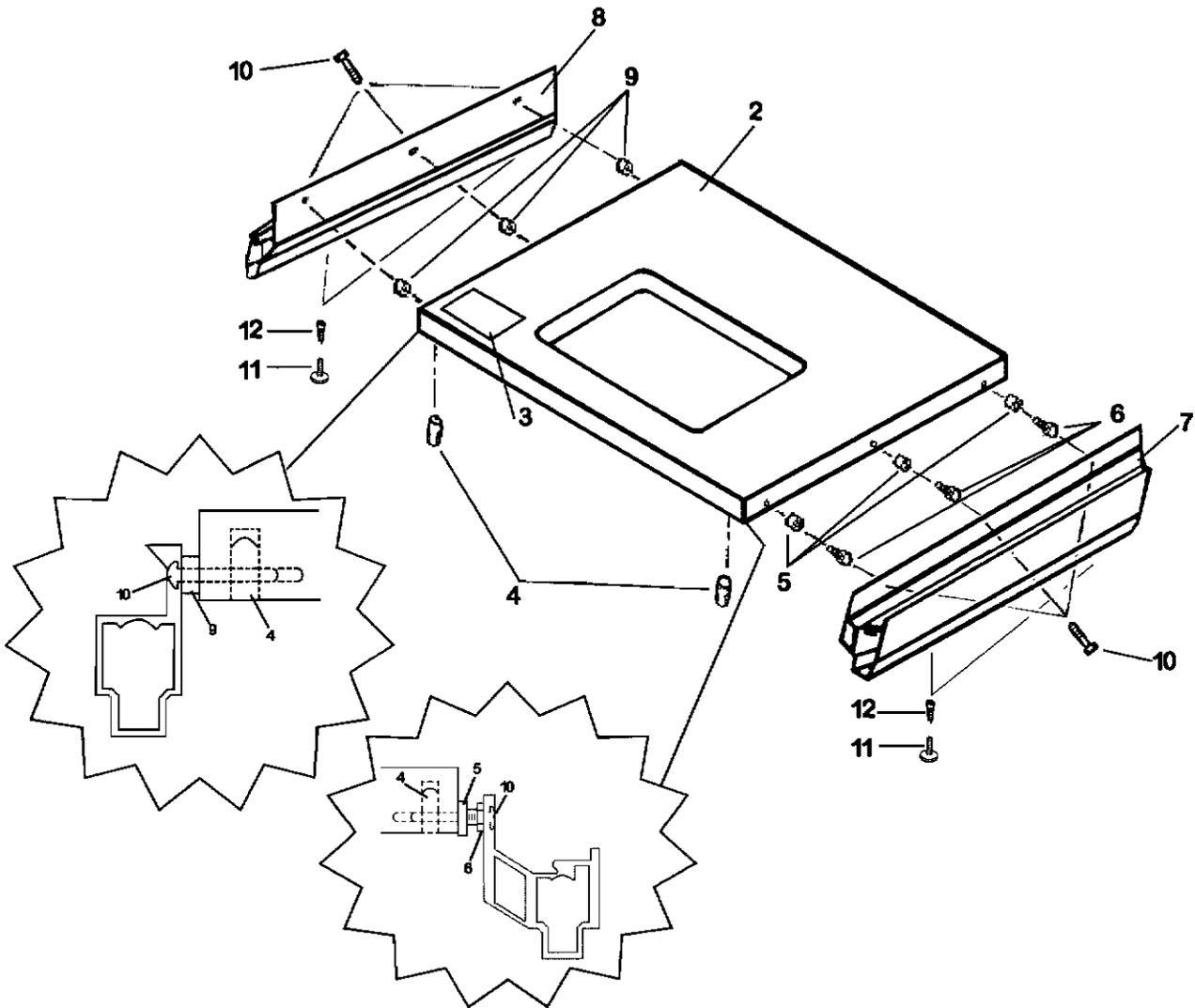




# MARK V PRO FENCE ROUTER TABLE 521962

## EXPLODED VIEW



## PARTS LIST

Ref. No.	Part No.	Item Description	Qty.
—	521962	Pro Fence Router Table Assembly	
1	521983	. Table Assembly (Incl. 2-10) .....	1
2	521908	.. Router Table .....	1
3	514629	.. Warning Label .....	1
4	521924	.. Barrel Nut .....	6
5	521909	.. Jam Nut .....	3
6	521785	.. Screw .....	3
7	521922	.. Front Rail Assembly .....	1

