

# *SawStop*<sup>®</sup>

## 10" PROFESSIONAL CABINET SAW

PCS<sup>™</sup>

### OWNER'S MANUAL

Models PCS31230, PCS31230-AU



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The saw on the front cover is shown with the optional 36 inch  
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# *To Our Customers*

Thank you for purchasing a *SawStop*® Professional Cabinet Saw! Your saw includes our revolutionary, award-winning safety system that tells the difference between cutting wood and cutting a person. If you ever accidentally contact the moving blade, the safety system will detect that contact and stop the blade in milliseconds to minimize any injury.

This manual tells you more about your Professional Cabinet Saw and how to operate and maintain it. Please read the manual carefully. The manual also includes our warranty and important safety information.

Again, thanks for purchasing a *SawStop*® Professional Cabinet Saw. We are confident you will be pleased with its performance. If you ever have any questions or comments, feel free to contact us at the address below.

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# **Table of Contents**

Warranty .....	5
No Warranty of Safety .....	5
If You Have an Accident .....	5
Safety and Warnings.....	6
Warning Labels .....	8
The SawStop® Safety System .....	9
Unpacking Your Saw .....	12
Standing Up Your Saw.....	14
Assembling Your Saw .....	16
Installing the Elevation Handwheel .....	17
Installing the Tilt Handwheel .....	18
Installing the Dust Port .....	19
Installing the Motor Cover.....	20
Mounting the Extension Wings .....	21
Mounting the Switch Box .....	22
Mounting the Accessory Holders .....	23
Installing the Blade Guard Limit Rod .....	24
Get to Know Your Saw .....	26
Preparing Your Saw for Use .....	28
Saw Placement .....	28
Table Insert Removal and Installation .....	28
Blade or Dado Installation .....	29
Brake Position Adjustment .....	30
Blade Guard and Riving Knife Installation .....	32
Dust Collection .....	34
Electrical Power Connection for a 208-240V, 3 hp Saw (PCS31230) .....	35
Changing the Plug or Power Cord on a 208-240V .....	36



# **Table of Contents**

Using Your Saw .....	40
Adjusting the Blade Height .....	40
Adjusting the Blade Tilt Angle .....	40
Turning on Main Power and Starting the Motor .....	41
System Status Codes .....	43
Using the Blade Guard .....	46
Using the Riving Knife .....	49
Using the Miter Gauge .....	49
Cross-Cutting .....	51
Using a Fence .....	52
Rip Cutting .....	53
Using the Saw in Bypass Mode .....	56
Using a Mobile Base .....	57
Changing the Brake Cartridge .....	58
Installing a Brake Cartridge .....	61
What to do if the SawStop® Safety System Activates .....	62
Making Adjustments to Your Saw .....	63
Aligning the Table .....	63
Aligning the Blade to the Tilt Axis .....	67
Aligning the Blade Elevation Assembly .....	70
Adjusting the Elevation Limit Stops .....	72
Adjusting the Tilt Limit Stops and Tilt Angle Indicator .....	73
Adjusting the Table Insert .....	75
Aligning the Riving Knife and Spreader to the Blade .....	77
Adjusting the Height of the Limit Rod Wood Stop .....	80
Adjusting the Quick-Release Clamp .....	82
Adjusting the Miter Gauge .....	83
Adjusting the Motor Belt Tension .....	84
Adjusting the Tilt Gearing .....	84
Adjusting the Elevation Gearing .....	85

# **Table of Contents**

Maintenance .....	86
SawStop Safety System .....	86
Brake Cartridge .....	86
Elevation and Tilt Mechanisms .....	86
Cabinet .....	86
Table and Extension Wings .....	86
Belts .....	86
Lubrication Points .....	87
Troubleshooting .....	88
Professional Cabinet Saw Specifications .....	91
Professional Cabinet Saw Dimensions .....	92
Push Stick Construction .....	94
Auxiliary Fence Construction .....	95
Push Block Construction .....	96
Featherboard Construction .....	97
Accessories .....	98
Index .....	99

# Warranty

SawStop warrants to the original retail purchaser of a new Professional Cabinet Saw accompanying this manual and purchased from an authorized SawStop distributor that the saw and any accessories purchased with the saw will be free from defects in material and workmanship for TWO YEARS from the date of purchase.

SawStop warrants to the original retail purchaser of a refurbished Professional Cabinet Saw from an authorized SawStop distributor that the saw will be free from defects in material and workmanship for ONE YEAR from the date of purchase.

This warranty does not apply to defects arising from misuse, abuse, negligence, accidents, normal wear-and-tear, unauthorized repair or alteration, or lack of maintenance. This warranty is void if the saw or any portion of the saw is modified without the prior written permission of SawStop, LLC, or if the saw is located or has been used outside of the country of residence of the authorized SawStop distributor from whom the saw was purchased.

Please contact SawStop to take advantage of this warranty. If SawStop determines the saw or an accessory is defective in material or workmanship, and not due to misuse, abuse, negligence, accidents, normal wear-and-tear, unauthorized repair or alteration, or lack of maintenance, then SawStop will, at its expense and upon proof of purchase, send replacement parts to the original retail purchaser necessary to cure the defect.

SawStop disclaims any and all other express or implied warranties, including merchantability and fitness for a particular purpose. SawStop shall not be liable for death, injuries to persons or property, or incidental, consequential, contingent or special damages arising from the use of the saw.

This warranty gives you specific legal rights. You may have other rights which, in the United States, vary from state to state.

# No Warranty of Safety

It is important to understand that the braking technology in SawStop table saws **does not prevent contact with the blade—it minimizes the effect of the contact**. If you do contact the blade, the braking technology will stop the blade, and in most cases there will be no injury or only a small nick. However, you may incur a serious injury on a SawStop saw depending on factors such as the speed and direction your hand is moving when it contacts the blade and the type of blade you are using. Also, if you decide to use the saw in Bypass Mode, the safety system will be disabled and will not activate in the event you contact the spinning blade.

# If You Have an Accident

We at SawStop hope you never have an accident with your saw, and strongly encourage you to always follow safe practices and to use all the safety equipment provided with this saw. However, if you ever accidentally contact the spinning blade, the safety system will detect that contact and stop the blade within milliseconds to minimize any injury. If this happens, please contact us with information regarding the accident because it is very important to our on-going research and development. The more we know about what happens during an accident, the better we are able to ensure that the safety system will react as quickly as possible in all accident situations. In addition, the brake cartridges store electronic data measured during an accident. If you return the activated cartridge to SawStop, we can retrieve that data to learn how the electronics and software performed. If we confirm that your cartridge activated due to skin contact, we will send you a free replacement cartridge. Thanks for your help.

# Safety

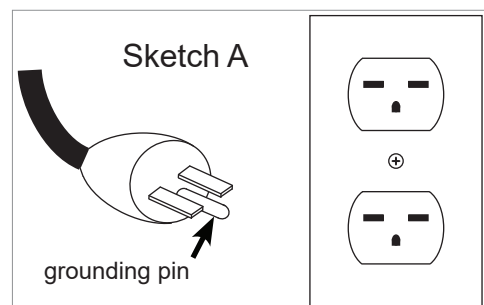
A table saw is a dangerous tool and there are hazards inherent with using this saw. Some of these hazards are discussed below. Use common sense when operating the saw and use the saw only as instructed. **You are responsible for your own safety!**

## **WARNINGS**

1. Read and understand the instruction manual and all safety warnings before operating this saw. Failure to follow instructions or heed warnings may result in electric shock, fire, serious personal injury or property damage. Save these instructions and refer to them whenever necessary.
2. **⚠️ WARNING:** This product can expose you to chemicals including wood dust, which is known to the State of California to cause cancer. This exposure can come from drilling, sawing, sanding or machining wood products. For more information go to [www.P65Warnings.ca.gov/wood](http://www.P65Warnings.ca.gov/wood). In addition, some types of dust created by sawing, sanding, grinding, drilling, and other construction activities also contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are lead from lead-based paints, crystalline silica from bricks, cement, and other masonry products, and arsenic and chromium from chemically treated lumber. In addition, wood dust has been listed as a known human carcinogen by the U.S. government. The risk from exposure to these chemicals and to dust varies depending on how often you do this type of work. To reduce your exposure, work in a well ventilated area and work with approved safety equipment including dust masks or respirators designed to filter out such dust and chemicals.
3. **THIS SAW MUST BE CONNECTED TO A GROUNDED WIRING SYSTEM** or to a system having an equipment-grounding conductor. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This saw is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided - if it will not fit the outlet; have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock and/or malfunction. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood or if in doubt as to whether the saw is properly grounded. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the saw's plug. Repair or replace a damaged or worn cord immediately.

