Owner's Manual & Safety Instructions

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. 23i

Bauer™

2142E-EB

1" SDS-PLUS TYPE ROTARY HAMMER



Visit our website at: http://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

58214

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING

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

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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 CAUTION	Addresses practices not related to personal injury.

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.

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 earthed (grounded) power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*

   b. **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.*

   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 for 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.** *Protective 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 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.*

   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 dust collection can reduce dust-related hazards.*

   h. **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.*

   i. 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.

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

   k. 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.

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

   m. 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.

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

   o. 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.
   • Properly ground power cord.
   Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.

   p. 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.

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 switch does not turn it on and off.** *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
   c. **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.*
   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 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.*
   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.*
   h. **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.*

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

6. **Safety instructions for all operations**
   a. **Wear ear protectors when Impact drilling.** *Exposure to noise can cause hearing loss.*
   b. **Use the auxiliary handle(s).** *Loss of control can cause personal injury.*
   c. **Brace the tool properly before use.** *This tool produces a high output torque and without properly bracing the tool during operation, loss of control may occur resulting in personal injury.*
   d. **Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory or fasteners may contact hidden wiring or its own cord.** *Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*
   e. Let bit cool before touching, changing or adjusting it. Bits heat up dramatically while in use, and can burn you.
   f. If the drill bit jams, release the Trigger immediately; drill torque can cause injury or break bit.

7. **Safety Instructions when using long drill bits**
   a. **Never operate at higher speed than the maximum speed rating of the drill bit.** *At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.*
   b. **Always start drilling at low speed and with the bit tip in contact with the workpiece.** *At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.*
   c. **Apply pressure only in direct line with the bit and do not apply excessive pressure.** *Bits can bend causing breakage or loss of control, resulting in personal injury.*

8. **Silicosis Safety Measures**

   Masonry drilling on materials such as concrete (which contains crystalline silica) can cause silicosis (a serious lung disease), cancer and death. To reduce crystalline silica exposures in the workplace and prevent silicosis and silicosis-related deaths:
   a. Conduct air monitoring to measure worker exposures.
   b. Use containment methods to control the hazard and protect adjacent workers from exposure.
   c. Practice good personal hygiene to avoid unnecessary exposure to silica dust.
   d. Wear washable or disposable protective clothes at the work site. Shower and change into clean clothes before leaving the work site to prevent contamination of cars, homes and other work areas. Avoid skin exposure.
   e. Always wear a NIOSH approved respirator and safety goggles. Ventilate the work area properly.
   f. Provide periodic medical examinations for all workers who may be exposed to crystalline silica.

g. Post signs to warn workers about the hazard and to inform them about required protective equipment.

h. Provide workers with training that includes information about health effects, work practices and protective equipment for crystalline silica.

i. Report all cases of silicosis to State health departments and to OSHA or the Mine Safety and Health Administration (MSHA).

9. **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:

a. 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.

b. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.

c. Wear suitable gloves to reduce the vibration effects on the user.

d. Use tools with the lowest vibration when there is a choice.

e. Include vibration-free periods each day of work.

f. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.

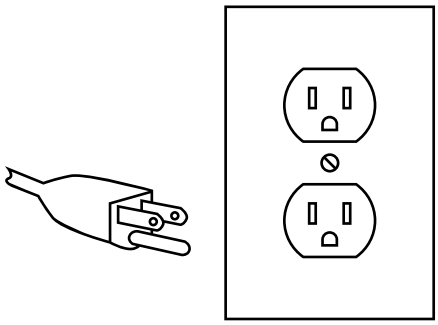
g. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

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



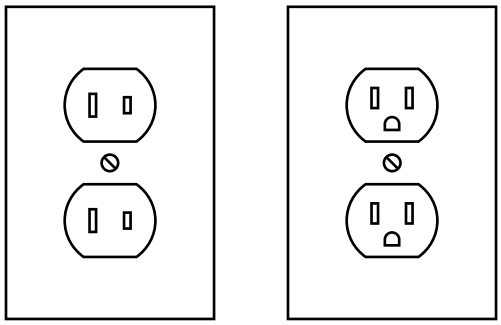
3-Prong Plug and Outlet

1. Tools marked 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.
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.**

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.
	WARNING marking concerning Risk of Hearing Loss. Wear hearing protection.

