rest to maintain 1/16 inch or less separation as the diameter of the wheel decreases with use.
8. Frequently clean grinding dust from beneath grinder.
9. Wear a full face shield over ANSI-approved safety goggles during use.
10. Do not grind with side of wheel unless wheel is specifically designed for that type of grinding.
11. **DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.**
12. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
15. Industrial applications must follow OSHA guidelines.
16. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
17. Avoid unintentional starting. Prepare to begin work before turning on the tool.
18. 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.
19. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains 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 lumberYour 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.*)

20. **WARNING:** Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)
21. 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.

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 medical or physical 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 between different processes.
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.



**SAVE THESE
INSTRUCTIONS.**

SPECIFICATIONS

Electrical Input	120 V~ / 1 A (Start)
Arbor Shaft	1/2"
No Load Speed	3450 RPM
Mounting Holes	3/16" Diameter



UNPACKING

When unpacking, check to make sure all the parts shown on the **Parts List near the end of the manual** are included. If any parts are missing or broken, please call Harbor Freight Tools at 1-800-444-3353 as soon as possible.

ASSEMBLY INSTRUCTIONS

WARNING! Turn the Grinder off and unplug it before assembly.

To Attach The Right Movable Tool Rest:

1. The *left* Movable Tool Rest has been pre-attached by the manufacturer. However, the *right* Movable Tool Rest must be attached by the operator prior to using the Grinder. **(See Figure E.)**
2. To attach the right Movable Tool Rest, insert its mounting slot onto the protruding, threaded Bolt located on the front of the Grinder. Then, secure the Movable Tool Rest, using the Wing Nut. **IMPORTANT: Adjust the distance between the Movable Tool Rest and Grinding Wheel to a 1/16" or less separation.** (See Figure E.)

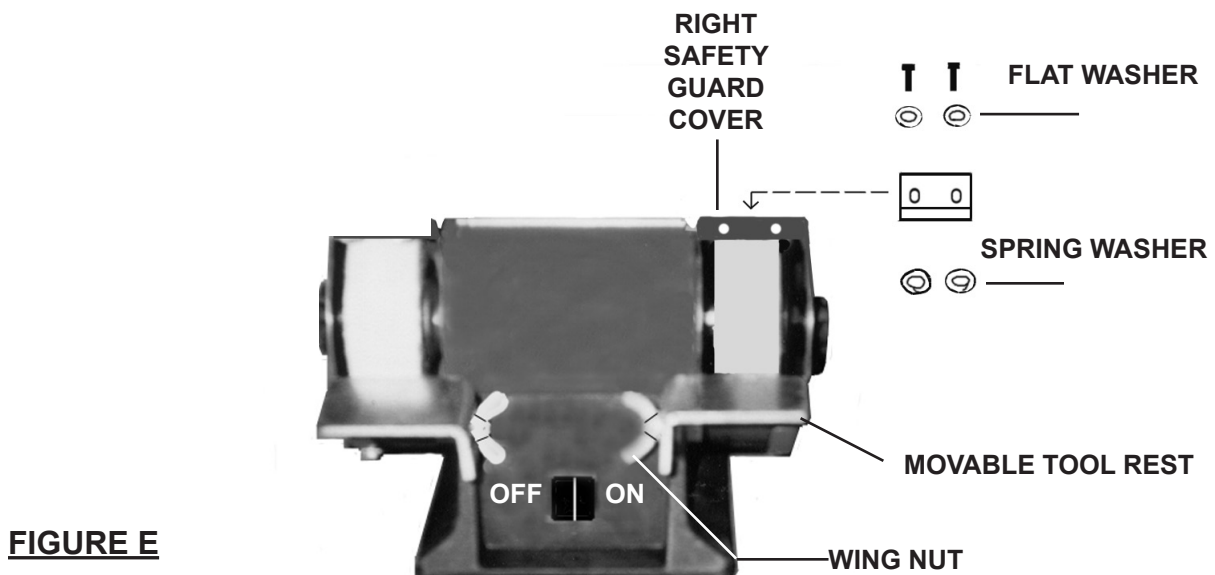


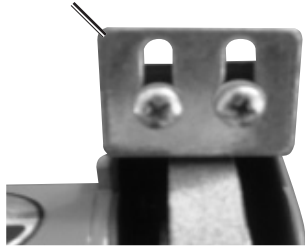
FIGURE E

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To Attach The Eyeshield:

1. An Eyeshield must be attached to both Right Safety Guard (to be used as protection from the Grinding Wheel).

Eyeshield



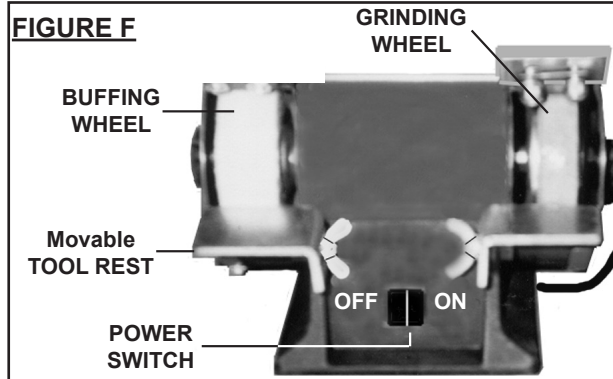
2. Attach the Eyeshield to the Guard using two Screws, two Flat Washers, and two Spring Washers. Orient it as shown in the **illustration above**.

To Mount The Grinder On A Workbench:

⚠ CAUTION! Make sure the workbench on which the Grinder will be mounted is flat, level, and sturdy enough to support the weight of the Grinder, any workpieces, and any additional tools.

1. The Grinder is equipped with four Rubber Feet which allows the tool to be temporarily placed upon a workbench for use. However, if the Grinder is to be permanently mounted on a workbench, the Rubber Feet must be removed.
2. To permanently mount the Grinder on a workbench, remove the Rubber Feet and place the Grinder in the desired work location on the workbench. Use the four mounting holes at the Base as a template to mark the areas where four **3/16" diameter** mounting holes should be drilled through the workbench.
3. Temporarily remove the Grinder, and drill the four 3/16" diameter mounting holes through the workbench, making sure no hidden electric cords or cables are in the drilling path.
4. Once the 3/16" mounting holes are drilled, align the four mounting holes at the Base of the Grinder with the four predrilled mounting holes in the workbench. Secure the Grinder to the workbench, using four appropriate length Bolts, Lock Washers, and Nuts (not included).

OPERATING INSTRUCTIONS



1. Connect the Power Cord/Plug of the Grinder to the nearest 120 volt, grounded, electrical outlet. **(See Figure F.)**
2. **⚠WARNING! ALWAYS** wear ANSI-approved safety impact eye glasses underneath an ANSI-approved safety impact full face shield when operating the Grinder.
3. Turn the Power Switch to its **“ON”** position, and allow the Buffing Wheel and Grinding Wheel to spin up to full speed. **(See Figure F.)**
4. Place the object you are buffing or grinding firmly against the Movable Tool Rest and slowly feed the object into the revolving Buffing Wheel or Grinding Wheel. **(See Figure F.)**
5. **⚠CAUTION!** Keep hands away from the Buffing Wheel and Grinding Wheel. Also, make sure to hold the object you are buffing or grinding firmly against the Movable Tool Rest throughout the buffing/grinding process. Failure to do so may cause the object to be propelled by the Buffing Wheel or Grinding Wheel toward your body and/or into the Grinder. **(See Figure F.)**
6. Once the grinding process is completed, turn the Power Switch of the Grinder to its **“OFF”** position. Do not press against the Buffing Wheel or Grinding Wheel to stop them from spinning. Allow the Wheels to completely stop on their own. Then, disconnect the Power Cord/Plug from its electrical outlet. **(See Figure F.)**
7. Keep the Grinder in an area out of reach of children and other unauthorized people.