4. **USE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your saw will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. For a cord length of up to 50 feet, use a cord of 14 gauge. For a cord length of 50 to 100 feet, use a cord of 12 gauge. A cord length over 100 feet is not recommended. If in doubt, use the next heavier gauge. The smaller the gauge number the heavier the cord.
5. This saw is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch A. The saw has a grounding plug that looks like the plug illustrated in Sketch A. Make sure the saw is connected to an outlet having the same configuration as the plug. No adapter is available or should be used with this saw. If the saw must be reconnected for use on a different type of electric circuit, the re-connection should be made by qualified service personnel; and after re-connection, the saw should comply with all local codes and ordinances.



6. **KEEP CHILDREN AWAY** from the saw. All visitors should be kept at a safe distance from the work area. Make the workshop kid-proof with padlocks, master switches, or by removing starter keys.

# WARNINGS

7. Do not use the saw in dangerous environments. For example, do not use the saw in damp or wet locations or expose it to rain, and keep the work area well lighted.
8. Check to make sure the saw is in proper working order before using the saw. For example, check the alignment of moving parts, look to see whether moving parts are binding or rubbing, check to see whether parts are broken, make sure accessories are properly mounted in the saw, and check any other conditions that may affect the operation of the saw. A guard or other part that is damaged should be properly repaired or replaced.
9. Keep guards in place and in working order. Never operate the saw with the motor cover or access panels open.
10. Wear eye protection. Always wear safety glasses when using the saw. Everyday eyeglasses are not safety glasses. Also use a face or dust mask if the cutting operation is dusty.
11. Wear proper apparel when using the saw. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear a protective hair covering to contain long hair.
12. You must install a rip fence before using this saw. Attempting to use the saw for rip cutting without the rip fence could result in serious personal injury.
13. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure the power switch is in the OFF position before plugging in the saw. Also, remove adjusting keys and wrenches from the saw before turning it on.
14. Keep hands out of the line of the saw blade. Never reach around or over the saw. Do not overreach or stretch to get something when using the saw. Keep proper footing and balance at all times.
15. Never stand on the saw. Serious injury could occur if the saw is tipped or if the cutting tool is unintentionally contacted.
16. Feed work into the blade against the direction of rotation of the blade only. Feeding the work in the direction of rotation may cause the work to be thrown by the blade and could result in serious personal injury.
17. Do not perform any operation freehand. Freehand means not using a fence (for rip cuts) or a miter gauge (for cross-cuts) to guide the work piece as it is being cut. Always maintain firm control over the material being cut.
18. Use a blade guard and spreader for every operation for which it can be used, including all through sawing. Use a push stick when required.
19. Secure your work. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
20. Pay particular attention to instructions on reducing the risk of kickback. Kickback occurs when a work piece contacts the downstream edge of the blade as it is being cut and is propelled back towards the user at high velocity.
21. **DON'T FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed. For example, do not try to cut wood faster than the motor can handle.
22. **USE THE RIGHT TOOL.** Do not try to force the saw to do something it was not designed to do. Don't force a tool or attachment to do a job for which it was not designed. Use the right blade for the job.
23. Never leave the saw running unattended. Wait until the blade comes to a complete stop and then turn the main power switch to *OFF* and unplug the power cord when you are finished using the saw.
24. Turn the main power switch to *OFF* and unplug the power cord before servicing the saw and when changing components or accessories such as blades, brake cartridges, and the like.
25. **MAINTAIN TOOLS WITH CARE.** Maintain the saw as specified in this manual. Keep tools sharp and clean for best and safest performance. Follow instructions for lubrication and changing accessories.
26. Use only recommended accessories with the saw. Consult this manual for recommended accessories. The use of improper accessories may cause risk of injury. When servicing, use only identical replacement parts.
27. Keep the top of the saw clean and free from clutter. Cluttered areas invite accidents.

# Warning Labels

Warning labels are mounted on the right and back sides of the saw, on the switch box, on the motor cover, and on the blade guard. Some of the warnings on those labels may be additional to the warnings listed above. Be sure to read the warning labels before using the saw. Copies of the English text of the warning labels are reproduced below:

**⚠ WARNING**

To avoid loss of SawStop protection during coast down, do not turn off Main Power until blade has stopped spinning.

**⚠ WARNING**

1. Use the blade guard and spreader for every operation for which it can be used.
2. Use the riving knife for non-through sawing.
3. Keep hands away from the saw blade. Use a push-stick when required.

**⚠ WARNING**



Moving belts and parts can pinch, cut or crush.

Do not operate with door open.

**⚠ WARNING**



Moving gears and parts can pinch, cut or crush.

Do not operate with door open.

**⚠ WARNING**



Do not operate with door open. The blade can retract and cause a severe injury if you touch it inside the cabinet. Also, moving parts can cut, pinch or crush.

**⚠ WARNING**

For your own safety, read the instruction manual before operating this saw.

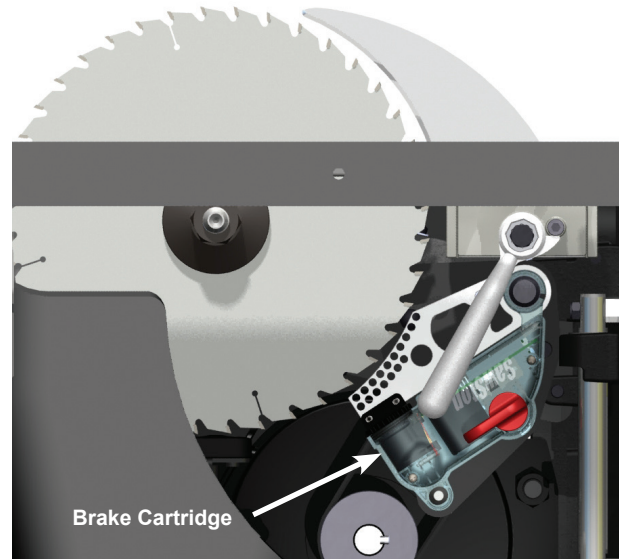
1. Wear eye protection.
2. Use the blade guard and spreader for every operation for which it can be used, including all through sawing.
3. Keep hands out of the line of the saw blade.
4. Use a push-stick when required.
5. Know how to reduce the risk of kickback.
6. Do not perform any operation freehand.
7. Never reach around or over the saw blade.
8. Never try to test fire the brake system.
9. Never adjust the position of the brake cartridge while the blade is spinning.
10. Do not try to disable the brake system.
11. Unplug the saw before changing the blade, changing the brake cartridge or servicing.
12. Do not connect the motor directly to a power supply.
13. Use the bypass switch only when necessary.
14. Do not expose to rain or use in damp locations.
15. Do not put your hands inside or underneath the cabinet while the blade is spinning.
16. Do not unplug or disconnect the saw from electrical power before the blade has stopped spinning.
17. If connected to a circuit protected by fuses, use time delay fuse marked D.



# The SawStop® Safety System

This Professional Cabinet Saw is equipped with the SawStop® safety system. This revolutionary technology was developed to reduce the potential for a serious injury in the event of accidental contact with the saw blade. SawStop® saws are the only saws smart enough to know the difference between you and the wood you are cutting.

The SawStop® safety system includes two components, an electronic detection unit and a fast-acting brake. The electronic detection unit detects when a person contacts the blade. A small electrical signal is induced onto the blade by electrodes placed around the arbor. Although this low voltage, high frequency signal is too small to feel, it can be measured by the detection system. When human skin comes into contact with the blade (or arbor), a portion of the signal is absorbed by the body due to the inherent electrical capacitance of the human body. As a result, the signal on the blade gets smaller and the detection unit recognizes this as contact.