Ref. No.	Part No.	Item Description	Qty.
8	521920	.. Rear Rail Assembly .....	1
9	518403	.. Table Spacer .....	3
10	521982	.. Screw .....	6
11	515859	.. Knob .....	4
12	518462	.. Spring .....	4
13	521988	.. 3/4" Wrench (Not Shown) .....	1
14	521989	.. 9/16" Wrench (Not Shown) .....	1
15	521991	.. Router Plate & Hardware (Not Shown) ..	1

## INTRODUCTION

The Router Table can be used with the Shopsmith MARK V Pro Unit.

This instruction manual covers safety, assembly, alignment, operations and care of the Router Table. Read through the entire manual before assembling and operating the Router Table.

## SAFETY

The MARK V Pro Fence Router Table has many built-in safety-features, but the effectiveness of them depends on you. Power Tool safety requires good common sense. Misuse of this tool can cause serious injury.

Throughout this manual, we list WARNINGS, CAUTIONS, and NOTES. We advise that when you come to one of these headings that you read them until fully understood.

Their meanings are:

### WARNING

**A WARNING is given when failure to follow the directions is likely to result in injury, loss of limb, or life.**



A CAUTION is given when failure to follow the directions is likely to result in damage to the equipment.

### NOTE

A NOTE is used to highlight an important procedure, practice, or condition.

### WARNING

**To protect yourself from injury:**

- **READ, UNDERSTAND, AND FOLLOW ALL THE INFORMATION IN THE INSTRUCTION MANUAL.**

- **ALSO, READ, UNDERSTAND AND FOLLOW ALL the information that came with your Router Motor and the Router Table Plate Package.**
- **Read the Safety section, complete the Assembly procedures and check the Alignment, before operating the MARK V Pro Router Fence.**

## GENERAL SAFETY RULES

- **Know your power tool. Read the instruction manual. Learn its application and limitations as well as specific potential hazards peculiar to this tool.**
- **Ground all tools (unless double insulated). If the tool is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding type receptacle, the green conductor in the cord is the journeying wire. Never connect the green wire to a live terminal.**
- **Wear proper eye and ear protection. Also, wear a dust mask.**
- **Keep all safety guards in place. Always keep the guards in working order, in proper alignment, and in proper adjustment. Most injuries occur on unguarded power tools.**
- **Remove all adjusting keys and wrenches.**
- **Wear proper apparel. Do not wear loose clothing, ties, gloves, rings, or other jewelry. Roll long sleeves up above your elbows, wear nonslip footwear, and tuck long hair under a hat.**
- **Avoid dangerous environments. Don't use power tools in damp, wet, or explosive atmospheres.**

- Keep works area well lit, clean, and free from clutter.
- Do not force the tool. It will do the job better and safer at the rate for which it was designed.
- Use the right tool. Do not force a tool or accessory to do a job for which it was not designed.
- For directional feed, ALWAYS feed the workpiece into the cutter against the rotation of the cutter. NEVER feed the workpiece into the cutter with the rotation of the cutter.
- Check for damaged parts. A damaged guard or part must be properly repaired or replaced before further use of the tool. If a strange noise or vibration develops, immediately turn off the power, unplug the machine and correct the problem. Never operate a power tool that is not functioning properly.
- Secure workpieces. Use clamps, fixtures and other devices to hold workpieces when practical. It's safer than using your hands and frees your hands to operate the tool.
- Do not overreach. Keep proper footing and balance at all times.
- Turn off the tool and wait until it comes to a complete stop before removing workpieces and scraps.
- Do not try to stop the tool by grabbing the workpiece or any part of the tools. Turn off the tool and let it come to a complete stop by itself.
- Do not leave the tool running unattended. Turn off the power. Don't leave the tool until it comes to a complete stop.
- Avoid unintentional starting. Make sure the switch is in the "off" position before plugging in or unplugging the tool.
- Disconnect tools. Turn off and unplug tools before changing accessories, setups, making adjustments, performing maintenance, or repairs.
- Do not stand or lean on the tool. You could fall into the tool or it could tip over injuring you and/or the tool.
- Maintain tools. Keep parts and tools sharp, clean, and maintained according to the instruction manual.
- Make your workshop child proof. Use padlocks, master switches and remove starter keys.
- Keep children away. All visitors must stay a safe distance from power tools, and wear ear and eye protection.
- Do not permit anyone who is inexperienced to use your power tools without proper supervision.

