Owner's Manual



ELECTRONIC PLUNGE ROUTER

Double Insulated

Model No. 315.175070



Save this manual for future reference

 CAUTION: Read and follow all Safety Rules and Operating Instructions before first use of this product.

Customer Help Line: 1-800-932-3188

Sears, Roebuck and Co., Hoffman Estates, IL 60179 USA Visit the Craftsman web page: www.sears.com/craftsman

- Safety
- Features
- Adjustments
- Operation
- Maintenance
- Parts List



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WARRANTY

FULL ONE YEAR WARRANTY ON CRAFTSMAN PLUNGE ROUTER

If this **CRAFTSMAN** Plunge Router fails to give complete satisfaction within one year from the date of purchase, **RETURN IT TO THE NEAREST SEARS STORE OR SEARS SERVICE CENTER IN THE UNITED STATES**, and Sears will repair it, free of charge.

If this **CRAFTSMAN** Plunge Router is used for commercial or rental purposes, this warranty applies for only 90 days from the date of purchase.

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

Sears, Roebuck and Co., Dept. 817WA, Hoffman Estates, IL 60179

INTRODUCTION

Your plunge router has many features for making routing operations more pleasant and enjoyable. Safety, performance and dependability have been given top priority in the design of this router making it easy to maintain and operate. **CAUTION:** Carefully read through this entire owner's manual before using your new plunge router. Pay close attention to the Rules for Safe Operation, Warnings and Cautions. If you use your plunge router properly and only for what it is intended, you will enjoy years of safe, reliable service.

Look for this symbol to point out important safety precautions. It means attention!!! Your safety is involved.

WARNING:



The operation of any plunge router can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool operation, always wear safety goggles or safety glasses with side shields and a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields, available at Sears Retail Stores.

RULES FOR SAFE OPERATION

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and the explanations with them, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

SYMBOL MEANING



SAFETY ALERT SYMBOL:

Indicates caution or warning. May be used in conjunction with other symbols or pictographs.



DANGER: Failure to obey a safety warning will result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.



WARNING: Failure to obey a safety warning can result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.

CAUTION: Failure to obey a safety warning may result in property damage or personal injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.

NOTE: Advises you of information or instructions vital to the operation or maintenance of the equipment.

DOUBLE INSULATION

Double insulation is a concept in safety, in electric power tools, which eliminates the need for the usual three-wire grounded power cord. All exposed metal parts are isolated from internal metal motor components with protecting insulation. Double insulated tools do not need to be grounded.



WARNING: Do not attempt to operate this tool until you have read thoroughly and understand completely all instructions, safety rules, etc. contained in this manual. Failure to comply can result in accidents involving fire, electric shock, or serious personal injury. Save owner's manual and review frequently for continuing safe operation, and instructing others who may use this tool.

READ ALL INSTRUCTIONS

- KNOW YOUR POWER TOOL. Read owner's manual carefully. Learn its applications and limitations as well as the specific potential hazards related to this tool.
- GUARD AGAINST ELECTRICAL SHOCK by preventing body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
- KEEP GUARDS IN PLACE and in working order.
- KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
- AVOID DANGEROUS ENVIRONMENT. Do not use power tools in damp or wet locations or

IMPORTANT

Servicing of a tool with double insulation requires extreme care and knowledge of the system and should be performed only by a qualified service technician. For service we suggest you return the tool to your nearest Sears Store for repair. Always use original factory replacement parts when servicing.

expose to rain. Keep work area well lit.

- KEEP CHILDREN AND VISITORS AWAY. All visitors should wear safety glasses and be kept a safe distance from work area. Do not let visitors contact tool or extension cord.
- STORE IDLE TOOLS. When not in use, tools should be stored in a dry and high or locked-up place – out of the reach of children.
- DO NOT FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
- USE RIGHT TOOL. Do not force small tool or attachment to do the job of a heavy duty tool. Don't use tool for purpose not intended — for example — a circular saw should never be used for cutting tree limbs or logs.
- WEAR PROPER APPAREL. Do not wear loose clothing or jewelry that can get caught in tool's moving parts and cause personal injury. Rubber gloves and nonskid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair and keep it from being drawn into nearby air vents.
- ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses have only impact-resistant lenses; they are not safety glasses.

RULES FOR SAFE OPERATION (Continued)

- PROTECT YOUR LUNGS. Wear a face or dust mask if the operation is dusty.
- PROTECT YOUR HEARING. Wear hearing protection during extended periods of operation.
- DO NOT ABUSE CORD. Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- SECURE WORK. Use clamps or a vise to hold work. It is safer than using your hand and it frees both hands to operate tool.
- DO NOT OVERREACH. Keep proper footing and balance at all times. Do not use on a ladder or unstable support. Secure tools when working at elevated positions.
- MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- DISCONNECT TOOLS. When not in use, before servicing, or when changing attachments, tools should be disconnected from power supply.
- REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- AVOID ACCIDENTAL STARTING. Do not carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
- MAKE SURE YOUR EXTENSION CORD IS IN GOOD CONDITION. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. A wire gage size (A.W.G.) of at least 12 is recommended for an extension cord 50 feet or less in length. A cord exceeding 100 feet is not recommended. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.
- OUTDOOR USE EXTENSION CORDS. When tool is used outdoors, use only extension cords suitable for use outdoors. Outdoor approved cords are marked with the suffix W-A, for example – SJTW-A or SJOW-A.
- KEEP CUTTERS CLEAN AND SHARP. Sharp cutters minimize stalling and kickback.
- KEEP HANDS AWAY FROM ROUTING AREA. Keep hands away from cutters. Do not reach underneath work while cutter is rotating. Do not attempt to remove material while cutter is rotating.
- NEVER USE IN AN EXPLOSIVE ATMOSPHERE. Normal sparking of the motor could ignite fumes.
- INSPECT TOOL CORDS PERIODICALLY and if damaged, have repaired at your nearest Sears

Repair Center. Stay constantly aware of cord location.

