PROFESSIONAL

CHICAGO ELECTRIC® POWER TOOLS

1/2” HEAVY-DUTY LOW SPEED VSR DRILL

Model 93632

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.

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

Manual Revised 09a, 09l

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 Power 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.

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

1. **Work area safety**
   a. **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
   b. **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.*
   c. **Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*
2. **Electrical safety**
   a. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*
   b. **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.*

c. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

d. **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.*

e. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable f*or outdoor use reduces the risk of electric shock.*

f. **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.*

3. **Personal safety**

a. **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.

b. **Use personal protective equipment. Always wear eye protection.** Safety *equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*

c. **Prevent unintentional starting. Ensure the Trigger is in the off-position before connecting to power source, picking up or carrying the tool.** *Carrying power tools with your finger on the Trigger or energizing power tools that have the Trigger on invites accidents.*

d. **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.*

e. **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*

f. **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.*

g. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust-*related hazards.*

h. **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.*

4. **Power tool use and care**

a. **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.*

b. **Do not use the power tool if the Trigger does not turn it on and off.** *Any power tool that cannot be controlled with the Trigger is dangerous and must be repaired.*

c. **Disconnect the plug from the power source and/or the battery pack 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.*

d. **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.

e. **Maintain power tools. 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.*

f. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

g. **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.*

5. **Service**

a. **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.*

Drill Safety Warnings

1. **Use auxiliary handles supplied with the tool.** *Loss of control can cause personal injury.*

2. **Hold power tools by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord.** *Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.*

3. **Let Bits cool before touching, changing or adjusting them.** Bits heat up dramatically while in use, and are capable of severe burns.

4. **If the drill bit jams, release the trigger immediately; drill torque can cause injury.**

5. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

6. Avoid unintentional starting. Prepare to begin work before turning on the tool.

7. Do not lay the tool down until it has come to a complete stop. Moving parts can grab the surface and pull the tool out of your control.

8. When using a handheld power tool, maintain a firm grip on the tool with both hands to resist starting torque.

9. 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.

10. This product is not a toy. Keep it out of reach of children.

11. 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 Trigger locked on.

• Properly maintain and inspect to avoid electrical shock.
• Any power cord must be properly grounded. Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.

12. 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 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.*)

13. 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.)

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.

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 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.

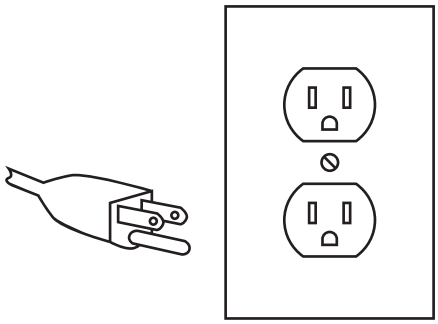
SAVE THESE INSTRUCTIONS.

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.

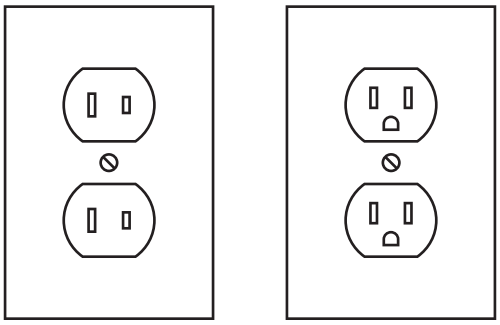
Grounded Tools: Tools with Three Prong Plugs



3-Prong Plug and Outlet

1. Tools marked with “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.
   (See Outlets for 2-Prong Plug.)

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.

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	-	-	-

TABLE A

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

Symbology

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
V~	Volts Alternating Current
A	Amperes
n_0 xxxx/min.	No Load Revolutions per Minute (RPM)

SPECIFICATIONS

Electrical Requirements	120 V~ / 60 Hz / 7.5 A
Motor No Load Speed	0 - 550 RPM
Drilling Capacity	2” Wood, 1/2” Mild Steel
Chuck	1/2” Capacity, Keyed
Chuck Spindle	1/2” 20 UNF

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LISTED
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UNPACKING

When unpacking, make sure that the item is intact and undamaged. 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.

