

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.

23g

drillmaster®

68341

Fixed Base Router



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

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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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. 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.
	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	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 depress the spindle lock when starting or during operation.
- n. 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.
- o. This product is not a toy. Keep it out of reach of children.
- p. 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.
- q. 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 routers

- a. **Hold the power tool by insulated gripping surfaces only, because the cutter may contact its own cord.** *Cutting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*
- b. **Use clamps or another practical way to secure and support the workpiece to a stable platform.** *Holding the work by your hand or against the body leaves it unstable and may lead to loss of control.*
- c. Let bit cool before touching, changing or adjusting it. Bits heat up dramatically while in use, and can burn you.

7. 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

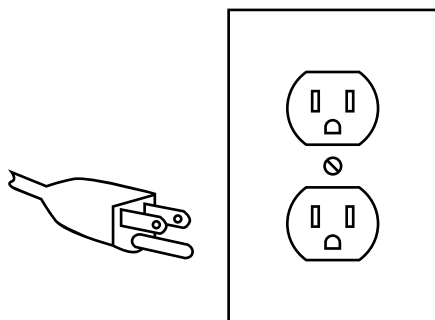
⚠ WARNING



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

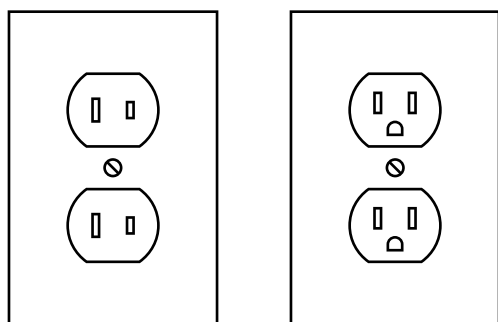


3-Prong Plug and Outlet

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.)

- 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.)**
- 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.
- 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.
- 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.

Specifications

Electrical Input	120 VAC / 60 Hz / 11 A (Rated)
Motor Speed	28,000 RPM (No Load)
Accepts Collet Sizes	1/4", 3/8", 1/2"
Maximum Cutting Depth	2-3/8"
Depth Measurements	1/64" increments
Accessories	1/4", 3/8" Collet Chucks Carbon Brushes Straight Trimmer Guide Two Wrenches

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



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 Trigger is in the off-position and unplug the tool from its electrical outlet before performing any procedure in this section.

Tool Setup

Bit Installation

WARNING! TO PREVENT SERIOUS INJURY:
Use only rotary cutting bits of the correct shank diameter for the collet mounted. Use only rotary cutting bits suitable for the speed of the tool.

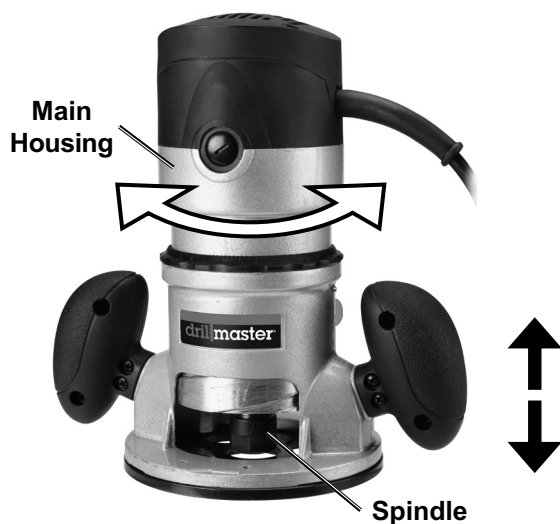
WARNING! TO PREVENT SERIOUS INJURY:
Carefully inspect router bits for cracks, chips, or other damage before installing. Do not use bits that have been dropped, cracked, or damaged. The bit may shatter causing serious injury.

1. Use only bits (sold separately) with 1/4" shank size, that are marked as suitable for the type of material being cut, and are marked with a speed equal or higher than the maximum speed marked on the tool. Do not use a bit with a cutting diameter larger than the opening in the base.