- INSPECT EXTENSION CORDS PERIODICALLY and replace if damaged.
- KEEP HANDLES DRY, CLEAN, AND FREE FROM OIL AND GREASE. Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any strong solvents to clean your tool.
- STAY ALERT AND EXERCISE CONTROL. Watch what you are doing and use common sense. Do not operate tool when you are tired. Do not rush.
- CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center.
- DO NOT USE TOOL IF SWITCH DOES NOT TURN IT ON AND OFF. Have defective switches replaced by an authorized service center.
- INSPECT FOR and remove all nails from lumber before routing.
- DO NOT operate this tool while under the influence of drugs, alcohol, or any medication.
- POLARIZED PLUGS. To reduce the risk of electric shock, this tool has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.
- WHEN SERVICING USE ONLY IDENTICAL CRAFTSMAN REPLACEMENT PARTS.
- WHEN USING THIS ROUTER WITH A ROUTER TABLE, HELP PREVENT POSSIBLE SERIOUS INJURY BY KEEPING THE CUTTER GUARDED AT ALL TIMES. Use only router tables, with guards, that have been designed for use on routers that are of this type, size, and weight.
- DO NOT USE TOOL UNDER "BROWN-OUT" OR OTHER LOW VOLTAGE CONDITIONS. Also, do not use with any device that could cause the power supply voltage to change.
- SAVE THESE INSTRUCTIONS. Refer to them frequently and use them to instruct others who may use this tool. If you loan someone this tool, loan them these instructions also.

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WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known 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 and other masonry products, and
- · 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.

SAVE THESE INSTRUCTIONS

PRODUCT SPECIFICATIONS

Plunge Depth	0-2 in.	Rating	120 volts, 60 Hz AC only, 9.0 amperes
Maximum Cutter Diameter	2-3/8 in.	No Load Speed	15,000 - 25,000 RPM
Collet	1/4 in.	Power Cord	10 ft.
Horsepower	1-3/4	Net Weight	8.1 lb.

UNPACKING

Your plunge router has been shipped completely assembled and ready for use. Inspect it carefully to make sure no breakage or damage has occurred during shipping. If any parts are damaged or missing, contact your nearest Sears Retail Store to obtain replacement parts before attempting to operate router. The only loose parts included in the box are a 9/16 in. wrench and owner's manual.

WARNING: If any parts are missing, do not operate this tool until the missing parts are replaced. Failure to do so could result in possible serious personal injury.

ACCESSORIES

THE FOLLOWING ACCESSORIES ARE C Dovetail Template Box Joint Template Butt Hinge Template				CURRENTLY AVAILABLE AT SEARS RETAIL STORES – Multi-Purpose Router Guide Rout -A - Form Pantograph Sharpening Kit					ES —		
COMBINATION PANEL CUTTER		CORE BOX BIT V-GROOVE CHAMFER	STRAIGHT FACE BIT	COMB- INATION STRAIGHT, BEVEL CUTTER			BIT		COVE BIT, 45° CHAMFER BIT	BEAD QUARTER- ROUND BITS	ARBOR 2589 4 4 5 5 8 10 12 10 25895
	*25895 FOR CARBIDE TIPPED EDGE FORMING BITS 2589 FOR HIGH SPEED STEEL EDGE FORMING BITS WARNING: The use of attachments or accessories not listed above might be hazardous.										

FEATURES

KNOW YOUR PLUNGE ROUTER

See Figures 1 and 2.

Before attempting to use any tool, familiarize yourself with all operating features and safety requirements.

Your router is a versatile woodworking tool which will give you years of trouble-free performance. It is engineered with the professional in mind, but its ease of operation allows the amateur to produce work which is beautiful and precise. As the name implies your router can be used for making plunge cuts in workpieces, routing grooves, edge routing, routing circles, and freehand routing. When used with recommended accessories, such as a router table, edge guide, and circle cutting attachment; it becomes even more versatile. Various types of cutters, both with and without roller bearings as guides also add to the versatility of this tool.



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FEATURES

HEAVY DUTY MOTOR

Your router has a powerful 9 amp motor with sufficient power to handle tough routing jobs. It delivers 1-3/4 horsepower for heavy duty performance. The motor also has externally accessible brushes for ease of servicing.

SWITCH

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To turn your router **ON**, depress the switch trigger. Release switch trigger to turn your router **OFF**.

LOCK-ON FEATURE

Your router is equipped with a "lock-on" feature that is convenient when continuous operation for extended periods of time is required. To lock on, depress the trigger, push in the "lock-on" button located on the side of the handle, then while holding the "lock-on" button pushed in, release the trigger. To release the lock, depress the trigger and release. See Figure 2.



REAR VIEW OF ROUTER

WARNING: Do not allow familiarity with your router to make you careless. Remember that a careless fraction of a second is sufficient to inflict severe injury.

FEATURES

ACCU-STOP™ MICRO-ADJUSTABLE DEPTH STOP SYSTEM

The Accu-Stop[™] Micro-Adjustable depth stop located on the base of your router provides precise stops for repetitive depth of cut changes. A depth adjustment scale makes quick adjustments to depth of cut changes possible.

CHIP SHIELD

A clear plastic see-through chip shield has been provided on the base of your router for protection against flying dust and chips. It is designed to fit the front opening of the router base. For your protection, do not use router without chip shield properly in place.

SPINDLE LOCK

A spindle lock secures the spindle so that only one wrench is needed to loosen collet nut and change cutters. It also leaves both hands free for changing cutters.

Note: Your router will not run if spindle is locked.