### **MARK V PRO FENCE ROUTER TABLE SAFETY RULES**

- Be sure to read and understand this entire instruction manual before using the MARK V Pro Fence Router Table. Also, do not use the MARK V Pro Fence Router Table unless you are sure it is assembled properly, all safety devices are installed, and you understand the operations you are attempting.
- Keep the Guard in place and in working order. Always set the Guard no more than 1/4" above the workpiece.

- Keep your hands, fingers, and other parts of your body at least 3" away from the rotating bit.
- Use a Push Stick, Push Block, Feather Board(s), fixtures, or other safety devices to maneuver a workpiece into a rotating bit. If a kickback occurs, these devices help to protect your hands and fingers.
- Use only Shopsmith Parts and Accessories on your MARK V Pro Fence Router Table. NEVER use non-Shopsmith Replacement Parts or Accessories. They are not designed like Shopsmith Parts. Using non-Shopsmith Parts may create a hazardous condition and will void your warranty. Follow your Router Motor manufacturer's recommendations as to Replacement Router Motor Parts.
- Do not Rout secondhand lumber. If you hit a nail, screw, or other foreign object, you could be hit by pieces of metal or there could be kickback.
- Do not "freehand" Rout stock less than 12" x 12" or equivalent.
- Support long boards and sheet materials with a Roller Stand(s) placed 1' to 4' from the Worktable.
- Always use a Fixture, Fence, Miter Gauge with Safety Grip, and/or Starter and Guide Pins to help control the workpiece.
- Always feed the workpiece against the rotation of the bit, not with it. Otherwise, the bit will grab and throw the workpiece.
- Keep a firm grip on the workpiece at all times and never hold the workpiece with your hands in line with the Router Bit.
- Always use a Feather Board Assembly or other devices to hold or guide narrow workpieces. Also, use a long piece of scrap stock to feed narrow workpiece underneath the Guard to complete a cut.
- Cut with the grain of the wood instead of against it. You will get a smoother cut and the operation will be safer.
- Avoid standing in-line with the workpiece being fed. In the event of a kickback you could be hit.
- Feed the workpiece slowly. Use extra care in routing workpieces that contain figured grain of knots, as these may cause kickbacks.
- When you are routing stock up to 10" wide across the grain, use your Miter Gauge with Safety Grip to control the workpiece. The workpiece must extend 5-1/2" away from the router bit.
- When stop routing, always use a Stop Block(s) to control the length of cut. Failure to use Stop Blocks could cause the bit to grab and throw the workpiece.
- When routing oversized stock, always use a least one Push Block to help control the workpiece firmly against the fence.
- Do not work with stock that is too small or too large to handle safely; that is warped, bowed, or cupped; or that has loose knots or other defects.
- Plan the operation before you begin. If you are in doubt about how to complete an operation safely, do not attempt it, contact a Shopsmith Service Representative for advice.
- Free freehand routing use a Guide Pin, do not rout a workpiece which has less than a 4" radius.

- The minimum length of stock should be no less than 8". You should also use a Push Stick and/or Push Block on any stock between 8" to 18" long.

## **EYE PROTECTION**

Always wear eye protection when you use power tools. Use Goggles, Safety Glasses or a Face Shield, to protect your eyes.

