

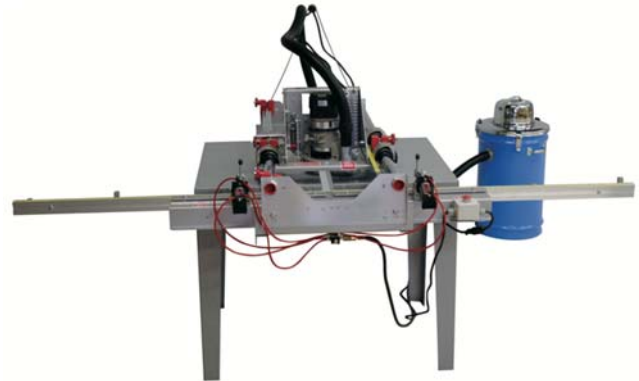


Panel Saw/Router Owner's Manual

SR5, SR5U, SR5A, SR5UA, 3400 & TR2



SR5U vertical panel saw/router with optional accessories



TR2 horizontal router with optional accessories

Proudly made in the USA

www.SafetySpeed.com



Read and understand this manual before operating this tool. Failure to follow the safety precautions and instructions can result in serious injury or death. Keep this manual in an accessible and safe location for future reference.

A message from all of us at SAFETY SPEED MANUFACTURING:

Thank you for purchasing a Safety Speed Manufacturing (SSM) vertical panel saw/router or horizontal router. We take pride in building these fine products in the U.S.A.

Each SSM product is designed to give years of dependable service. Your new panel saw and/or router was built from the finest components available, and every machine is individually assembled by craftsmen - some of whom have been building these products for more than 25 years. We appreciate you choosing SSM products for your facility.

Team Safety Speed
Ham Lake, Minnesota

Limited Warranty

Safety Speed Manufacturing (SSM) warrants the parts and workmanship of this tool, except for the electric motor(s), for one year from the date of purchase. SSM will repair or replace, at our discretion, any component that is determined to be defective. Repair or replacement is limited to providing replacement parts from the factory. SSM assumes no responsibility for making repairs on site. Parts returned to the factory must be returned freight prepaid and include a Return Authorization (R.A.) number. Please call SSM 763-755-1600 for a R.A. number.

All motors are warranted directly by the motor manufacturer. See local repair and maintenance centers for warranty claims for motors.

Safety Speed Manufacturing assumes no responsibility for any damage or accidents resulting from the misuse of this tool, its misapplication, or failure to follow precautionary safety measures. SSM assumes no responsibility for any consequential damage or loss of production. SSM will not be responsible for claims made for machines that are not used or maintained in the normal course of business, used for applications not intended, or modified in any way. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. SSM # 763-755-1600.

This manual applies to the following SSM panel saw and router models:

SR5	SR5A	3400
SR5U	SR5UA	TR2

Enter your model number and serial number for quick and easy reference when ordering accessories, supplies or parts.

Note: The Model and Serial Number label of the SR5 variations and the 3400 can be found on the upper, left side of the frame, when facing the vertical saw/router (Fig. 1). The Model and Serial Number label of the TR2 (horizontal router) can be found on the top, front left side of the frame (Pg. 5, Fig. 3).

Model No: _____

Serial No: _____

Safety Speed Mfg.
13943 LINCOLN ST. NE
HAM LAKE, MN 55304
763-755-1600

Serial & Model
Label



Figure 1: Serial & Model label (SR5U shown)

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SAFETY

Read and understand this manual before operating this tool. Failure to follow the safety precautions and instructions can result in serious injury or death. Keep this manual in an accessible and safe location for future reference. Electronic copies of this manual are available at www.safetyspeed.com. Printed copies are available by calling SSM **763-755-1600**.



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

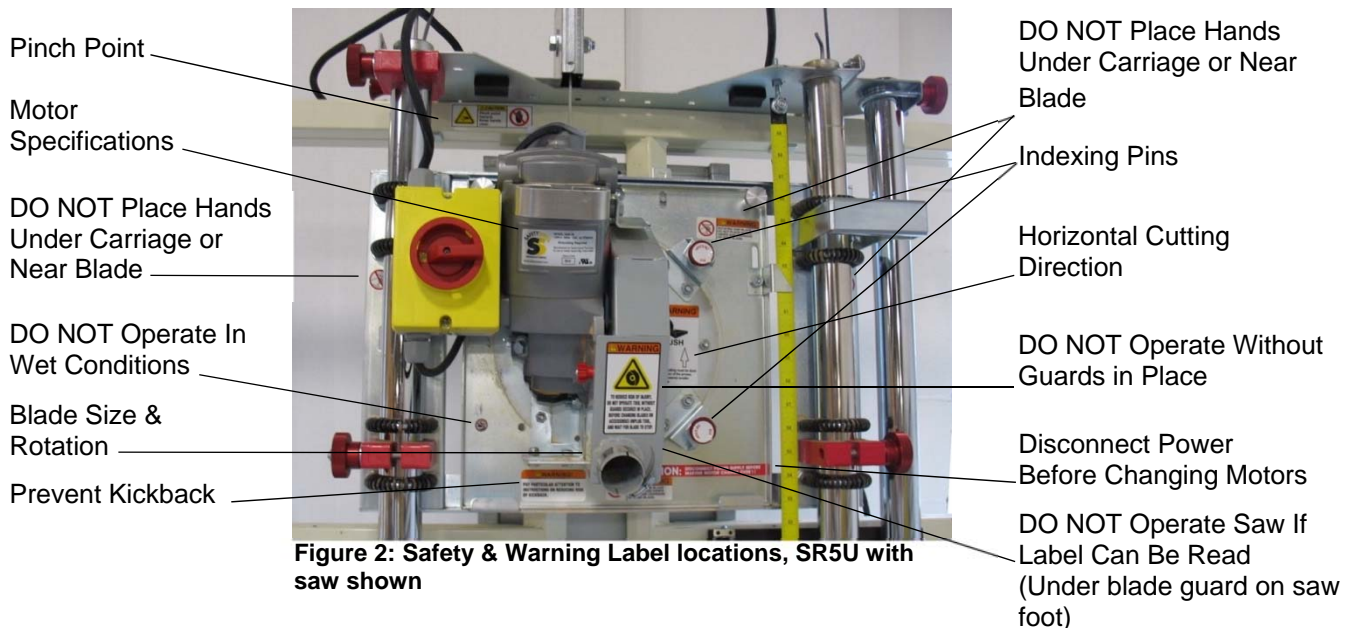


Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation, which if not avoided, could result in minor or moderate injury.

Safety & Warning Label Placement (Saw)



Safety & Warning Label Placement (Router)

Nose Cone Adjustment
(behind Carriage)

Read & Understand
Manual

DO NOT Place Hands Under
Carriage or near Blade

Nose Cone Adjustment

Horizontal Cutting
Direction

Serial & Model #

DO NOT Operate Without
Guards in Place

Pinch Point

DO NOT Place Hands Under
Carriage or near Blade
(one behind Carriage)

Horizontal Cutting Direction

DO NOT Operate in Wet
Conditions

DO NOT Place Hands Under
Carriage or near Blade

Remote ON/OFF Switch

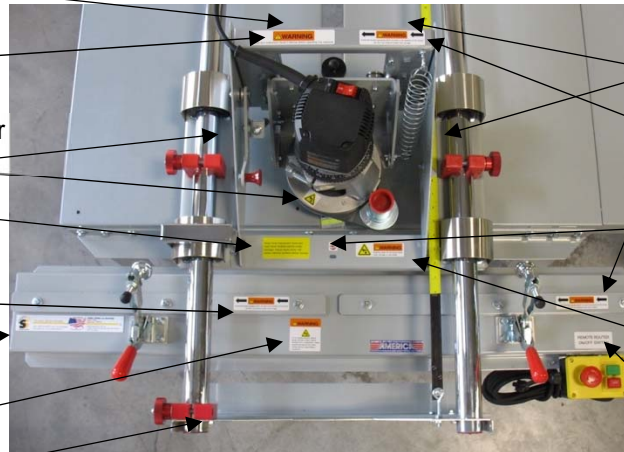


Figure 3: Safety & Warning Label locations, TR2 shown

Safety Warning Labels Identified



Read and understand Owner's Manual before operating this machine!

Read And Understand Owner's Manual



Rotating blade. Do not place hands under carriage or near blade.

Do NOT Place Hands Under Saw/Router



Horizontal Routing (plugging) MUST be done in the direction of the arrows.
DO NOT rout material smaller than carriage.

Feed Stock In Direction Of Arrows

REMOTE ROUTER
ON/OFF SWITCH

Remote ON/OFF Switch

Nose Cone Adjustment Knob and
Lock Knob located behind router
carriage. Adjust Nose Cone 1/8"
below material surface before routing.

Adjust Nose Cone Before Routing



Do Not Place Hands
Under Saw/Router



Do not operate machine without guards secured in place. Before changing bits or accessories, unplug machine and wait for bit to stop. Comply with all Lockout/Tagout procedures.

Do Not Use Without Guards

Warning Labels Identified



Feed Stock In The Direction Of The Arrow



Do Not Use Without Blade Guard On Machine



Do Not Operate In Wet Conditions



Indexing Pin



Do Not Place Hands Under Saw Carriage Or Near Blade



Read Instructions To Reduce Risk Of Kickback



Do Not Place Hands Under Saw

CAUTION: DISCONNECT POWER SUPPLY BEFORE MAKING MOTOR CHANGE OVER !!

Disconnect Power Supply Before Motor Change



Install Blade In Direction Of Arrow



Install Blade In Direction Of Arrow



Install Blade In Direction Of Arrow



Keep Hands Clear Of Area To Reduce Risk Of Pinching



If Label Is Visible Do Not Operate Saw



When using electric tools, always follow basic safety precautions to reduce the risk of fire, electric shock, and personal injury.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE USE. Before use, be sure everyone using this machine reads and understands this manual as well as any labels packaged with or attached to the machine.

1. **KNOW YOUR POWER TOOL.** Read this manual carefully to learn your power tool's applications and limitations as well as potential hazards associated with this type of tool.
2. **DO NOT ALLOW UNQUALIFIED PEOPLE TO OPERATE** the tool.
3. **AVOID DANGEROUS ENVIRONMENTS.** Do not use your power tool in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust, or flammable materials). Remove materials or debris that may be ignited by sparks.



4. **KEEP WORK AREA CLEAN AND WELL LIT.** Cluttered, dark work areas invite accidents. Provide at least 200 watts of lighting at the front work area of the tool. Eliminate all shadows that could interfere with clear viewing of the work area.
5. **DRESS PROPERLY.** Do not wear loose-fitting clothing or jewelry. Wear a protective hair covering to contain long hair, as it may be caught in moving parts. When working outdoors, wear rubber gloves and insulated, nonskid footwear. Keep hands and gloves away from moving parts.
6. **USE SAFETY EQUIPMENT.** Everyone in the work area should **wear safety goggles or glasses with side shields** that comply with current safety standards. Wear hearing protection during extended use and a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be used when specified or necessary. Keep a fire extinguisher nearby.
7. **KEEP BYSTANDERS AWAY.** Keep children and bystanders at a safe distance from the work area to avoid distracting the operator and contacting the tool or extension cord.
8. **MAKE THE WORKSHOP CHILD PROOF** with padlocks, master switches, etc.
9. **NEVER LEAVE THE TOOL RUNNING UNATTENDED.** Turn the power OFF. Do not leave the tool until it comes to a complete stop.
10. **PROTECT OTHERS IN THE WORK AREA** from debris such as chips and sparks. Provide barriers or shields as needed.
11. **SECURE THE WORK.** Use a clamp, vise, or other practical means to hold your work securely, freeing both hands to control the tool.
12. **USE THE RIGHT TOOL.** Do not use a tool or attachment to do a job for which it is not recommended. For example, do not use a circular saw to cut tree limbs or logs. Do not alter the tool, remove guards, or operate the saw or router when removed from the carriage and frame.
13. **USE PROPER ACCESSORIES.** Using non-recommended accessories may be hazardous. Be sure accessories are properly installed and maintained. Do not defeat a guard or other safety device when installing an accessory or attachment.
14. **CHECK FOR DAMAGED PARTS.** Inspect guards and other parts before use. Check for misalignment, binding of moving parts, improper mounting, broken parts, and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the tool off immediately and have the problem corrected before further use. Do not use a damaged tool. Tag damaged tools "DO NOT USE" until repaired. Repair or replace a damaged guard or other part. For all repairs, insist on identical replacement parts or factory certified conversions.
15. **REMOVE ALL ADJUSTING WRENCHES AND TOOLS** from the tool before turning it on. Make this a habit.
16. **GROUND YOUR TOOL.** See "Electrical Safety," page 11.

17. **AVOID ACCIDENTAL STARTING.** Be sure your tool is turned off before plugging it in. Do not use the tool if the power switch does not turn it on and off. Observe correct Lockout/Tagout procedures when performing maintenance on the tool.
18. **DO NOT FORCE THE TOOL.** Your tool will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear, increased risk of binding or sudden breakage, and reduced control.
19. **KEEP HANDS AWAY FROM ALL CUTTING EDGES, MOVING PARTS AND PINCH POINTS.**



20. **DO NOT ABUSE THE CORD.** Never unplug the cord by yanking it from the outlet. Pull the plug rather than the cord to reduce the risk of damage. Keep the cord away from heat, oil, sharp objects, cutting edges, and moving parts.
21. **DO NOT OVERREACH. MAINTAIN CONTROL.** Keep proper footing and balance at all times. Maintain a firm grip.
22. **STAY ALERT.** Watch what you are doing, and use common sense. Do not use a tool when you are tired, distracted, or under the influence of drugs, alcohol, or any medication causing decreased control.
23. **UNPLUG THE TOOL** when it is not in use, before changing items such as blades or bits, and before performing recommended maintenance. Observe appropriate Lockout/Tagout procedures.
24. **MAINTAIN TOOLS CAREFULLY.** Keep handles dry, clean, and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Periodically inspect tool cords and extension cords for damage. Have damaged parts repaired or replaced.
25. **MAINTAIN LABELS AND NAMEPLATES.** These carry important information. If unreadable or missing, contact Safety Speed for a free replacement.



26. **AVOID KICKBACK.** Kickback is a violent reaction to a pinched or binding blade/bit. It throws the saw upward when crosscutting and a router back when through cross routing and throws the work piece out when ripping with a saw or router. Firm control, proper support of the work piece, and concentration on the job are essential to reduce the risk of injury from kickback:
 - a. **KEEP SAW BLADE/ROUTER BITS CLEAN AND SHARP.** A dull or improperly sharpened blade/bit produces a narrow kerf and is likely to be pinched by the work piece. Any blade with a small set, even though sharp, may be likely to kick back. A dull blade/bit encourages you to force the saw/router, causing reduced control and binding. The excessive friction generated can cause the blade/bit to warp or bind. Use only blades/bits that are recommended for use with your tool. Do not use blades with mounting holes that are not the correct size or shape. Do not use bits with a damaged/worn shank or of the wrong size. Never use defective or incorrect blade flanges or bolts. Be sure the blade bolt/arbor is tight. Select the proper blade/bit for the application. Blade/bit speed specifications must be at least as high as the nameplate RPM.
 - b. **DO NOT FORCE THE MACHINE.** Let the saw/router do the work. A saw/router is more easily controlled and will do a better job when used in the manner for which it was designed.

- c. **SECURE WORK PROPERLY.** If a piece is supported on both sides of the cut in such a way that it allows the material to bow and pinch the blade/bit, it may produce kickback. Do not cut/rout pieces smaller than the carriage. Support large panels properly. Use clamps when applicable.
 - d. **IF THE BLADE/BIT BINDS, TURN MACHINE OFF!** The saw/router or work piece may kick back. Keep hands, body, and bystanders out of the path of the blade/bit and material.
 - e. **STAY ALERT.** Watch what you are doing and use common sense. Do not allow yourself to be distracted. Do not operate the tool when you are tired or under the influence of drugs or alcohol. Hold the tool and material firmly and exercise control at all times. Position yourself and co-workers out of the kickback path. Repetitive cuts that lull you into careless movements can also cause kickback. A brief “stretch” may be all that is necessary to avoid a problem.
 - f. **RESTARTING IN MID-CUT.** If the saw/router is stopped in mid-cut, **TURN SAW/ROUTER OFF!** Allow the blade/bit to stop. Then back up the saw/router (if crosscutting) or the board/panel (if rip cutting) before restarting.
 - g. **IF THE BLADE/BIT STALLS, TURN SAW/ROUTER OFF! DO NOT TURN THE SWITCH ON AND OFF.** A dull blade/bit or excess pressure may cause stalling. **TURN OFF** the switch immediately if the blade/bit binds or the saw/router stalls, and remove the saw/router from the cut.
 - h. **AVOID CUTTING NAILS OR OTHER FASTENERS.** Inspect for and remove all metal fasteners before cutting.
 - i. **SUPPORT THIN MATERIAL.** Large sheets such as paneling, Formica, etc., tend to warp or sag and must be well supported over their entire length to avoid pinching the blade. Optional hold down bar recommended for this application. Use clamps when applicable.
27. **HANDLE THE COUNTERWEIGHT WITH CARE.** The counterweight cable is under tension. See page 22. Do not pull on the cable by hand or attempt to disassemble or repair the counterweight. Replacement counterweights can be purchased directly from Safety Speed, or an authorized dealer.
28. **DO NOT USE PUSH STICKS.**
29. **CROSSCUTTING & CROSSROUTING (VERTICAL CUTTING/ROUTING) MUST ALWAYS BE DONE FROM THE TOP DOWN.** Raise the saw/router carriage to the uppermost position on the guides and lock it into position with the carriage lock whenever the tool is not in use. See “Operating Procedure: Crosscutting”, for more information.
30. **RIPPING (HORIZONTAL CUTTING/ROUTING) MUST ALWAYS BE DONE WITH THE DIRECTION OF THE ARROW (on Warning Label).** Raise the saw/router carriage to the top of the guides and lock it into position with the carriage lock whenever the tool is not in use. See “Operating Procedure: Rip cutting”, for more information.
31. **ALWAYS WAIT FOR THE BLADE/BIT TO STOP COMPLETELY BEFORE CHANGING POSITIONS.** Unplug the tool before transporting or moving it.
32. **DO NOT PLACE YOUR HANDS ON OR UNDER THE SAW CARRIAGE OR IN THE PATH OF THE BLADE OR BIT.** Do not try to retrieve a piece of cut material while the blade is rotating. This symbol is to remind you:



33. **DO NOT DEFEAT THE GUARDS OR OPERATE THE TOOL WITHOUT THE GUARDS IN PLACE.** Do not remove the saw/router motor from the plate.



34. NEVER STAND ON THE TOOL. Serious injury could occur if the tool is tipped or if you unintentionally contact the cutting tool.
35. DIRECTION OF FEED. Always feed work into the blade or cutter against the direction of the rotation of the blade or cutter.
36. HOME CENTERS AND COMMERCIAL LOCATIONS should check with their local electrical contractor to be sure the proper amount of electrical power (volts/amps) will be available for this machine during all operating hours and conditions. Be aware of any special electrical safety requirements for this machine (examples: key lock offs, timers, coded security, touch pads, disconnects, or time lockouts) required by local codes.
37. DISCONNECT AND LOCK THE POWER OFF before changing saw blades/bits or making any adjustments.
38. BEFORE CONNECTING THE SAW/ROUTER MOTOR TO THE POWER SUPPLY BE SURE THE MOTOR SWITCH IS IN THE OFF POSITION.
39. KEEP THE CARRIAGE LOCK SECURELY TIGHTENED when the machine is not in use.
40. DO NOT PLACE HANDS UNDER CARRIAGE OR IN LINE WITH CARRIAGE TRAVEL. Be aware of potential pinch points at top of saw/router carriage. Only hold or operate saw/router with designated handles. Do not place hands under carriage or in-line with carriage travel.



41. REFER TO PAGES 5 & 6 FOR WARNING LABEL IDENTIFICATION.

Please Read Before Operating the Saw/Router



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 paint
- 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 specifically designed to filter out microscopic particles.

Electrical Safety



Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are not sure that the outlet is properly grounded. Do not modify the plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the cord or plug is damaged. If damaged, have it repaired by a qualified electrician before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

Some machines are equipped with 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 a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power supply system mentioned above.

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



For best performance and to prevent damage use a dedicated electrical circuit for all SSM machines.

The plug must be connected to a properly grounded outlet (Fig. 4) If the tool should electrically malfunction or break down, grounding provides a low-resistance path to carry electricity away from you, reducing the risk of electric shock.

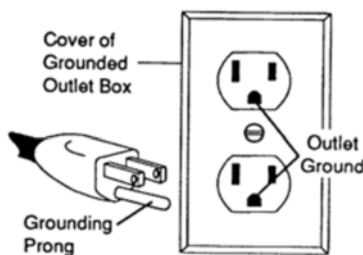


Figure 4: Grounded Plug and Outlet

The grounding prong on 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.

Your 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 Figure 4.

Figure 5 illustrates a temporary adapter available for connecting grounded plugs. The green rigid ear or lug extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box or receptacle. Simply remove the center screw from the outlet, insert the adapter and reattach the screw through the green grounding ear to the outlet. If in doubt of proper grounding, call a qualified electrician. A temporary adapter should only be used until a qualified electrician can install a properly grounded outlet. The Canadian Electrical Code prohibits the use of temporary adapters.