APPLICATIONS

(Use only for the purposes listed below)

- Routing grooves, shaping edges, freehand designs, etc. in wood.
- Chamfering, rabbeting, dadoing, and dovetailing in wood are additional applications.
- Routing edges on laminates.

WARNING: Do not use cutters that are larger in diameter than the opening in the router base.

VARIABLE SPEED SWITCH WITH ELECTRONIC SPEED CONTROL (Feedback Switch)

Your router has advanced electronic features, designed to assist you in getting the maximum use from your router. By making proper speed selections, your router can be adjusted to specific routing needs. This eliminates much of the guess work previously needed to perform a given job. Both the experienced and inexperienced router users benefit, obtaining professional-like results with fewer job errors.

The variable speed control allows the router to develop a no load speed that can be adjusted from 15,000 to 25,000 RPM. The variable speed control selector is conveniently located on the side of the right handle.

The electronic feature of your router introduces the

flexibility of adjusting the motor speed to required job conditions. An electronic speed control module senses the load applied to the motor, and increases or decreases motor voltage to compensate for and maintain desired RPM.

Speed can be set according to the approximate cutter diameter you will be using and to the hardness of the material being cut. See the chart in figure 11. The best cuts are made when the cutter is fed through material at the proper rate of feed.

PLUNGE LOCK RELEASE

Your router has a plunge lock release feature that allows free plunging. This feature is very useful for table mounted operations on router tables. A plunge release lock locks out the plunge lock release allowing smooth, precise plunging action. Once a desired depth of cut has been reached, simply squeeze and release the plunge lock release. The cutter will then be secured at this desired depth of cut.



WARNING: Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious personal injury.

MULTI-POSITION HANDLES

The handles on your router provide for easy handling and maintaining proper control when routing.

The handles have also been designed so that they are comfortable and easy to grasp when operating in different positions or at different angles.



WARNING: Use only router bits for cutters. Also make sure all router bits and recommended accessories are in accordance with listed specifications for this tool. For example, do not use router bits that are rated at less than 25,000 RPM.

ELECTRICAL CONNECTION

Your plunge router has a precision built electric motor. It should be connected to a **power supply that is 120 volts, 60 Hz, AC only (normal household current).** Do not operate this tool on direct current (DC). A substantial voltage drop will cause a loss of power and the motor will overheat. If your tool does not operate when plugged into an outlet, double-check the power supply.

WARNING: Your router should never be connected to power supply when you are assembling parts, making adjustments, installing or removing cutters, cleaning, or when not in use. Disconnecting router will prevent accidental starting that could cause serious personal injury.

INSTALLING/REMOVING CUTTERS

See Figures 3 and 4.

- Unplug your router.
 - WARNING: Failure to unplug your router could result in accidental starting causing serious injury.
- Place the spindle lock into lock position. See Figure 3.



Note: If spindle does not lock, turn collet nut with wrench, applying pressure at the same time to the spindle lock with your thumb or finger. When lock mechanism engages with notch in spindle, spindle lock will slide into lock position.

WARNING: To prevent damage to the spindle or spindle lock, do not attempt to engage spindle lock while motor is running. Always allow motor to come to a complete stop and unplug it before engaging spindle lock.

- Place router upside down on workbench in order to gain easy access to collet nut.
- Place the wrench provided through back of router base onto collet nut and turn counterclockwise to loosen. See Figure 4.



- WARNING: If you are changing a cutter immediately after use, be careful not to touch cutter or collet with your hands or fingers. They will get burned because of the heat buildup from cutting. Always use the wrench provided.
- If installing cutter for the first time, it can be installed once collet nut is loose. If changing cutters, cutter will easily slip from collet after loosening collet nut.
- The collet is machined to precision tolerances to fit cutters with 1/4 in. diameter shanks.
- Insert shank of cutter into collet until shank bottoms out, then pull it out 1/16 in. to allow for expansion when the bit gets hot.
- Tighten the collet nut securely by turning clockwise with the wrench provided. See Figure 4.



WARNING: If collet nut is not tightened securely, cutter may come out during use, causing serious personal injury.

Place spindle lock back in unlock position. Otherwise, interlocking mechanism of spindle lock will not let you turn your router on.

WARNING: Do not use cutters with undersized shanks. Undersized shanks will not tighten properly and could be thrown from tool causing injury.



DEPTH OF CUT ADJUSTMENTS

See Figures 5, 6 and 7.

When routing a groove that is too deep to safely cut in one pass, it is best to make the cut in several passes. We recommend that cuts be made at a depth not exceeding 1/8 in. and that several passes be made to reach deeper cuts.

Proper depth of cut depends on several factors: horsepower of router motor, type of cutter being used, and type of wood being routed. A lightweight, low horsepower router is designed for making shallow cuts. A router with high horsepower rating can safely cut deeper. Small bits, such as veining bits with 1/16 in. cutting diameters, are designed to remove only small amounts of wood. Large bits, such as straight-flute bits, are made to remove larger amounts of wood in a single pass. Cuts can be made deeper in soft woods, such as white pine, than in tough hardwoods, like oak or maple. Based upon these considerations, choose a depth of cut that will not place excessive strain on router motor. If you find that extra force is needed or that the motor speed slows down considerably, turn off router and reduce the depth of cut. Then, make the cut in two or more passes.

TO SET DEPTH OF CUT

Unplug your router.

WARNING: Failure to unplug your router could result in accidental starting causing serious injury.

Raise cutter by depressing plunge lock release. See Figure 5.



Adjust cutter until it is inside router subbase. See Figures 5 and 6.



- Place router on a flat surface.
- Lower router until tip of cutter barely touches flat surface. See Figure 7.



Release plunge lock release to lock cutter at "zero" depth of cut.

Note: If desired, adjust hex nut until it comes in contact with stop flange. This will provide a positive stop at "zero" depth of cut.