Specifications

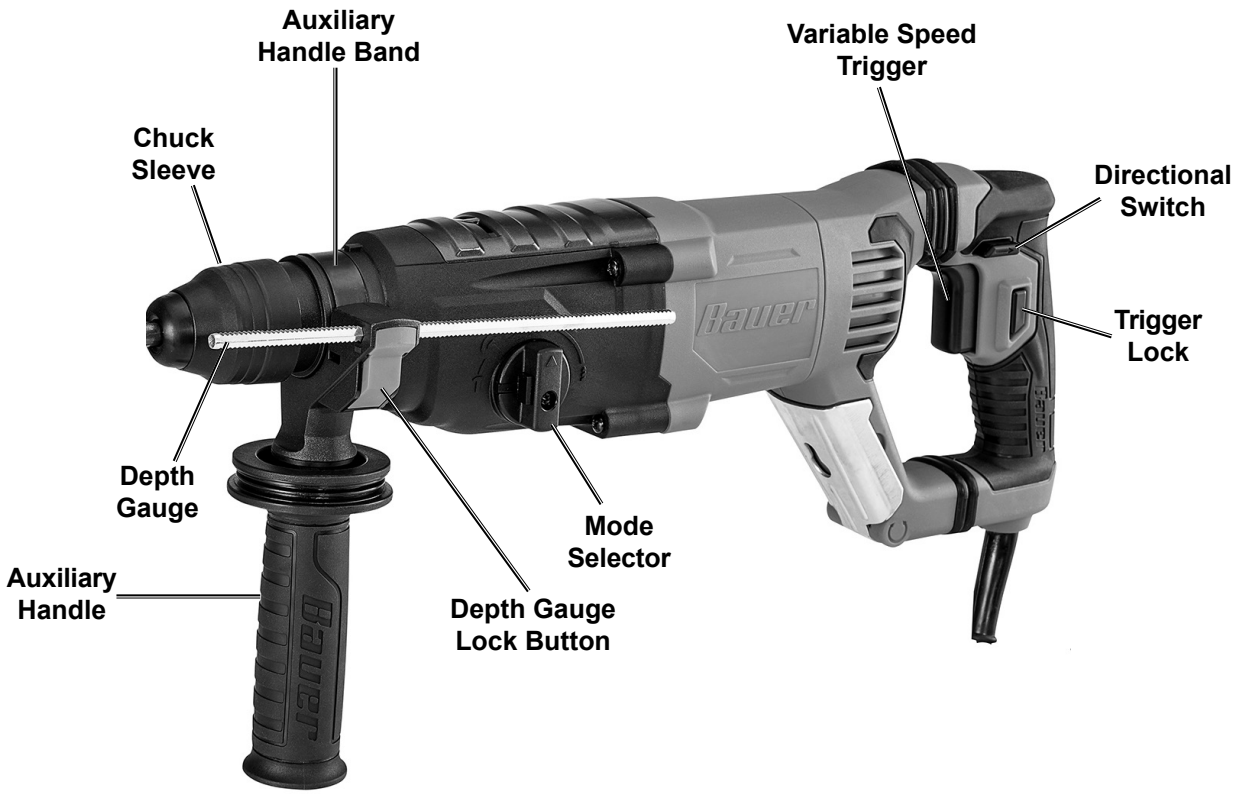
Electrical Rating	120 VAC / 60Hz / 8.5A
No Load Speed	0 - 1200 RPM
Impact Rate	0 - 5200 BPM
Chuck Size	1″ SDS-Plus Type

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.

Note: For additional information regarding the parts listed in the following pages, refer to *Parts List and Diagram* on page 14.

Functions



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.