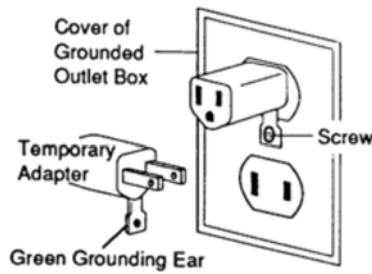


Figure 5: Temporary Grounding Adapter

Extension Cords

Extension cords are not recommended. If an extension cord is used, please adhere to the following suggestions. Grounded tools require a three-wire extension cord. As the distance from the supply outlet increases a heavier-gauge extension cord must be used. Extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible motor damage. Refer to Table I below to determine the required minimum wire size.

Table I: Recommended Minimum Wire Gauge for Extension Cords

Nameplate Amps	Extension Cord Length*					
	25'(7.6m)	50'(15m)	75'(23m)	100'(31m)	150'(46m)	200'(61m)
< 5	16	16	16	14	12	12
5 - 8	16	16	14	12	10	—
8 - 12	14	14	12	10	—	—
12 - 15	12	12	10	10	—	—
15 - 20	10	10	10	—	—	—

* Based on limiting the line voltage drop to 5V at 150% of rated amperes.

— Not recommended

The smaller the gauge number of the wire, the greater the ampacity (capacity) of the cord. For example, a 14-gauge cord can carry a higher current than a 16-gauge cord.

Guidelines for Using Extension Cords

For longest motor life and optimum performance extensions cords are not recommended.

If you are using an extension cord outdoors, be sure it is marked with the suffix "W-A" ("W" in Canada) to indicate that it is acceptable for outdoor use.

Be sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it.

Protect extension cords from sharp objects, excessive heat, and damp or wet areas.

Short-Circuit Protection

This machine must only be plugged into a dedicated circuit that has a short-circuit protection device which is located ahead of the equipment in the circuit, in accordance with local codes.

General guidelines are as follows:

120 volt: 20 amp protection.

These models can include: SR5, SR5U, SR5A, SR5UA, 3400 & TR2

220 volt: 10 amp protection.

These models can include: SR5, SR5U, SR5A, SR5UA, 3400 & TR2

Reference your motor label and your local codes before installation.

Electrical Connections

Connect the power cord from the panel saw/router to a dedicated circuit that meets the requirement of the machine and local codes. Connect the power cord from the dust collector to a circuit that meets the requirement of the dust collector.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE REFERENCE

Vertical Panel Saw/Router Components

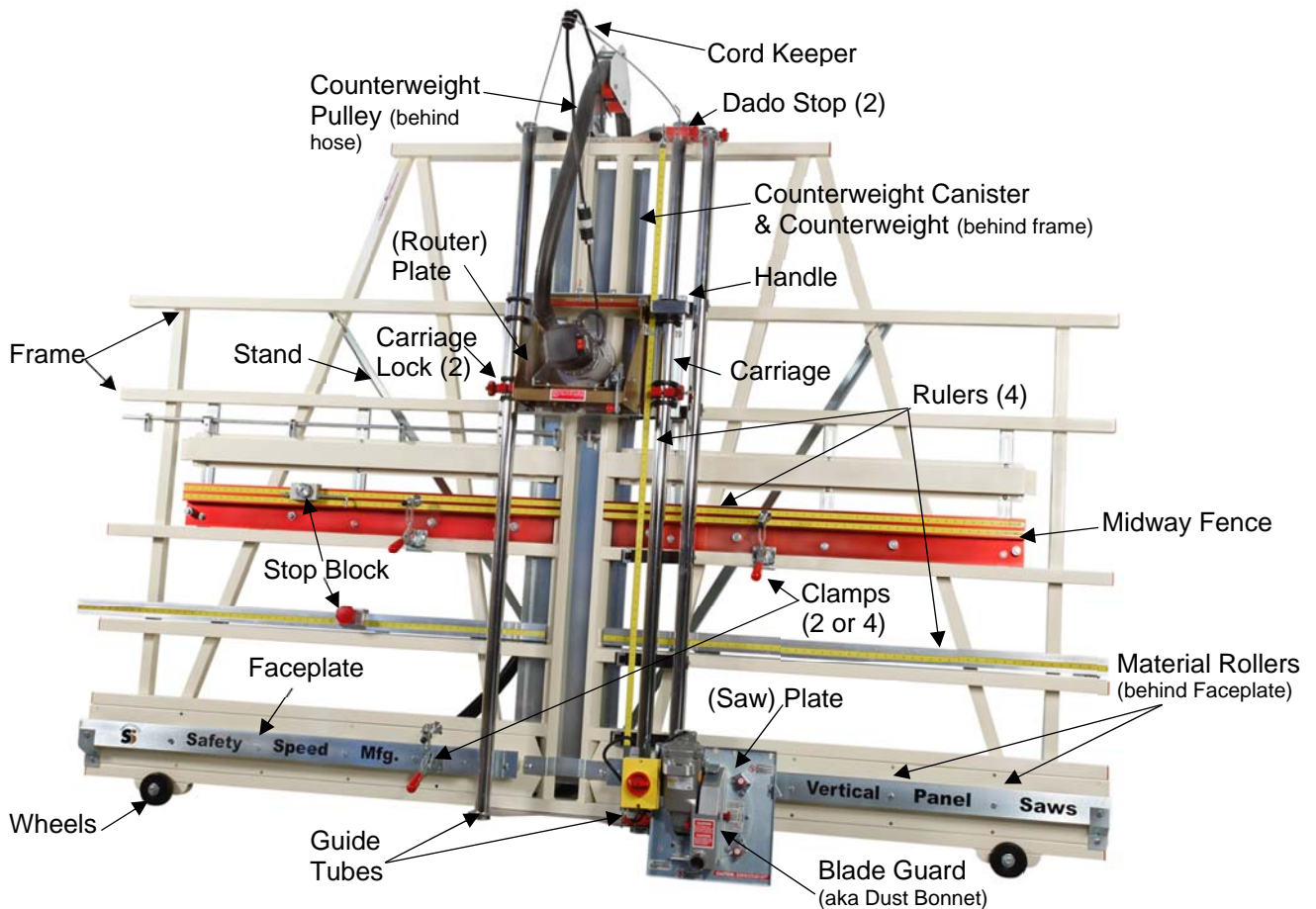
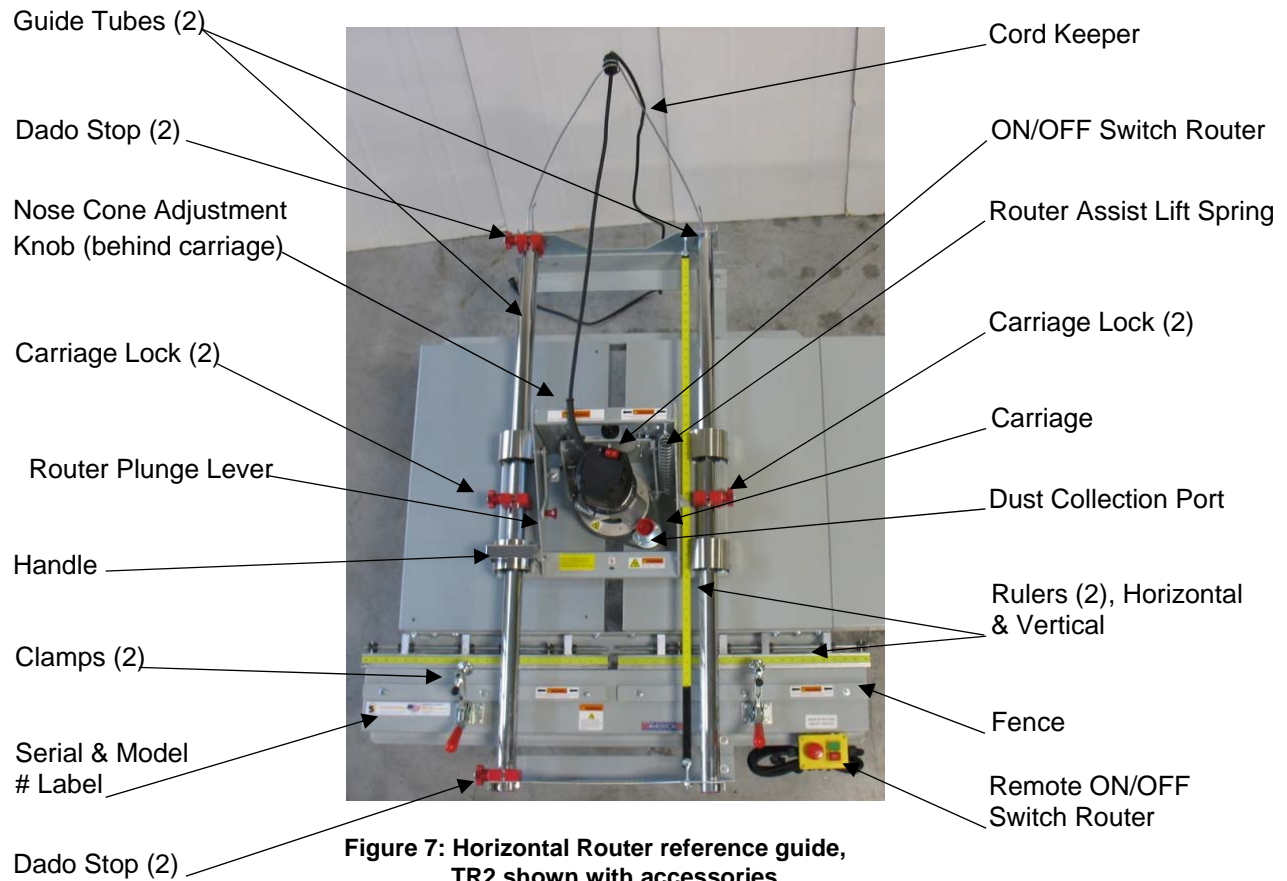
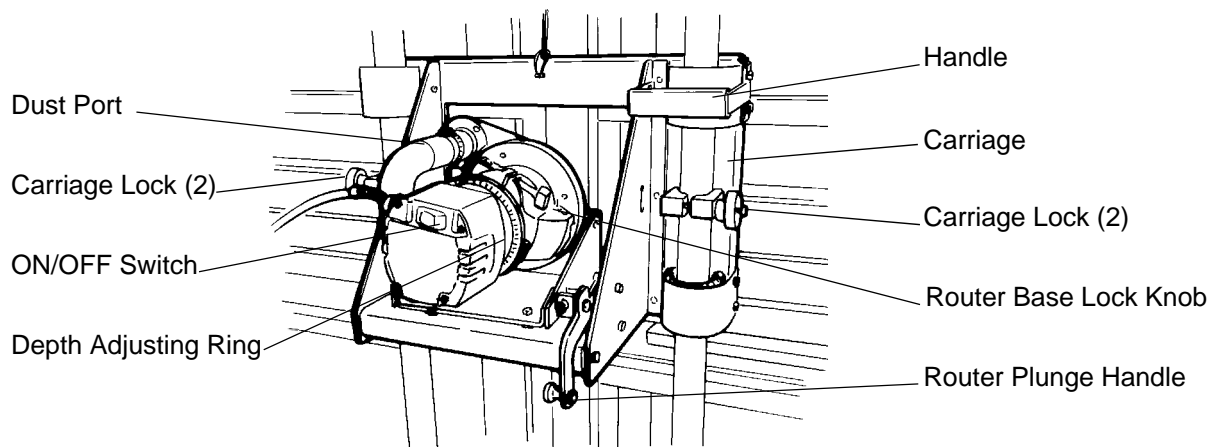


Figure 6: Vertical Panel Saw/Router reference guide, SR5U shown with accessories

Horizontal Router Components



Router Carriage Components



Router Carriage Components (cont.)

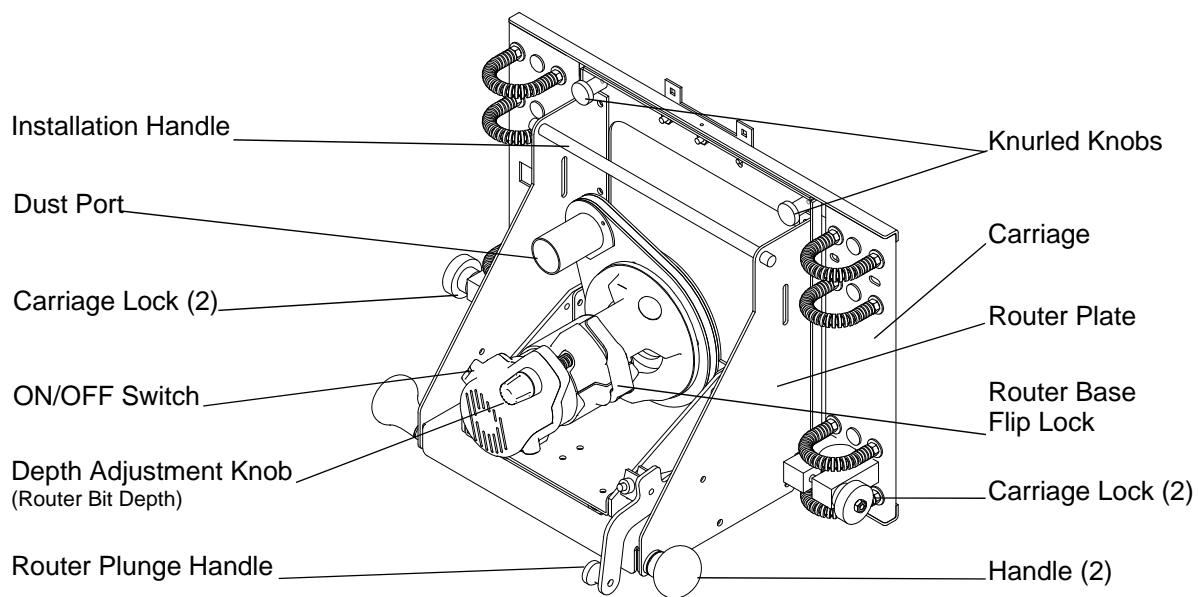


Figure 9: SR5 and SR5A Router Carriage

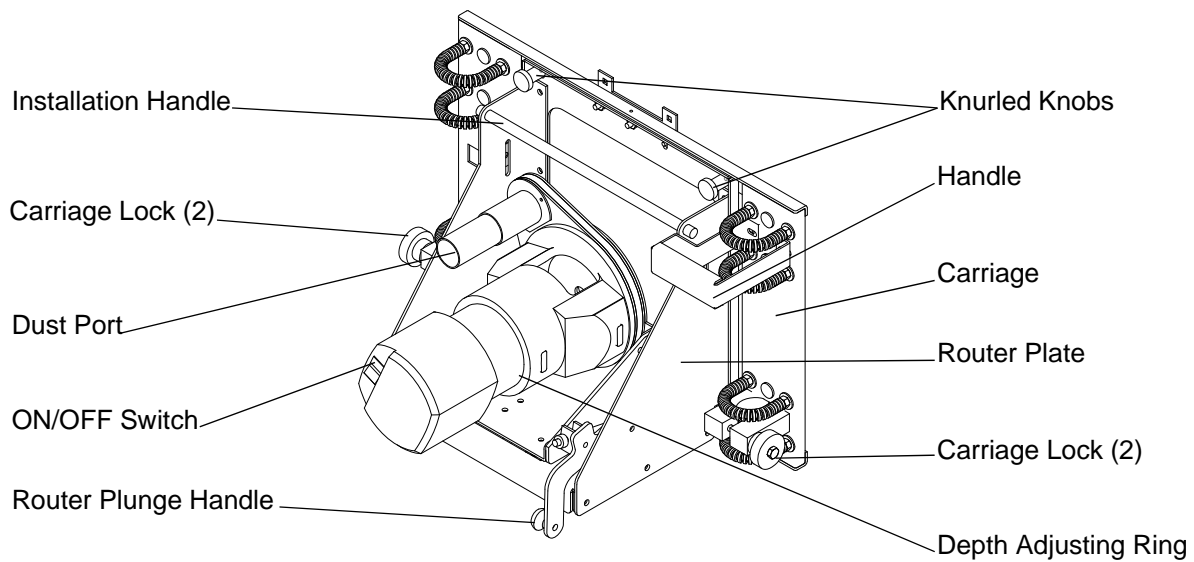


Figure 10: SR5U and SR5UA Router Carriage

INSTALLATION/SET UP

Your Safety Speed saw/router comes from the factory assembled and aligned. You will only have to mount the following parts before you can run these tools:

- Router Motor: SR5*, SR5A*, SR5U, SR5UA, 3400 & TR2
- Saw or Router Plate: SR5, SR5A, SR5U & SR5UA
- Cord keeper, all models

* The router motor may be installed on some configurations.

If you ordered any optional accessories, (e.g. Frame Stand, Frame Wheels, Dust Kit, Vacuum, etc.), you will find assembly instructions packed with that item and repeated at the end of this manual, (page 58).

Tools Required for Installation

NOTE: Additional tools may be required for installing accessories or making adjustments.

- 5/16 or 3/8" wrench or nut driver
- 1/2" wrench (TR2)
- 9/16" wrench (all models)
- 3/4" wrench (SR5, SR5A, SR5U & SR5UA)
- Collet wrenches (router) included:
 - 1-1/8" (2) SR5 & SR5A
 - 1-1/16" (2) SR5U, SR5UA, 3400 & TR2
- Blade wrench (saw) included:
 - 1/2" wrench (SR5 & SR5A)
 - 6mm Hex wrench (SR5U & SR5UA)

Operating Environment

For safe operation, install the machine in an area that is well lit. Eliminate all shadows that could interfere with clear viewing of the work area.

Do not locate the machine in a damp or wet location, or a location where it may be exposed to rain.

If the machine will be operated in an enclosed area, SSM recommends installing the optional Dust Kit and Vacuum. (see pg. 62).

Avoid explosive atmospheres (gaseous fumes, dust, or flammable materials).

Secure the area so that children and bystanders are kept a safe distance from the work area. Provide barriers and shields as needed.

NOTE: The average noise level of SSM saws/routers is less than 80 dB.

Inventory

Each model includes the frame, motor(s) and counterweight, except TR2. These items may be installed on the saw/router or packaged in separate boxes. The SR5 Series saws/routers include a separate box for the saw and router motor, and dust cover (Fig. 11, SR5U shown). The 3400 and TR2 include packaging for the router motors. Accessories may be packaged and included with saw/router frame or shipped separately. Carefully remove and inspect all items before assembly and operation.

NOTE: The SR5 and SR5A with Milwaukee routers include a second collet for ¼" bits. All router models come equipped with the standard ½" collet, which is the best choice for large router bits.



Figure 11: Packaged saw/router and boxes (SR5U shown)

Unpacking

SR5, SR5U, SR5A, SR5UA & 3400

1. Removing plastic sheeting, protective cardboard, and wood crating. NOTE: Uncrating methods vary by model and accessories.



Caution: Have a helper hold saw/router frame for the next steps.

2. Remove wood crate by cutting (a reciprocating saw is used as an example) the wood frame along the **outside/back** corners (Fig. 12) being careful not to damage panel saw/router. Cut around base. NOTE: Do not cut through (across) crate base (Fig.13).

NOTE: Cut between block of wood and base of wood crate, supporting counter weight in back. This will ease removal of wood block supporting counterweight (Fig. 15).



Figure 12: Cutting back of wood crate



Figure 13: Cutting along base of wood crate, do not cut through (across) base

3. Cut top of crate near saw frame, to release crate, Fig. 14. Remove back side of crate as it should be loose from saw/router and crate. Make sure helper is holding the frame.



Figure 14: Cutting top (back) of wood crate



Figure 15: Counterweight support block

4. Make sure helper is holding the frame. **NOTE:** If you purchased an optional stand, install it before removing saw/router from crate. Refer to stand installation instructions.
5. Push sides of crate away from frame to release and remove saw/router and set out of crate and place in the desired and secure position.
6. One or more boxes of parts are attached to the frame. The cord keeper is attached to the carriage. Remove these items for later installation.

NOTE: When assembling any version of the SR5 or 3400 skip ahead to page 22 for Assembly instructions.

Unpacking/Assembly

TR2



Caution: Have a helper hold/lift router frame for the next steps.



Figure 16: TR2 back (open side) of crate

1. With the assistance of a helper lay crate flat on floor with back (open side, Fig. 16) of crate down and cardboard side up (Fig.17).



Figure 17: TR2 crate positioned flat for unpacking

2. Removing plastic sheeting, protective cardboard, and wood crating. NOTE: Uncrating methods vary by model and accessories.
3. Remove wood crate by prying off boards on top of cardboard. Remove cardboard.
4. Remove boxes and loose parts from crate.
5. Cut away or pry away sides of crate.
6. Remove two wood cross pieces from inside of crate. Cutting or prying may be necessary to remove these cross pieces (if sides of crate have not been fully removed). Being careful not to damage router or frame during this step.
7. With the assistance of a helper, lift TR2 from crate.
8. With the assistance of a helper, install four legs on the inside corners of the base, using four 3/8" hex bolts through each corner and leg. Finger tighten.
9. After placing TR2 in position, tighten all sixteen bolts through legs.
10. Install two Ruler Support Angles (Pg. 14. Fig. 7) with Scales (rulers, right and left) by bolting to frame. Each Ruler Support Angle should have the yellow Scale facing "up" with the zero mark near the center of the table. The back or side of the Angle will bolt to the side of the tube of the fence. Two bolts are used on each Ruler Support Angle and can be adjusted slightly by loosening the nuts and moving the Scale and retightening.
11. Install accessories (Air Clamps, Dust Vacuum Kit, etc.) at this time.

Note: instructions for attaching accessories are included with the accessory and many are duplicated in the back of this manual starting on page 58.