- Rotate depth stop to desired position, loosen lock knob and adjust stop bar until it touches depth stop.
- Slide zero-reset indicator up or down the scale on stop bar until red line on zero-reset indicator aligns with a desired reference point. For example, align red line with 1 in. mark on the scale.
- Next, lift stop bar to obtain desired depth of cut. See Figure 7. For example, if setting 1/8 in. depth of cut, the zero-reset indicator will move 1/8 in. from the 1 in. reference point.
- Tighten lock knob securely.
- Position your router so that the cutter can extend below the subbase for desired depth setting.
- Depress plunge lock release.
- Grasp handles and lower router until stop bar contacts depth stop. Release plunge lock release, locking cutter at desired depth of cut. See Figure 7.

OPTIONAL DEPTH CONTROL KNOB See Figure 8.



An optional depth control knob is available and may be purchased for use with your plunge router. We recommend its use when your router needs require precise depth of cut adjustments and when router is mounted upside down on a router table.

Note: The weight of the router plus the awkward position it is in when mounted to a router table make it very difficult to set depth of cut simply by turning the hex nut with a 9/16 in. wrench. Therefore, we recommend that you purchase and use a depth control knob for situations mentioned above as well as other similar situations.

When installed properly, the optional depth control knob is spring loaded against hex nut. If you adjust it up too far, it will pop off threaded rod. Refer to

OPTIONAL DEPTH CONTROL KNOB

ADJUSTMENTS in maintenance section for proper assembly or reassembly.

TO SET DEPTH OF CUT WITH OPTIONAL DEPTH CONTROL KNOB

- Unplug your router.

WARNING: Failure to unplug your router could result in accidental starting causing serious injury.

- Loosen lock knob and adjust stop bar so that it is not touching depth stop.
- Depress plunge lock release and allow router to return to it's uppermost position against hex nut.
- Plunge router until cutter reaches the approximate desired depth of cut. Then release plunge lock release, temporarily locking cutter at desired depth of cut.
- Turn depth control knob clockwise until hex nut seats against stop flange. Do not overtighten hex nut against stop flange.
- Depress and hold plunge lock release, then depress plunge release lock. Turn depth control knob until cutter reaches desired depth of cut. Always make sure plunge lock is depressed and router is free before setting depth of cut with depth control knob.
- Squeeze plunge lock release and release, locking cutter at desired depth of cut. Always make sure cutter is locked securely in place with plunge lock before performing any routing operation.
- Loosen lock knob and adjust stop bar until it touches depth stop.
- Tighten lock knob securely.

ACCU-STOP™ MICRO-ADJUSTABLE DEPTH STOP SYSTEM

See Figures 9 and 10.

The depth stop is located on the base of your router and makes it possible to make deep or heavy cuts in successive passes by use of the Accu-Stop™ Micro-Adjustable Depth Stop System. Alignment marks make depth of cut changes quick and easy.

A preset cutting depth is achieved by plunging router until stop bar comes in contact with depth stop. The micro-adjusting feature provides alignment marks at each 90° rotation of the depth stop knob. Each 90° rotation of the knob changes depth of cut setting 1/64 in. See Figure 9.



A complete rotation (360°) of the depth stop knob changes the depth of cut setting 1/16 in. See Figure 10.

The Accu-Stop™ Micro-Adjustable Depth Stop System provides for depth of cut changes to be made from 0 to 1/2 in. from the initial setting of the stop bar. This initial setting of the stop bar can be "zero" depth of cut, or it can be any depth of cut setting that you choose as a starting point for a particular job to be performed.

TO SET DEPTH STOP SETTINGS

Unplug your router.



- Loosen lock knob and raise stop bar.
- Rotate depth stop until the highest depth stop is aligned with the stop bar.
- Raise cutter by depressing plunge lock release.
- Place router on flat surface, and lower router until tip of cutter barely touches flat surface.
- Release plunge lock release to lock cutter at "zero" depth of cut.
- Lower stop bar against depth stop, then tighten lock knob securely. The highest stop now becomes the "zero" depth of cut setting.



The zero reset indicator allows you to use the scale provided on the housing to make quick depth of cut changes to existing depth of cut settings. Simply choose a reference point on the scale and slide the zero reset indicator up or down the scale the distance required for new depth of cut. Then change stop bar position by loosening lock knob and adjusting stop bar until red line on zero reset indicator moves back to reference point. Tighten lock knob securely to lock stop bar in new position. The cutter position will now increase or decrease the exact distance the stop bar was adjusted.

Remember: Each mark on the inch scale indicates a 1/16 inch change in depth setting while each mark on the metric scale equals a 1 mm change in depth setting; depth control knob should be used for making precise adjustments to depth of cut.

VARIABLE SPEED CONTROL SELECTOR See Figure 11.

MATERIAL	1/4 8	3/8	1/2	3/4
	0		_	<u> </u>
SOFT	<u> </u>	7	3-4	1-2
MEDIUM	7	6-7	2	1
HARD	6	3-4	1	_1
VERY HARD	7	6-7	5	4
SPEED	SELE	CTION	CHAR	T
SWITCH HANDLE TO INCREASE SPEED				DECREASE SPEED VARIABLE SPEED CONTROL SELECTOR Fig. 11

Your router has a variable speed control selector designed to allow operator control of speed and torque limits. You can make speed selections best suited to the type of cut, the material being cut, and the size of bit being used. The variable speed control selector allows you to adjust router speed from 15,000 to 25,000 rpm. There is an eight step scale numbered 1 through 8 on the variable speed control selector. To increase the speed and torque of your router, turn the variable speed control selector to a higher setting. Turn to a lower setting to decrease speed and torque.

Note: If you do not want to use the variable speed control selector, turn to the highest possible setting, and the feature will not be active.

The speed selection chart shown gives suggested speed settings based on the diameter of the cutter and the type of material being routed.