- Goggles completely surround and protect your eyes. Many Goggles will also fit over Regular Glasses. Be sure your Goggles fit closely, but comfortable.
- Safety Glasses don't fog as easily as Goggles and can be worn at all times. Regular Glasses normally have only impact resistant lenses. They are not Safety Glasses.
- A Face Shield protects your entire face, not just your eyes.

## **HEARING PROTECTION**

Prolonged exposure to high intensity noise from high-speed power tools can damage your hearing.

- Hearing Protectors screen out noise levels that can damage your ears, and are recommended for ALL uses with Routers mounted in Router Tables.

## **GUARDING FOR ROUTING**

Most shop accidents happen to woodworkers who fail to follow instructions, or fail to use Guards and Safety Devices. Although proper use of Guards and Safety Devices often requires additional setup, the protection for you and your family is well worth the effort.

## **DRESS**

Loose hair and clothing, which could be entangled in rotating bits, are very hazardous.

- Tuck long hair under a hat or tie it up above the shoulders. Do not wear ties, gloves, loose clothing, rings or other jewelry. Roll sleeves up above your elbows.

## **ELECTRICAL REQUIREMENTS**

Follow the electrical requirements that appear in the instruction manual that came with your Router Motor. Do not overload your electrical circuits.

## **UNDER-TABLE MOUNTED ROUTER**

The Router is not included with the MARK V Pro Fence Router Table. You will have to purchase a Router or use one that you already own. Any UL approved router can be used.

The specifications for the router that you can use are:

- Use only UL approved Routers
- The Router must not exceed 3 hp.
- The Router switch is best located so that it can face toward the front of the Mark V Router Table. It can then be easily and safely reached during operations.
- The Router switch must be able to stay in the "on" position without being held by hand. It also must easily switch off as needed.

- The Shopsmith Accessory Switch is recommended if the router motor switch does not meet the above criteria.

## **SAWDUST AND CHIPS**

Sawdust and chips can be a fire hazard and breathing sawdust can be a health hazard. The sawdust from some woods is toxic. To help protect yourself from sawdust:

- Attach the MARK V Pro Router Table to a dust collection system.
- Or wear a close-fitting dust mask. Clean or replace the filters in the mask regularly. Also, open a window or use a fan to ventilate your shop.

## **MOUNTING ROUTER BITS**

- Turn off and unplug the Router before mounting router bits.
- Follow the recommendations of the Router manufacturer as to the sizes and types of router bits to use.
- Make sure the router bit is secured properly in the collet. Loose bits could work free and cause serious injury. Inset the bit all the way into the collet and retract it about 1/8" to avoid transferring vibrations to the motor armature and bending the shank of the bit.
- Be sure the bit is positioned with the cutting edge facing to the right.
- Listen for chatter or signs of looseness at start-up. If you hear, see or suspect problems, stop the tool immediately, unplug it, and check the tool thoroughly. Correct any problem before proceeding. If you are unable to locate the problem, you can contact your Shopsmith Service Repre-

sentative or store personnel for advice. Never operate the Mark V Router Table if it is not functioning properly.

- Keep bits clean, maintained and sharp.
- Don't try to make your own collet adapter to hold different sized bits. Balance is important at high speeds, so always buy appropriately sized collets.

## **TYPES OF ROUTER BITS**

Router bits come in a wide variety of shapes and sizes designed to be used at very high speeds. The part of the bit mounted in the router chuck is called the shank and the rounded extension beyond the cutter on some bits is called the pilot. The cutting edge of the bit is called a flute. Router bits have one, two or three flutes and the more flutes there are on the bit, the more cuts that can be made per minute. A higher number of flutes reduces the load on the motor and produces a smoother cut.

Quality bits are made of high-speed steel, solid carbide or carbide-tipped steel. High-speed steel bits are heat treated for extra hardness and to hold keen cutting edges. Carbide bits (solid or tipped) are the finest bits available today. Although more expensive, they will out last high speed steel bits at a 15 to 1 ratio on softwoods and are high recommended for use on hardwoods, plastic laminates, plywood and particle board.