Mounting the Router Motor into Router Base on Router Plate: TR2



Do not use router motor for applications not intended. Do not use router motor removed from the carriage, plate or base for any application. The router motors are engineered for SSM and built specifically for the intended use as a horizontal router.



Make certain the router is unplugged when mounting into base, adjusting or changing bits. Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

8. Install router motor into base by loosening router base lock-knob (do not remove). Place router motor into base and twist to position motor until motor is seated in base but collet is not touching acrylic sub-base. Tighten router base lock-knob. This will secure router motor in base.
9. Install cord keeper into end of guide tubes by squeezing ends and pushing into end of tubes (Fig. 18).

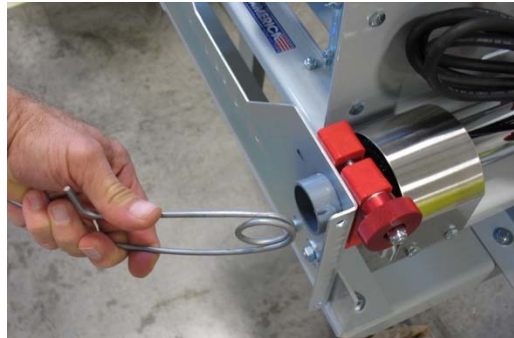


Figure 18: Installing Cord Keeper TR2

10. Place router cord through rubber guide and into cord keeper. Cord should never drag onto work surface or under carriage. Readjust if necessary.
11. Plug router cord into remote ON/OFF switch located at front of machine.



**Unplug Router before adjusting.
Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.**



Figure 19: Installed Cord Keeper and cord TR2

Machine Assembly

SR5, SR5U, SR5A, SR5UA & 3400



To reduce the risk of injury or damage to components, do not attempt to disassemble or repair the Counterweight without proper technical instructions from SSM.

When unpacking, loosen 2 Carriage Locks (Pg. 13, Fig. 6), move Carriage to center. Remove wood support block from bottom, center of Counterweight Canister (Pg.19, Fig.15).

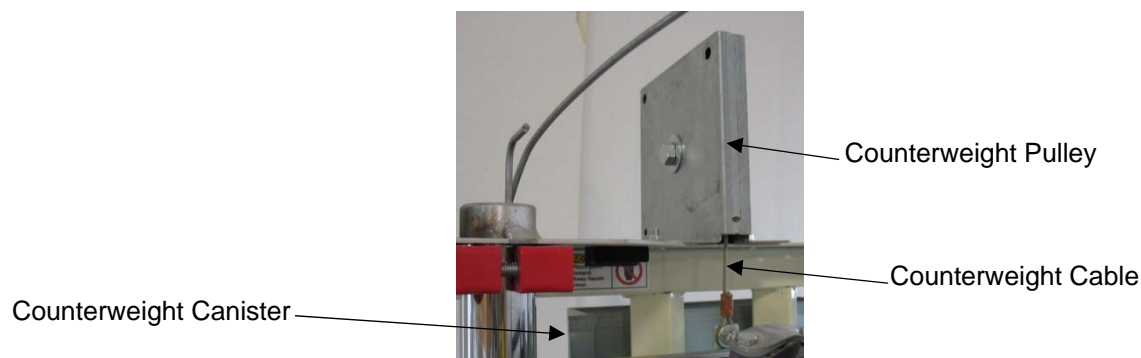


Figure 20: Counterweight System



Do not remove the bolt and nut from the Counterweight cable.

Standing Up the Tool



Do not attempt to lift machine without help of an assistant.

1. With the help of an assistant, position machine in its intended operating location.
2. If the tool is to be mounted to the floor, a wall or post, it must be securely attached to prevent injury from tipping. Position the frame with a 10 – 15 degree angle of back-lean for optimum performance (does not apply to TR2).
3. If installing the optional Fixed Frame Stand follow the mounting instructions packed with the stand (and repeated at the end of this manual). The stand will correctly support the tool under normal operating conditions.



A freestanding saw/router must be located away from areas where it could be accidentally tipped over.

Mounting the Router Motor and Router Plate on the Carriage

Models: SR5, SR5U, SR5A, SR5UA & 3400



Do not use panel saw or router motor for applications not intended. Do not use saw or router motor removed from the carriage, plate or base for any application. The saw and router motors are engineered for SSM and built specifically for the intended use as a vertical panel saw/router or horizontal router.

The router motor is inside the box marked "Router Motor". Remove packaging. Mounting the router motor to the router base which is affixed to the router plate and attaching the plate to the carriage creates the "Router Carriage".

1. Install router motor into base by loosening router base lock-knob (do not remove) (Pg. 14, Fig. 8) or opening flip-clamp (Pg. 15, Fig. 9) (depending on model). Place router motor into base and twist clockwise to position motor until motor is seated in base but collet is not touching acrylic sub-base. Tighten router base lock-knob or close flip-clamp (depending on model). This will secure router motor in base.
2. Loosen the two carriage locks and lower the carriage to a comfortable working height. Then tighten the carriage locks securely.
3. Mount the router motor plate to the carriage by setting the bottom of the plate into the carriage and tipping up and back to seat the plate by centering the alignment pin into the corresponding guide hole. Secure plate to carriage using the two knurled knobs and tighten securely.

NOTE: Knurled Knobs are offset to reduce chance of becoming loose, but should be checked as part of normal maintenance and operation.

4. Make sure router is turned OFF! Plug router cord into machine cord attached to cord keeper.
5. Loosen carriage locks and move carriage to top of guide tubes.

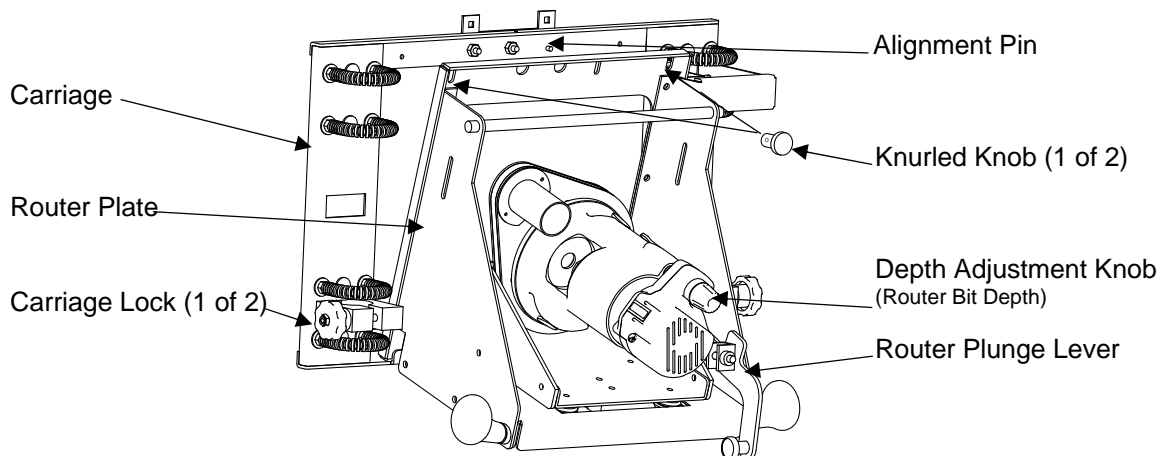


Figure 21: Mounting (Router) Plate to Carriage, SR5 shown

Changing Bits (Routers)



Confirm the router is unplugged when mounting into base, adjusting or changing bits. Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

1. Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered
2. Move Carriage to a comfortable working height.
3. Tighten a Carriage Lock.
4. Loosen the clamp/release or flip-clamp (depending on model) of the router base.
5. Rotate the router motor counterclockwise and pull to remove the motor from base.
6. Using the provided wrench kit, loosen the collet and remove bit.
7. Install new bit and tighten collect.



Confirm router bit is properly seated in collet when tightening.

8. Place router motor into base and twist clockwise to position until motor is seated in base but collet or bit is not touching acrylic sub-base. Tighten router base clamp or close flip-clamp (depending on model).
9. Loosen Carriage Lock and move Carriage to top of guide tubes.

Mounting the Saw Plate on the Carriage

Models: SR5, SR5U, SR5A & SR5UA



Do not use panel saw or router motor for applications not intended. Do not use saw or router motor removed from the carriage, plate or base for any application. The saw and router motors are engineered for SSM and built specifically for the intended use as a vertical panel saw/router or horizontal router.

The saw motor and plate are in a separate box marked “saw motor”. Mounting the saw motor plate to the carriage creates the “Saw Carriage”.

1. Loosen the two carriage locks and lower the carriage to a comfortable working height. Then tighten the carriage locks securely.



Figure 22: Mounting Saw Plate to Carriage, SR5U shown

2. Mount the saw motor plate to the carriage by setting the bottom of the plate into the carriage and tipping up and back to seat plate by centering the alignment pin into the corresponding guide hole. Secure plate to carriage using the two knurled knobs and tighten securely.

NOTE: Knurled Knobs are offset to reduce chance of becoming loose, but should be checked as part of normal maintenance and operation.

3. Make sure saw is turned OFF! Plug saw cord into machine cord attached to cord keeper. This is a Twist-Lock connection (Fig. 23 & 24). Match prongs on plug and twist to secure. Twist in reverse before separating halves.



Figure 23: Twist Lock connections



Figure 24: Twist Lock connected

4. Loosen carriage locks and move carriage to top of guide tubes.

Installing a Blade SR5 & SR5



1. Observe appropriate **Lockout/Tagout** procedures to insure the tool cannot accidentally be powered.
2. Select the correct blade for your needs. Refer to "**Selecting a Blade**", page 36.

IMPORTANT: Because the saw blade must be carefully matched to the materials being cut, Safety Speed **does not** supply a blade as standard equipment on the saw. Improper blade selection can result in reduced tool life, inaccurate, poor quality cuts, and safety risks. Consult with your machinery dealer or with our customer service department (**763-755-1600**) to determine the best blade for your cutting needs.

NOTE: It is a good idea to have spare blades available to prevent downtime.

3. Tighten a Carriage Lock. While holding the spindle lock "in" (Fig. 25, #16) (located on the bottom side of the motor) **remove the blade bolt** (#12), using the included 6mm hex wrench, (supplied with the machine) from the saw motor spindle by turning it **counterclockwise**. Remove the outer blade flange (#13), but leave the inner blade flange (#14) on the spindle.

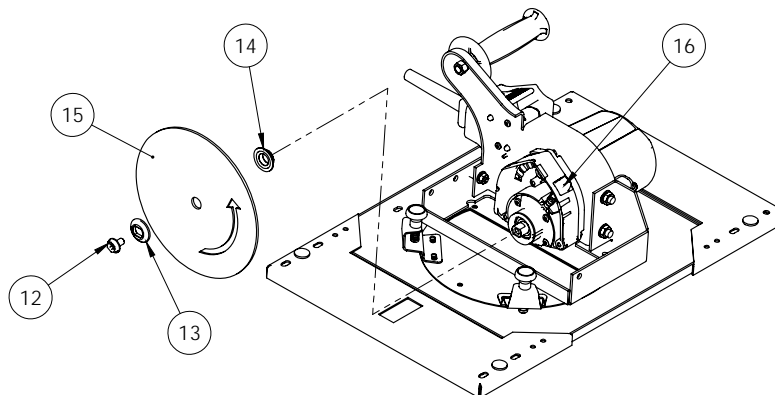


Figure 25: Installing a Saw Blade (SR5 & SR5A)

4. Install the blade with the arrow pointing counterclockwise as shown Fig. 25, #15.
5. Reinstall the outer blade flange (#13) and hand-tighten the arbor bolt (#12). To keep the spindle from turning while you tighten the bolt hold "in" the spindle lock button (#16) Use the 6mm hex wrench provided with the machine (stored in motor housing) to **securely tighten the bolt clockwise**.
6. **Install Blade Guard before operating** (Page 28).



To reduce the risk of injury, do not operate the tool without the blade guard in place.

7. Loosen the carriage lock and allow the saw carriage to return to the top of the guides.

Installing a Blade SR5U & SR5UA

1. **Observe appropriate Lockout/Tagout procedures** to insure the tool cannot accidentally be powered.
2. Select the correct blade for your needs. Refer to "Selecting a Blade" page 36.

IMPORTANT: Because the saw blade must be carefully matched to the materials being cut, Safety Speed does not supply a blade as standard equipment on the saw. Improper blade selection can result in reduced tool life, inaccurate and poor quality cuts, and safety risks. Consult with your machinery dealer, or with our customer service department (763-755-1600) to determine the best blade for your cutting needs.

NOTE: It is a good idea to have spare blades available to prevent downtime.

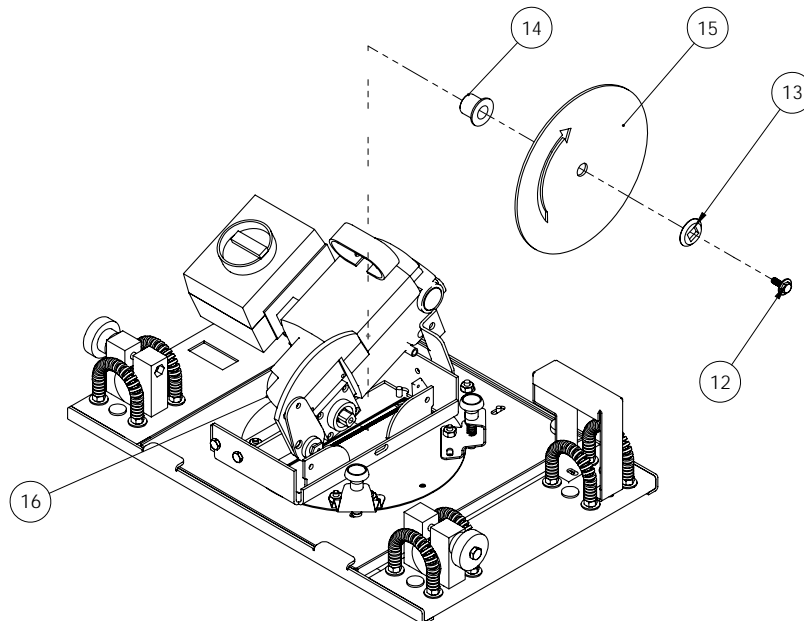


Figure 26: Installing a Saw Blade (SR5U & SR5UA)

3. First tighten the carriage lock, then while holding the spindle lock "in" (Fig. 26, #16) (located on the bottom side of the motor) remove the blade bolt by turning it **clockwise**, using the included ½" wrench. Remove the outer blade flange (#13), but leave the inner blade flange (#14) on the spindle.
4. Install the blade with the arrow pointing clockwise as shown (Fig. 26, #15).

5. Reinstall the outer blade flange (#13) and hand-tighten the arbor bolt (#12). To keep the spindle from turning while you tighten the bolt hold “in” the spindle lock button (#16). Use the ½” wrench provided with the machine to **securely tighten the bolt clockwise**.
6. **Install Blade Guard before operating** (Page 28, below).



To reduce the risk of injury, do not operate the tool without the blade guard in place.

7. Loosen the carriage lock and allow the saw carriage to return to the top of the guide tubes.

NOTE: It is a good idea to have spare blades available to prevent downtime.

Installing the Blade Guard (aka Dust Bonnet)

The blade guard (Fig. 27) for SR5 & SR5A is in the box marked “Saw Motor.”

NOTE: The blade guard for SR5U & SR5UA is factory installed.



Always install the blade guard before operating the saw.

The guard is shipped with two (SR5U & SR5UA, Fig. 27) or three (SR5 & SR5A, Fig. 28) torque knobs (#22) installed, depending on the model. Remove the knobs to install the guard. Be sure to leave the rubber washers on the torque knobs, as they prevent the knobs from slipping.

Attach the guard (Fig. 27 & 28, #21) to the carriage by reinstalling the torque knobs as shown (Fig. 27 & 28, #22).

Return the carriage to the top of the guide tubes and tighten the carriage lock.

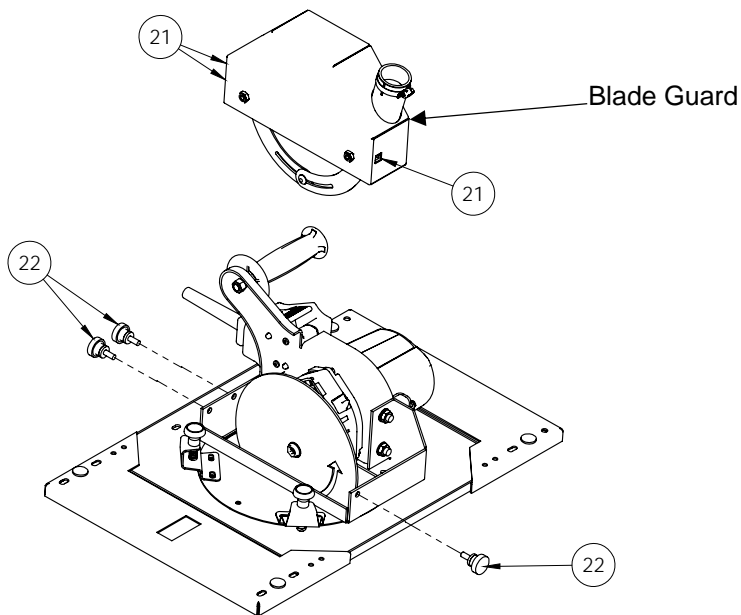


Figure 27: Installing the Blade Guard (SR5 & SR5A)

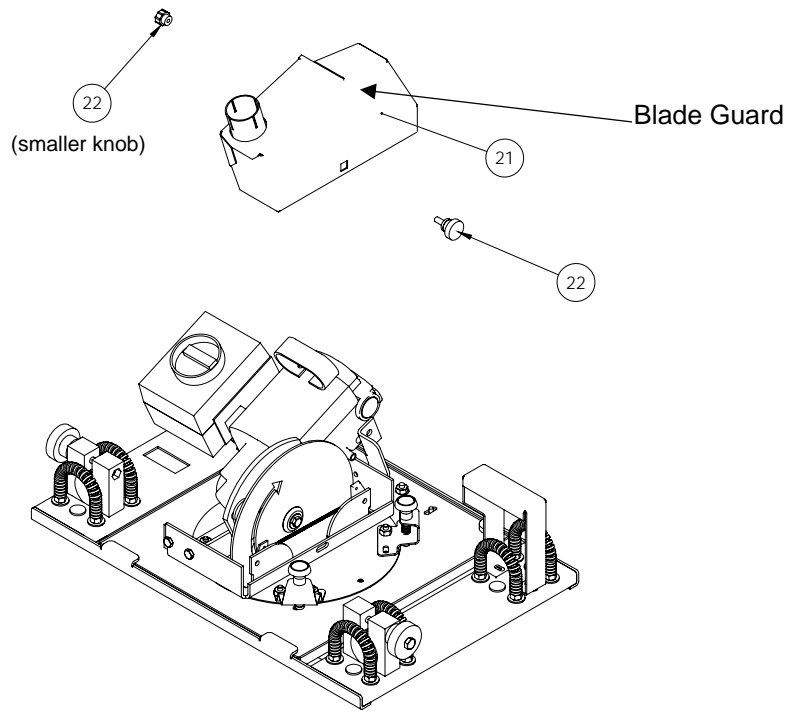


Figure 28: Installing the Blade Guard (SR5U & SR5UA)

Rip and Crosscut Rulers (Scales): SR5, SR5A, SR5U, SR5UA & 3400

The saw/router has one rip ruler mounted vertically and a second rip ruler if the Mid-Way Fence is installed. The rip ruler is set at the factory, for right-to-left cuts using a blade with a 1/8" kerf (1/8" width). The ruler can be adjusted to accommodate other blade widths or kerfs. To adjust the rip rulers, refer to page 41 "Adjusting the Rip Rulers" in the Operation section.

The saw/router has two crosscut rulers, one attached to the frame on each side of the carriage and two more crosscut rulers if the Mid-Way Fence is installed. To adjust the crosscut rulers, refer to page 42 "Adjusting the Crosscut Rulers" in the Operation section.

NOTE: After the saw is completely assembled, make a test cut to verify that the rulers are lined up correctly. Readjust if necessary.

Installing the Cord Keeper: SR5, SR5A, SR5U, SR5UA & 3400

The Cord Keeper holds the cord away from the blade/bit and away from your work piece.

1. Pinch the ends of the Cord Keeper together as shown in figure 29, page 30, while slowly sliding the ends into the guide tubes. Seat the ends securely, (Fig. 30).