Setting and Testing

⚠WARNING

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

Adjusting the Auxiliary Handle

The Auxiliary Handle can be placed in a variety of positions to obtain an efficient working angle.

1. To adjust the Auxiliary Handle, turn the Handle counterclockwise to loosen the Band.
2. Slide the Handle on or off the Rotary Hammer or to the desired position then turn the Handle clockwise to secure it in place.

Using the Depth Gauge

The Depth Gauge can be used to lock in a desired depth and return to that depth setting with ease.

1. Press the Gauge Lock Button, then slide the Depth Gauge through the Depth Gauge Slot on the Auxiliary Handle.
2. Position the Depth Gauge as needed, then release the Lock Button to secure the Depth Gauge in place.

Adjusting the Functions

Adjust the Mode Selector to the desired function before using the Rotary Hammer. Press the Release Button and rotate the Mode Selector until it clicks in place with the Indicator pointing to the desired function.

NOTICE: Move the Mode Selector only when the Motor is stopped. Attempting to move the Mode Selector while the Motor is engaged will result in abrupt bit rotation and can cause property damage.

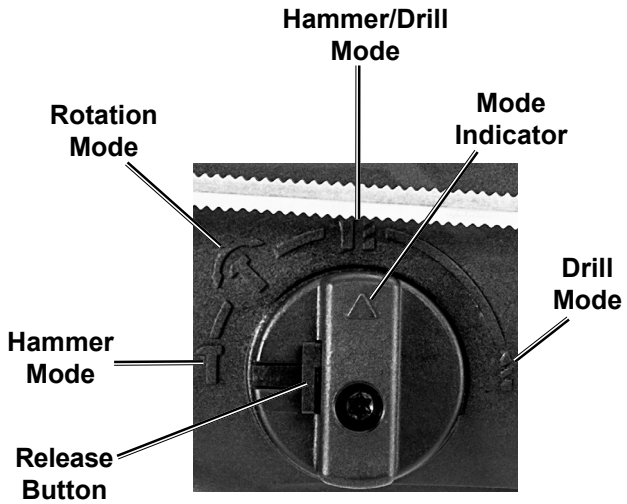
NOTICE: When moving the Mode Selector, make sure it clicks into the desired position. If not locked in place, the Mode Selector could slip out of position resulting in tool damage.

To Chisel: Rotate the Mode Selector to the Hammer Mode setting. The tool will hammer when powered.

To Rotate a Bit: Rotate the Mode Selector to the Rotation Mode setting when rotating a bit.

To Hammer/Drill: Rotate the Mode Selector to the Hammer/Drill Mode setting. The tool will hammer drill when powered.

To Drill: Rotate the Mode Selector to the Drill Mode setting. The tool will drill when powered.



Changing SDS Type or SDS-Plus Type Drill Bits

CAUTION! Wear heavy-duty work gloves to provide protection when inserting and removing drill bits. Drill bits become very hot during use. Do not remove drill bits until the bit has cooled. Do not strike stuck bits with a hammer.

1. Grease the drill bit shank before installing.
2. Pull back on the Chuck and insert the drill bit. Make sure it slides all the way into the opening.
3. Release the Chuck.
4. Check that the drill bit is secured in place. It should not be able to be pulled out of the Chuck.

Note: When drilling a hole larger than 1-1/4″ diameter, use a drill bit with four cutting edges.

NOTICE: Use sharp bits. Dull, bent, or damaged bits will cause stress on the drill and/or break.

Dust Collection Instructions

1. Place the rubber Dust Guard on Shank before inserting drill bit.
2. Insert drill bit over Dust Guard.

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. Secure loose work pieces using a vise or clamps (not included) to prevent movement while working.
4. There must not be objects, such as utility lines, nearby that will present a hazard while working.