Wood and other non-conductive materials such as plastic, foam, cardboard, Corian®, melamine, etc., do not cause a drop in the signal because those materials do not absorb the signal on the blade. Conductive materials such as aluminum and other metals, carbon fiber materials, mirrored acrylic, carbon-filled materials, etc., will typically cause the brake to activate. If you need to cut these conductive materials, the safety system can be placed in “Bypass Mode” to temporarily disable the brake. (Bypass Mode is discussed on page 56.)

The fast-acting brake includes a small fuse that holds a strong spring in compression. If the electronic detection unit detects contact while the blade is spinning (including during coast down), the fuse is burned by a surge of electric current. The spring then pushes an aluminum pawl into the teeth of the spinning blade. The teeth cut into the pawl, stopping the blade. The total time between the detection of contact and stopping the blade is just a few milliseconds. If the brake is activated while the blade is at or near full speed, the blade will also quickly retract below the table. The system will not activate the brake when the blade is stopped—even if you spin the blade by hand. This allows you to touch or change the blade when the motor is off just as with ordinary table saws. However, for safety, always turn the main power switch to *OFF* and unplug the power cord when changing the blade.

The SawStop® safety system is active whenever the main power is on. The safety system continuously performs many different self-checks to ensure that the components of the system are operating properly. If any problems are detected, the safety system will disable the motor and display a system status code to identify the problem (see page 43 for a description of the system status codes and the corrective action). If the problem is detected while the motor is spinning, the motor will be shut off. The safety system will not allow the motor to start, even in Bypass Mode, as long as a problem is detected.

The electronic detection unit and fast-acting brake are contained in the “brake cartridge,” which is positioned under the table and just behind the blade, as shown above. The brake cartridge must be correctly installed before the motor can be started (see page 58 for instructions on removing and installing the brake cartridge). In the event that the brake is activated, a new brake cartridge must be installed before the saw can be used again.

# The SawStop® Safety System

The SawStop® safety system does not interfere with your use of the saw. You can still make all the cuts that you can with ordinary saws including 0° to 45° bevels, non-through cuts, and dado cuts (with the optional dado brake cartridge and the optional dado table insert).

Your SawStop® saw operates differently than ordinary table saws, and there are a few important points to keep in mind as you use the saw.

1. **Do not** rely on the SawStop® safety system to protect against unsafe operation. Although the system is designed to react and stop the blade very quickly in the event of accidental contact, it cannot react until contact is detected. This means that you may receive at least a minor injury even with the SawStop® safety system. Therefore, always use safe operating practices, and use the blade guard, push stick and other safety devices whenever possible. The SawStop® safety system, like the airbag in a car, should be considered as a last measure to minimize injury when all other safety practices and devices have failed to prevent an accident.
2. In the event of contact, the blade will be stopped in about 3–5 milliseconds (coarse toothed blades stop more quickly than fine-toothed blades such as plywood blades). Therefore, the seriousness of the injury incurred will depend on the speed at which a person's hand or other body part is moving toward the blade. For example, if a person's hand is moving toward the blade at 1 ft./sec., then the depth of the cut will be approximately 1/16 inch (1 ft./sec. \* 0.005 sec. = 0.005 ft. or 1/16 inch). At faster speeds, the cut will be proportionally deeper. Therefore, it is possible to be seriously injured even with the SawStop® safety system.
3. **Do not** operate the saw in Bypass Mode unless you are cutting electrically conductive material. When Bypass Mode is engaged, the SawStop® safety system will not activate the brake if contact is detected and a serious injury could result if you contact the blade.
4. The motor cannot be started without a blade installed. Since the safety system disables the motor if the blade is spaced too far from the brake, a missing blade will be detected as a blade-to-brake spacing error and the motor will be disabled.
5. Blades  
You can use any standard 10 inch saw blade or 8 inch dado set with your SawStop® saw, although the following precautions should be observed:
  - i. **Never** attempt to use a blade other than a single 10 inch blade with the standard SawStop® brake cartridge. **Never** attempt to use a dado set or blade other than an 8 inch dado set with the SawStop® dado cartridge. The use of smaller diameter blades with a brake cartridge designed for larger blades could result in a serious injury because the brake cannot be positioned correctly to stop the smaller blades.
  - ii. **Never stack dado blades thicker than 29/32 inch.** The 8 inch dado brake cartridge is not designed to stop dado stacks thicker than 29/32 inch.
  - iii. **Do not use molding heads.** The use of molding heads could result in a serious injury because neither the standard brake cartridge nor the dado brake cartridge is designed to stop a molding head.
  - iv. **Never use a blade with damaged or missing teeth** as this can result in a more serious injury or a false activation of the brake. Blades with variable spacing between teeth are compatible with the SawStop® safety system, however you must ensure the brake is positioned correctly by rotating the blade at least one full revolution to be certain that none of the teeth touch the brake (see page 30 for more information on setting the brake position).
  - v. **Never install the blade backwards.** The brake might not stop a blade that is installed backwards.
  - vi. **Do not use saw blades or dado sets that have a lacquer or other coating on the teeth.** These coatings are non-conductive and therefore can reduce the speed at which the system detects contact. In other words, a coated tooth must cut slightly deeper into the skin for contact to be detected, resulting in a somewhat more serious injury. Used blades that originally had a coating are OK to use since the coating is worn away within a few uses. However, SawStop recommends that you examine each tooth on such blades to confirm that no coating remains.