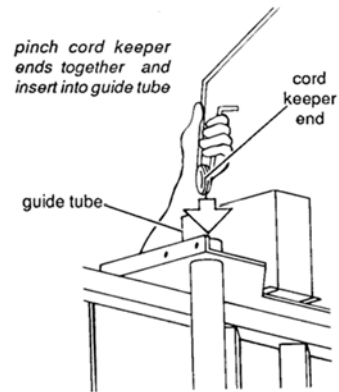


Figure 29: Installing the Cord Keeper

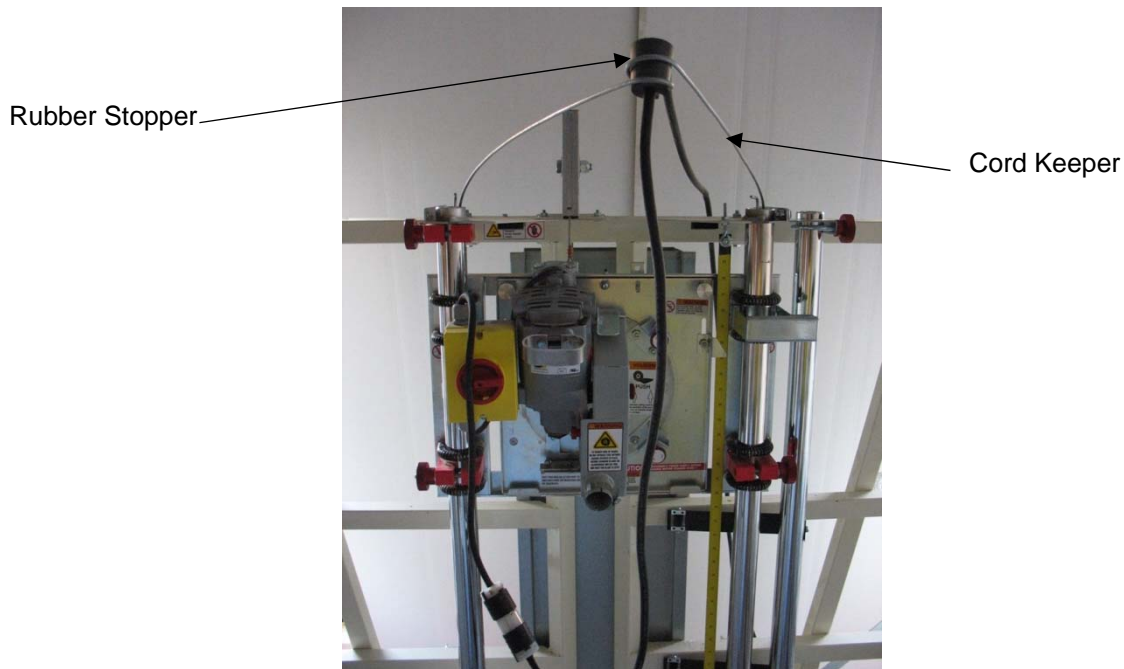


Figure 30: Cord keeper installed (SR5U)

2. Remove the rubber stopper from the ring in the Cord Keeper. See figure 30. Uncoil the cord, and place the plug end through the ring as shown, (Fig. 30). Connect the loose cord to the cord from the saw/router by inserting the plug and twisting to lock (if equipped with a twist-lock).

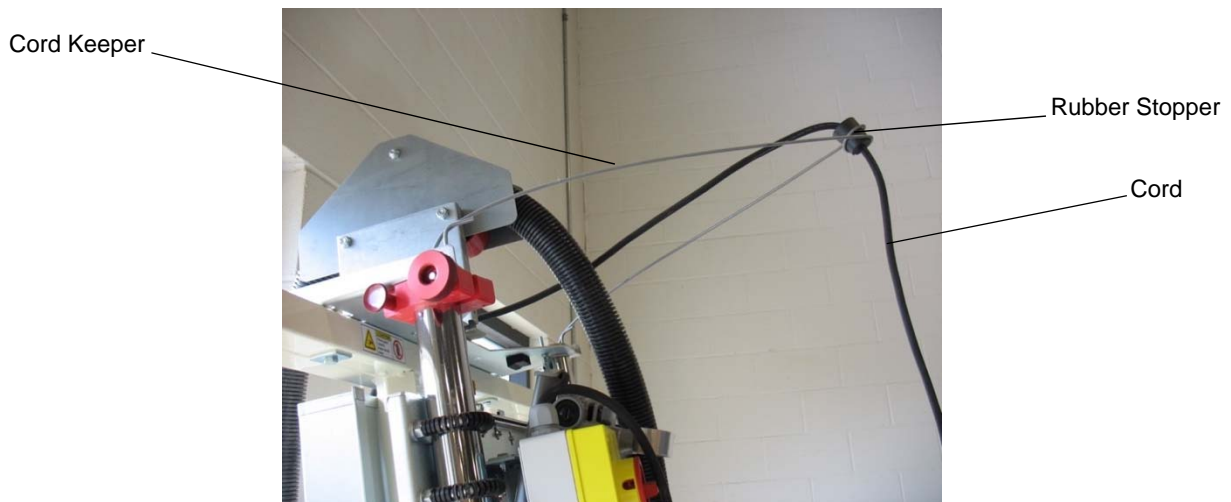


Figure 31: Cord keeper installed with cord

3. Loosen the two carriage locks and lower the carriage to the **bottom** of the guide tubes (the farthest that the cord will have to be extended). Lock a carriage lock in this lowered position.
4. Pull the Cord Keeper down so it is approximately parallel to the floor as shown. Pull the cord up to remove any slack in it. Then open the rubber stopper and pull it over the cord with the small end of the taper on the bottom. Press the rubber stopper into the ring on the cord holder, (Fig. 31 & 32).

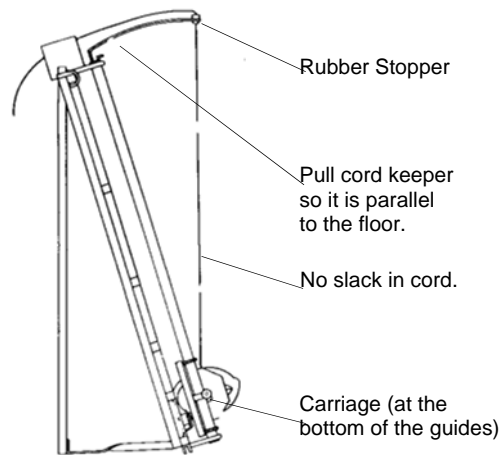


Figure 32: Installing the Cord Keeper

5. Loosen the carriage lock. Allow the carriage to return to the top of the guide tubes and then lock a carriage lock.

NOTE: If there is too much or not enough slack in the cord, readjust if necessary.

Installing the Hold-Down Clamps:

All models (SR5 variations, 3400 & TR2) include two “Lower” Hold-Down Clamps and models that include the Mid-Way Fence include two “Upper” Hold-Down Clamps to be used when Vertical (cross) Routing and some crosscutting applications. The clamps are typically packed with the saw motor, but can be in a different box(es), depending on machine configuration.

NOTE: If you purchased the optional Pneumatic Hold-Down Clamps for the 3400 or TR2 see instructions at the back of this manual and packed with clamps to attach now.

“Lower” Hold-Down Clamps:



Figure 33: “Lower” Hold-Down Clamp

1. Remove nut, washer and spacer from clamp.
2. Slide clamp stud into hole of faceplate and align spacer between face plate and frame (Fig. 33).
3. Attach washer and nut to stud, behind frame.
4. Tighten nut while holding clamp parallel to guide tube.
5. Adjust clamp for various thickness material by loosening nuts on pad and tightening so pad locks on material when clamp is tightened.

“Upper” Hold-Down Clamps on Mid-Way Fence:



Figure 34: “Upper” Hold-Down Clamp installed

1. Remove “L” stud, washer and locking knob.
2. Slide clamp onto horizontal frame member (Fig. 35). Position one clamp on each side of guide tubes to securely hold stock when routing or sawing when using the Mid-Way Fence.



Figure 35: Installing “Upper” Hold-Down Clamp

3. Slide “L” stud through two holes in clamp, attach washer and Lock Knob.

4. Hand Tighten Lock Knob.
5. Remove Upper Clamps if not using Mid-Way Fence by reversing above procedure.

Backer Board

The Backer Board (Fig. 36) is used when crosscutting thin sheet goods such as plastics or when trimming flexible material as it gives support at the cut. It can also reduce chipping and tearing. It is standard equipment for the SR5A and SR5UA and is factory installed. It is located in the space between the two upright frame columns on each side of the saw blade. It is held in place with magnets and should be removed when ripping or making through cuts with a router.

NOTE: The kerf mark in the backer board can be used as an alignment aid when positioning stock for crosscutting. Align the cut mark with the kerf in the backer board for quick positioning of material.

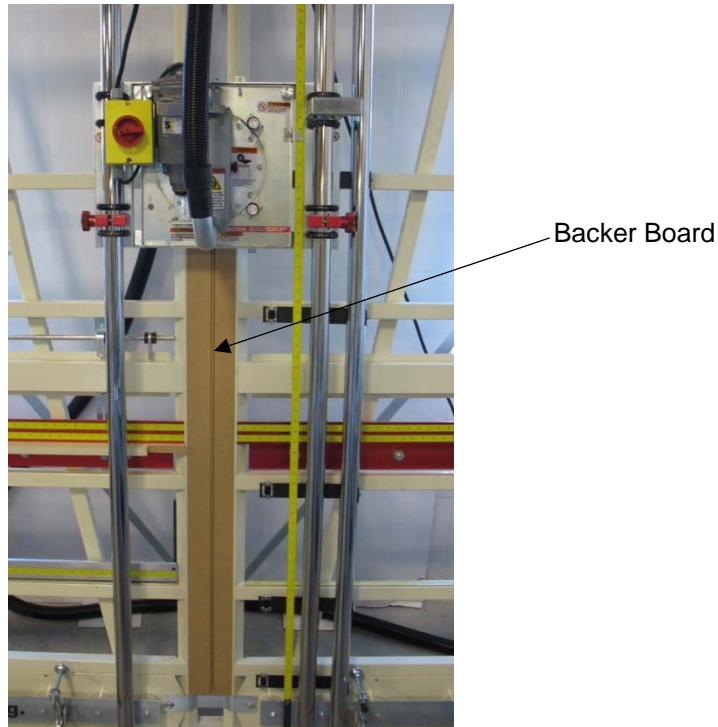


Figure 36: Backer Board Installed, SR5U shown

OPERATION

(All Models)



The following are suggestions that give you a general idea of how a panel saw/router is intended to be operated. No instructions can replace common sense and experience. Be sure you and all operators have enough time and material to become familiar with the general operating characteristics of this tool, and have **FULLY READ AND UNDERSTOOD** all general operating and safety instructions.

Capacities of the Tool

Small Work pieces



Do not cut/rout pieces that are so small that your hand must be behind the carriage to hold the piece in place. Use a tool better suited to these applications, such as a table saw, radial arm saw, chop saw, band saw or router table.

Work piece Height (Vertical Crosscutting, Cross Routing)

SSM saw/router crosscut/cross rout capacity as shown in Table II below.

Table II: Maximum work piece height (stock width) for Crosscutting & Cross Routing

Model	Max. Height
SR5	62 in.(1575mm)
SR5U	62 in.(1575mm)
SR5A	62 in.(1575mm)
SR5UA	62 in.(1575mm)
3400	62 in.(1575mm)
TR2	36 in.(910mm)

Work piece Thickness

Maximum thickness of a work piece to be cut with SSM saws and routers is:

- 1-3/4" (45mm) on all models*.

SSC recommends using the optional Hold-Down Bar for frequent cutting of materials thinner than 1/2" (13mm).

*2" (50mm) thick cutting is available as an option with many models when ordering a new panel saw/router.

Crosscutting/Cross Routing Capacities of vertical machines

When crosscutting/cross routing (vertical cuts & routing), the work piece must be supported on at least two rollers (Page 44, Fig. 45) for safe operation and accurate cutting/routing. When you use the optional Midway Fence, the work piece must extend at least 4" (100mm) beyond the carriage on both sides (Page 45, Fig. 46).

Do not crosscut/cross rout work pieces that extend more than 5 feet (1520mm) beyond the outermost roller. To increase available capacity for these larger panels, SSM recommends using the optional Frame Extensions (Page 62, Fig. 66).

NOTE: Included with all Router models are two (Blind or Stopped) Dado Stops.

These can be located on the right or left Guide Tubes, when facing the saw/router (Pg. 13 & 14, Fig. 6 & 7). They can be used to limit Carriage travel in either direction for Blind Dados or Stopped cuts.

NOTE: The lower Dado Stop may need to be removed for certain cuts with the

saw or router for the blade or bit to complete the cut.

Rip Cutting and Ploughing (grooving) Capacities of vertical machines



Always use both Carriage Locks when Ploughing or Grooving with a Router!

The minimum length recommended for rip (horizontal) cuts/routing is 2-1/2 feet (760mm), so the work piece will be supported on at least four rollers. Pieces shorter than 4 feet (1220mm) can be rotated 90° and be crosscut/cross routed. This size limitation also applies when using the optional Midway Fence. See page 46, Fig. 47 & 48.

There is no limit to the length of stock that can be rip cut or routed. However, you must insure that the stock is properly supported at all times. For regular rip cutting or routing of long pieces, SSM recommends using optional Frame Extensions or Extension Tables.

Selecting a Router Bit

The router bit must be carefully matched to the materials being routed. Improper bit selection can result in reduced tool life, inaccurate and poor quality cuts and safety risks. Call your dealer or SSM for Specialty Router Bits or for help in choosing the correct router bits. SSM #763-755-1600.

NOTE: The SR5 and SR5A with Milwaukee routers include a second collet for 1/4" bits. All router models come equipped with the standard 1/2" collet, which is the best choice for large router bits.

Selecting a Saw Blade

The saw blade must be carefully matched to the materials being cut. Improper blade selection can result in reduced tool life, inaccurate and poor quality cuts, and safety risks.

NOTE: The following table lists some recommended blades for certain applications.

If in doubt, consult with your machinery dealer, or with our customer service department (**763-755-1600**), to determine the best blade for your cutting needs.

NOTE: It is a good idea to have replacement blades on hand to prevent unnecessary downtime.

Table III: Recommended SSM Blades for Certain Applications

Material	8200HG	840ATB	860ATBL	860ATB	864NRATB	860NRTCG	860TCG	860TCGS	880ATBL	880TCGL
Aluminum composite						X	X	X		
Aluminum plate						X				
Chipboard		X	X	X			X		X	
Double-face panels			X		X	X			X	
Duraply							X			X
Gatorfoam								X	X	
Hardwood		X	X	X					X	
Laminated panels		X	X						X	
Masonite		X	X				X		X	
Melamine					X	X				X
Particle board		X	X				X	X	X	
Plexiglas up to 1/2"							X	X		
Plywood		X	X	X				X	X	
Polycarb. (Lexan)	X							X		
Polyester					X	X				X
Printed grain lamin.					X					X
Solid wood		X	X	X				X	X	
Veneer			X		X				X	
Vinyl					X	X			X	

Always keep blades clean and sharp for the best performance. A dull or dirty blade can bind and pinch, resulting in kickback and poor quality cuts. **If in doubt, replace it with a new/sharp blade.**

The blade diameters specified for SSM panel saws are 8" (200mm), with an arbor of 5/8" (16mm). Minimum blade kerf for the saw blade is .10" (2.5mm).



Riving knife thickness is .08" (1.98mm), blades thinner than this kerf should NOT be used!



Only blades made in conformity to BS EN 847-1:2013 should be used on SSM machines.

Basic Operating Controls and Functions of Saws

Refer to figure 37 & 38 for the location of operator controls on each model saw.

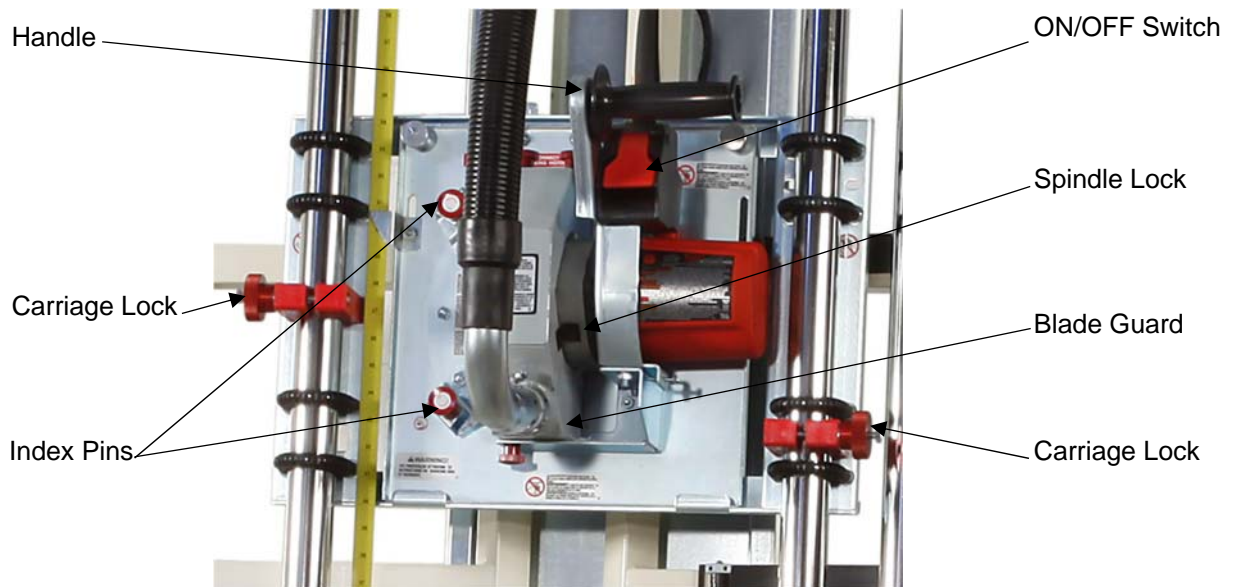


Figure 37: Basic SAW Operating Controls and Components (SR5 & SR5A)



Figure 38: Basic SAW Operating Controls and Components (SR5U & SR5UA)

Removing and Reinstalling the Blade Guard (Dust Bonnet)



Unplug Saw before adjusting.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

The Blade Guard (Dust Bonnet) (Fig. 39 & 40, #21) is attached to the carriage with torque knobs (Fig. 39 & 40, #22). Remove the torque knobs to remove the guard. Be sure to leave the rubber washers on the torque knobs to prevent the knobs from slipping.



Always install the blade guard before operating the saw (Fig. 39 & 40, #21).

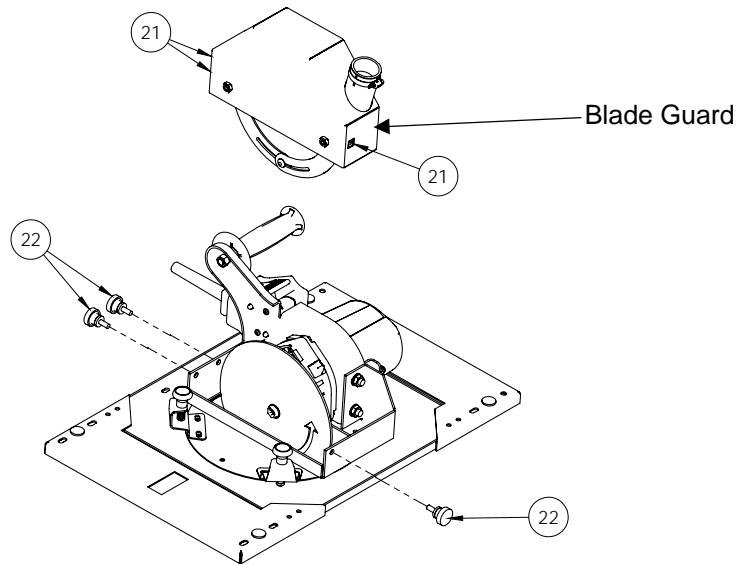


Figure 39: Removing/Installing the Blade Guard (Models SR5 & SR5A)

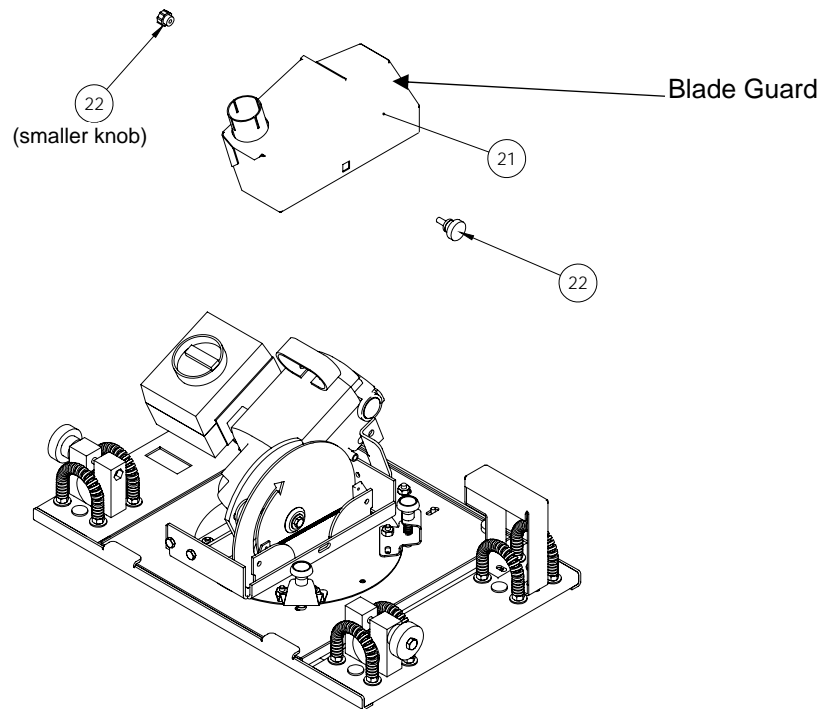


Figure 40: Removing/Installing the Blade Guard (Models SR5U & SR5UA)

Changing the Blade



Unplug Saw/Router before adjusting.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

1. Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.
2. Move Carriage to a comfortable working height. Tighten a Carriage Lock.
3. Remove the blade guard, see **“Removing and Installing the Blade Guard”** and (Fig. 39 & 40, #21).
4. To keep the spindle from turning while you loosen the arbor bolt (SR5 & SR5A Fig. 41, #12) or (SR5U & SR5UA Fig. 42, #12) push the spindle lock (#16) located on the under-side of the saw motor Fig. 42 (SR5U & SR5UA) or on top of the motor housing Fig. 41 (SR5 & SR5A).
5. Use the 6mm hex wrench (SR5 & SR5A) or ½” wrench (SR5U & SR5UA) provided with the saw to loosen and remove the spindle bolt (Fig. 41, #12, **counterclockwise** SR5 & SR5A) or (Fig. 42, #12 **clockwise** SR5U & SR5UA), while holding the spindle lock.
6. Remove the outer blade flange (Fig. 41 or 42, #13), blade (#15), and inner blade flange (#14).
7. Clean the spindle, flanges, bolt, and blade to remove built-up dust and debris.
8. Reinstall the inner flange, slide on the **new blade with the arrow pointing counterclockwise (SR5 & SR5A), hand-tighten the bolt clockwise**. On the **(SR5U & SR5UA)** models the arrow should be pointing clockwise and you loosen the bolt turning clockwise and **tighten the bolt turning counterclockwise**.
9. Use the 6mm hex wrench or ½” wrench to tighten the bolt while pushing the spindle lock.
10. **Reinstall the blade guard.**



Always install the blade guard before operating the saw/router.