General Instructions for Use

Masonry Drilling Operation

1. Adjust the Auxiliary Handle as needed.
2. Set the Function by adjusting the Mode Selector to the desired setting.
3. Plug in the Power Cord.
4. Squeeze and hold the Trigger to turn on the Rotary Hammer.
5. To lock the Trigger in the ON position, squeeze the Trigger, press in the Trigger Lock button, and then release the Trigger. The tool will operate continuously. To stop the tool, squeeze and release the Trigger.
6. Do not apply excessive force, allow the tool to do the work.

Concrete Drilling Tips:

a. Do not add water to the drill hole.
b. Clean the bit flutes regularly while drilling.
c. Back the bit out of the hole often during drilling, especially when drilling deep holes.
d. Grease the bit shank and bit holder and keep the shank end of the bit dust and debris free.
e. Use the shortest bit practical.
f. When drilling deep holes, work in stages. Use a short bit for the beginning of the hole, then change to a longer bit.

Hammer Drill Operation

1. Adjust the Auxiliary Handle as needed.
2. Set the Function by adjusting the Mode Selector to the desired setting. Adjust the speed as needed.
3. Plug in the Power Cord.
4. Use the Directional Switch to select either a clockwise or counterclockwise direction for the bit.
5. Squeeze and hold the Trigger to turn on the Rotary Hammer.
6. To lock the Trigger in the ON position, squeeze the Trigger, press in the Trigger Lock button, and then release the Trigger. The tool will operate continuously. To stop the tool, squeeze and release the Trigger.
7. Do not apply excessive force. Allow the tool to do the work.
8. **When finished**, to prevent accidents, release the Trigger and disconnect its power supply after use.
   a. Allow the bit to cool, then remove it from the tool.
   b. Wipe off the bit's shank and store bit separately from tool.
   c. Clean the tool, then store the tool indoors out of children's reach.

Chiseling

Chisel Operation

1. Adjust the Auxiliary Handle as needed.
2. Set the Function by adjusting the Mode Selector to the desired setting. Adjust the speed as needed.
3. Plug in the Power Cord.
4. Use the Directional Switch to select either a clockwise or counterclockwise direction for the bit.
5. Squeeze and hold the Trigger to turn on the Rotary Hammer.
6. To lock the Trigger in the ON position, squeeze the Trigger, press in the Trigger Lock button, and then release the Trigger. The tool will operate continuously. To stop the tool, squeeze and release the Trigger.
7. Allow the Rotary Hammer to reach full speed before contacting the work surface.
8. **When finished**, to prevent accidents, release the Trigger and disconnect its power supply after use.
   a. Allow the bit to cool, then remove it from the tool.
   b. Wipe off the bit's shank and store bit separately from tool.
   c. Clean the tool, then store the tool indoors out of children's reach.

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 Trigger 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. Monthly, open the Grease Port, clean out old grease, and replace with new grease.

NOTICE: Warranty void if grease maintenance (internal and bit shank) is not followed.

3. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
4. Lubricate the bit shank with grease each time before installing to maintain the life of the internal mechanism.
5. **⚠WARNING! TO PREVENT SERIOUS INJURY: If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**
6. This tool includes an internal safety clutch that helps prevent tool damage by disengaging the drill function if the bit locks in place.
7. Sharpen chisel bits regularly.

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 Trigger, 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* in *Grounding* section on page 5.
Performance decreases over time.	1. Carbon brushes worn or damaged. 2. Bit dull or damaged.	1. Have qualified technician replace brushes. 2. Keep bits sharp. Replace as needed.
Excessive noise or rattling.	Internal damage or wear. (Carbon brushes or bearings, for example.)	Have technician service tool.
Overheating.	1. Forcing tool to work too fast. 2. Bit dull or damaged. 3. Blocked motor housing vents. 4. Motor being strained by long or small diameter extension cord.	1. Allow tool to work at its own rate. 2. Keep bits sharp. Replace as needed. 3. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. 4. 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* in *Grounding* section on page 5.

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

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.