Router bits are generally classified into four different categories: grooving bits, edge-cutting bits, panel bits and laminate and veneer trimming bits.

## **CARE AND MAINTENANCE OF ROUTER BITS**

You will enjoy longer use of your router bits if you make it a point to handle, use and sharpen them properly.

- Use your router bits only for the job they are intended to do.
- Make sure the bit is mounted rigidly in the collet.
- Learn to cut your workpiece at the proper speed to prevent heat buildup that can cause the loss of bit temper.
- Between operations, set your bits in a safe place where they will not fall or get hit.



Never use solvent on a bearing-piloted bit without first removing the bearing.

- After use, clean bits thoroughly.
- Sharpen your bits with a small slip stone or oil stone with oil. Hone the face of each cutter with light strokes in one direction. Never hone the outside edge because it reduces the diameter of the cutter. Hone each cutter edge with the same number of strokes.
- If the cutting edge is nicked, take the bit to a professional sharpening service.

## TOOLS NEEDED

In addition to the tools provided with your MARK V Pro Fence Router Table you will need the following from your MARK V Setup. See your owners' information for part numbers, views, and descriptions of these items.

- MARK V Pro Fence
- 5/32" Allen Wrench
- Gauge Alignment
- Connector Tubes (2)
- T-Joint (2)
- Telescoping Legs (2)

## ASSEMBLY

### WARNING

Make sure the Speed Dial is set to "Slow", then turn off and unplug the MARK V before performing any ASSEMBLY procedure.

1. With your MARK V Pro Fence System setup in the Horizontal Position, remove all Accessories, leaving only the Main Saw Table Assembly in the Carriage Assembly. Adjust the Saw Table to a comfortable height.
2. Loosen both the Headstock and Carriage Locks. Slide the Headstock to the left and the Carriage to the right, as far as they will go. Lock into position.
3. Place the Router Table facedown on a clean, flat shop table or bench. Locate the package containing the Router Plate and assemble the Brackets ONLY, according to the included instructions.
4. Slide the small diameter end of a Spring (12) over a Knob (11), then tighten the Knob with Spring into the threaded insert near each end of the Front Rail Assembly. Tighten these just enough to allow the Connector Tubes free movement in the Rails. Repeat this for the Rear Rail Assembly. At this time, also loosen the Knobs on both the Front and Rear Rail Assemblies of the Saw Table. (See Figure 1)

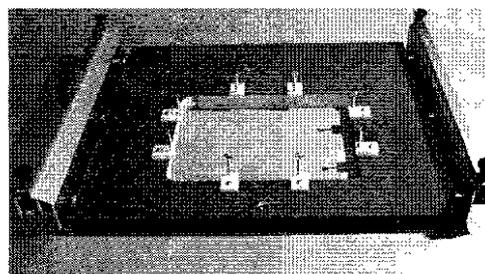


Figure 1

5. Insert one Connector Tube into both the Front Rail (7) and Rear Rail (8) of the Router Table.
6. Position both Connector Tubes evenly, so that an equal amount is protruding out from both ends of the Rails (7 and 8). (See Figure 2)

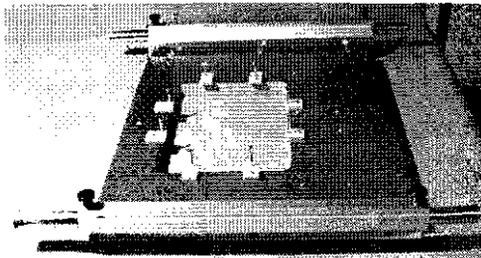


Figure 2

7. Tighten all the Knobs (11) of the Router Table, in place.
8. Make sure that the Front Rail (7) is positioned next to the Front Rail of the Saw Table, slide the Connector Tubes into the Saw Table Rails. (See Figure 3)