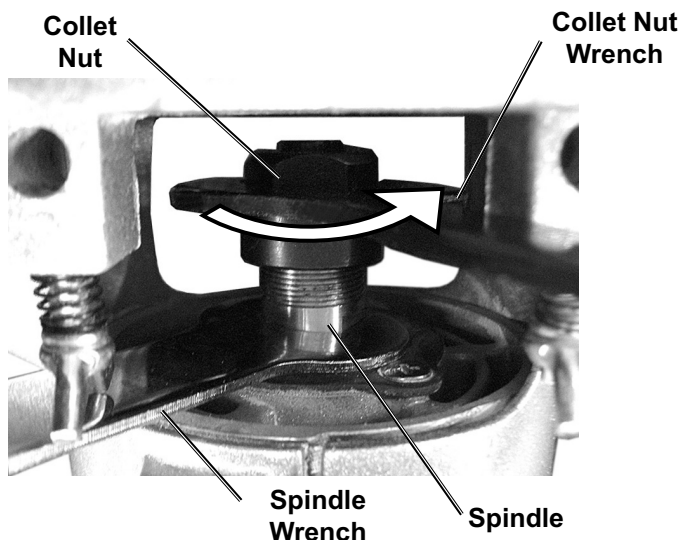
2. Unlock the Lock Lever.



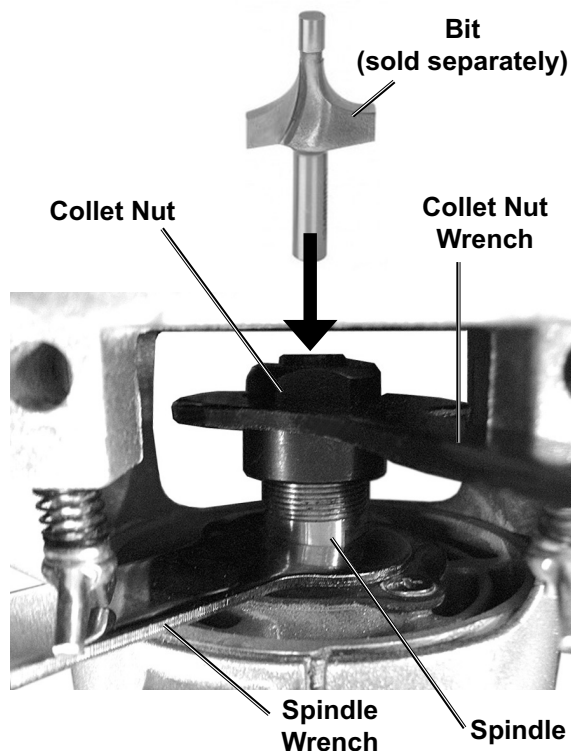
3. Rotate Main Housing to raise or lower Spindle to access Spindle and Collet Nut with Wrenches.



4. Turn Router upside down and hold Spindle in place with Spindle Wrench while turning Collet Nut counterclockwise with Collet Nut Wrench to loosen Collet Nut.



5. Remove or insert a Collet Chuck as needed to fit the bit size, then insert bit (sold separately) and tighten Collet Nut with Wrenches.



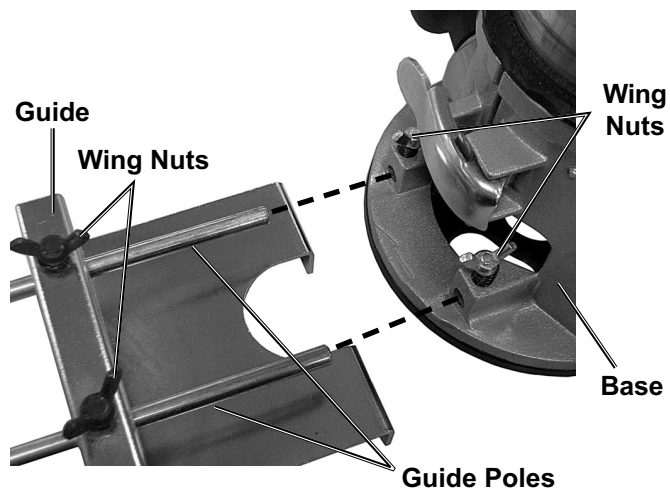
Edge Guide Installation

Use Edge Guide to make cuts parallel to the edge of a workpiece, or following a guide clamped onto workpiece.

1. Loosen Wing Nuts.
2. Slide Guide Poles on Guide into slots on Base of Router with Guide facing workpiece.

Note: The Edge Guide can be inserted into either side of the tool to make cuts along the left or right side of the material.