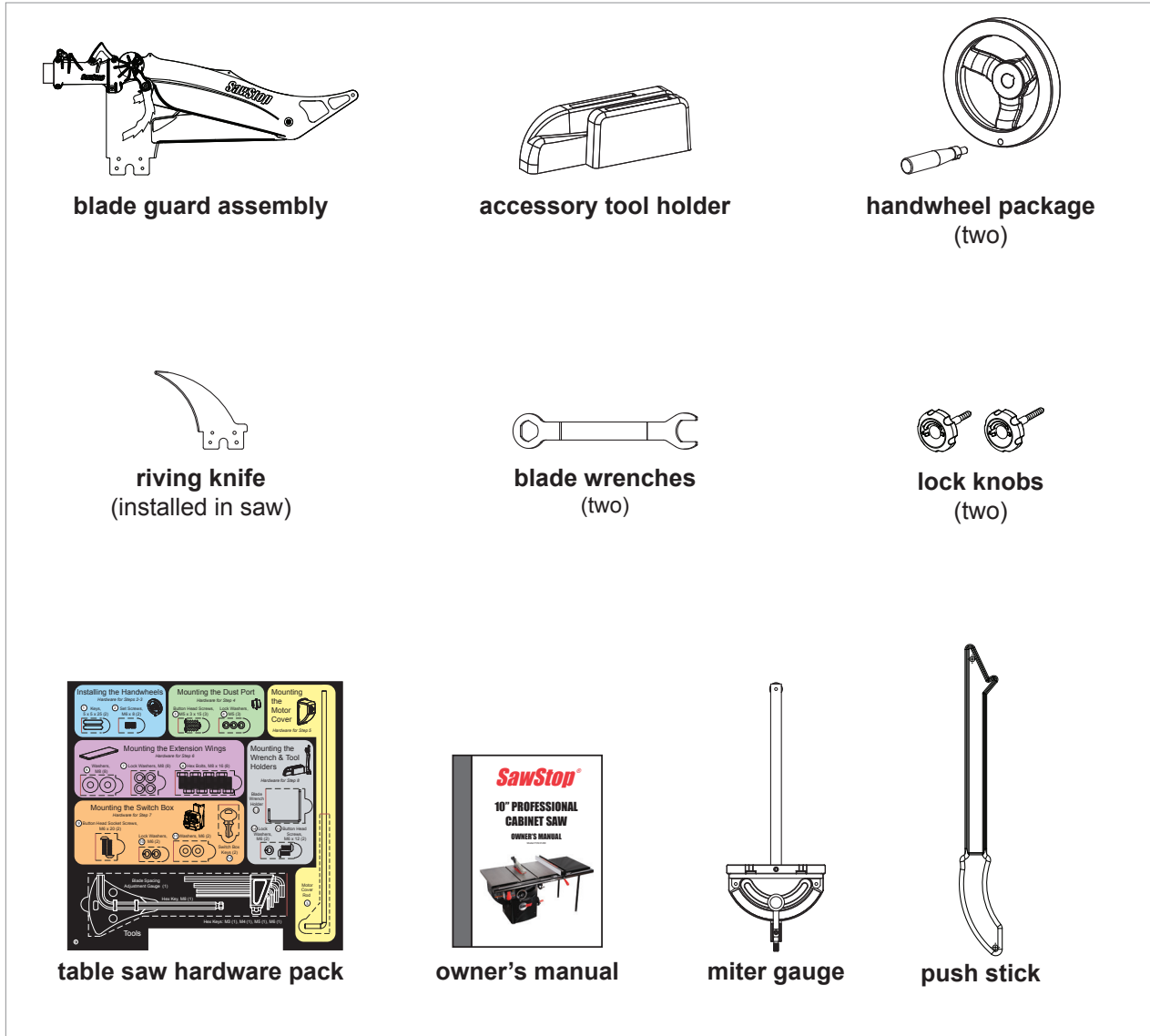
# The SawStop® Safety System

- vii. **Blades with depth-limiting shoulders** may take longer to stop in the event of an accident than standard blades, and you could receive a more serious injury. Therefore, SawStop recommends using blades without depth-limiting shoulders.
  - viii. The SawStop safety system is designed for use with standard 10 inch blades with kerfs from  $\frac{3}{32}$  inch to  $\frac{3}{16}$  inch. Blades with kerfs much thinner than  $\frac{3}{32}$  inch should not be used because those blades might not be strong enough to withstand the force applied by the brake when it activates. As a result, those blades might deform and stop more slowly in the event of an accident, resulting in a more serious injury. Blades with kerfs much thicker than  $\frac{3}{16}$  inch are heavier than standard  $\frac{1}{8}$  inch kerf blades, and should not be used because they may stop more slowly than standard blades in the event of an accident, resulting in a more serious injury. Similarly, stacks of two or more 10 inch blades should never be used on your SawStop saw as the combined weight of the blades may be too heavy to stop quickly. If you need to use a blade with a kerf thicker than  $\frac{3}{16}$  inch, use an 8 inch dado set with the optional Sawstop 8 inch dado brake cartridge.
  - ix. **Do not use non-conductive blades**, including abrasive blades, blades with plastic hubs, or blades that have non-conductive teeth. The safety system cannot induce the electrical signal onto a non-conductive blade, and blades with non-conductive teeth may prevent the system from detecting contact. Only standard steel blades with either steel or carbide teeth should be used.
6. **Do not** use table inserts, guards, fences or other devices which have metal parts that may come into contact with the blade. Any metal part that contacts the blade may cause the brake to activate. All SawStop® accessories are specifically designed to prevent metal contact with the blade.
  7. Wet, pressure-treated wood may cause the brake to activate. The chemicals used to pressure treat wood often contain large amounts of copper, which is conductive. When pressure-treated wood is wet, the combination of copper and water substantially increases the conductivity of the wood. Therefore, allow wet pressure-treated wood to fully dry before cutting. Typically, the wood will be sufficiently dry if left unstacked in a dry location for 24 hours. If you must cut wet pressure-treated wood, you can make several cuts in the wettest piece(s) using the Bypass Mode to test whether the wood is too wet. See page 56 for instructions on using Bypass Mode and page 45 for information on testing the conductivity of a material. If the test indicates the wood is too wet to cut with the safety system active, you must either allow the wood to dry or make the remaining cuts in Bypass Mode.
  8. **Do not** replace the arbor belt with a non-SawStop® belt. The SawStop® arbor belt is custom designed to dissipate static electricity that may build up on the spinning blade which could cause a false activation of the brake.
  9. **Never** touch the arbor, arbor pulley, arbor nut or arbor washer when the blade is spinning because you may receive a serious injury. These parts are all electrically coupled to the blade and the brake will activate if contact with these parts is detected.
  10. **Never** reach under the blade while it is spinning. In the event the brake is activated, the retraction of the blade may cause a serious injury if you contact the bottom of the blade.
  11. **Do not** remove the dust shroud because a large portion of the blade will be exposed. If you contact the blade under the table, the blade may retract toward you and cause a severe injury.
  12. **Do not** unplug or disconnect the saw from electrical power before the blade has stopped spinning. If the power is interrupted while the blade is moving, the safety system will not be active and therefore the brake will not activate in the event of accidental contact. You may receive a serious injury if you contact the spinning blade while the electrical power has been interrupted.
  13. **Never** attempt to disable the SawStop® safety system or modify the electrical wiring of the saw in any way. Any change or modification or disablement of the safety system or other wiring could result in a serious injury and will void all warranties.
  14. **Never** attempt to repair, adjust, modify or otherwise service a brake cartridge. There are no user-servicable parts inside the brake cartridge. The brake cartridge is permanently sealed against dust and other contaminants. Destruction, removal, or alteration of this seal voids all warranties.

# Unpacking Your Saw

Remove all packing materials and accessories before removing the saw from the shipping pallet. While unpacking your saw verify that all the components shown on this page and the following page are included. Use care when unpacking your saw to prevent damage to any of the saw components or accessories. If the saw or the accessories have been damaged during shipping, report the damage to your shipper before proceeding with unpacking. Read and understand this manual fully before assembling and operating your saw.