Record Product's Serial Number Here:_____

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

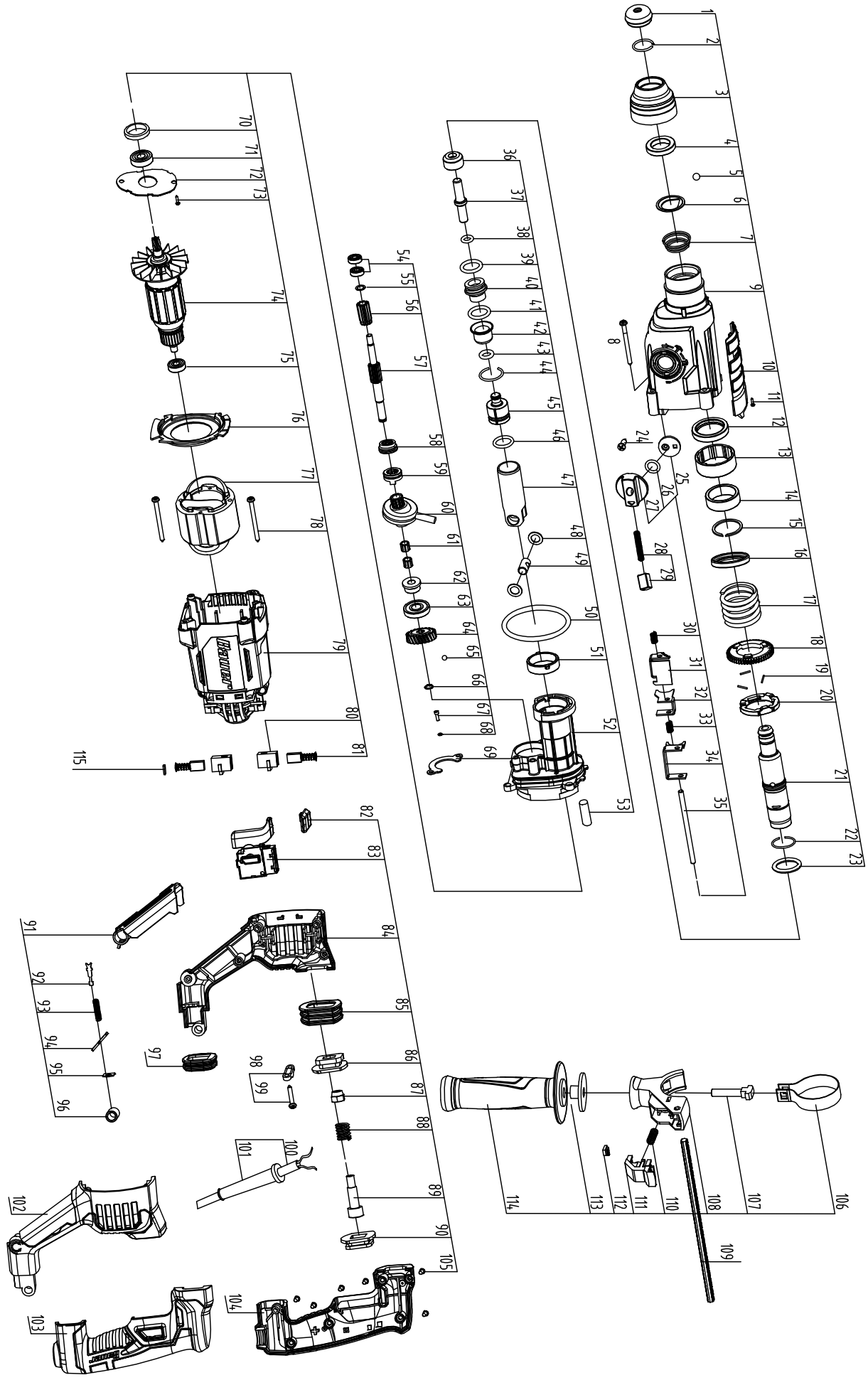
Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175434296 when ordering parts.