11. Loosen the carriage lock and allow the saw carriage to return to the top of the guides.
12. Reconnect the power.

NOTE: You may have to readjust the rip and crosscut rulers after changing blades or installing a re-sharpened blade. See **“Adjusting the Crosscut Rulers”**.

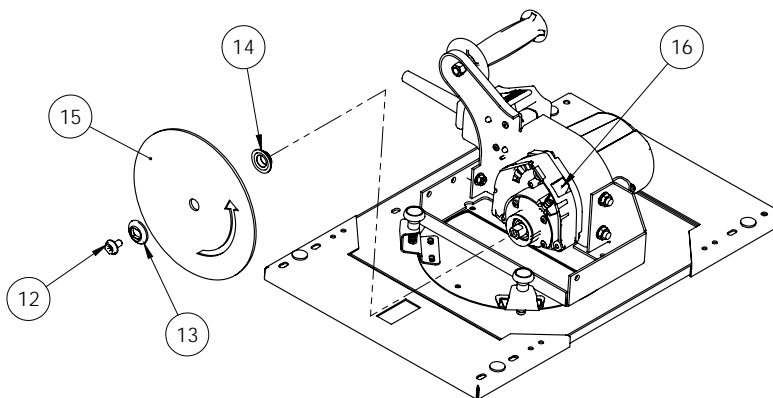


Figure 41: Installing a Saw Blade (SR5 & SR5A)

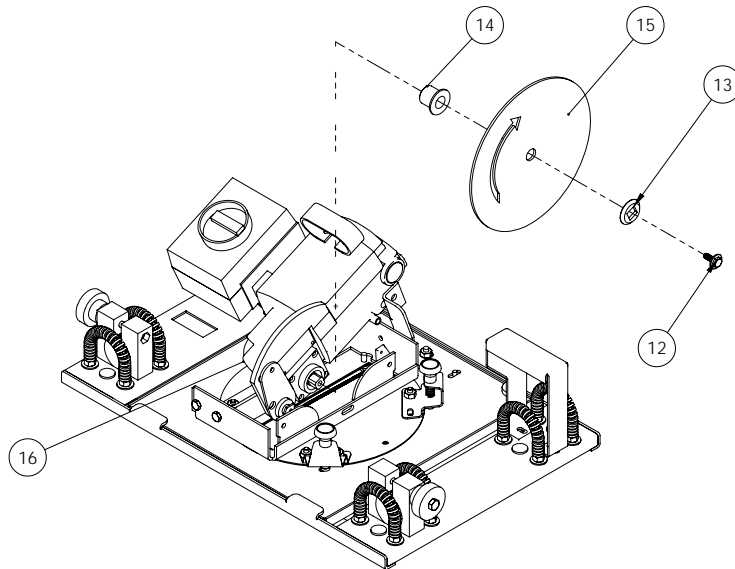


Figure 42: Installing a Saw Blade (SR5U & SR5UA)

Starting and Stopping the Motors

SR5 & SR5A Saws: Start the saw motor by lifting on the paddle switch (ON) (Pg. 37, Fig. 37), located under the saw handle. Stop the motor by pressing the switch down (OFF).

SR5U & SR5UA Saws: Start the saw motor by rotating the start-stop switch ON (Pg. 37, Fig. 38). Stop the motor by turning the switch OFF.

SR5, SR5U, SR5A, SR5UA & 3400 Routers: Start the router motor by depressing the rocker switch ON. Stop the motor by depressing the switch OFF (Pg. 15, Fig. 9 & 10).

TR2 Routers: Start the router motor by pushing the ON button at the remote ON/OFF switch. Stop the motor by pushing the OFF button on the remote ON/OFF switch (Pg. 14, Fig. 7).

Note 1: The router switch on the router should be at the ON position to use the remote ON/OFF switch.

Note 2: The remote router switch includes an EMERGENCY STOP button, which should only be used in an emergency.

Rotating the Turntable on the Carriage

All saw models. Pull out both of the Index Pins (Pg. 37, Fig. 37 & 38), and pivot the turntable until they snap into the appropriate holes.



Moving the Carriage Up or Down (back & forth, TR2)

SR5 & SR5A Saws: Use the handle attached to the motor body (Pg. 37, Fig. 37).

SR5 & SR5A Routers: Use the handles mounted to the router carriage (Pg. 15, Fig. 9).

SR5U & SR5UA Saws: Use the handle in front of the right guide tube, attached to the carriage in the far upper right hand corner (page 37, Fig. 38).

SR5U, SR5UA, 3400 & TR2 Routers: Use the handle in front of the right guide tube, attached to the carriage in the far upper right hand corner (Pg. 15, Fig. 10).

Locking the Carriage

Lock the carriage by tightening the 2 Carriage Locks, (page 37, Fig. 37 & 38):

- **One Lock on each of the two Guide Tubes, all models.**



Use both Carriage Locks when ploughing or cross routing.

Rip and Crosscut Rulers (Scales): SR5, SR5A, SR5U, SR5UA & 3400

The saw/router has one rip ruler mounted vertically. The rip ruler is set at the factory, for right-to-left cuts using a blade with a 1/8" kerf (1/8" width). The ruler can be adjusted to accommodate other blade widths or kerfs.

The saw/router has two crosscut rulers, one attached to the frame on each side of the carriage and two more crosscut rulers if the Mid-Way Fence is installed.

Adjusting the Rip Rulers



Unplug Saw/Router before adjusting.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

Be sure the blade is installed before following these steps:

1. Remove the blade guard (Pg. 37, Fig. 39 & 40) so the blade is exposed.
2. Loosen the carriage lock and lower the carriage to a comfortable working height, as shown in figure 43.
3. Rotate saw, if necessary, to horizontal or ripping configuration.
4. Use a square at least 14" long and place across rollers.
5. Move carriage down to square, with bottom edge of blade or tooth to a measurement. Tighten carriage lock.
6. Adjust ruler, if necessary by loosening hex nut holding indicator and slide indicator to match measurement from square.
7. Install blade guard.



Always install the blade guard before operating the saw/router.

8. Make a test cut to verify that the ruler is lined up correctly. Readjust if necessary.

Adjusting the Crosscut Rulers

The saw/router has two crosscut rulers, one attached to the frame on each side of the saw/router. The two crosscut rulers, or four rulers with Mid-Way Fence must be adjusted to the specific blade that is mounted in the saw.



Unplug Saw/Router before adjusting.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

Be sure the blade is installed before following these steps:

1. Remove the blade guard (Pg. 37, Fig. 39 & 40) so the blade is exposed.
2. Loosen the carriage lock and lower the carriage to a comfortable working height, as shown in figure 43.

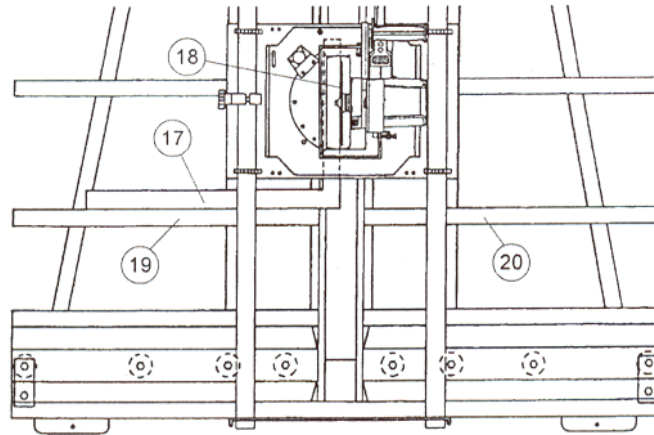


Figure 43: Adjusting the Crosscut Rulers

3. Rotate saw, if necessary, to vertical (crosscut) configuration.
4. Use a square (Fig. 43, #17) that measures at least 14" (356mm) on one side. Line up one edge of the square with the tips of the saw blade, and the other edge of the square with the crosscut (horizontal) ruler. Slide the ruler (#19) so that its measure matches the measure on the square. A magnet holds the ruler in place and allows the ruler to be adjusted to various blade types. To prevent unauthorized adjustment, clear tape can be wrapped around the ruler and frame.
5. Repeat the above steps to adjust the crosscut ruler on the other side (#20) of the tool.
6. Install blade guard.



Always install the blade guard before operating the saw/router.

6. Make a test cut to verify that the ruler is lined up correctly. Readjust if necessary.

General Operating Tips

- For smooth, clean, chip-free cuts, you **must** use industrial carbide saw blades and bits that are **sharp**. Dull or improperly sharpened blades/bits will cause chipping, unclear cuts, chatter, and motor overloading. **If you are not sure that a blade/bit is sharp, replace it with a new/sharp one.**
- When feeding material through the tool horizontally, or moving the carriage over the material vertically, **do it slowly, smoothly, and (whenever possible) without stopping and in the direction of the arrows on the carriage labels.** Overfeeding results in poor-quality cuts, shortened blade/bit life and motor overloading.
- Be careful when setting material onto the rollers. **Do not drop heavy material onto the rollers** or damage to the rollers may result.
- For best results when sawing/routing, place the work piece onto the tool with its backside facing you (unless routing the face only. This provides the smoothest possible cut on the face side of the panel.
- Panels being cut horizontally or vertically must always be fed against the rotation of the saw blade/bit.

- Vertical panel saws/routers are intended for cutting **large** panels down to size. As the overall panel size becomes smaller and smaller consider the “**Midway fence**” page 68 or other types of sawing/routing tools as they become more convenient and safer to use.
- When routing on a vertical router, if most panels are narrow, the optional Midway Fence will bring the work surface to a comfortable height.
- When routing window openings, start the plunge cut in an upper corner. This allows the drop piece to fall downward and away from the bit when the final cut of the opening is completed.
- Refer to the Maintenance section for regular maintenance procedures.

Operating Procedure: Crosscutting

A crosscut or cross routing is a vertical cut that must always be done from the top to the bottom of a work piece as shown on page 44, Fig. 44 and 45. (See also “**General Operating Tips**” above and “**Capacities of the Tool**”.)



To reduce the risk of injury, do not place your hands on or under the carriage or in the path of the saw blade/bit.

1. Position the saw motor in the crosscutting position with the blade oriented vertically. See “**Rotating the Turntable**”.
2. Loosen the carriage lock and move the carriage to the top of the guides.
3. Place the work piece on top of the rollers. Be careful not to drop the material on the rollers.
4. Slide the work piece to the desired position, using the crosscut rulers or optional gauging systems (Stop Bar or Quick Stop) as measures.
5. Make certain that the work piece is adequately supported and stable in the machine. Refer also to “**Capacities of the Tool**”. The work piece can be held with one hand.



6. **Do not hold the work piece so that your hand is anywhere behind the carriage or guides or in the path of the saw blade/bit!**
7. Start the motor (see “**Starting and Stopping the Motor**”), and allow it to reach full speed before beginning the cut.
8. When the motor has reached full speed, slowly and smoothly pull the carriage down so the blade/bit runs through the work piece. **Keep one hand on the handle at all times and the other hand clear of saw carriage/router carriage.** Be careful not to force the saw through the work piece, to avoid binding.



9. **If the blade binds in the work piece, or the work piece shifts during the cut, stop the motor, carefully move the carriage to the top of the guides, restart the motor, and begin the cut again.**
10. Support and remove the cut-off piece as the saw completes its cut.
11. Once the cut is complete, turn OFF the motor and wait for the blade/bit to come to a full stop. Move the work pieces away from the blade/bit. Return the carriage to the top of the guides, and tighten a carriage lock.

12. When making saw cuts that are less than 1" (25mm), the chatter preventer (guard) (located inside the blade guard) must be resting on the work piece, not on the cut-off piece. See page 47 & 48, Fig. 50 & 51. If it is not positioned this way, it will jam the work piece and prevent the carriage from continuing through the cut. **If the saw jams, turn the saw OFF** and wait for the blade to stop. Then back the saw out of the cut.

NOTE: A coasting saw blade/bit could mar the edge of a freshly cut work piece.

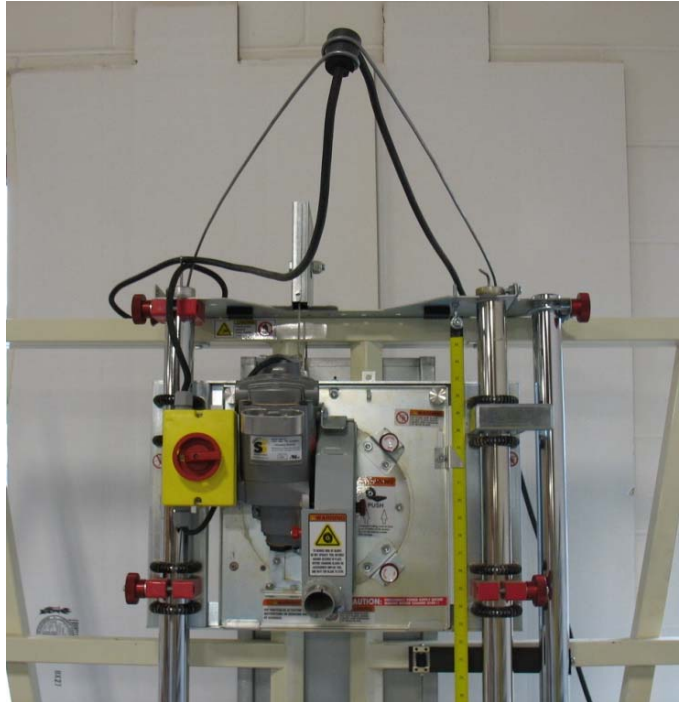


Figure 44: Crosscut motor position (SR5U shown)

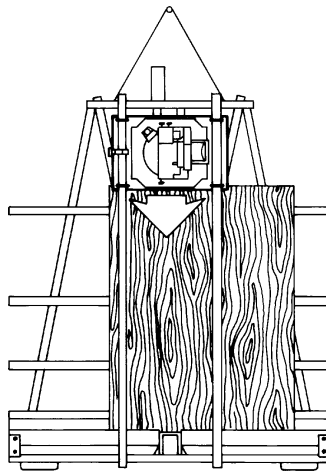


Figure 45: Crosscutting (work supported on at least two rollers)

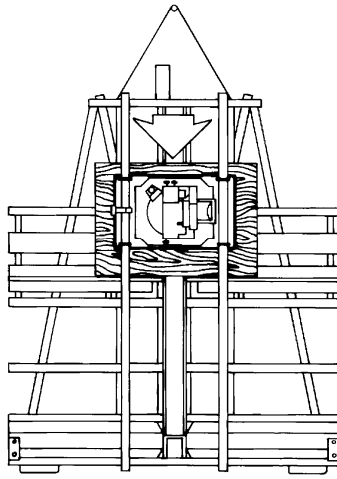


Figure 46: Crosscutting using optional Midway Fence Kit
(work extends at least 4" (100mm) beyond saw carriage)

Operating Procedure: Rip cutting

A rip cut is a horizontal cut that can be done either from the left to the right or from the right to the left, as shown on page 46, Fig. 47. **Rip cuts must always be done by moving the work piece in the direction of the arrow on the saw carriage.** (See also "General Operating Tips" above and "Capacities of the Tool.")



To reduce the risk of injury, ripping must always be done with the direction of the arrow on the saw/router.



1. Before you begin, be sure there is enough space on both sides of the saw to completely load the work piece on the saw frame, move it past the saw, and completely off-load it.
2. Select the ripping direction, from right or from left, based on preference. Then rotate the turntable to the ripping position as shown. See "**Rotating the Turntable**". The rip measurement is set at the factory for cutting right to left. The measurement indicator will need to be adjusted for left to right.
3. Select the height of the saw blade above the rollers. Raise or lower the carriage until the height index tab is aligned with the corresponding dimension on the vertically mounted ruler. Lock the carriage securely to the guides in this position.
4. Start the motor (see "**Starting and Stopping the Motor**") and allow it to reach full speed before beginning the cut.
5. Position the material on the side of the machine indicated by the arrows on the carriage that show direction of cut. Place the work piece on top of the rollers. Be careful not to drop the material onto the rollers.

6. When the motor has reached full speed, slowly and smoothly push the work piece through the saw, in the direction of the feed arrow on the saw. **Warning: Avoid placing your hands, clothing, or body parts under the carriage or in the cutting path of the saw blade. Do not look directly down the line of cut because dust and debris are generated during this operation.**

Be careful not to force the work piece through the saw, to avoid binding.



If the saw blade binds in the work piece, or the work piece shifts during the cut, stop the saw motor, carefully back the work piece out of the saw, reposition the work piece, restart the motor, and begin the cut again.

7. As the work piece passes across the machine, move to the other side and complete the cut by pulling the work piece past the saw blade. Support the upper piece to keep it from pinching the blade or the kerf protector, or falling away from the machine.
8. Once the cut is complete, turn off the motor and wait for the blade to come to a full stop. Remove the work pieces from the machine.
9. Rotate the turntable back to the vertical position and return the carriage to the top of the guides. Lock the carriage in this position.

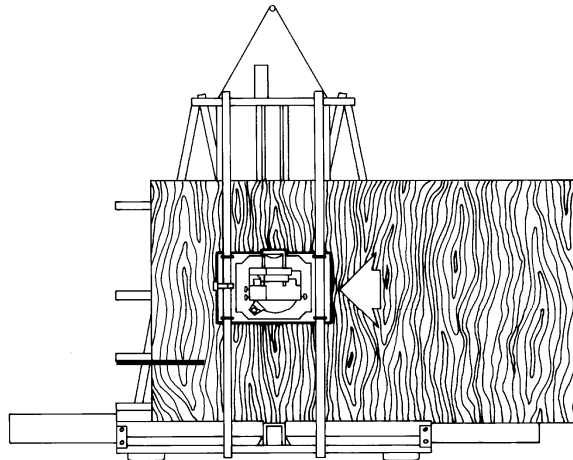


Figure 47: Saw Motor in Rip cutting Position

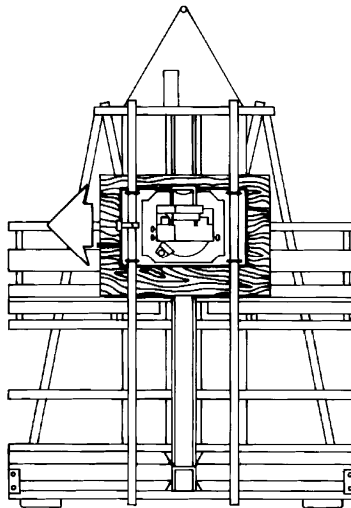


Figure 48: Rip cutting From the Right Using Optional Midway Fence
(work must extend beyond saw carriage at least 4" (100mm))

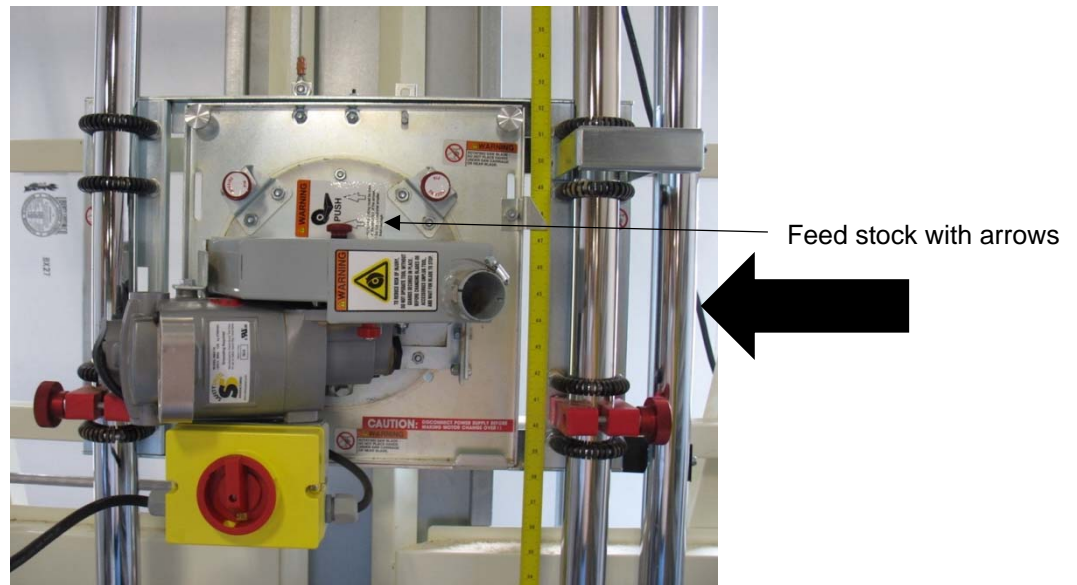


Figure 49: Rip cutting motor position (SR5U shown)

10. When making cuts that are less than 1 inch, the chatter preventer (guard) (located inside the blade guard) must be resting on the work piece, not on the cut-off piece. See Fig. 50 & 51. If it is not positioned this way, it will jam the work piece and prevent the carriage from continuing through the cut. **If the saw jams, turn the saw OFF** and wait for the blade to stop. Then back the saw out of the cut before continuing with the cut.