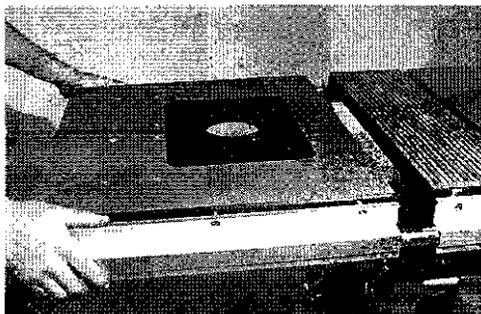


Figure 3

9. Tighten the Knobs (11) of the Saw Table, to hold the Connector Tubes in place.
10. Attach a T-Joint, with Telescoping Leg, to the Connector Tube extending from each of the Router Table Rails (7 and 8). Tighten the T-Joint Set Screw with a 5/32" Allen Wrench.

11. Adjust each Telescoping Leg to support the end of the Router Table. (See Figure 4)

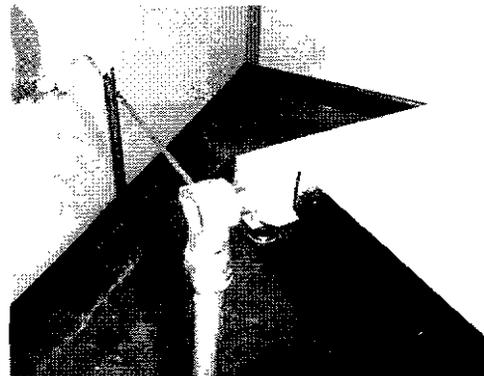


Figure 4

12. Locate the Router Table Plate Package and follow the included instructions to assemble and install the remaining parts of the Router Table Plate. These instructions also give you the information needed for mounting your Router and aligning the Plate to the Table.

## ALIGNMENT

Your MARK V Pro Fence Router Table Attachment has been pre-aligned at our Dayton Factory, However, due to Environmental changes, it may be necessary to make adjustments as required.

Should you experience trouble sliding the Connector Tubes through the Rails on either the Router Table or Saw Table, follow these instructions to correct the problem.

1. Loosen the 3 Screws (10) located in the Front Rail (7)
2. Review the assembly instructions for in this manual to insure steps 1 to 9 are completed correctly.
3. If after rechecking your assembly procedures, you are still experiencing trouble

sliding your Connector Tubes, follow these steps to adjust the Front Rail Assembly of the Router Table.

- a. Place an accurate straightedge across the front surfaces of both Front Rail Assemblies for the Saw Table and the Router Table. Make note as to where the "gap" is on the Router Table Rail so that you can adjust it parallel to the Saw Table Rail.
- b. To move the Front Rail Assembly away from the Router Table, turn the Screw (6) counter clockwise. To move the Front Rail Assembly toward Router Table, turn the Screw (6) clockwise.



**Do not adjust the middle screw.**

4. Use a 9/16" Open-end Wrench and the 3/4" Open-end Wrench to tighten the Jam Nuts (5) in the ends of the Front Rail Assembly. (See Figure 5)



Figure 5

5. Loosen the Knobs under both the Front and Rear Rail Assemblies of the Router Table.
6. Slide the Connector Tubes into the Saw Table until they are flush with the Router Table, leaving a gap between the Router Table and the Saw Table to allow for placement of a C-Clamp between the two Tables.
7. Tighten the 4 Knobs in the Router Table Rails to secure Router Table to the Connector Tubes.
8. Place the two Alignment Gauges (521097), received with your MARK V, at each end of the Router Table. Use C-Clamp to hold the Gauges in place. Adjust Front Rail Assembly so that its top edge is touching the bottom edge of the Alignment Gauges. (See Figure 6)