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INSPECTION, MAINTENANCE, AND CLEANING

1. **⚠WARNING!** Turn the Grinder's Power Switch to its "OFF" position and unplug the tool from its electrical outlet before performing any inspection, maintenance, or cleaning.
2. **Before each use:** Inspect the general condition of the Grinder. Check for misalignment or binding of moving parts, loose, cracked or broken parts, damaged Power Cord, and any other condition that may affect its safe operation. If a problem occurs with the Grinder, have the problem corrected before further use. **Do not use damaged equipment.**
3. **To install a Buffing Wheel:**
Note: Use both Wrenches when installing and removing Buffer and Grinding Wheels.
 - a. Remove the Left Safety Guard Cover from the Grinder by unscrewing and removing Hex Nut. **IMPORTANT:** The Hex Nut on the Buffing Wheel is a **LEFT** threaded Hex Nut. To remove, turn the Hex Nut *clockwise*. To tighten, turn the Hex Nut *counterclockwise*.
 - b. Remove the Left Safety Guard Cover. Remove the Outside Flange and Wheel Bushing.
 - c. Remove the old Buffing Wheel. Install the new Buffing Wheel.
 - d. Replace the Wheel Bushing, Flange, Left Safety Guard Cover, Hex Nut, and Seal Ring.
4. **To install a Grinding Wheel:**
 - a. Remove the Right Safety Guard Cover from the Grinder by unscrewing and removing Hex Nut. **IMPORTANT:** The Hex Nut on the Grinding Wheel is a **RIGHT** threaded Hex Nut. To remove, turn the Hex Nut *counterclockwise*. To tighten, turn the Hex Nut *clockwise*.
 - b. Remove the Right Safety Guard Cover. Remove the Outer Flange and Wheel Bushing.
 - c. Remove the old Grinding Wheel. Install the new Grinding Wheel. **Do not overtighten the Hex Nut.** Excessive tightening can cause the Grinding Wheel to crack during operation.
 - d. Replace the Wheel Bushing, Flange, Right Safety Guard Cover and Hex Nut.
5. **⚠CAUTION!** When replacing the Buffing Wheel and/or Grinding Wheel, make sure each wheel has a minimum **3500 RPM rating**.
6. **To clean:** Wipe with a damp cloth, vacuum or use compressed air. Do not use solvents. Do not immerse any part of the Grinder in liquids.
7. **When storing:** Store the Grinder in a safe, clean, dry, location out of reach of children and other unauthorized people.
8. **⚠CAUTION!** All maintenance, service, or repairs not listed in this manual are only to be attempted by a qualified service technician.

PLEASE READ THE FOLLOWING CAREFULLY

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 MAKE ANY REPAIRS TO THE PRODUCT, OR 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 RISK 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.

PARTS LIST

Part	Description	Qty.
1	Spring / Flat Washer Assembly	9
2	Left Safty Guard Cover	1
3	Hex Nut	1
4	Outside Flange	2
5	Wheel Bushing	2
6	Buffing Wheel	1
7	Inside Flange	2
8	Spacer	2
9	Grinding Wheel	1
10	Hex Nut	1
11	Right Safty Guard Cover	1
12	Right Safty Guard	1
13	Spring / Flat Washer Assembly	6
14	Screw	1
15	Flat Washer	3
16	Eyeshield Mount Rod	1
17	Right Movable Work Rest	1
18	Eyeshield	1
19	Hex Nut	1
20	Switch	1

Part	Description	Qty.
21	Stator	1
22	Clamp Washer	2
23	Rotor	1
24	Lock Washer	1
25	Wave Spring Washer	1
26	Bearing	2
27	Left Safety Guard	1
28	Left Movable Tool Rest	1
29	Locked Knob Assembly	2
30	Cord / Plug	1
31	Wire Clamp	1
32	Base	1
33	Capacitor	1
34	Screw	1
35	Base Plate	1
36	Rubber foot	4
37	Screw / Flat washer assembly	2
38	Cord Bushing	1
39	Wrench	1