Parts List

Part	Description	Qty
1	Rubber Cover	1
2	Circlip for Shaft Φ18.8xΦ2	1
3	Sleeve	1
4	Retaining Ring	1
5	Steel Ball Φ7.25	1
6	Locating Ring	1
7	Spring	1
8	Tapping Screw ST4x45	4
9	Gear Box	1
10	Cover for Gear Box	1
11	Tapping Screw ST3x10	2
12	Oil Seal 41x30x7	1
13	Positioning Sleeve of Needle Roller	1
14	Needle Bearing HK30x37x12	2
15	Circlip for Shaft Φ29xΦ2	1
16	Spring Washer	1
17	Cylinder Spring	1
18	Tripping Gear	1
19	Needle Φ2.5x11.8	3
20	Clutch Block	1
21	Cylinder	1
22	Circlip for Shaft Φ27.5xΦ2	1
23	Washer Φ37xΦ30.1x1.5	1
24	Tapping Screw ST4x25	4
25	Rotary Knob Seat	1
26	O Ring Φ20xΦ2	1
27	Rotary Knob	1
28	Spring of Rotary Knob	1
29	Button of Rotary Knob	1
30	Positioning Fork Spring	1
31	Positioning Fork	1
32	Upper Shift Fork	1
33	Spring	1
34	Lower Shift Fork	1
35	Guide Pillar	1
36	Sleeve of Impacter	1
37	Impacter	1
38	O Ring Φ9.4xΦ2	1
39	O Ring Φ18xΦ3.5	1
40	Inner Sleeve of Impacter	1
41	O Ring Φ18 xΦ3.5	1
42	Outer Sleever of Impacter	1
43	O Ring Φ10 xΦ3.5	1
44	Circlip of Shaft Φ27.3xΦ2	1
45	Punch Hammer	1
46	O Ring Φ23.2 xΦ3	1
47	Aluminium Piston	1
48	Gasket of Piston Pin	2
49	Piston Pin	1
50	O Ring Φ73xΦ5.3	1
51	Aluminum Support Bushing	1
52	Aluminum Support Bushing	1
53	Wool Column	1
54	Bearing 696	2
55	Flat Washer Φ12xΦ6x1	1
56	Clutch Tooth	1
57	Drive Shaft	1
58	Lower Clutch Set	1

Part	Description	Qty
59	Upper Clutch Set	1
60	Pendulum Rod Bearing	1
61	Needle Φ9xΦ12x10	2
62	Bearing Sleeve	1
63	Bearing 16003	1
64	Gear I	1
65	Steel Ball SΦ3	1
66	Circlip for Shaft Φ8	1
67	Screw M5x12	2
68	Spring Washer Φ5	2
69	Bearing Pressure Plate	1
70	O Ring	1
71	Bearing 609	1
72	Bearing Pressure Plate	1
73	Screw M4x12	2
74	Rotor	1
75	Bearing 607	1
76	Wind Shield	1
77	Stator	1
78	Tapping Screw ST5x55	2
79	Housing	1
80	Brush Box	2
81	Carbon Brush	2
82	Push Rod	1
83	Switch	1
84	Bracket of Left Handle	1
85	Upper Rubber Sleeve	1
86	Suspension Base	1
87	M8 Lock Nut	1
88	Damping Spring	1
89	Screw	2
90	Damping Device	1
91	Hook	1
92	Block	1
93	Spring	1
94	Hook Plate	1
95	Hook Plate	1
96	Positioning Sleeve of Hook	1
97	Lower Rubber Sleeve	1
98	Power Cord Plate	1
99	Tapping Screw M4x14	2
100	Power Cord	1
101	Cord Shield	1
102	Bracket of Right Handle	1
103	Left Handle	1
104	Right Handle	1
105	Tapping Screw ST4x25	4
106	Hoop	1
107	T Type Bolt	1
108	Bracket of Auxliary Handle	1
109	Depth Guide	1
110	Spring for Locking Piece	1
111	Locking Catch for Auxliary Handle	1
112	Locking Catch for Auxliary Handle	1
113	Washer of Auxliary Handle	1
114	Auxliary Handle	1
115	Cover of Carbon Brush	2

Assembly Diagram



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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