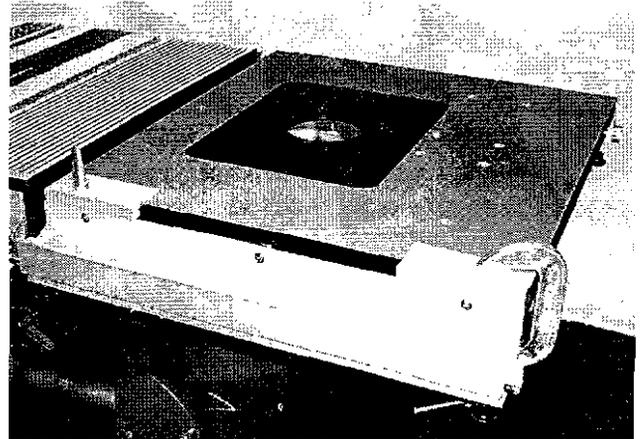


Figure 6

#### **NOTE**

If you received one 9" Alignment Gauge with your MARK V, measure and mark the center point of the Alignment Gauge so that you can cut it in half with a Hacksaw.

9. While holding the Front Rail Assembly in place, tighten the Screws (10) located on each end of the Front Rail Assembly.

10. Turn the middle screw (10) either clockwise or counterclockwise then tighten the Jam Nut using the two open-end wrenches. Tighten the Screw.
11. Remove the C-Clamps and Alignment gauges and complete your assembly instructions beginning at Step 10.

## OPERATIONS

### WARNING

**Be sure to turn off and unplug the Router before making any adjustments or changing Router Bits.**

1. Install the Router Bit. Insert the Router Bit all the way into the Collet and retract about 1/8" to avoid any transition radius where its shank becomes larger for the profile.

### NOTE

The rotary depth-of-cut stop found on some Plunge Routers may not allow some 1/4" Shank Router Bits to achieve a full depth-of-cut, to temporarily solve this problem, remove the rotary depth-of-cut stop.

### WARNING

**Makesure the Router Bit is secured properly in the Collet. Loose Bits could work free and cause serious injury.**

2. Mount accessories. Depending on the type of Routing you are doing, mount the appropriate Fixture, Fence(s), and/or Safety Devices such as Feather Board(s) to help control workpiece.
3. Set the depth-of-cut. Rotate the Router Motor in its Base to set the depth-of-cut and lock it firmly in position before turning it on. Before cutting your

actual workpiece, make a practice cut on a piece of scrap stock.



**When some Routers' depth-of-cut lock is loosened, they may tend to drop down from the Router Table.**

4. Install and adjust the Guard.

### WARNING

**The Guard (515704) for freehand cuts is an accessory. It not only improves safe operations but also acts as a Dust Collection Chute. We strongly recommend its purchase and use. Follow operation instructions throughout this manual for proper use of the Guard.**

**Avoid taking deep cuts. With the exception of single-pass dovetail cuts, limit depth-of-cut to 1/4" for each pass when using Bits up to 1/2" diameter in hardwood. Limit depth-of-cut to 3/8" - 1/2" for each pass when using Bits up to 1/2" diameter in softwood. When using Bits over 1/2" diameter, limit depth-of-cut to half the recommended depths for 1/2" diameter Bits.**

5. Make the cut. After following all setup procedures and checking to be sure that everything is tightened properly, you're ready to turn on the Router Motor and make your desired cuts.

### NOTE

To prevent dwell marks or burns on your workpiece, always work in a continuous motion without stopping. Always remember to raise or slide your workpiece carefully away from the rotating bit before turning the motor off.

### WARNING

**Never Rout without the Guard in place.**

Never Freehand Rout stock. Always use a Fixture with a Guide Pin, Fence, Piloted Router Bit with Guide Pin, Feather Board(s) Push Stick, Push Block and/or Miter Gauge with Safety Grip in order to control workpieces.

### **EXTERNAL AND INTERNAL EDGING, USING PILOT BITS.**

1. Install your Router Bit and set the depth-of-cut. Rotate the Router Motor in its Base (or adjust in the established fashion) to set the depth-of-cut and lock it firmly in position before turning on the Motor. Before cutting your actual workpiece, make a practice cut on a similar piece of scrap stock.
2. Install the Insert (found in the Router Plate Package). If the diameter of your Router Bit is larger than the opening in this Insert, this step is not required.
3. Install a Starter Pin into the hole located in the large, square Router Plate.