INSTRUCTIONS FOR PUTTING INTO 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.

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Trigger of the tool to its "OFF" position and unplug the tool from its electrical outlet before assembling or making any adjustments to the tool.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

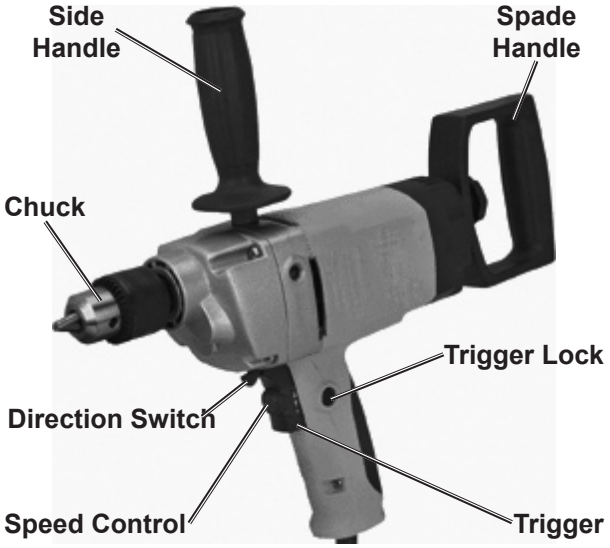
Note: In some cases, due to variations in packaging, you may have to install the Spade Handle and Auxiliary Handle.

1. Align the Spade Handle (31) with the Back Case (32). Insert the Spade Handle Knob (30) through the Spade Handle into the Back Case. Tighten the Spade Handle Knob by turning clockwise until tight.

2. Insert the Screw (14) through the Side Handle (15). Position the Side Handle on the Gear Housing Cover (22). Using a screwdriver (not included) tighten the Screw (14) until tight.

Note: Periodically check to be sure the handles remain tight. Do not reposition the handles while the tool is running or plugged in.

Features



This tool incorporates a double gear reduction transmission to reduce drill speed while increasing torque. This design improves performance when drilling large holes. This feature also helps prevent the tool from "bogging down" or stopping when under heavy load.

OPERATING INSTRUCTIONS

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

Tool Set Up - Installing Drill Bits

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Trigger of the tool to its "OFF" position and unplug the tool from its electrical outlet before assembling or making any adjustments to the tool.

1. Drill Bits (not included) come in various sizes and types. Various types include low and high speed twist bits for metals, spade or brad point bits for wood, forstner bits for flat bottomed holes in wood or plastic, auger bits for boring through walls and floors, masonry bits for plaster and dry wall, etc. Select the appropriate drill bit.
2. Unplug the tool.
3. By hand, rotate the outer ring of the Chuck counterclockwise to open it enough to allow the bit to be inserted. Use the Chuck Key if needed. Insert the bit fully into the Chuck jaws and center it.
4. By hand, rotate the outer ring of the Chuck clockwise to tighten on the bit. Make sure the bit is still centered in the Chuck.
5. Insert the tip of the Chuck Key into one of the openings drilled into the side of the Chuck. Engage the gears of the Chuck Key with the gear teeth on the outside of the Chuck. Turn the Chuck Key clockwise to tighten the jaws of the Chuck firmly on the drill bit.

<u>CAUTION:</u> Make sure the drill bit is centered and firmly fixed in the Chuck before beginning work.

General Operating Instructions

Note: The motor will heat up as it is used. To avoid motor burn out, do not use continually for more than 20 minutes at a time. Allow the tool to cool down for at least 10 minutes before resuming work.

1. The Trigger (46) has a variable speed feature. Simply turn the dial below the Trigger to adjust the drill speed. The dotted lines on the dial are spaced from narrow to wide to indicate increasing drill speed.

2. The trigger lock button on the side of the handle, when activated, will allow the drill to run without continuous finger pressure on the trigger. To release the trigger lock, simply press your finger on the trigger and release it.