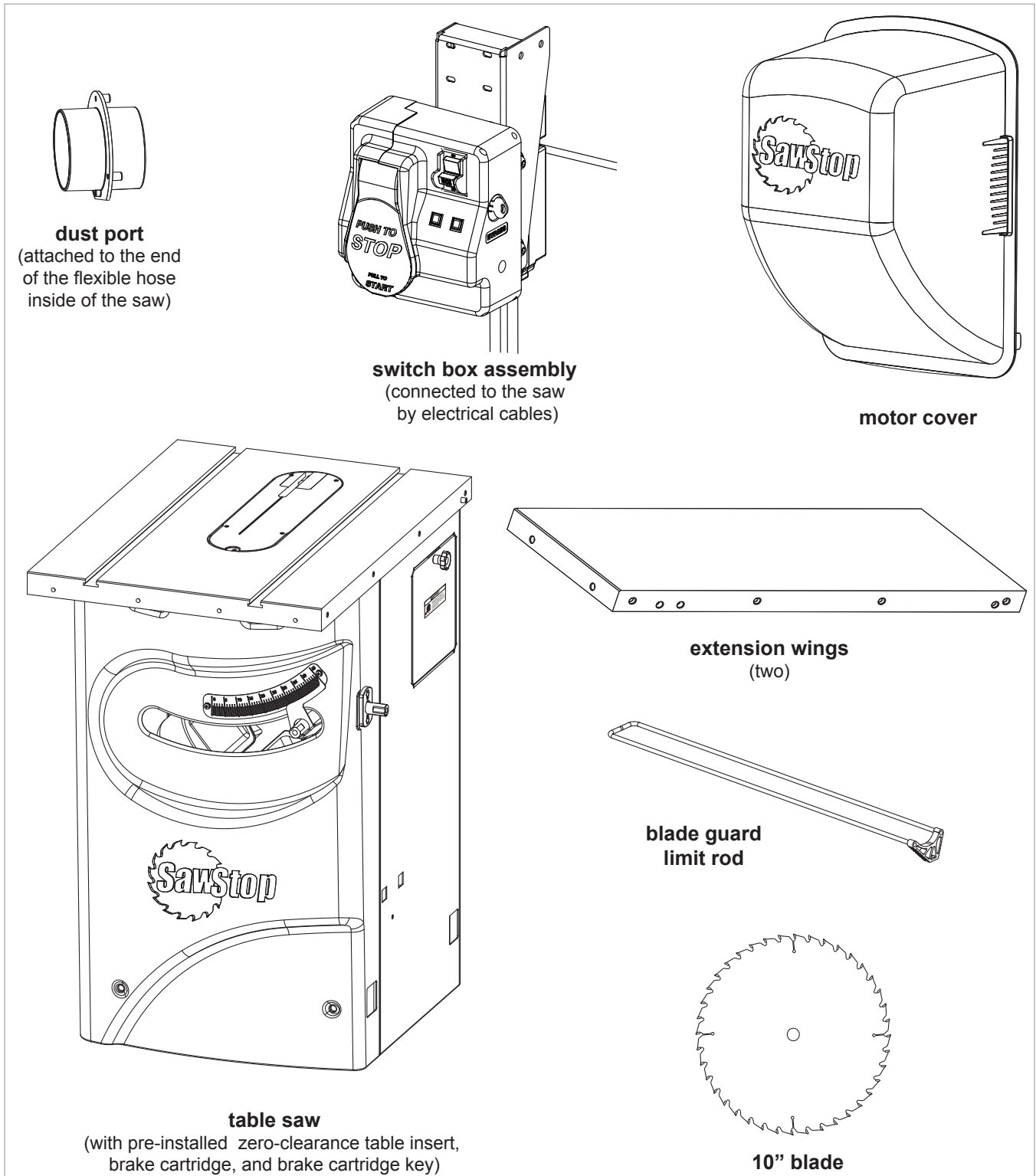
Fig. 1



**WARNING!** The saw weighs approximately 265 pounds without the extension wings and 335 pounds with the extension wings. Be careful in handling the saw to avoid injury.

# Unpacking Your Saw

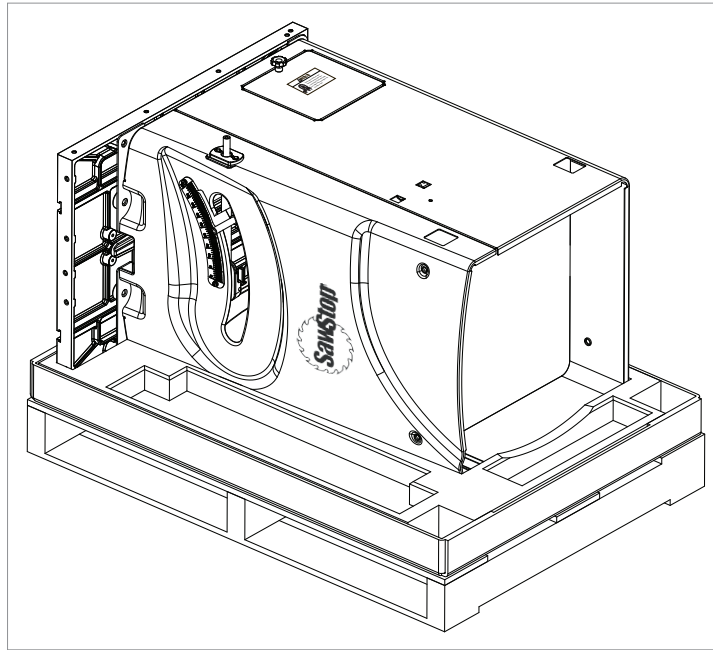
Fig. 2



# Standing Up Your Saw

1. Your saw is shipped horizontal to protect it from tipping during transit. To stand up your saw, first remove all packing materials and accessories from the shipping pallet (see Fig. 3). There is a poster that ships with the saw that shows where all of the accessories are located in the packaging.

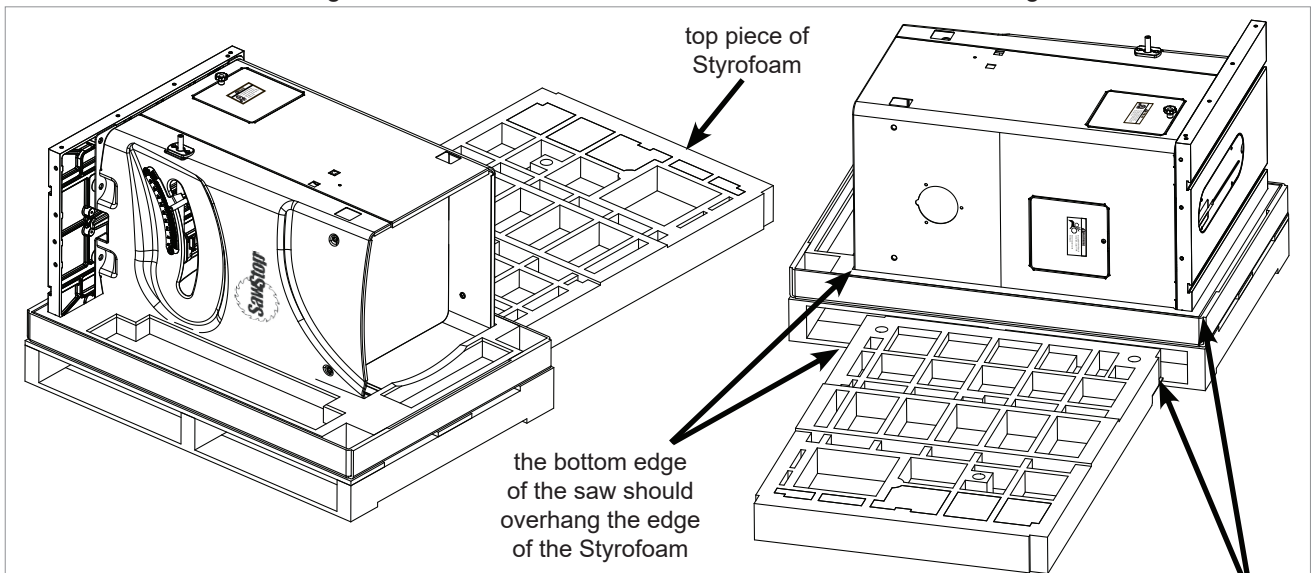
Fig. 3



2. Take the top piece of Styrofoam and place one of its short sides next to the pallet by the back of the saw (see Fig. 4). Place the Styrofoam so that the top edge of the table and the bottom edge of the saw both overhang the edges of the Styrofoam (see Fig. 5).