PRACTICE BEFORE ACTUAL USE

See Figure 11.

We suggest that you practice with the variable speed feature of your router before installing a cutter and making cuts in wood. Check the following before connecting your router to power supply:

- Make sure power supply is 120 volts, 60 Hz, AC only.
- Make sure the spindle lock is in the unlocked position.
- Make sure the trigger is not in the lock-on position.
- Make sure there is not a cutter in the collet.
- Make sure the collet does not extend below the subbase.
- Choose the desired speed from the speed selection chart. See Figure 11.
- Turn the variable speed control selector to the desired setting.
- Plug your router into power supply source.
- Grasp your router firmly with both hands and turn on.

HELPFUL HINTS

- Always clamp workpiece securely before routing.
- A safe operator is one who thinks ahead.
- Always wear eye protection when routing.
- ✓ Make set-up adjustments carefully. Then double check. Measure twice and cut once.
- Keep cutters clean and properly sharpened.
- Don't let familiarity make you careless.
- Study all safety rules and do the job safely.
- Never place your hands in jeopardy.
- Make certain clamps can't loosen while in use.
- Test difficult set-ups on scrap Don't waste lumber.
- Plan each operation before you begin.
- Provide for smoother operation by cleaning your router frequently. Shake router or blow with an air jet to remove sawdust build-up.
- Think Safety By Thinking Ahead.

WARNING: Always wear safety goggles or safety glasses with side shields when using your router. Failure to do so could result in dust, shavings, chips, loose particles, or foreign objects being thrown in your eyes resulting in possible serious injury. If the operation is dusty, also wear a face or dust mask.

LOCK-ON BUTTON

See Figure 12.



CUTTER EXTENDED BELOW SUBBASE

The switch of your router is equipped with a lock-on feature which is convenient when operating for extended periods of time. To lock on, depress the switch trigger and push in the lock button located on the side of the handle. While holding the lock button pushed in, release the switch trigger. To release the lock, depress the switch trigger and release.

ROUTING

See Figure 13.



For ease of operation and maintaining proper control, your router has two handles, one on each side of the router base. When using your router hold it firmly with both hands as shown in figure 13.

WARNING: Keep a firm grip on router with both hands at all times. Failure to do so could result in loss of control leading to possible serious injury.

Before starting router, unplug it and make sure cutter is securely tightened in collet nut and that depth of cut is properly set.

Plug router into power supply, turn it on, and let motor build to its full speed, then gradually plunge or feed cutter into workpiece. Do not let the cutter contact workpiece before turning on router and allowing it to develop full speed.

Remain alert and watch what you are doing. Do not operate router when fatigued or under the influence of drugs, alcohol, or any medication.

FEED DIRECTION

When routing, the cutter rotates clockwise. Therefore, you should feed the router into the workpiece from left to right. When fed from left to right, the rotation of the cutter pulls the router against the workpiece. If fed in the opposite direction, the rotation forces of the spinning bit will tend to throw the router away from the workpiece. This could cause loss of control of your router. See Figure 17.

RATE OF FEED

IMPORTANT: The whole "secret" of professional routing and edge shaping lies in making a careful set-up for the cut to be made and in selecting the proper rate of feed.

The proper rate of feed depends on several factors: the hardness and moisture content of the wood, the depth of cut, and the cutting diameter of the bit. When cutting shallow grooves in soft woods such as pine, a faster rate of feed can be used. When making deep cuts in hardwoods such as oak, a slower rate of feed will be required.

The best rate of feed is one that does not slow down the router motor more than one-third of its no-load speed. If the router is fed too fast, it will take large chips out of the wood and leave gouge marks. If the router is fed too slow, it will scorch or burn the wood.

PROPER FEEDING

The right feed is neither too fast nor too slow. It is the rate at which the bit is being advanced firmly and surely to produce a continuous spiral of uniform chips — without hogging into the wood to make large individual chips or, on the other hand, to create only sawdust. If you are making a small diameter, shallow groove in soft, dry wood, the proper feed may be about as fast as you can travel your router along your guide line. On the other hand, if the bit is a large one, the cut is deep or the wood is hard to cut, the proper feed may be a very slow one. A cross-grain cut may require a slower pace than an identical with grain cut in the same workpiece.

There is no fixed rule. You will learn by experience from practice and use. The best rate of feed is determined by listening to the sound of the router motor and by feeling the progress of each cut. Always test a cut on a scrap piece of the workpiece wood, beforehand.

SPEED SELECTION

In general, if the material being cut is hard, the cutter size is large, or the depth of cut is deep - maximum 1/8 in., then your router should be run at slower speeds. When these situations exist, turn the variable speed control selector until the desired speed is reached.

Note: Carbide cutters cut at higher speeds than steel cutters and should be used when cutting very hard materials. Keep cutters sharp at all times.

FORCE FEEDING

Clean, smooth routing and edge shaping can be done only when the bit is revolving at a relatively high speed and is taking very small bites to produce tiny, cleanly severed chips. If your router is forced to move forward too fast, the RPM of the bit becomes slower than normal in relation to its forward movement. As a result, the bit must take bigger bites as it revolves. "Bigger bites" mean bigger chips, and a rougher finish. Bigger chips also require more power, which could result in the router motor becoming overloaded.

Under extreme force-feeding conditions the relative RPM of the bit can become so slow — and the bites it has to take so large — that chips will be partially knocked off (rather than fully cut off), with resulting splintering and gouging of the workpiece. See Figure 14.



TOO SLOW

Fig. 14

Your router is an extremely high-speed tool (15,000 - 25,000 RPM no-load speed), and will make clean, smooth cuts if allowed to run freely without the overload of a forced (too fast) feed. Three things that cause "force feeding" are bit size, depth-of-cut, and workpiece characteristics. The larger the bit or the deeper the cut, the more slowly the router should be moved forward. If the wood is very hard, knotty, gummy or damp, the operation must be slowed still more.