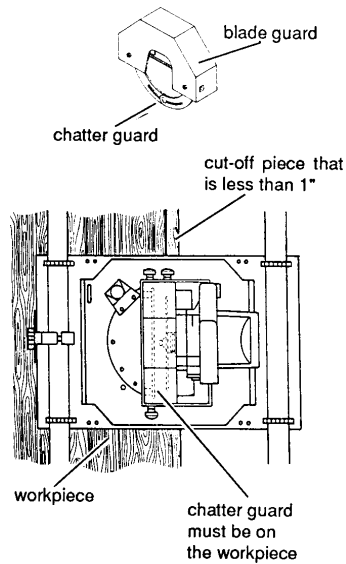
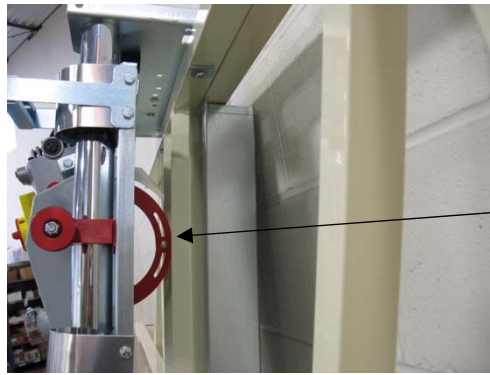


Figure 50: Chatter Preventer (guard) in position for crosscutting (SR5 shown)



Chatter Preventer (guard)

Figure 51: Chatter Preventer (guard) in position for crosscutting (SR5U shown)

Basic Operating Controls and Functions of Routers

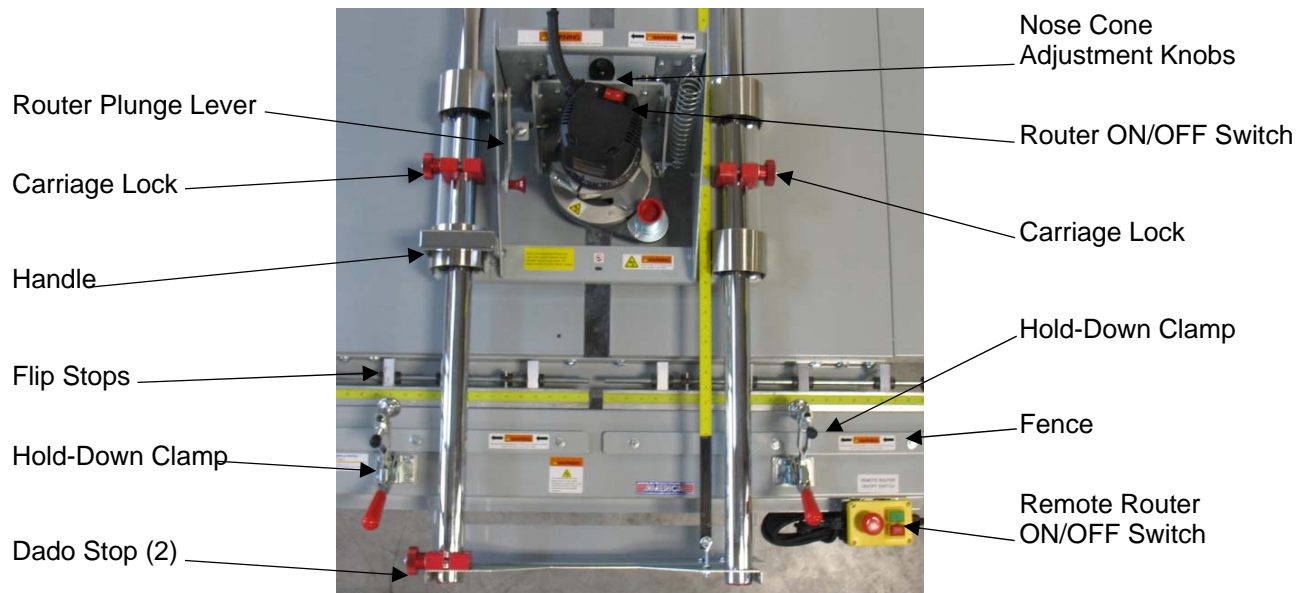


Figure 52: Basic Router Operating Controls, TR2 shown

Operating Procedure: Routing (3400, SR5 series & TR2)

Routing is accomplished with the Router Carriage and a router bit for the proper cut. This can be accomplished using either a vertical router (e.g. SR5 or 3400) or horizontal router (e.g. TR2). The router can be pulled across stock for vertical cuts or the router can be locked in place and stock fed through for horizontal routing.



To reduce the risk of injury, do not place your hands on or under the carriage or in the path of the saw blade/bit.



Unplug Router before adjusting.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

1. With bit installed, (see Changing Bits page 24), set proper depth of cut.
2. Adjust bit depth by loosening motor clamp or flipping open lever clamp (depends on model).
3. Rotate depth collar or depth knob (depends on model) to extend bit past nose cone to desired depth of cut.
4. Tighten/Lock clamp for router base and motor.
5. Adjust router to working position by lowering Plunge Lever and locking in place by pushing down firmly.

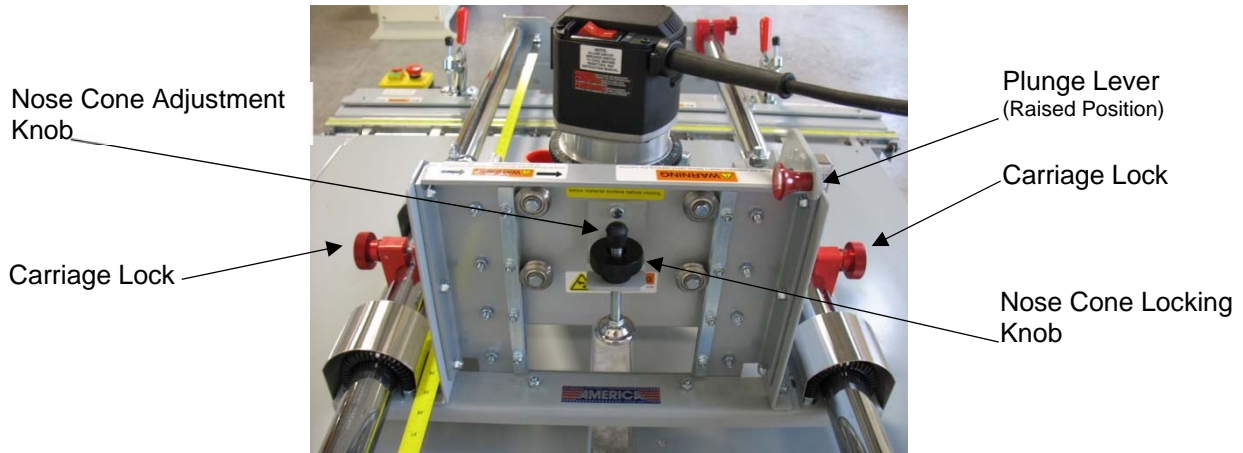


Figure 53: Nose Cone Adjustment (shown from back of router carriage)

6. Loosen the Nose Cone Locking knob located at the back of the Router Carriage.
7. Using the Nose Cone Adjustment Knob, adjust the Nose Cone Sub Base so it lifts approximately 1/8" when the router is pulled into the work piece (with the Plunge Lever lowered). This adjustment is made from the back of the Router Carriage, on all models.

NOTE: Failure to make this adjustment will result in damage to the router carriage and inconsistent depth of cut!

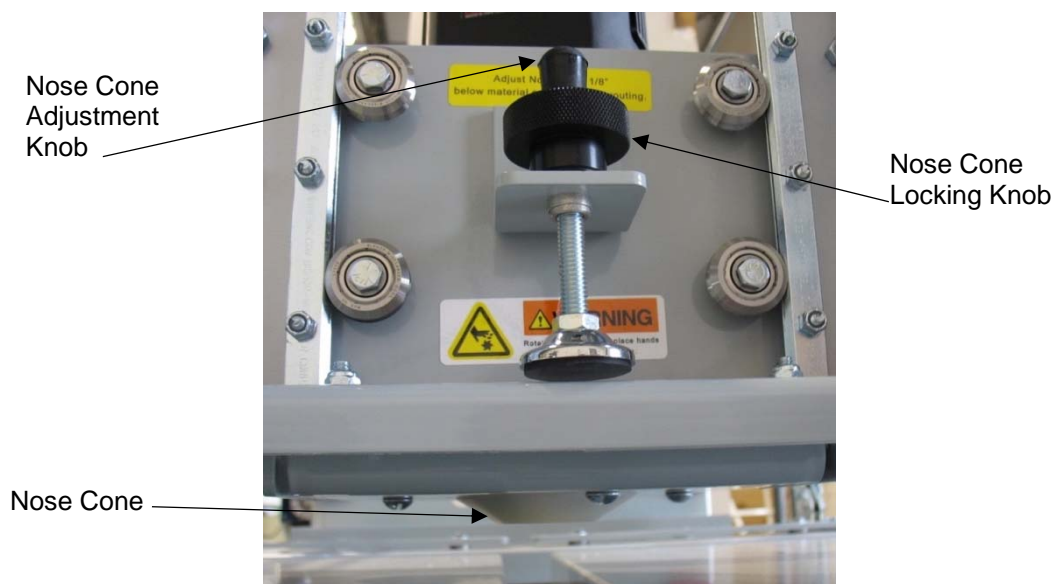


Figure 54: Nose Cone Adjustment

8. Tighten the Nose Cone Locking knob at the back of the Router Carriage.
9. Raise router using the Plunge Lever.
10. Move Router Carriage either to top of Guide Tubes for vertical cuts (see Vertical Routing section) or position along Guide Tubes and lock into position using both Carriage Locks and both hold-down clamps (see **Horizontal Routing** section).
11. Connect Power to Router.
12. Lower router with Plunge Lever.
13. Start router and make cuts.

Operating Procedure: Cross Routing

Cross Routing is a vertical cut (e.g. V-Grooving, Dadoing, Edge Cutting, etc.) that is usually accomplished from the top to the bottom of a work piece with vertical or horizontal routers. Some applications, such as V-Grooving and Dadoing can be done in both directions when stock is securely clamped and router bit **DOES NOT** completely cut through stock.

NOTE: Included with all Router models are two Dado Stops. These can be attached to either Guide Tube (Pg. 13 & 14, Fig. 6 & 7) and the left Guide Tube on the TR2. They can be used to limit Carriage travel in either direction for Stopped Dados or stopped cuts. The bottom Dado Stop may need to be removed for certain through cuts to be completed.

1. With router turned OFF, confirm correct bit is installed and set to the correct depth (see **Routing**).
2. Move the Router Carriage to the top (away from fence or material rollers) of Guide Tubes.
3. Insert stock to be routed into frame or stand.
4. Clamp stock using the included hold-down clamps.

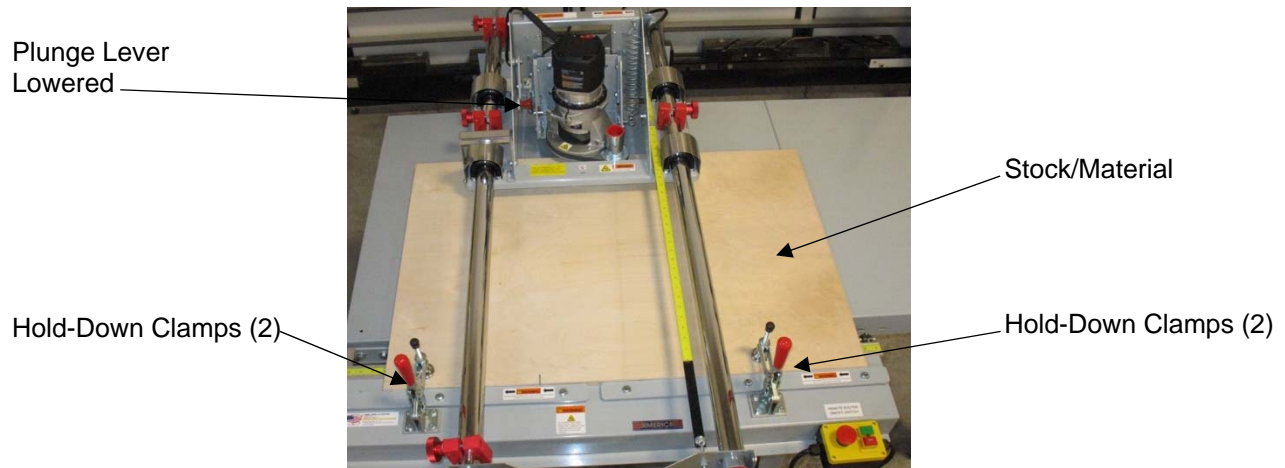


Figure 55: Cross Routing, TR2 shown

5. Lower Plunge Lever on Router Carriage.
6. Start Router and with both hands on Carriage, slowly and smoothly pull Router through cut. Be careful not to force bit through the work piece.
7. Turn Router OFF, Raise Plunge Lever, wait for bit to stop spinning and remove material.
8. Return Carriage to the top of the Guide Tubes and Lock Carriage.

Operating Procedure: Horizontal Routing

Horizontal Routing is a horizontal cut (e.g. Ploughing, Grooving, V-Grooving, Rip Cutting, etc.) that must always be done from side-to-side of the work piece when using routers.

1. With router turned OFF, confirm correct bit is installed and set to the correct depth (see **Routing**).
2. Move Router Carriage to desired location and tighten both Carriage Locks.
3. Lower Router using Router Plunge Lever.
4. Start Router and push stock Slowly and Smoothly from Right to Left following the arrows on the Carriage.



To reduce the risk of injury, horizontal routing must always be done with the direction of the arrow on the saw/router.



To reduce the risk of injury, do not place your hands on or under the carriage or in the path of the saw blade/bit.

MAINTENANCE



To reduce the risk of injury, always unplug the tool before doing any maintenance. Never disassemble the tool or try to do any rewiring to its electrical system. Contact a qualified electrician for electrical repairs. Always follow lockout/tag out procedures when servicing electrical equipment.

General Maintenance

Keep the tool in good repair by adopting a regular maintenance program. Before each day's use, examine the general condition of the tool, and inspect the guards, switches and power cord for damage. Check for loose screws, misalignment, binding of moving parts, improper mounting, broken parts, and any other condition that may affect safe operation. If abnormal noise or vibration occurs, turn the tool OFF immediately and have the problem corrected before further use. Do not use a damaged tool. Tag damaged tools **"DO NOT USE"** until repaired (see **"Service"** & **"Repairs"**).

Cleaning



Unplug Saw/Router before cleaning.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

Daily, clean all dust and debris from the vents in the motor housing.

Keep the handles clean, dry and free from oil and grease.

Use only mild soap and a damp cloth to clean the tool, because certain cleaning agents and solvents are harmful to plastics and other insulated parts. Some of these harmful agents include: gasoline, turpentine, lacquer thinner, paint thinner, chlorinated cleaning solvents, ammonia, and household detergents containing ammonia. Never use flammable or combustible solvents around tools.



To reduce the risk of injury, electric shock, and damage to the tool, never immerse the saw or router in liquid or allow a liquid to flow inside it.

Maintaining the Motor



Unplug Saw/Router before inspecting.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

Under normal conditions, motor maintenance is not necessary until the brushes need to be replaced.

Every six months:

- Inspect the brushes, and replace as necessary.
- Mechanically inspect and clean the gears, spindles, bearings, housing, etc.
- Inspect the switch, cord, armature, etc. for cracks or other issues.
- Test to assure proper mechanical and electrical operation.

Lubricating the Guides

The carriage should move smoothly up and down the guide tubes or rails. However, if the guides become caked with dust or debris, the carriage may get stuck or it may not slide smoothly. Periodically clean the guides with a damp cloth, following the directions under “**Cleaning**” above. Then use a dry lubricant such as a spray silicone. Other lubricants cause dust and debris to collect on the guides and contaminate the bearings.

SERVICE

Repairs

If your tool is damaged, call your purchasing dealer or Safety Speed at **(763) 755-1600** for technical advice or for the name of a dealer near you who can service your machine.

Replacement Parts

Refer to the separate replacement parts information provided with the machine. Parts diagrams and manuals can be found at www.safetyspeed.com or by calling SSM # **(763) 755-1600**.

NOTE: To save time have your Model Number and Serial Number available when calling for parts and accessories. See inside cover of this manual or model/serial label on top/left of saw/router frame (Pg. 2, Fig. 1 & Pg. 5, Fig. 3).

Alignment

The machine is aligned at the factory to a tolerance of:

- $\pm 1/64"$ (.4mm), on Models SR5, SR5U, SR5A, SR5UA, 3400 & TR2

Realignment is only required if the saw/router is mishandled or abused, or if the motor or a roller is replaced.

Aligning SR5, SR5A, SR5U, SR5UA & 3400

Alignment consists of four steps that must be done in the following order (these steps are explained in detail below):

1. Adjust the blade/bit so it is parallel with the guides.
2. Adjust the blade/bit so it will be perpendicular to the work piece.
3. Adjust the guides so they are perpendicular to the rollers.
4. Align the rollers.

Constructing an Alignment Tool (all models except TR2)

For maximum accuracy, construct a test square to check the full movement of the saw/router.

See Fig. 56. Construct the square using a 6-ft (1830mm) metal ruler and two 4-ft (1220mm) metal rulers. (Using the 3' (915mm), 4' (1220mm), and 5' (1520mm) measurements assures squareness.) Drill holes and attach the rulers with pop rivets or small nuts and bolts.

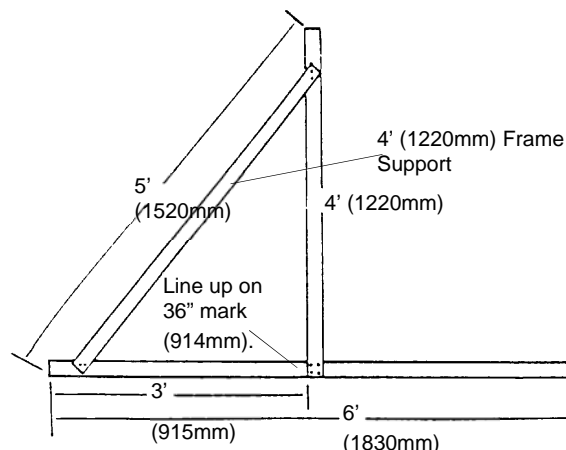


Figure 56: Field Alignment Tool

Use the 6-ft (1830mm) ruler to check rollers for square. Use the 4-ft (1220mm) ruler to check guide tubes (or rails) for square. The tool also can be used as a giant square for layouts.

Step 1: Adjust the Blade Parallel to the Guides (All models except 3400 & TR2)

The blade must move parallel to the guides, or tail burning may occur and the kerf will be wider than the set of the blade. Make the following adjustment only if the blade appears to be out of alignment.

To check the blade parallelism:

1. If the blade “heels”, or leaves burn marks on the cut, position the carriage for a crosscut and make a sample cut. Check both sides of the cut to determine which side of the blade is causing the problem (you will need this information for adjusting the blade).

To adjust the blade parallelism:



Unplug tool before making adjustments.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

1. Position the Adjustment Tool on the rollers. Lower the carriage so the Adjustment Tool overhangs the blade.
2. Place the Adjustment Tool against the blade. The entire face of the blade should contact the Adjustment Tool. If it does not, then the blade is not parallel to the work piece and you should:
 - a. Loosen (but do not remove) the four hex-head nuts holding the indexing pin assembly (Fig. 57, #24).
 - b. If burn marks appear on the **left side** of the work piece, rotate the saw slightly clockwise until the entire face of the blade contacts the Adjustment Tool.
 - c. If burn marks appear on the **right side** of the work piece, rotate the saw slightly counterclockwise until the entire face of the blade contacts the Adjustment Tool.

Make only a slight adjustment at a time.

3. Securely tighten the four hex nuts holding the index pin assembly or assemblies.
4. Make a sample cut and adjust if necessary.

Step 2: Adjust the Blade Perpendicularity (all models except 3400 & TR2)

To adjust for perpendicularity:

1. If the tool does not cut at 90° to the surface (face) of the work piece, loosen the two motor mount nuts (Fig. 57, #25).
2. Loosen the adjusting screw lock nut (#27). Tighten or loosen the adjustment screw (#26) depending on the angle adjustment required. Make only a slight adjustment.
3. Retighten the lock nut (#27); making sure the screw is touching the plate.
4. Retighten the motor mount nuts (#25). Make a test cut and readjust if necessary.

NOTE: For perpendicular cuts, confirm saw motor is touching the factory-set adjustment screw (#26).

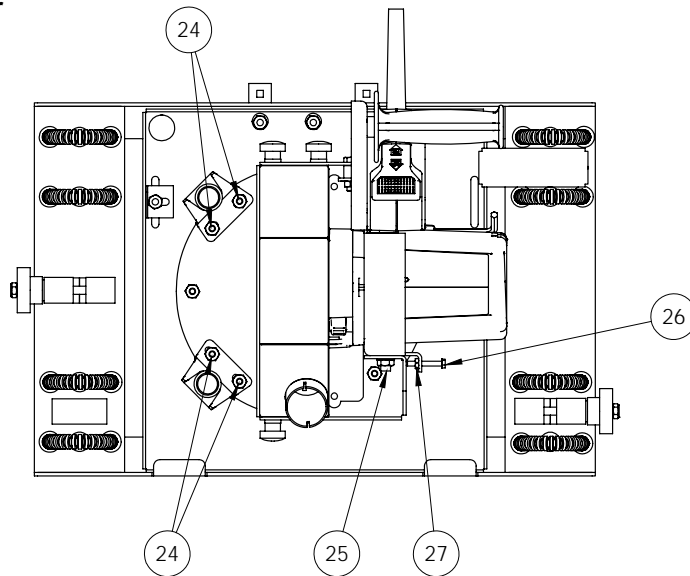


Figure 57: Adjusting Blade Perpendicularity (SR5 & SR5A) shown)

Step 3: Align the Guide Tubes (all models except TR2)



Unplug tool before making adjustments.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

If the tool does not cut at 90°, the guides may not be perpendicular to the rollers or fence.