Fig. 4

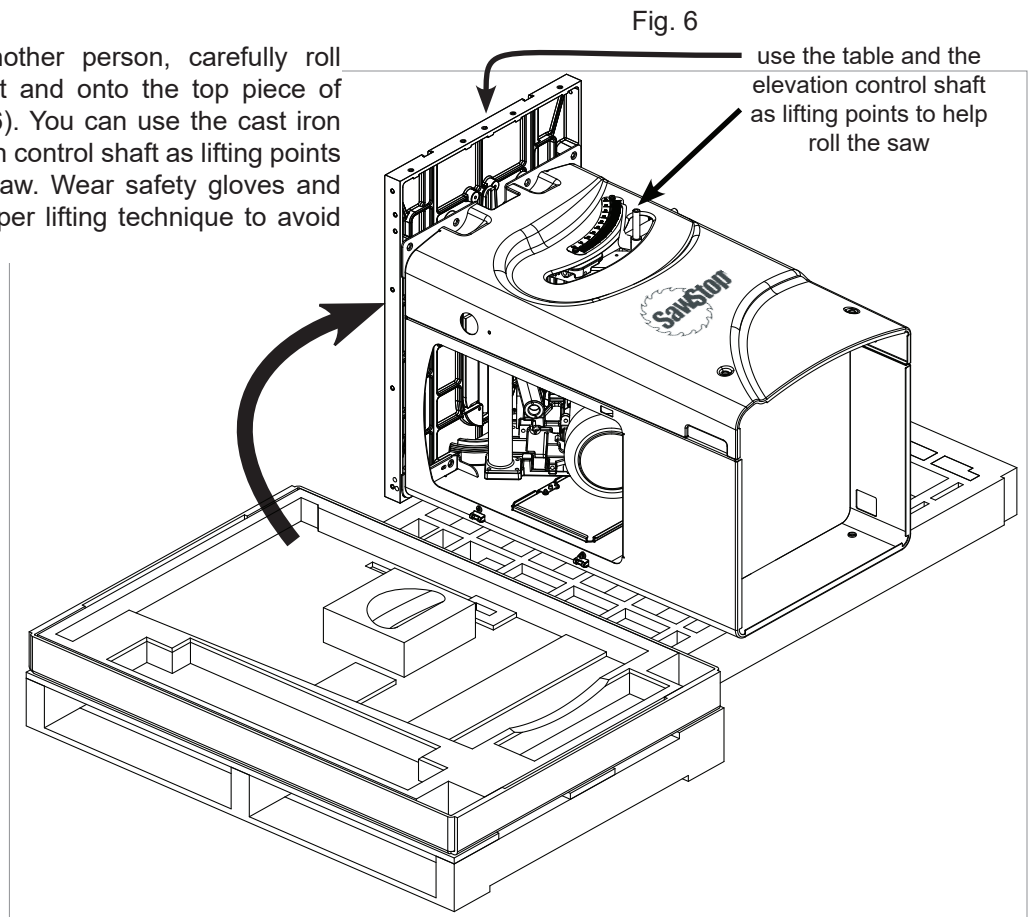
Fig. 5



the edge of the table should overhang the edge of the Styrofoam

# Standing Up Your Saw

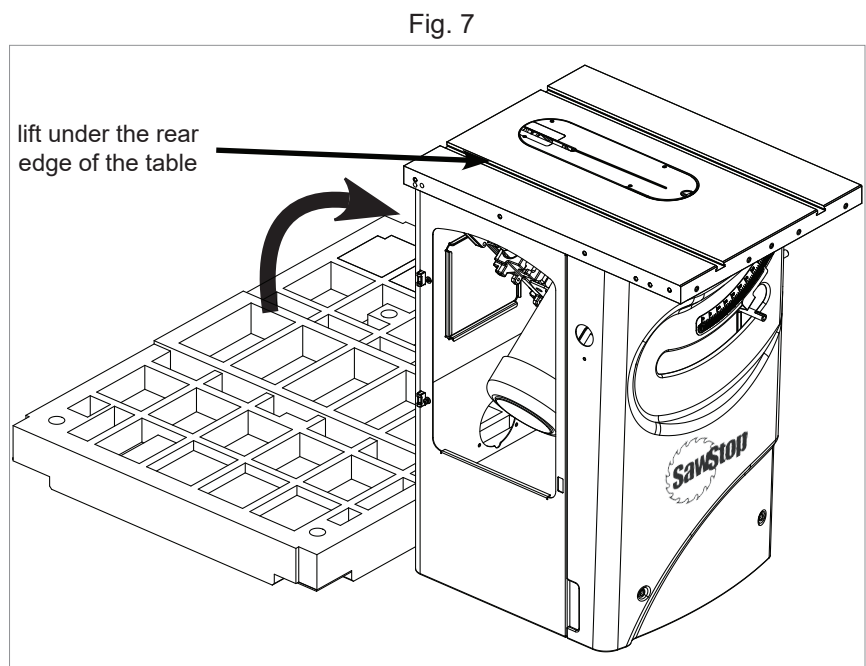
3. With the help of another person, carefully roll the saw off the pallet and onto the top piece of Styrofoam (see Fig. 6). You can use the cast iron table and the elevation control shaft as lifting points to help you roll the saw. Wear safety gloves and be careful to use proper lifting technique to avoid injury.



## **If you have a Professional Cabinet Saw Mobile Base ...**

install it now while the saw is on its side. Refer to the manual that comes with your Professional Cabinet Saw Mobile Base for instructions. Once the mobile base is installed, continue with step 4 to stand up your saw.

4. With the help of another person, carefully tip the saw to the upright position by lifting under the rear edge of the cast iron table (see Fig. 7). Lift the saw slowly so that it slides off the Styrofoam and onto the floor without damaging the cabinet.

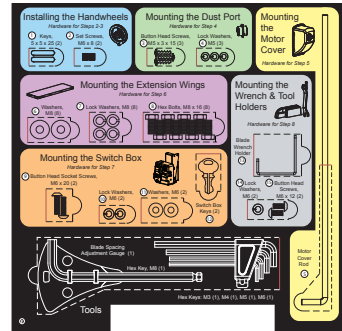


# Assembling Your Saw

The instructions to assemble your Professional Cabinet Saw are listed below. In addition to the tools included with the Table Saw Hardware Pack (see Fig. 8) you will also need the following tools to complete the assembly:

- a Phillips screwdriver
- a 13 mm wrench
- a 14 mm wrench
- a level or straight edge

Fig. 8

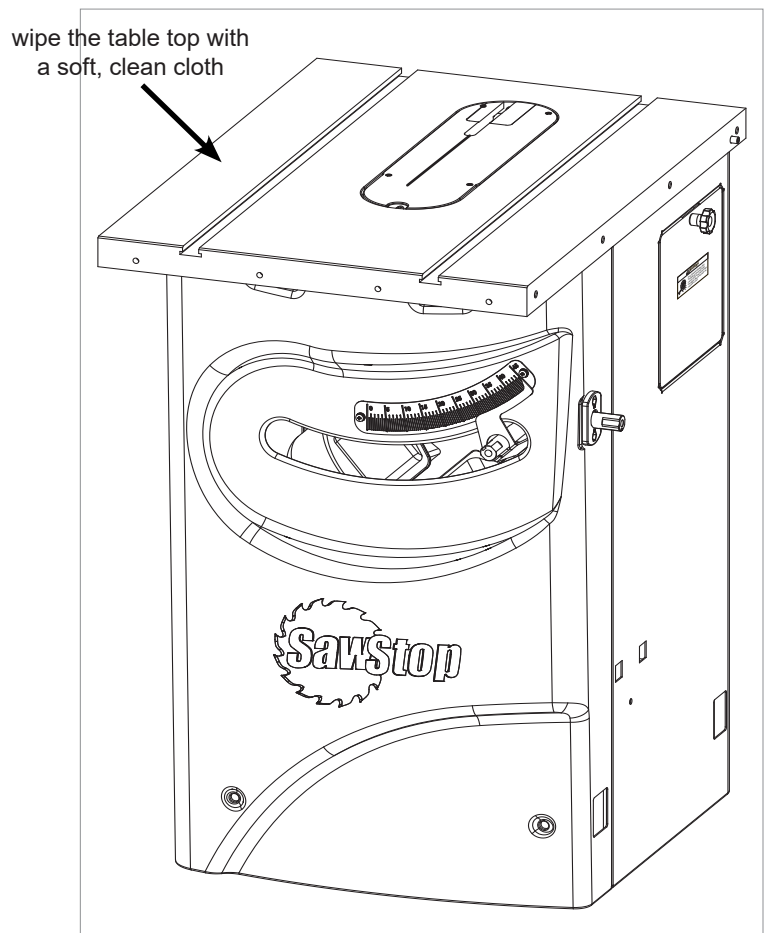


1. Once the saw is in the upright position, remove the plastic covering from the cast iron table top and remove the yellow label from the top of the table insert. Wipe the oil off the table top with a soft, clean cloth (see Fig. 9). Do the same for the extension wings. The table top and extension wings are shipped with a coating of oil to prevent the cast iron from rusting.

**NOTE:** Before assembling the saw, make sure that all packaging has been removed and all parts unpacked.

In particular, **DO NOT PROCEED** with the assembly of the saw until the switch box has been moved to the outside of the cabinet. (See unpacking poster.) When unpacking the switch box assembly, be careful not to damage the power cord or the cords attached to the switch box when cutting the cable ties. Be sure to remove all cardboard pieces from the inside of the cabinet.