- a. Adjust distance between router bit and Guide to desired setting.
- b. Tighten Wing Nuts.

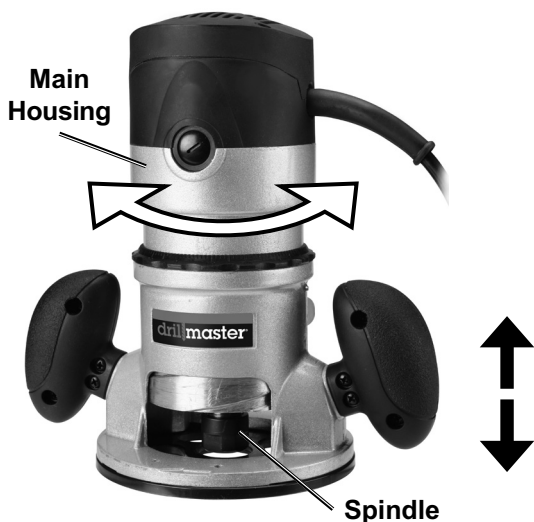


Adjusting the Cutting Depth

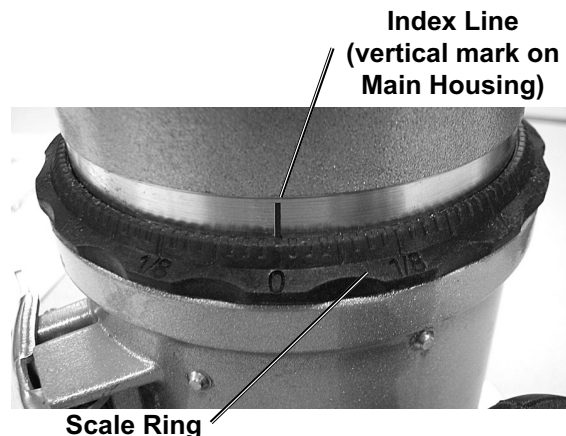
1. Place Router on a flat wood surface. Unlock the Lock Lever.



2. Rotate Main Housing until tip of bit touches the workpiece surface. Lock the Lock Lever.



3. Slide Scale Ring until the "0" aligns with index line (vertical mark) on Main Housing. Unlock the Lock Lever. Each line on scale raises or lowers bit by 1/64".



4. While holding Base up from surface, rotate Main Housing to raise or lower bit until index line on housing aligns with desired depth on scale ring. Lock the Lock Lever.



Work Piece 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. Make sure there are no metal objects in the wood which might make contact with the router bit.
5. Hold Router handles firmly with both hands.
6. Keep hands away from rotating bit. Unplug the tool and wait until the bit stops rotating completely before making adjustments.
7. Do not touch the bit right after cutting. It becomes very hot.
8. Before cutting material, turn the Router on. Watch and feel for vibration which could indicate an improperly installed bit.
9. Turn the Router off when not actually cutting. Do not leave running.

General Operating Instructions

SAFETY

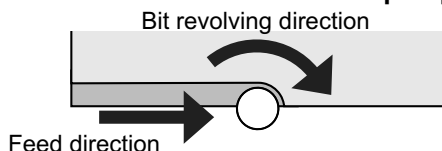
Note: Use two or more passes for deep cuts, especially in the case of hardwood. Do not attempt to cut deeper than 5/8" in a single pass. Turn Depth Stop Turret so that the first pass will be less than 5/8" deep, then rotate Turret one step for each progressive pass, until final depth is achieved.

CAUTION! When first turning on the Router, grip the Handles firmly as the tool may try to twist from the strong initial torque.