To check the guide alignment:

1. Remove the blade guard to expose the blade/bit. Mark a tooth to use as a reference. If you are using a high-speed steel blade, mark a tooth that points toward the edge of the **Alignment Tool** (described above).
2. Clamp the Alignment Tool to the roller assembly.
3. Pull the carriage down slowly until the marked reference tooth just touches the vertical edge of the Alignment Tool. Continue to pull the carriage down: if the blade/bit does not contact the square, or if the blade/bit binds on the square, the guides are not aligned.

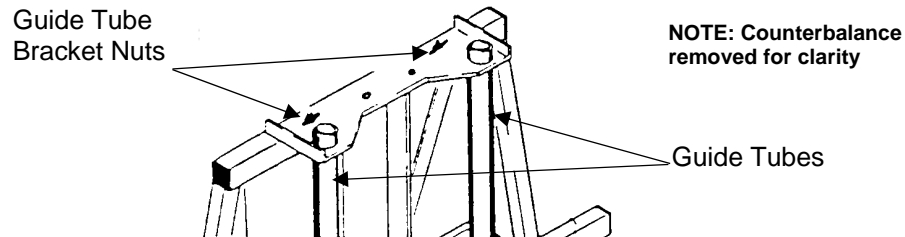


Figure 58: Aligning the Guide Tubes

To align the Guide Tubes:

1. Remove set screw, which indicates original position of guide tubes. Loosen the guide tube bracket nuts (Fig. 58), but **do not remove** the bracket. Using a dead blow mallet, strike the bracket on the side and in the direction you wish the guides to go.

NOTE: Do not strike the guide tubes.

NOTE: Only adjust the top of the Guide Tubes

2. Recheck that guide tubes are square to rollers, using the procedure outlined above. Readjust if necessary.
3. Securely retighten the guide tube bracket nuts.

Step 4: Align the Rollers (all models except TR2)

To check the roller alignment:

1. Remove any Frame Extensions (reattach them after completing all alignment steps).
2. Remove or retract the Frame Stand, if used. Lay the tool flat so the roller nuts are easily accessible. With proper care, you can place the tool on a table with the guides up.
3. The two outermost rollers are fixed, so adjust all other rollers to them. Lay the 6-ft (1830mm) edge of the Alignment Tool (see above) across the rollers to verify alignment: all rollers should contact the edge. If a roller is “high” or “low” to the edge of the Alignment Tool, align the rollers according the instructions below.

To align the rollers:

1. Clamp a straightedge (at least 5-ft (1520mm) long) to the top of the rollers so that it lies flat on the frame and against the outermost rollers. Position the clamps above the outermost roller.
2. With the straightedge securely clamped, rotate each roller to be sure that it neither jams nor has excessive clearance from the straightedge. If a roller runs “tight” or “loose” to the straightedge, loosen the roller nut. The roller nuts are torqued and require at least an 18-in (458mm) breaker bar to loosen them.
3. All the rollers except the outermost are mounted on an eccentric center hub. Turning a roller when the roller nut is loose will change the position of the roller. You may have to lift the roller **Face Plate** (Pg. 13, Fig. 6) to rotate the eccentric hub. Turn the roller until it contacts the straightedge, being careful not to bend or bow the straightedge when repositioning the roller.
4. Tighten the roller nut securely; making sure the roller does not change position.
5. Repeat this process as needed for any remaining rollers. **NOTE:** After replacing an **outside** roller, repeat **Step 2** as needed. Reposition the Frame Stand.

Aligning the TR2

1. Make certain router is turned OFF and unplugged

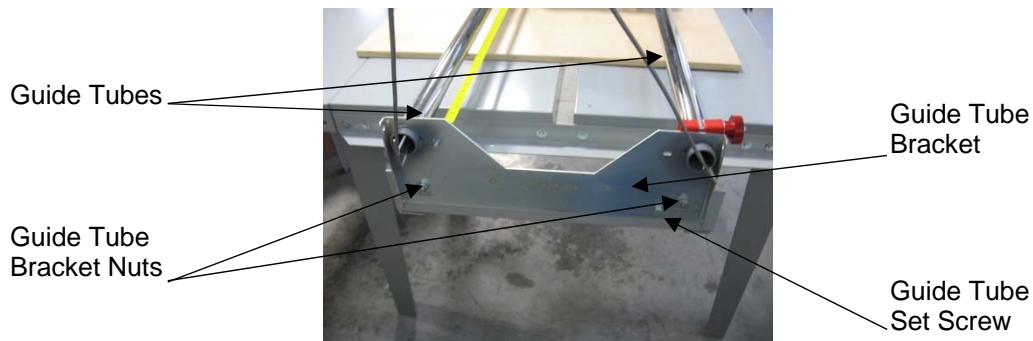


Unplug tool before making adjustments.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

2. Install a router bit in router.
3. Place a square along fence, with the longer side (2' min.) on the table, parallel to the guide tubes.
4. Rotate router bit so shank of router bit can touch the square, not the cutting edge of the bit.
5. Move router carriage along square making certain the router bit shank touches the square along the travel of the router.

6. If the router bit body pulls away from the square or pushes the square away as the router carriage is moved, adjustment is required.
7. Loosen the two bolts securing the guide tube bracket to the frame (Fig. 59), do not remove.



8. Remove the lock bolt in the guide tube bracket (Fig. 59).
9. Tap Guide Tube Bracket with a hammer to align guide tubes.
NOTE: DO NOT tap the guide tubes!
10. Recheck alignment with square.
11. Tighten Guide Tube Bracket Nuts.
12. Install and tighten Guide Tube Lock Bolt.
13. Confirm alignment with the square, make a test cut. Readjust if necessary.

ACCESSORIES

Safety Speed offers several accessories for the vertical panel saws/routers and horizontal routers.

Tools Required for Accessory Installation

- **9/16" wrench;** Frame Stand, Quick Stop, Stop Bar, Hold Down Bar, Extension Tables
- **5/8" wrench;** Fixed Stand
- **3/4" wrench;** Frame Wheels
- **9/16" deep socket;** Fixed Stand
- **Center Punch;** Stop Bar
- **7/32" drill bit;** Stop Bar, Quick Stop
- **Drill & Bits;** Stop Bar, Quick Stop

Frame Wheels

The Frame Wheels Accessory allows vertical saws/routers to be rolled from one location to another in the shop. It includes two wheels and mounting fasteners. (Except TR2).

Installation:



Unplug tool before making adjustments or installing accessories.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

Bolt one wheel to each end of the frame as shown in Fig. 60 & 61.

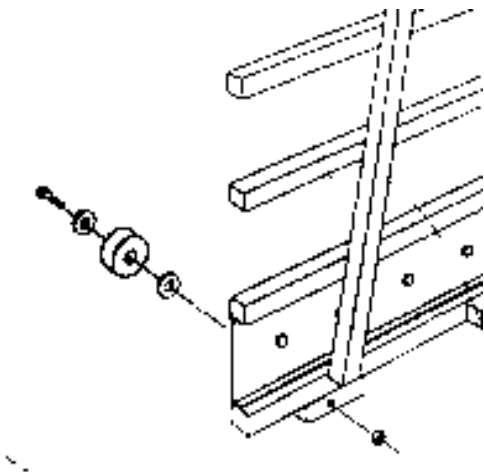


Figure 60: Installing the Wheels Accessory (viewed from rear of frame)



Figure 61: Wheels installed

Frame Stand

The Frame Stand Accessory allows vertical saws/routers to be freestanding in the shop. It includes two long angle-steel supports that attach to the top of the frame, one bracket that attaches to the bottom of the frame, and U-bolts or other fasteners for mounting them. Slightly different fixed Frame Stands and attachment methods are required for each saw model. (Except TR2).



Unplug tool before making adjustments or installing accessories.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

If the tripod stand has not been purchased, the panel saw must be located against a wall, or other solid vertical surface. Blocking must be attached to the wall which will allow the upper right and left corners of the machine frame to be supported without the pulley wheel (counterbalance/counterweight) and box assembly (and dust hose roller assembly, if purchased) touching the wall. The panel saw frame should stand at approximately 15 degrees, for optimum saw performance. This will place the front of the guide tubes at the floor approximately 30" away from the wall (varies with model), or blocking supports. At this point, the top of the machine should be secured to the back supporting wall by means of a lightweight chain or security rope. This will prevent the machine from being pushed over from behind.



Do not use banding to attach the panel saw to the support wall.



Do not attempt to lift or lean machine without help of an assistant.

Installation:

Note: Various mounting positions of fixed frame stand depending on saw/router model.

See instructions included with frame stand and next page for reference pictures.

1. With the assistance of a helper, lean face of saw frame toward wall. Make sure saw is secure or held in place during installation of fixed stand and NOT resting against counterbalance/counterweight.
2. Attach short bracket to bottom of saw frame with one U-bolt through two matching holes with two washers and nuts. See next page and instructions with fixed stand for reference.
3. Align holes in both angle iron supports with single hole of short bracket, using one bolt, two washers and one nut. Finger tighten only at this time.
4. Separate the upper ends of the two angle iron supports and use one U-bolt, two washers and two nuts to attach to the left, upper side of frame, finger tighten only. See next page and instructions with fixed stand for reference.
5. Attach remaining angle iron support to upper, right side of saw frame using one U-bolt, two washers and two nuts, finger tighten only.
6. After establishing proper saw angle (see paragraph above) tighten nut that attaches two angle iron supports to the single short bracket. Tighten the nuts on both U-bolts.
7. With all hardware tight, slowly lean saw back on the fixed stand and make certain the machine and stand are secure.



Figure 62: Fixed Stand SR5U shown from back



Figure 63: Fixed Stand SR5U shown from back/bottom

Table Extensions (TR2)

The Table Extension accessory adds 20" (500mm) to one side of the tool frame. It includes one extension table,

two legs and fasteners. It can be mounted to either side of the TR2. Multiple Table Extensions can be added. Extensions are recommended for routing 8-ft (2440mm) or longer sheets.

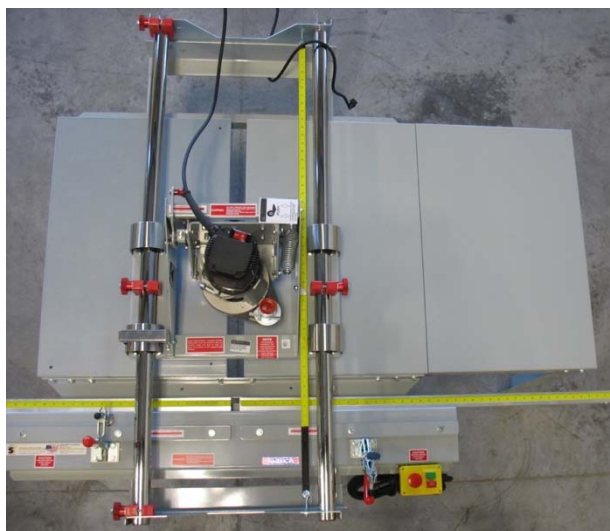


Figure 64: Table Extension TR2

Installation:



Unplug tool before making adjustments or installing accessories.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.



Figure 65: Table Extension installation

1. Bolt two legs to the inside of Table Extension on the side away from the machine's outermost legs, using included hardware. Finger tighten. See Fig. 65.
2. Remove two bolts from each of the two legs on the main machine table.
3. Attach Table Extension to side of main machine table using the same holes and hardware in Step 2.
4. Position extension table flush with existing table, level and tighten all bolts.

Frame Extensions

The Frame Extensions Accessory adds 20" (500mm) to each end of the tool frame. It includes two extensions and fasteners. (Except TR2).

Extensions are recommended for cutting panels longer than 10 ft. (3040mm).

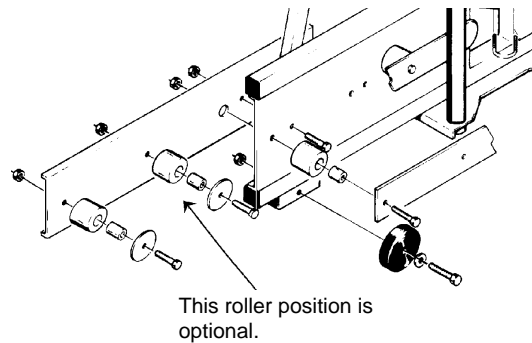
Installation:



Unplug tool before making adjustments or installing accessories.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

Attach the extensions to the back of the frame as shown in figure 66. It is not necessary to remove any parts from your existing machine to install the extensions.



**Figure 66: Installing the Frame Extensions
(viewed from rear of frame)**

Dust Collection Kits

Dust Collection Kits are available for all models and recommended if the tool will be used in an enclosed area. They include discharge tubing, hose and a hose roller system to hold the outboard end of the tubing.

The dust hose must be attached to an SSM Vacuum or to any high-pressure vacuum source that provides at least 90" to 110" of static pressure and 100 CFM. All machines come standard with the clear hose connection (Dust Tube) on the blade guard/bit guard.

NOTE: Saws include a slotted, clear dust collection fitting (Dust Tube), which directs chips and dust into the dust collection kit and vacuum (Fig. 67). The slot must be centered on saw blade and not touch blade. Then tighten clamp.



Figure 67: Dust Tube, Saws

NOTE: Routers include a clear dust collection fitting (Dust Tube), which directs chips and dust into the dust collection kit and vacuum (Fig. 68).



Figure 68: Dust Tube, Routers

Installation:

Refer to figures 67 - 70.



Before beginning installation, disconnect the power supply to the motor, raise the carriage to the top of the guides, and lock the carriage in place with then carriage lock. Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.



Be sure the tool frame is securely supported and cannot be tipped over during this installation procedure. An additional person should support and stabilize the frame at all times during the installation.

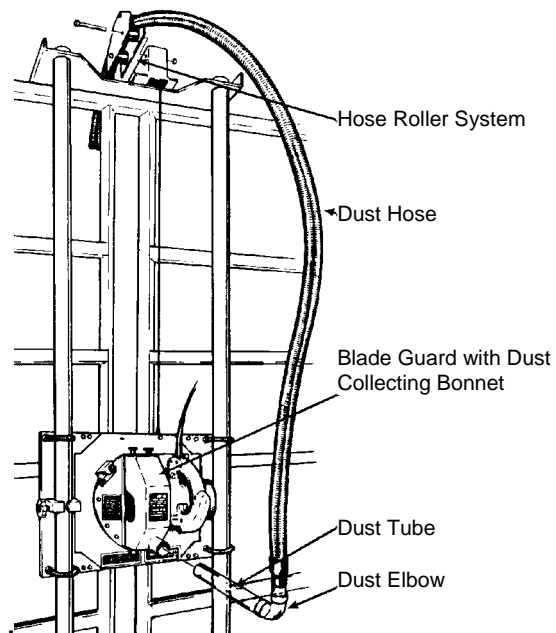


Figure 69: Installing the Dust Collection Kit on a Saw

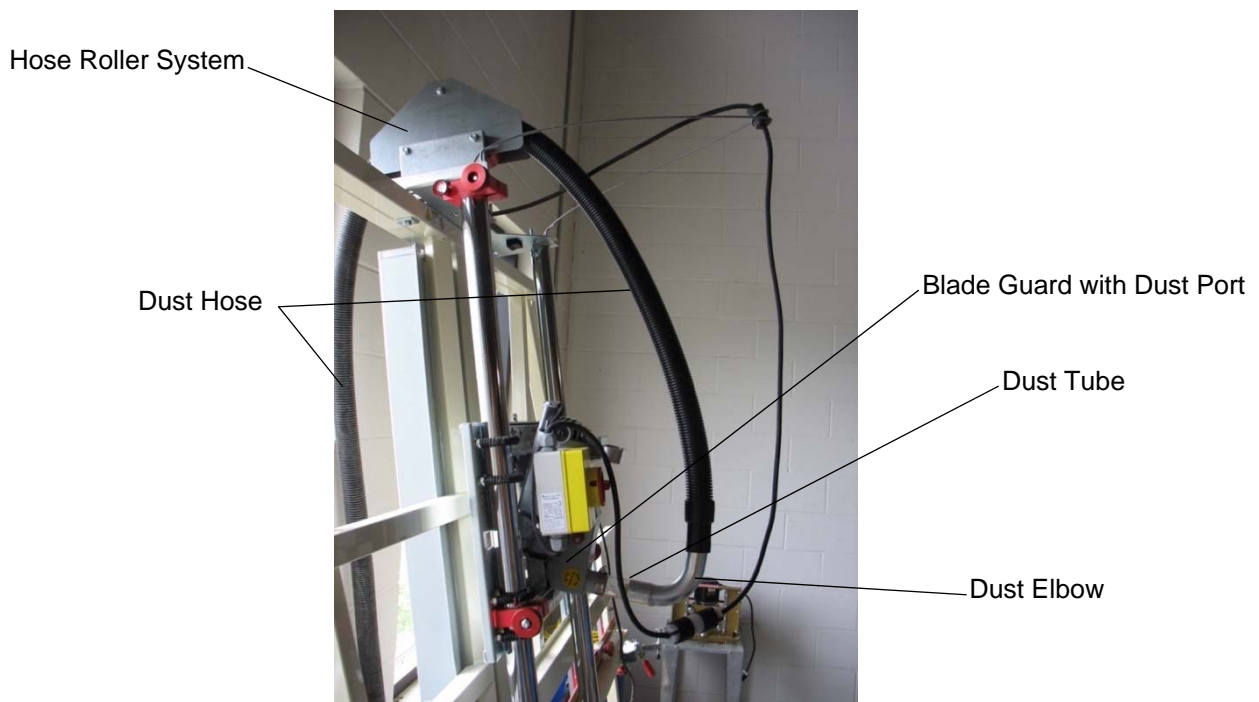


Fig. 70: Installed Dust Collection Kit SR5U shown

1. Remove the plastic blade guard dust plug by loosening the hose clamp and pulling dust plug from dust cover.
2. Insert the clear plastic inner tube into the blade guard, and align the tube's slot with the inner tab. Slide the tube further in (the slot will fit around the blade), until it is as close to the work piece as possible. Tighten the clamp to hold the inner tube in place.

3. Mount the hose rollers to the top of the frame.
4. Lay the 1½" (40.6mm) black flexible vacuum hose across the rollers, with one end to the front of the frame and one end to the back of the frame.
5. Connect the hose end that is toward the back of the frame to the vacuum (see above specifications).
6. Connect the hose end that is toward the front of the frame to the narrow end of the steel tube elbow.
7. Connect the tapered end of the steel tube elbow to the outside of the plastic dust tube.

Operation

Always turn the vacuum source on before starting the saw and turn it off when finished cutting.

Stop Bar

The Stop Bar Accessory fits between the lower pair of horizontal frame members. It provides preset flip stops for repetitive cuts. Six or eight flip stops are included (depending on the model), and additional stops can be added. (Except TR2).

Installation:



Before beginning installation, disconnect the power supply to the motor, raise the carriage to the top of the guides, and lock the carriage in place with the lock knob.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.



Be sure the tool frame is securely supported and cannot be tipped over during this installation procedure. An additional person should support and stabilize the frame at all times during the installation.

1. Position the stop bar in the bottom left side of the frame (Fig. 71) resting against the bottom horizontal arm and the vertical back supports.

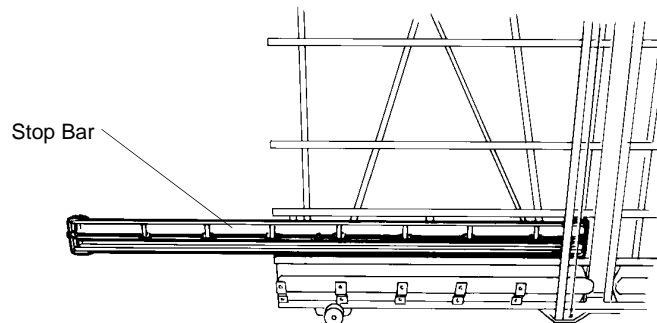
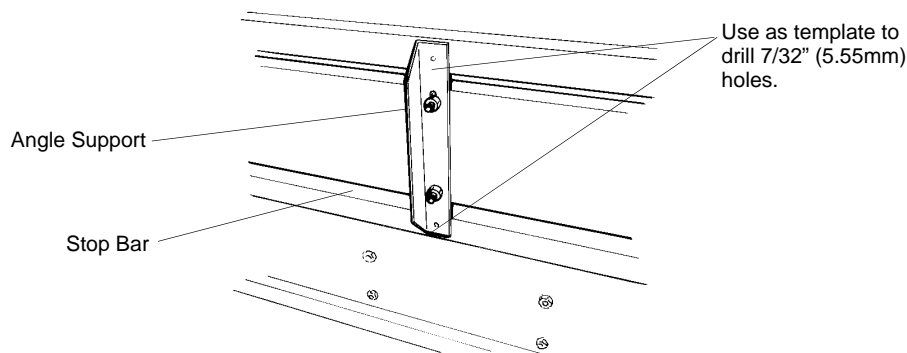


Figure 71: Installing the Stop Bar

2. Working from the front of the tool, attach the three angle supports (Fig. 72) to the back of the Stop Bar, using six 5/16 x 3/4" (7.9mm x 19.05mm) hex-head cap screws and nuts. Tighten the nuts securely.