You can always detect "force feeding" by the sound of the motor. Its high-pitched whine will sound lower and stronger as it loses speed. Also, the strain of holding the tool will be noticeably increased.

TOO SLOW FEEDING

It is also possible to spoil a cut by moving the router forward too slowly. When it is advanced into the work too slowly, a revolving bit does not dig into new wood fast enough to take a bite; instead, it simply scrapes away sawdust-like particles. Scraping produces heat, which can glaze, burn, or mar the cut — in extreme cases, can even overheat the bit so as to destroy its hardness.

In addition, it is more difficult to control a router when the bit is scraping instead of cutting. With practically no load on the motor the bit will be revolving at close to top RPM, and will have a much greater than normal tendency to bounce off the sides of the cut (especially if the wood has a pronounced grain with hard and soft areas). As a result, the cut produced may have rippled, instead of straight sides. See Figure 14.

"Too-slow feeding" can also cause your router to take off in a wrong direction from the intended line of cut. **Always grasp and hold your router firmly with both hands when routing.**

You can detect "too-slow feeding" by the runaway too-highly pitched sound of the motor; or by feeling the "wiggle" of the bit in the cut.

DEPTH OF CUT

As previously mentioned, the depth of cut is important because it affects the rate of feed which, in turn, affects the quality of a cut (and, also, the possibility of damage to your router motor and bit). A deep cut requires a slower feed than a shallow one, and a too deep cut will cause you to slow the feed so much that the bit is no longer cutting, it is scraping, instead.

Making a deep cut is never advisable. The smaller bits — especially those only 1/16 inch in diameter are easily broken off when subjected to too much side thrust. A large enough bit may not be broken off, but if the cut is too deep a rough cut will result — and it may be very difficult to guide and control the bit as desired. For these reasons, we recommend that you do not exceed 1/8 inch depth of cut in a single pass, regardless of the bit size or the softness or condition of the workpiece. See Figure 15.



Fig. 15

To make deeper cuts it is therefore necessary to make as many successive passes as required, lowering the bit 1/8 inch for each new pass. In order to save time, do all the cutting necessary at one depth setting, before lowering the bit for the next pass. This will also assure a uniform depth when the final pass is completed. See Figure 16.



DIRECTION OF FEED AND THRUST See Figure 17.



The router motor and bit revolve in a clockwise direction. This gives the tool a slight tendency to twist (in your hands) in a counterclockwise direction, especially when the motor revs up (as at starting).

Because of the extremely high speed of bit rotation during a "proper feeding" operation, there is very little kickback to contend with under normal conditions. However, should the bit strike a knot, hard grain, foreign object, etc. that would affect the normal progress of the cutting action, there will be a slight kickback — sufficient to spoil the trueness of your cut if you are not prepared. Such a kickback is always in the direction opposite to the direction of bit rotation.

To guard against such a kickback, plan your set-up and direction of feed so that you will always be thrusting the tool — to hold it against whatever you are using to guide the cut — in the same direction that the leading edge of the bit is moving. In short, the thrust should be in a direction that keeps the sharp edges of the bit continuously biting straight into new (uncut) wood.

ROUTING

Whenever you are routing a groove, your travel should be in a direction that places whatever guide you are using at the right-hand side. In short, when the guide is positioned as shown in the first part of Figure 18, tool travel should be left to right and counterclockwise around curves. When the guide is positioned as shown in the second part of Figure 18 tool travel should be right to left and clockwise around curves. If there is a choice, the first set-up is generally the easiest to use. In either case, the sideways thrust you use is against the guide.

GUIDE OUTSIDE







EDGE ROUTING

Place router on workpiece, making sure the router bit does not contact workpiece. Turn router on and let motor build to its full speed. Begin your cut, gradually feeding cutter into workpiece.

WARNING: Keep a firm grip on router with both hands at all times. Failure to do so could result in loss of control leading to possible serious injury.

Upon completion of cut, turn motor off and let it come to a complete stop before removing router from work surface.

WARNING: Never pull router out of work and place upside down on work surface before the cutter stops.

EDGING WITH PILOT BITS

See Figure 19.



TOP EDGE SHAPING



WHOLE EDGE SHAPING Fig. 19

Rabbets and molded edges can be cut using piloted cutters. The pilot extends below the cutter. Some pilots are solid extensions of the cutter. Others are ball bearing guides that are fastened to the end of the cutter. The pilots allow the cutters to turn while the pilot follows the edge of the workpiece.

Arbor-type bits with pilots are excellent for quick, easy, edge shaping. They will follow workpiece edges that are either straight or curved. The pilot prevents the bit from making too deep a cut; and holding the pilot firmly in contact with the workpiece edge throughout prevents the cut from becoming too shallow.

Whenever the workpiece thickness together with the desired depth of cut (as adjusted by router depth setting) are such that only the top part of the edge is to be shaped (leaving at least a 1/16 inch thick uncut portion at bottom), the pilot can ride against the uncut portion, which will serve to guide it. See Figure 19. However, if the workpiece is too thin or the bit set too low so that there will be no uncut edge to ride the pilot against, an extra board to act as a guide must be placed under the workpiece. This "guide" board must have exactly the same contour - straight or curved - as the workpiece edge. If it is positioned so that its edge is flush with the workpiece edge, the bit will make a full cut (in as far as the bit radius). On the other hand, if the guide is positioned as shown in Figure 19 (out from the workpiece edge), the bit will make less than a full cut - which will alter the shape of the finished edge.

Note: If desired, any of the piloted bits can be used without a pilot for edge shaping with guides, as preceding. Also, the size (diameter) of the pilot that is used determines the maximum cut width that can be made with the pilot against the workpiece edge - the small pilot exposes all of the bit; the large one reduces this amount by 1/16 inch.