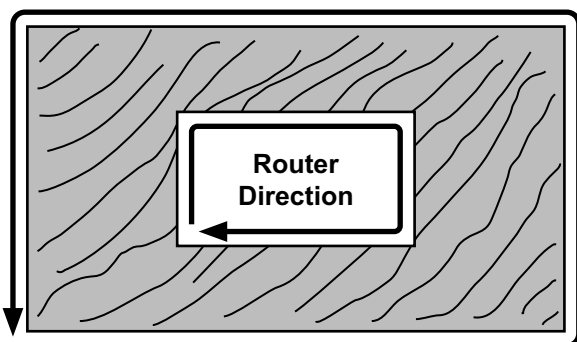
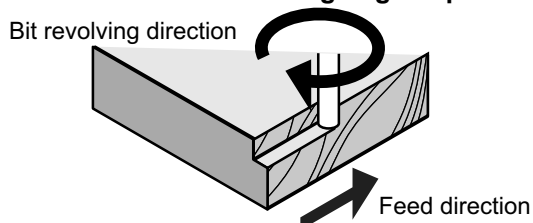
Note: The Router bit should always be fed into the stock from left to right so as to match the clockwise rotation of the router. When cutting outside edges, rotate the router counterclockwise. Rotate it clockwise when cutting inside edges.

Note: Make practice cuts at different speeds in scrap material until you are able to produce a smooth cut with no burnishing or burn marks. Burn marks are caused by moving too slowly through the wood. Feeding the Router too quickly, or trying to remove too much material in a single pass creates a rough cut and can overload the motor.

View from top of piece



View from cutting edge of piece



WARNING! TO PREVENT SERIOUS INJURY: Moving the router against the recommended direction can cause serious injury from kickback.

SETUP

OPERATION

MAINTENANCE

1. Hold Router handles firmly with both hands.
2. Place Router directly above the point you plan to cut. Verify that there are no obstructions in cutting path.
3. Make sure Trigger is in off-position, then plug in tool.
4. Turn on Router.
5. Before cutting material, watch and feel for vibration which could indicate an improperly installed bit. Turn off and re-install bit, if needed.
6. Allow bit to come to full speed, slowly engage material. DO NOT force Router down into the material.



7. When finished, raise Router so bit is clear of material, then turn Power Switch off. Do not set Router down until bit has come to a complete stop.
8. Do not touch bit right after cutting. It becomes very hot. Allow to cool before changing bits.
9. Do not leave Router running when not actually cutting. Turn power off between cuts.
10. To prevent accidents, disconnect power supply 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 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.

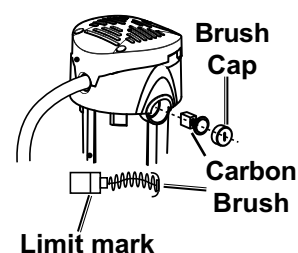
Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE**, inspect the general condition of the tool. Check for loose hardware, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation.
2. **AFTER USE**, wipe external surfaces of the tool with clean cloth.
3. Regularly clean all ventilation openings by periodically brushing with a soft brush and/or blowing clear with compressed air.
4. **!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.**

Replacing Carbon Brushes

Remove and check the Carbon Brushes regularly. Replace when they wear down to the limit mark on the carbon. Replace both brushes at the same time.

To replace: Remove the Brush Caps and old brushes, then insert the new brushes and secure the caps in place.



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 792363683418 when ordering parts.


Troubleshooting

SAFETY

SETUP

OPERATION

MAINTENANCE

Problem	Possible Causes	Likely Solutions
Tool will not start.	<ol style="list-style-type: none"> 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.) 	<ol style="list-style-type: none"> 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.	Extension cord too long or wire size too small.	Eliminate use of extension cord. If an extension cord is needed, use shorter/heavier gauge cord. See <i>Extension Cords</i> in <i>Grounding</i> section on page 14.
Performance decreases over time.	<ol style="list-style-type: none"> 1. Accessory dull or damaged. 2. Carbon brushes worn or damaged. 	<ol style="list-style-type: none"> 1. Keep cutting accessories sharp. Replace as needed. 2. Have qualified technician replace brushes.
Excessive noise or rattling.	Internal damage or wear. (Carbon brushes or bearings, for example.)	Have technician service tool.
Overheating.	<ol style="list-style-type: none"> 1. Forcing tool to work too fast. 2. Accessory misaligned. 3. Accessory dull or damaged. 4. Blocked motor housing vents. 5. Motor being strained by long or small diameter extension cord. 	<ol style="list-style-type: none"> 1. Allow tool to work at its own rate. 2. Check and correct accessory to fence and/or table alignment. 3. Keep cutting accessories sharp. Replace as needed. 4. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. 5. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See <i>Extension Cords</i> in <i>Grounding</i> section on page 14.
 Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.		

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.

drillmaster®

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