### **WARNING**

**When Routing, never start a cut using a Piloted Bit without first sliding the workpiece against the Starter Pin.**

4. Loosen the Knob on the Guard Support and position the Guard over the workpiece, leaving no more than a 1/4" gap between the Guard and the Top of the workpiece. When in place, tighten the Knob.
5. Edge the workpiece. With the workpiece away from the bit area, turn on the Motor. Resting the edge of your workpiece against the Starter Pin, ease it gradually into the rotating bit to start your cut. When the Bit Pilot contacts the workpiece edge, gradually rotate the workpiece off the Starter Pin and continue to move the

workpiece against the rotation of the Bit, maintaining a steady pressure against the Bit Pilot which now serves as your guide. If a second pass is required, repeat the procedure.

### **WARNING**

**The edging of workpieces with non-piloted bits is dangerous and therefore not recommended. A fence must be used. See the literature provided with the Fence for proper setup and safe use of the fence.**

### **RABBETS**

Rabbets are formed in straight or round workpieces exactly as External and Internal Edging using a Pilot Bit. Remember to ease your workpiece from left to right, gradually against the Pin and into the rotating Router Bit to start your cut.

1. Install your Router Bit. For rabbets, use a special Rabbeting Bit with a Pilot of the appropriate diameter.
2. Set the vertical depth-of-cut. Rotate the Router Motor in its Base (or adjust in the established fashion) to set the depth-of-cut and lock it firmly in position.
3. Install the Insert.
4. Adjust the Pilot on your Bit to establish your lateral depth-of-cut.
5. Loosen the Knob on the Guard Support and position the Guard over the workpiece, leaving no more than a 1/4" gap between the Guard and the top of the workpiece. When in place tighten the Knob.

## MAINTAINING YOUR PRO FENCE ROUTER TABLE

### WARNING

**Before doing any Maintenance procedures to your Router Table, be sure to turn off and unplug the Router.**

**ALSO remove the Router Bit and any other Accessories, Fences, or Fixtures that are mounted on the Router Table.**

The maintenance intervals listed here are based on normal operation and assume that you will be careful not to abuse your Router Table. If you work the unit unusually hard, you'll need to maintain it more often.

If an unusual noise or vibration develops, turn off the Motor IMMEDIATELY and check to see what could be causing the problem. DO NOT operate the Router Table again until you have corrected the cause of the unusual noise or vibration.

### MAINTENANCE SCHEDULE

#### **As needed...**

- Have Router Bits sharpened.

#### **Every 5 hours of running time...**

- Clean the Router Table thoroughly.
- Check alignments and adjustments.
- Check tightness of all critical hardware.

#### **Every 6 months or as needed...**

- Clean and wax the Router Table.

To estimate running time, use this rule: The average woodworker will use power tools only 10% of the total time spent in the shop - at the most. You may not use your Router Table as much as other power tools. If you

work in your shop for 25 hours, you have probably logged less than an hour of running time on your Router Table.

### CLEANING

As you work, sawdust will accumulate on the Router Table and this residue can affect performance. Clean the Router Table and Motor with your Dust Collector or Shop Vacuum. Use the Brush and Crevice Tool Attachments. After vacuuming, clean all major metal parts of the Router Table (except the Router Motor) with mineral spirits to remove all dirt, grease and any built-up wood pitch. Use a clean slightly damp cloth to wipe all residue from the Guard and Worktable. Clean the Router Motor as instructed in the manual that came with your Router Motor.

### WAXING

After a thorough cleaning, wax and buff the Table Surface. Apply the wax sparingly, then buff it thoroughly. If you apply too much wax or don't buff it, the wax will mix with the sawdust, impede the movement of parts, and leave residue on the stock.



Except for the Laminated Router Table surface, DO NOT wax or use solvents on any other plastic parts.

### NOTE

If you have any questions, please call our Customer Service Department Toll Free 800-762-7555 or send an E-mail to [techsupport@shopsmith.com](mailto:techsupport@shopsmith.com). Also, visit our Website at [www.shopsmith.com](http://www.shopsmith.com)



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