When routing all the edges of a panel or board, rout the end grain first. Any splintering that occurs at the corners will then be removed when routing the edge. Start each side 1/4 in. away from the end. Feed the cutter into the wood until the pilot contacts the uncut edge. Then, slowly back the router to shape the corner. Next, move the router forward to shape the rest of the edge. Be careful to keep the pilot pressed against the uncut edge. Repeat this procedure on each side of the panel. Figure 20 shows the proper sequence of cuts to make when edge routing four sides of a panel.



ROUTING GROOVES See Figure 21.



When routing across the face of boards, set router at desired depth of cut, place the edge of router base against workpiece, and turn on your router. Slowly feed the cutter into the workpiece along desired cutline.

When routing straight cuts across stock, clamp a straightedge to the workpiece to use as a guide. Position the straightedge parallel to the cutline and offset the distance between the cutting edge of the cutter and the edge of the router base. Hold the router base against the straightedge and rout the groove.

When routing a groove wider than the diameter of the cutter, clamp a straightedge on both sides of the cutting line. Position both guides parallel to the desired cutline and spaced equal distances from the desired edges of the groove. Rout along one guide; then, reverse direction and rout along the other guide. Clean out any remaining waste in the center of the groove freehand.

OPTIONAL EDGE GUIDE

For routing straight cuts and grooves, an optional edge guide is available and may be purchased for use with your router. It may be purchased at your nearest Sears Retail Store.

The edge guide attaches to your router by inserting the guide bars into openings in the router base and securing with the two knob screws provided.

Adjustments are made by loosening knob screws in the base, placing the edge guide the desired distance from the cutter, then retightening knob screws.

When routing, hold the edge guide securely against the edge of your workpiece.

FREEHAND ROUTING

See Figure 22.



When used freehand, your plunge router becomes a flexible and versatile tool. This flexibility makes it possible to easily rout signs, relief sculptures, etc.

There are two basic techniques for freehand routing:

- Routing letters, grooves, and patterns into wood.
- Routing out the background, leaving the letters or pattern raised above the surface as shown in figure 22.

When freehand routing, we suggest the following:

- Draw or layout the pattern on workpiece.
- Choose the appropriate cutter.

Note: A core box or V-groove bit is often used for routing letters and engraving objects. Straight bits and ball mills are often used to make relief carvings. Veining bits are used to carve small, intricate details.

- Rout the pattern in two or more passes. Make the first pass at 25% of the desired depth of cut. This will provide better control as well as being a guide for the next pass.
- Do not rout deeper than 1/8 in. per pass or cut.

Freehand routing is an excellent example of how to use the plunge routing feature of your router:

- Choose the appropriate cutter, set desired depth of cut, carefully check set-up, and secure workpiece.
- Make a test cut in a scrap piece of wood from the same workpiece if possible.

- Depress plunge lock release and raise cutter from any preset depth of cut. This also permits raising cutter inside router subbase.
- Place router on workpiece inside pattern to be routed.
- Grasp handles securely and depress switch trigger to start your router.
- Let motor build to full speed, then gradually plunge cutter into workpiece until stop bar comes into contact with depth stop.
- Release plunge lock release to secure depth of cut setting.
- Begin routing out the pattern, continuing until a complete pass at this depth of cut has been made.
- Several cuts that require repositioning of router may be needed for a particular job. If this situation exists, depress plunge lock release and raise cutter inside router subbase after each cut, reposition router for next cut, gradually plunge cutter into workpiece until stop bar contacts depth stop, release plunge lock release and continue routing.
- After all cuts have been made, depress plunge lock release, raise cutter inside router subbase, remove router from workpiece, release switch trigger, and allow cutter to come to a complete stop.

WARNING: Do not use large router bits for freehand routing. Use of large router bits when freehand routing could cause loss of control or create other hazardous conditions that could cause possible serious personal injury. When using a router table, large router bits should be used for edging only. Do not use router bits that are larger in diameter than the opening in router base.

ROUTER TABLES



The use of Craftsman routers in router tables offered by other manufacturers has not been investigated for compliance with applicable safety standards.

MAINTENANCE

WARNING: When servicing, use only identical Craftsman replacement parts. Use of any other part may create a hazard or cause product damage.

BRUSH REPLACEMENT

See Figure 23.



Your router has externally accessible brush assemblies that should periodically be checked for wear.

PROCEED AS FOLLOWS WHEN REPLACEMENT IS REQUIRED:

Unplug your router.

WARNING: Failure to unplug your router could result in accidental starting causing serious injury.

- Remove brush cap with a screwdriver. Brush assembly is spring loaded and will pop out when you remove brush cap.
- Remove brush assembly (brush and spring).
- Check for wear. If worn, always replace in pairs. Do not replace one side without replacing the other.
- Reassemble using new brush assemblies. Make sure curvature of brush matches curvature of motor and that brush moves freely in brush tube.
- Make sure brush cap is oriented correctly (straight) and replace.
- Tighten brush cap securely. **Do not** over torque.

GENERAL

Only the parts shown on parts list, page 23, are intended to be repaired or replaced by the customer. All other parts represent an important part of the double insulation system and should be serviced only at a Sears Service Center.

Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean cloths to remove dirt, carbon dust, etc.

WARNING: Do not at any time let brake fluids, gasoline, petroleum-based products, penetrating oils, etc. come in contact with plastic parts. They contain chemicals that can damage, weaken or destroy plastic.

It has been found that electric tools are subject to accelerated wear and possible premature failure when they are used on fiberglass boats, sports cars, wallboard, spackling compounds, or plaster. The chips and grindings from these materials are highly abrasive to electric tool parts such as bearings, brushes, commutators, etc. Consequently, it is not recommended that this tool be used for extended work on any fiberglass material, wallboard, spackling compounds, or plaster. During any use on these materials it is extremely important that the tool is cleaned frequently by blowing with an air jet.