3. The Direction Switch is located behind the Trigger (46). When button is pushed in on the left side of housing, the drill will rotate counterclockwise. When button is pushed in on the right side of housing, the drill will rotate clockwise (forward).

Note: Most drill bits are designed to work while turning clockwise. Before drilling, confirm that the drill is set to turn in the correct direction.

CAUTION! Do not change direction while the drill is operating.

4. Place the drill tip on the work piece, and start the tool.

5. Apply light pressure on the tool to help it drill into the workpiece.

6. When the hole has been drilled, remove the bit from the hole, release the Trigger and trigger lock.

7. Unplug the tool and store it in a safe place.

MAINTENANCE AND INSPECTION

1. The Armature (25) and Stator (29) comprise the main part of the tool. Protect these electrical components from moisture or oil intrusion.

2. Inspect the Carbon Brushes (34) regularly. Replace them is they are more than 1/3 worn or are chipped or cracked. When handling them, be careful not to damage them. To reduce wear after inspection, replace them in exactly the same way as they were removed.

3. Regularly inspect all components and fasteners to be sure they are properly installed, not damaged, and tight. Tighten any loose parts. Repair or replace any damaged components.

4. If the tool is damaged or does not function properly, take it to a qualified service technician.

5. Clean the tool after each use, and store it properly. Keep it out of reach of children and other unauthorized persons. Protect it from moisture and corrosive materials.

Troubleshooting

1. **Drill operates but hole is not effectively drilled.**
   a. *Possible Cause:* Inappropriate or dull drill bit.
   Solution: Try a different drill bit.

2. **Drill will not turn ON.**
   a. *Possible Cause:* No power source.
   Solution: Check that the power cord is plugged into an appropriate live outlet. Check that power cord is in good condition.
   b. *Possible Cause:* Damaged Carbon Brushes.
   Solution: Unplug tool. Remove and inspect Carbon Brushes. If glazed, they can be cleaned with a pencil eraser. If chipped, cracked or worn out, they must be replaced. Reinstall good Carbon Brushes. Plug in tool and try again.
   c. *Possible Cause:* Damaged or burned out Rotor or Stator.
   Solution: Take to a qualified service technician for replacement or repair.

3. **Drill bit “wobbles” in Chuck.**
   a. *Possible Cause:* Loose or misaligned drill bit.
   Solution: Unplug tool from power supply. Loosen drill bit in chuck, and reinstall carefully. Tighten securely.
   b. *Possible cause:* Chuck is loose on Spindle (12).
   Solution: Tighten the Chuck onto the Spindle by turning clockwise.

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 Washer m5	4
2	Screw ST5x550	4
3	Chuck Key	1
4	Cap Head Screw m6x22	1
5	Chuck	1
6	Washer m21	1
7	Gear Housing	1
8	Pin m3	2
9	Ball Bearing 6002RS	1
10	Circlip	1
11	Key m3x3.7x10	3
12	Spindle	1
13	Output Gear	1
14	Screw m10x40	1
15	Side Handle	1
16	Circlip m12	1
17	Needle Bearing HK101412	1
18	Second Shaft	1
19	Second Gear	1
20	Circlip m12	1
21	Needle Bearing HK081210	4
22	Gear Housing Cover	1
23	Circlip m10	1
24	Bearing Retainer	1
25	Armature	1
26	Ball Bearing 608.27	1
27	Bearing Bushing	1
28	Winding Guide	1