Fig. 9

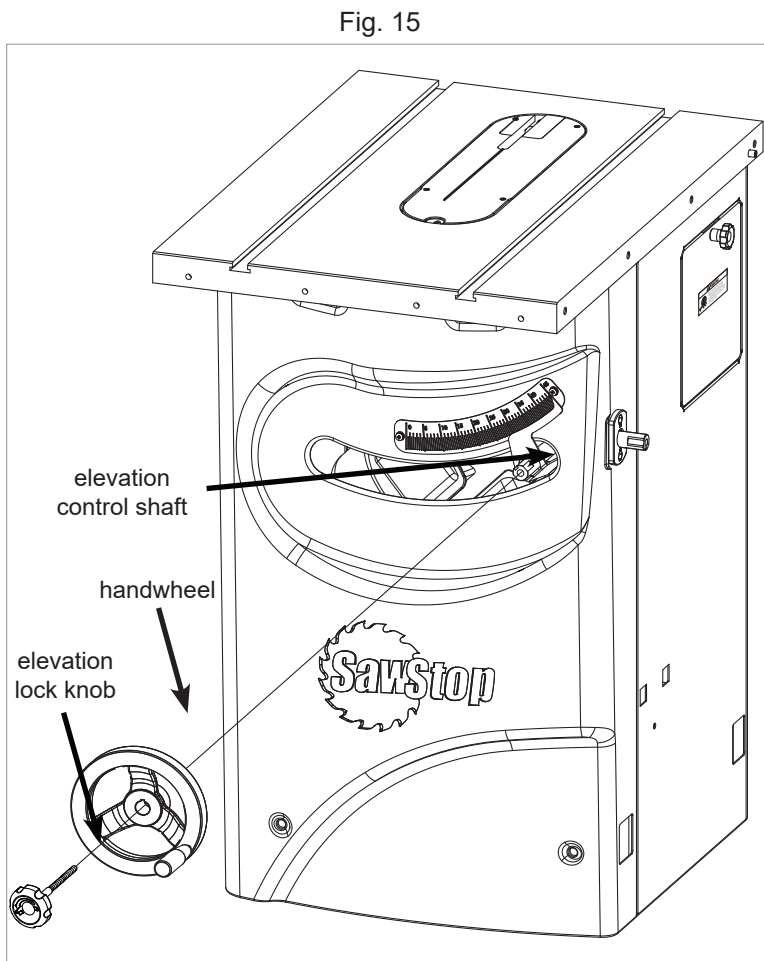
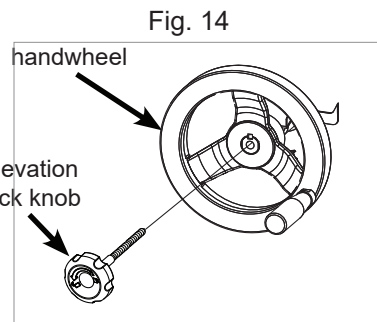
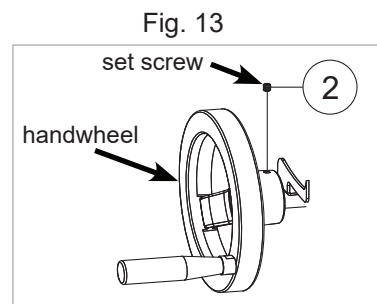
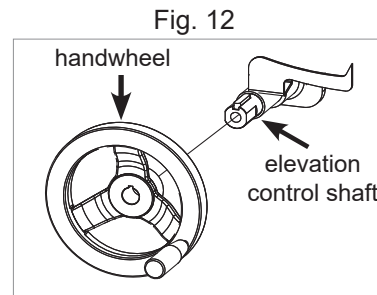
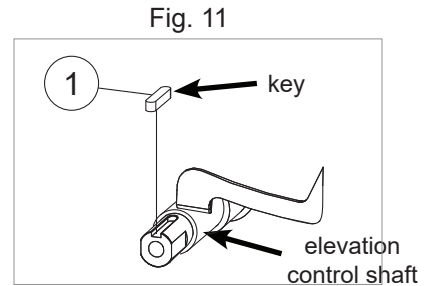
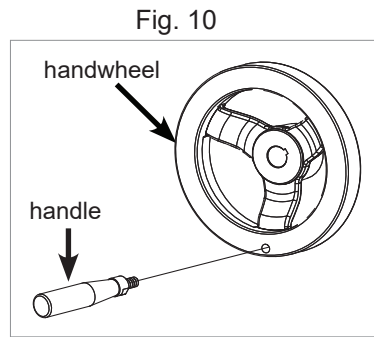
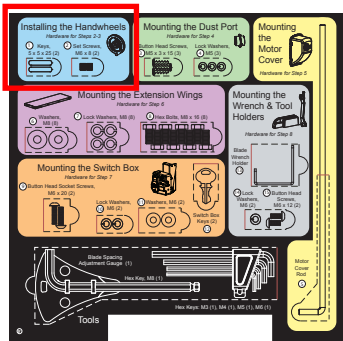




# Assembling Your Saw

## Installing the Elevation Handwheel

- Open one of the handwheel packages included with your saw and screw the handle into the handwheel (see Fig. 10). Tighten the handle with a 14 mm wrench. The hardware required to install the elevation handwheel is located in the area with the blue background on the Table Saw Hardware Pack. Remove a key from the Table Saw Hardware Pack and insert it into the slot at the end of the elevation control shaft (see Fig. 11). Slide the handwheel onto the end of the elevation control shaft (see Fig. 12) until the face of the handwheel is flush with the end of the shaft. Remove a set screw from the Table Saw Hardware Pack and insert it into the small hole located on the side of the handwheel (see Fig. 13). Use a 3 mm hex key to fully tighten the set screw. Locate the lock knob with the longer shaft. Screw the lock knob into the end of the elevation control shaft (see Fig. 14), but don't tighten it completely. The lock knob is used to prevent the handwheel from turning after the blade has been set to a new elevation.



# Assembling Your Saw

## Installing the Tilt Handwheel

- Open the other handwheel package and screw the handle into the handwheel (see Fig. 16). Tighten the handle with a 14 mm wrench. The hardware required to install the tilt handwheel is located in the area with the blue background on the Table Saw Hardware Pack. Remove a key from the Table Saw Hardware Pack and insert it into the slot at the end of the tilt control shaft (see Fig. 17). Slide the handwheel onto the end of the tilt control shaft (see Fig. 18) until the face of the handwheel is flush with the end of the tilt control shaft. Remove a set screw from the Table Saw Hardware Pack and insert it into the small hole located on the side of the handwheel (see Fig. 19). Use a 3 mm hex key to fully tighten the set screw. Locate the lock knob with the shorter shaft. Screw the lock knob into the end of the tilt control shaft (see Fig. 20), but don't tighten it completely. The lock knob is used to prevent the handwheel from turning after the blade has been set to a new tilt angle.

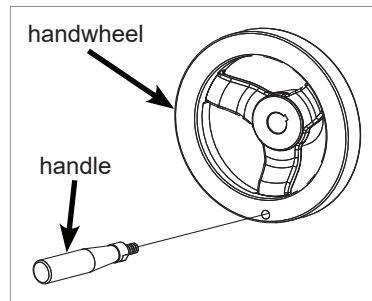
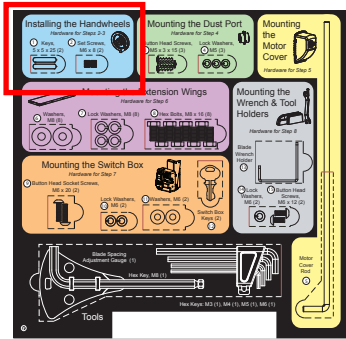