WARNING: Always wear safety goggles or safety glasses with side shields during power tool operation or when blowing dust. If operation is dusty, also wear a dust mask.

PROPER CARE OF CUTTERS

Get faster more accurate cutting results by keeping cutters clean and sharp. Remove all accumulated pitch and gum from cutters after each use.

When sharpening cutters, sharpen only the inside of the cutting edge. Never grind the outside diameter. Be sure when sharpening the end of a cutter to grind the clearance angle the same as originally ground.

PROPER CARE OF COLLET

From time to time, it also becomes necessary to clean your collet and collet nut. To do so, simply remove collet nut from collet and clean the dust and chips that have collected. Then return collet nut to its original position.

LUBRICATION

All of the bearings in this tool are lubricated with a sufficient amount of high grade lubricant for the life of the unit under normal operating conditions. Therefore, no further lubrication is required.

MAINTENANCE

OPTIONAL DEPTH CONTROL KNOB ADJUSTMENTS

See Figure 24.



The optional depth control knob is spring loaded against hex nut to prevent router motor from accidentally separating from router base. If depth control knob is turned too far up depth adjustment rod, the spring will cause depth control knob to pop off before hex nut. **Do not remove hex nut.** It should remain on depth adjustment rod at all times. This is especially important when using router upside down on a router table.

TO INSTALL OR REPLACE OPTIONAL DEPTH CONTROL KNOB:

Unplug your router.

WARNING: Failure to unplug your router could result in accidental starting causing serious injury.

Remove upper hex nut (jam nut) from depth adjustment rod.

Note: This is the only time hex nut should be removed from your router. Also, if you remove optional depth control knob for any reason, hex nut must be reinstalled before reusing your router.

- Turn remaining hex nut counterclockwise until 1/4 in. of threads are remaining at the top of depth adjustment rod.
- Place compression spring on top of hex nut as shown in figure 24.
- Place optional depth control knob on top of compression spring and align tabs on depth control knob with flats on hex nut.
- Carefully compress spring by pushing down on top of depth control knob.
- With spring compressed, thread depth control knob clockwise onto depth adjustment rod.
- Turn depth control knob until desired depth of cut is reached.

Do not replace optional depth control knob without compression spring.

WARNING: Replacing optional depth control knob without compression spring could result in depth control knob and hex nut vibrating off depth adjustment rod during use. This situation could cause motor to separate from router base, resulting in possible serious personal injury.

EXTENSION CORDS

The use of any extension cord will cause some loss of power. To keep the loss to a minimum and to prevent tool overheating, use an extension cord that is heavy enough to carry the current the tool will draw.

A wire gage size (A.W.G.) of at least **12** is recommended for an extension cord 50 feet or less in length. When working outdoors, use an extension cord that is suitable for outdoor use. The cord's jacket will be marked **WA**.

- **CAUTION:** Keep extension cords away from the cutting area and position the cord so that it will not get caught on lumber, tools, etc., during cutting operation.
- WARNING: Check extension cords before each use. If damaged replace immediately. Never use tool with a damaged cord since touching the damaged area could cause electrical shock resulting in serious injury.

Extension cords suitable for use with your plunge router are available at your nearest Sears Retail Store.



CRAFTSMAN ELECTRONIC PLUNGE ROUTER - MODEL NO. 315.175070

The model number will be found on a plate attached to the motor housing. Always mention the model number in all correspondence regarding your **PLUNGE ROUTER** or when ordering repair parts.

SEE BACK PAGE FOR PARTS ORDERING INSTRUCTIONS

PARTS LIST

	Key Part				
N	lo.	Number		Description	Quan.
	1	989985-003		Collet Nut	1
	2	975602-001		Logo Plate	
	3	972261-001		Zero Reset Indicator	
	4	972334-001		Lock Knob	
	5	972260-001		Stop Bar	
-	6	970764-001		Brush Cap	2
	7	610784-060		Brush Assembly	2
	8	972259-002		Plunge Lock Release	
	9	616967-001	*	Cap Screw (#6-20 x 3/8 in. Fil. Hd. T.C.)	
1	10	975603-001		Data Plate	
1	11	970723-001		Guide Pin	2
1	12	970754-002		Compression Spring	2
1	13	972276-002		Accu-Stop™ Depth Stop Knob	1
1	4	972275-001		Gage Cap	
1	15	972258-208		Base Assembly (Inc. Key No. 17)	
1	16	972265-001		Chip Shield	
1	17	976147-001		Subbase	
1	18	607406-010	*	Hex Nut (3/8-16)	
1	19	970732-004		Depth Adjustment Rod	
2	20	989935-006		Wrench	
2	21	975220-001	***	Optional Depth Control Knob Assembly	
2	22	976242-001	***	Optional Edge Guide	
2	23	976269-001	***	Optional Guide Bushing Adapter	
2	24	060721-630	***	Optional Guide Bushing w/Nut (1/4 in. x 5/16 in.)	
2	25	060721-530	***	Optional Guide Bushing w/Nut (1/4 in. x 3/8 in.)	
2	26	060721-430	***	Optional Guide Bushing w/Nut (1/2 in. x 5/8 in.)	1
2	27	060721-030	***	Optional Guide Bushing w/Nut (11/32 in. x 7/16 in.)	
		972000-418		Owner's Manual	
NOTE: "A"				nts an important part of the Double Insulated System. To avoid the possibility of alterati by your nearest Sears Repair Center. Contact your nearest Sears Retail Store for Se	
				* Standard Hardware Item — May Be Purchased Locally	
		•	*** Opt	onal Accessory (Not Shown) — Available At Your Nearest Sears Retail Store	
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