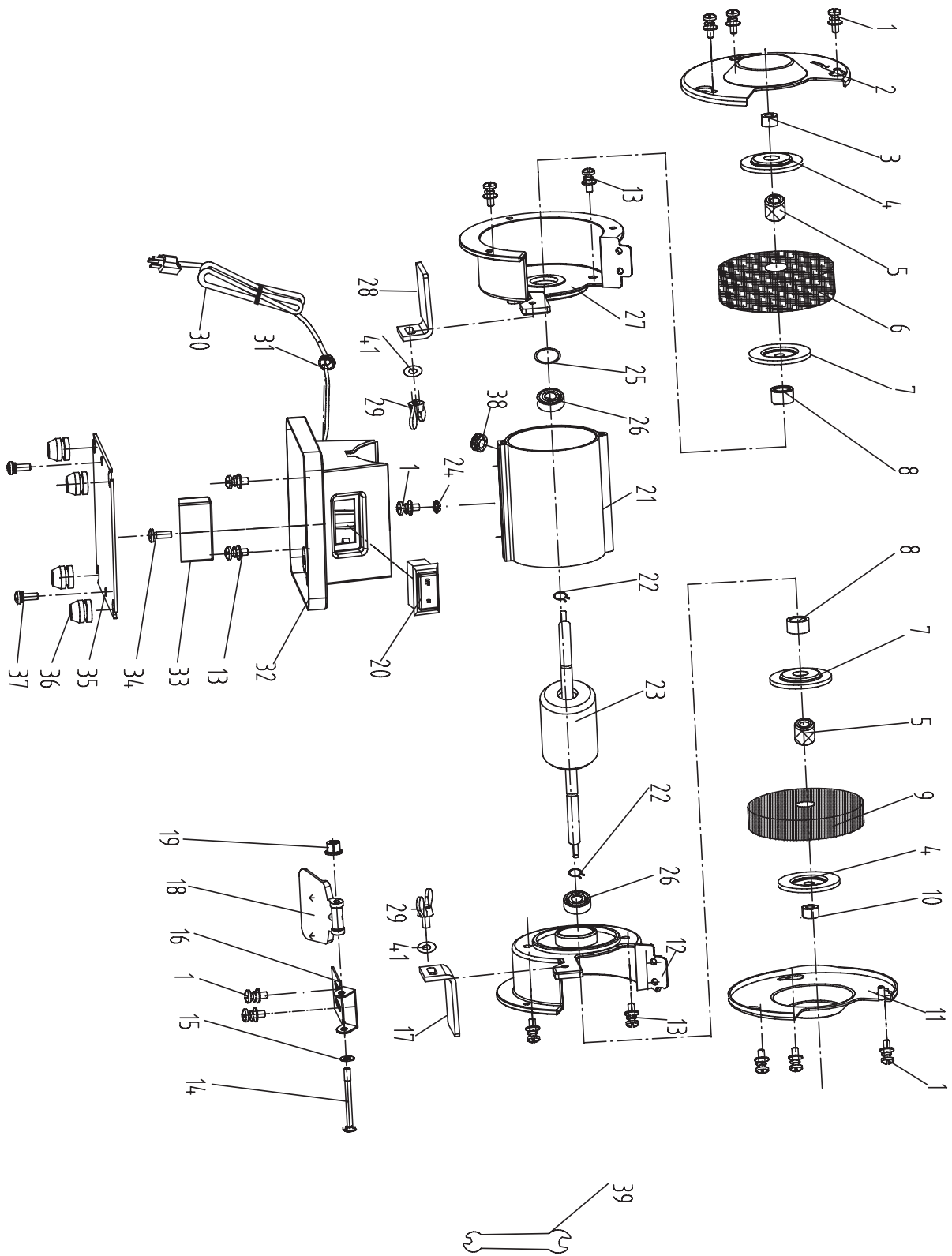
Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

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

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ASSEMBLY DIAGRAM



REV 11a

LIMITED 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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