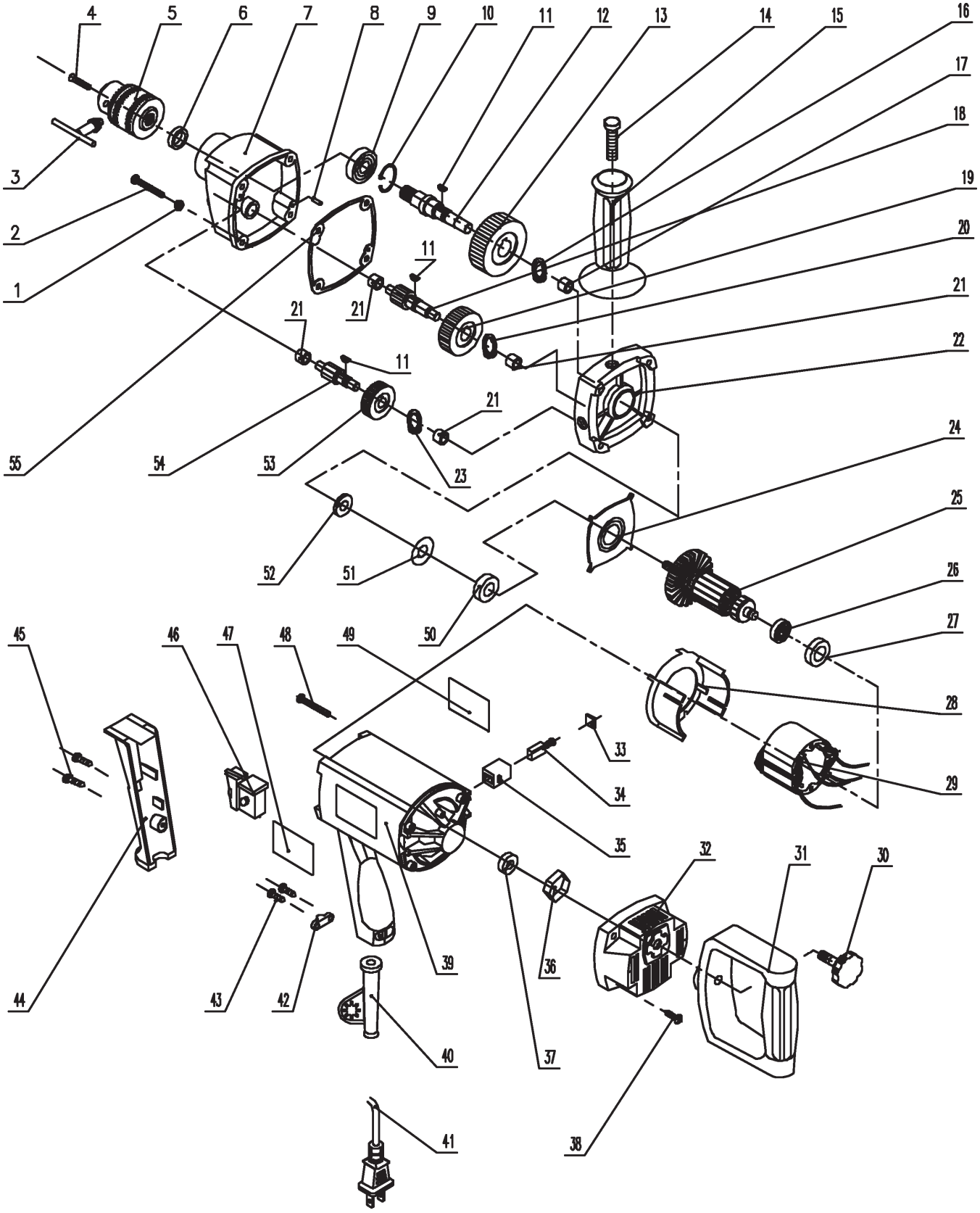
Part	Description	Qty.
29	Stator	1
30	Spade Handle Knob	1
31	Spade Handle	1
32	Back Case	1
33	Brush Cap	2
34	Carbon Brush	2
35	Brush Holder	2
36	Hex Nut m8	1
37	Cover for Nut	1
38	Screw ST4x16F	4
39	Housing	1
40	Rubber Sleeve	1
41	Cord and Plug	1
42	Cord Clip	1
43	Screw ST4x16	2
44	Handle Cover	1
45	Screw ST4x18F	2
46	Trigger	1
47	Label	1
48	Screw ST4x550	2
49	Label	1
50	Ball Bearing 6000.2Z	1
51	O-Ring	1
52	Seal Ring	1
53	First Gear	1
54	First Shaft	1
55	Gasket	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.

ASSEMBLY DRAWING



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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