**Figure 72: Installing the Stop Bar
(viewed from the rear)**

3. Push the stop bar housing as far toward the center of the tool as possible.
3. Working from the back of the machine, use the angle supports as templates to drill six 7/32" (5.55mm) holes (two per bracket) in the horizontal tubes of the frame.
4. Insert and tighten six self-tapping 1/4- 20 (6.35mm) hex-head screws to secure the angle support brackets to the frame tubes.
5. Measure out from the blade and adjust the stop bar ruler by sliding it left or right inside its aluminum extension.

Operation

Set the individual flip stops to the positions desired for repetitive cuts: loosen the collars with the provided Allen wrench, slide the collars to the desired position, and retighten them.

Multiple cuts can be made by flipping the stops up or down to position the work piece at the proper distance from the blade or bit. When setting multiple stops, remember to account for the material lost to the blade kerf.

Quick Stop

The Quick Stop Accessory provides an easy method of setting an exact repeatable cut length for crosscuts. It consists of an aluminum angle extrusion with movable tape measure, a large aluminum stop block with threaded lock knob, and mounting brackets and screws. The Quick Stop can be attached to any horizontal frame member, on any model saw/router. Standard Quick Stops are factory-drilled to mount on the left side of the frame; right-hand Quick Stops are available by special order. (Except TR2)

Installation:

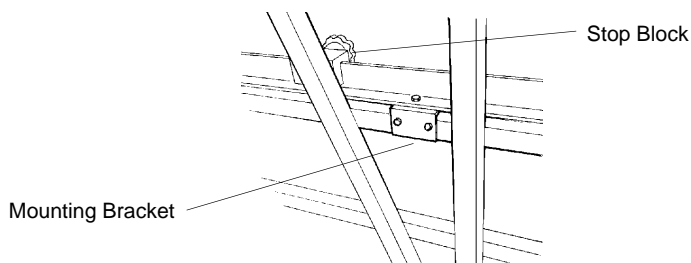


Before beginning installation, disconnect the power supply to the motor, raise the carriage to the top of the guides, and lock the carriage in place with the lock knob. Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.



Be sure the tool frame is securely supported and cannot be tipped over during this installation procedure. An additional person should support and stabilize the frame at all times during the installation.

1. Attach the two mounting brackets to the long aluminum angle bar of the Quick Stop, as shown in figure 73, using the screws provided.



**Figure 73: Installing the Quick Stop
(viewed from rear of frame)**

2. Set the assembled angle bar on the next-to-lowest horizontal bar on the left side (as you are looking at the frame in Fig. 74 & 75). The standard ruler will be covered after installing this accessory.

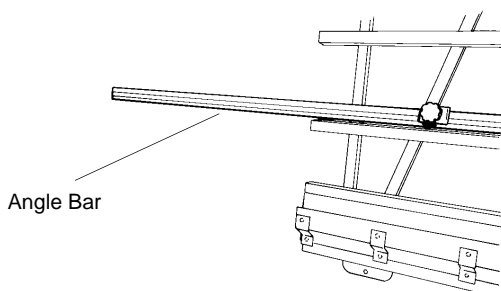


Figure 74: Installing the Quick Stop

3. Push the Quick Stop as far toward the center of the tool as possible.
4. Using the mounting bracket holes as a template, drill four 7/32" (5.55mm) holes in the tool frame.
5. Attach the brackets to the frame, using four 1/4-20 (6.35mm) self-tapping hex-head screws.
6. Measure from the blade and adjust the Quick Stop measuring tape by sliding it in the angle extrusion.

Operation

1. Position the stop block at the desired cut length, as shown by the Quick Stop measuring tape, and secure the block with the lock knob.
2. Raise the carriage to the top of the guides.
3. Slide the work piece behind the carriage, and hold it firmly against the stop block.



Never reach behind the carriage!

4. Cut the work piece with a smooth, continuous down stroke of the carriage.

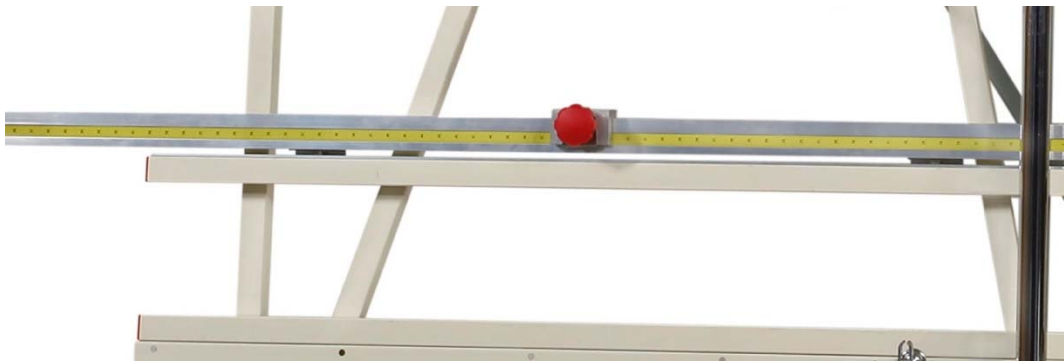


Figure 75: Quick Stop installed

Midway Fence

The Midway Fence Accessory is a removable horizontal work piece support that mounts halfway up the tool frame. It allows narrow work pieces to be worked at waist height. The fence consists of left and right fixed brackets that mount to the frame, and removable supports for each side. The accessory contains the components shown in figure 76.

NOTE: Standard equipment on all SR5 models, optional on 3400, not available for TR2.

Installation:



Unplug tool before making adjustments or installing accessories.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

NOTE: All hex nuts furnished with this accessory are **lock** nuts. During pre-assembly, **do not** completely tighten these nuts.

1. Lay out the parts, shown in figure 76, on a horizontal surface (table or bench) for pre-assembly. Note that one end of each fence extrusion is cut at a 45° angle. The units should be pre-assembled so that these beveled ends will fit against the center of the tool frame at final assembly.

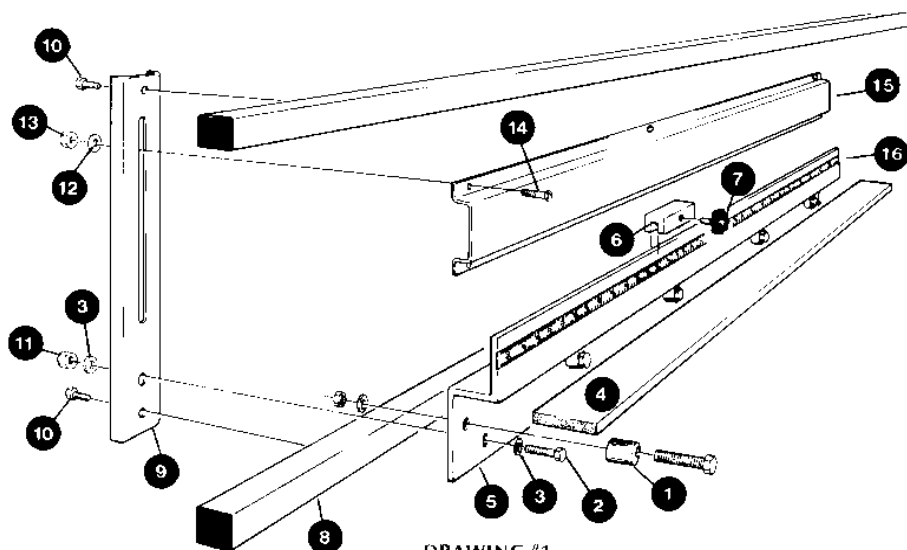


Figure 76: Pre-assembly of Midway Fence

- Set the complete right-hand fence assembly onto the tool frame as shown in figure 77.

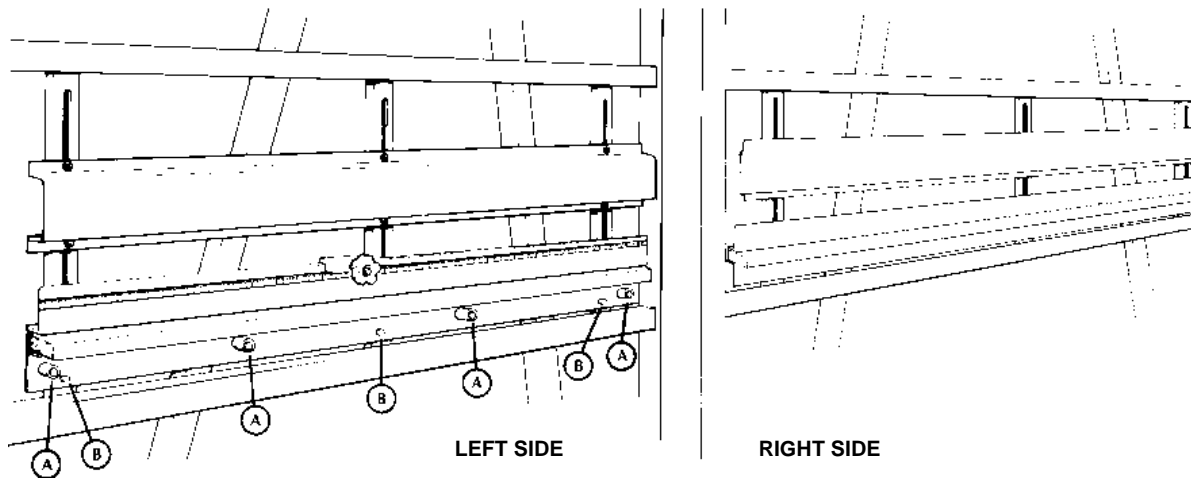


Figure 77: Mounting the Midway Fence



Fig. 78: Midway fence installed

- Tip the top of the rear support brackets (#9 in Fig. 76) under the **upper** horizontal frame member (#8), raise the fence, and push the lower ends of the rear support brackets down behind the **lower** horizontal frame member. The nuts may have to be loosened slightly to perform this step.
- Tap the entire fence system toward the center of the tool frame, and align (as closely as possible) the 45° angle of the aluminum extrusion (#5) with the 45° angle of the vertical tube at the center of the frame. To assure a neat appearance, be sure the rear support brackets (#9) are flush top and bottom with the machine frame tubes, and that they are at a 90° angle to the horizontal machine frame tubes.
- Double-check the position of the complete fence assembly. Using the holes in the rear support brackets as a template, drill six 7/32" (11.11mm) mounting holes in the machine horizontal frame tubes, and secure with six self-tapping screws.
- Repeat Steps 2 through 5 on the left-hand side of the frame.
- Mount the wooden fence sections (#4), with the 45° angle ends toward the center of the machine, between the aluminum extrusion sections and the cam-type spacers (#1). When not in use, the two wooden fence sections can be stored in the material support channels (#15) on each side.
- The friction fit of the wooden fence sections between the aluminum support bracket and the cam-type spacers can be adjusted by turning the bolt heads with a wrench. This fit can be readjusted at any time without realigning the fence system.
- Align the fence system (see below).

Fence Alignment

1. Disconnect the power supply to the tool.
2. Remove the blade guard.
3. Slightly loosen the bolts that secure the aluminum extrusion (#5, Fig. 76) to the rear support brackets (#9), to allow the extrusion to be moved up or down by tapping it with a mallet.
4. Tap the extrusion to align it evenly, 1/4" (6.35mm) above the **lower** horizontal frame member (#8).
5. Place a carpenter's square on the wood fence, with the longer side on the fence and the shorter side against the saw blade. Raise and lower the carriage to check if the saw blade maintains alignment with the edge of the square. Gently tap the **outside** edge of the fence system to bring the wooden fence and the carpenter's square into alignment with the saw blade travel.
6. Reinstall the blade guard and reconnect the power supply.
7. Using a sample panel approximately 18" (458mm) wide and 40" (1016mm) long, and a freshly sharpened saw blade, trim 1" (25mm) off the end of the panel.
8. Remove the panel from the fence. Turn it around, **keeping the same edge down**. Trim 1" (25mm) off the other end.
9. Measure the top and bottom of the piece. When the measurements are the same, or within the tolerance of the machine, tighten all securing bolts.
10. To align the left half of the fence, place a 6-ft (1830mm) or 8-ft (2440mm) straightedge on the right-hand fence. Move it to the left until it extends the full length of the left wooden fence, 48" (1220mm). Clamp the straightedge to the frame of the machine. Carefully adjust the left aluminum extrusion until the top of the wooden fence gently touches the bottom of the straightedge along its entire surface. Retighten all securing bolts.

To adjust the rulers, measure out from the saw blade and place a vertical pencil mark at 24" (610mm). Place both thumbs on the face of the ruler, and slide the ruler to the right or left to the proper location. Test-cut a piece of scrap material to check the ruler position.

Hold-Down Bar

The Hold-Down Bar Accessory consists of a vertical tube and several spring hold-down arms that help hold any thin, flexible material for chip-free, accurate cutting. It accepts material up to 3/4" (19mm) thick, and can be quickly removed without wrenches for cutting thicker material. (Except TR2)

Installation:



Unplug tool before making adjustments or installing accessories.

Observe appropriate Lockout/Tagout procedures to insure the tool cannot accidentally be powered.

1. Attach the top and bottom support brackets (Fig. 79) with four 5/16" x 3/4" (7.9mm x 19.05mm) cap screws and nuts. The top bracket is marked "T" and the bottom bracket is marked "B".
2. Insert the round vertical tube up through the top bracket and then lower it down through the bottom bracket. A small hex-head screw at the bottom of the tube prevents you from inserting it the wrong way.
3. Attach the top and bottom tension locks as shown in figure 79.
4. Attach the spring hold-down arms with 1/4" (6.35mm) hex-head Self-Tapping bolts and washers.
5. Turn the vertical tube until the spring arms touch the tool frame and then tighten the top and bottom tension locks (Fig. 79).

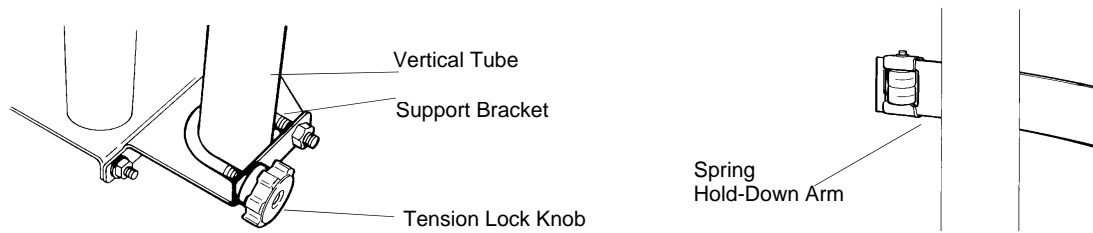


Figure 79: Installing the Hold-Down Bar

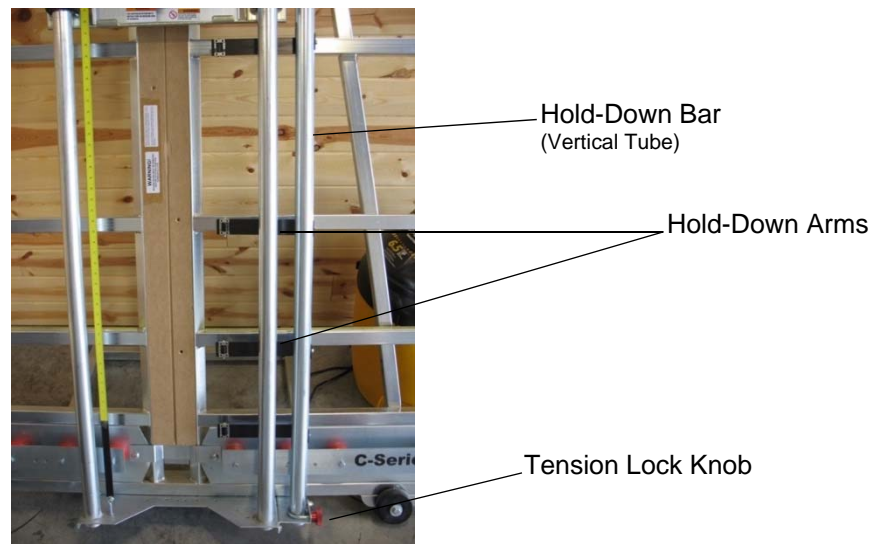


Figure 80: Hold-Down bar installed

Air Clamping Package (for routers)

The Air Clamp Accessory replaces the (lower) manually operated clamps for 3400 & TR2. Not available for SR5, SR5A, SR5U or SR5UA.

Installation

Install as shown in figure 81.

1. Bolt air clamps in place of manual clamps
2. Bolt control valve to base of machine. TR2 will require drilling of frame for attachment.
3. Connect air hoses by pressing hose into each fitting.

Note: Air hoses can be removed by pressing "in" on the yellow collar of the fitting and simultaneously pulling the hose out of the fitting.

4. Adjust clamp pad to thickness of material by loosening both nuts on clamp pad stud. Rotate stud until clamp will seat properly on desired thickness material and tighten both nuts.
4. Attach air supply to control valve.

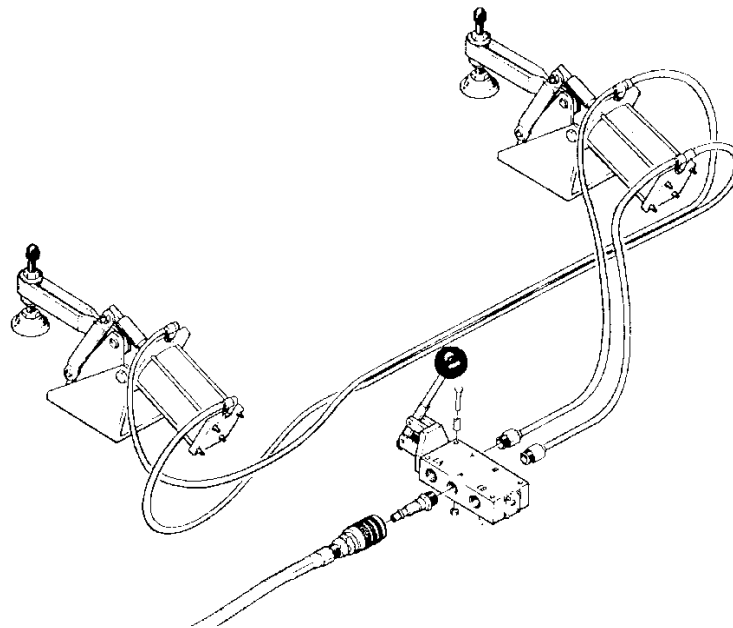


Figure 81: Air Clamping Package (for models 3400 and TR2)

SPECIFICATIONS

Table IV: Vertical Panel Saw/Router Specifications

Saw/ Router Model	Dimensions				Maximum Crosscut/ Cross Rout	Cut Thickness*	Volts AC**	Horse Power Saw/Router
	Length	Height	Depth	Weight (shipping)				
SR5	120"/3050mm	90"/2286mm	14"/356mm	320lbs/145kg	62"/1575mm	1.75"/45mm	120	3.25/1.75
SR5U	120"/3050mm	90"/2286mm	14"/356mm	675lbs/306kg	62"/1575mm	1.75"/45mm	120	3.00/3.25
SR5UA	120"/3050mm	90"/2286mm	14"/356mm	740lbs/336kg	62"/1575mm	1.75"/45mm	120	3.00/3.25
SR5A	120"/3050mm	90"/2286mm	14"/356mm	350lbs/160kg	62"/1575mm	1.75"/45mm	120	3.25/1.75
3400	120"/3050mm	90"/2286mm	14"/356mm	660lbs/299kg	62"/1575mm	1.75"/45mm	120	N/A /3.25
TR2	97"/2460mm	45"/1145mm	57"/1450mm	285lbs/129kg	36"/910mm	1.75"/45mm*	120	N/A /3.25

*Optional 2" cut thickness available, except TR2.

**All models available in optional 220/240V, 50/60 hertz.

ACCESSORIES

BE PORTABLE

Description: Part #

WHEELS (except TR2) H10

FIXED STAND
SR5, SR5U, 3400 6420

MEASURE WITH ACCURACY

QUICK STOP
SR5, SR5U, 3400 (8 ft.) H6460

DIGITAL QUICK STOP
SR5, SR5U, 3400 H6460-DRO

STOP BAR (except TR2) H6450

MIDWAY FENCE FLIP STOP PD1

(except TR2)

FLIP STOP (TR2 only) 4450

(Gauging System)

PANEL MOVER

PANEL DOLLY PD1

MAXIMIZE DUST COLLECTION

Description: Part #

DUST KIT

(includes: Hose, Rollers, Dust Tube & Elbow)

SR5, SR5U, SR5A, SR5UA VSR DUST

3400 VPR DUST

TR2 TR DUST

INDUSTRIAL VACUUMS

1 HP, 100 CFM, 90" S.P. 740C

2.25 HP, 115 CFM, 110" S.P. 740CC

Automater (120 V only) AUTO1

EXPAND CAPABILITY

MIDWAY FENCE

3400 3470

EXTENSIONS

SR5 H30

SR5U 6430

TR2 (1 Per Side) 4430

CLAMP IT

HOLD DOWN BAR

SR5, SR5U, 3400 6440

AIR CLAMPS

3400 3430

TR2 3430TR2

NOTE: Saw Blades listed on page 36.

Call SSM for Specialty Router Bits.



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