Fig. 16

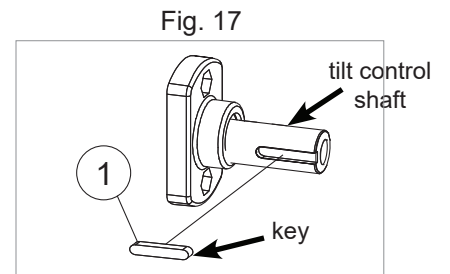


Fig. 17

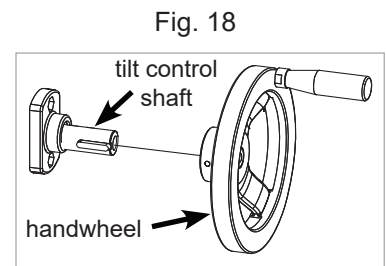


Fig. 18

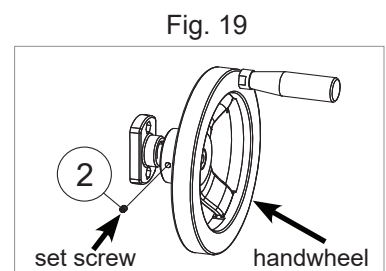


Fig. 19

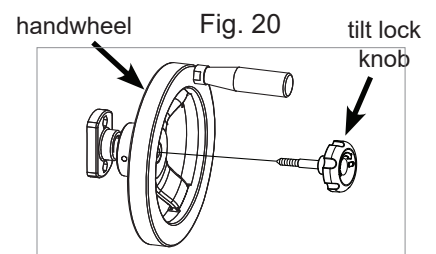


Fig. 20

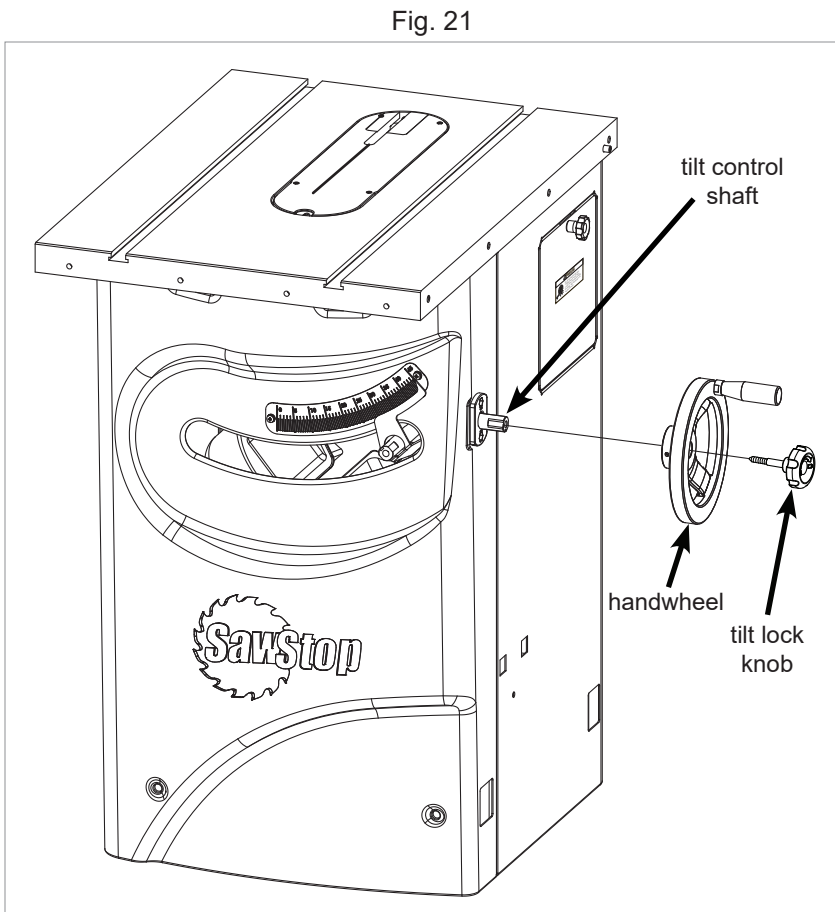


Fig. 21



# Assembling Your Saw

## Installing the Dust Port

- The dust port comes attached to the end of a flexible hose residing within the cabinet. Notice that there is a small semicircle on the dust port flange (see Fig. 22). The dust port must be inserted into the four inch diameter hole at the back of the cabinet from the inside of the cabinet (see Fig. 23). The semicircle acts as a key to correctly orient the dust port. The hardware required to install the dust port is located in the area with the green background on the Table Saw Hardware Pack. Remove the three dust port screws and lock washers from the Table Saw Hardware Pack and place a lock washer on each screw. Keep the screws nearby.

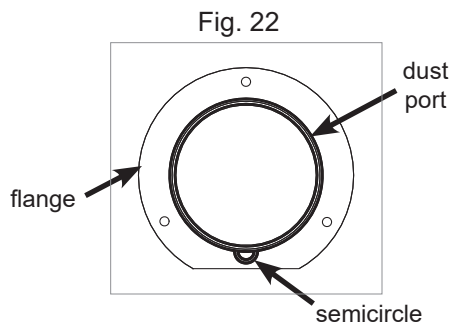
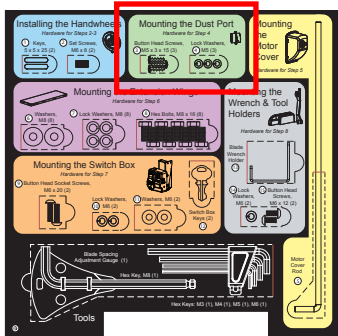


Fig. 22

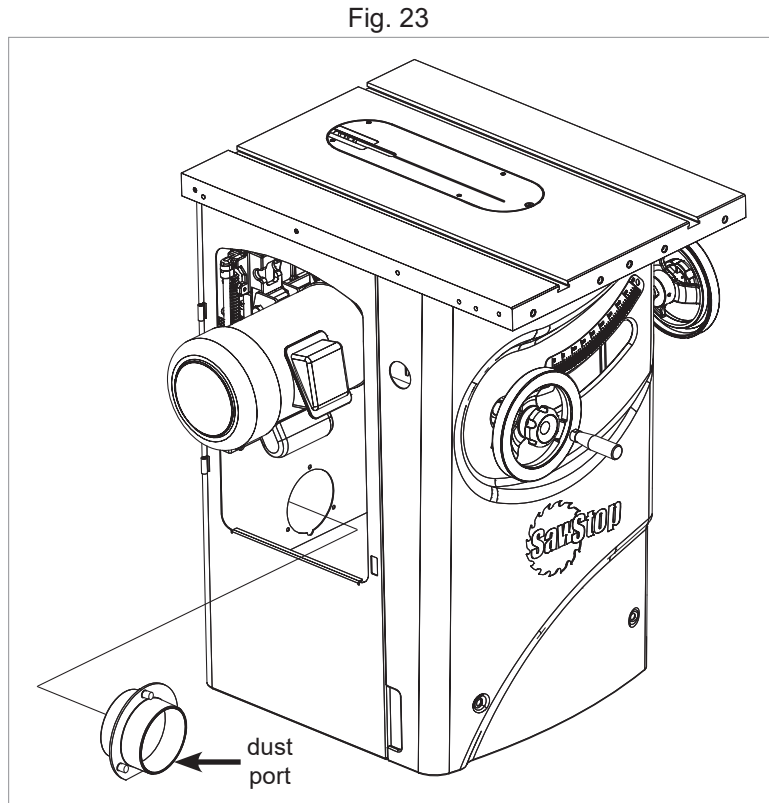


Fig. 23

Holding the dust port in your hand, reach inside the cabinet through the opening on the side of the cabinet through which the motor protrudes and fit the dust port in the hole so that the semicircle fits in the cabinet and the flange around the dust port lies flat against the inside of the cabinet. When correctly installed, the three holes in the cabinet surrounding the dust port will line up with the three bosses in the dust port.

While holding the dust port firmly in place on the inside of the cabinet, insert each of the three screws into the holes surrounding the dust port on the outside of the cabinet (see Fig. 24). Using a Phillips screwdriver, tighten each screw a little bit at a time until all three screws are securely in place.

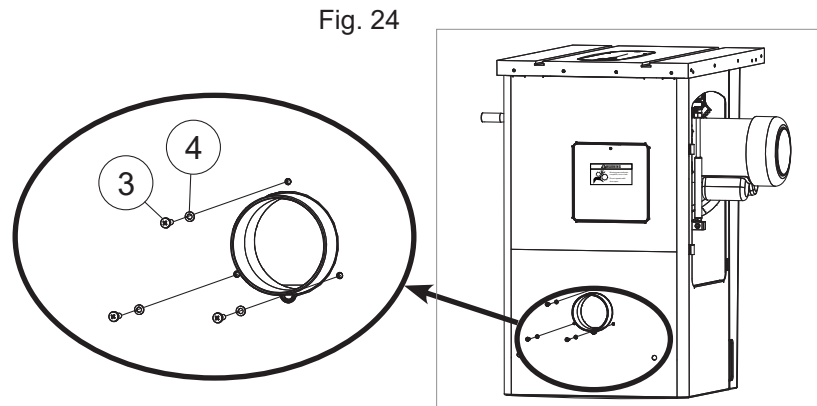
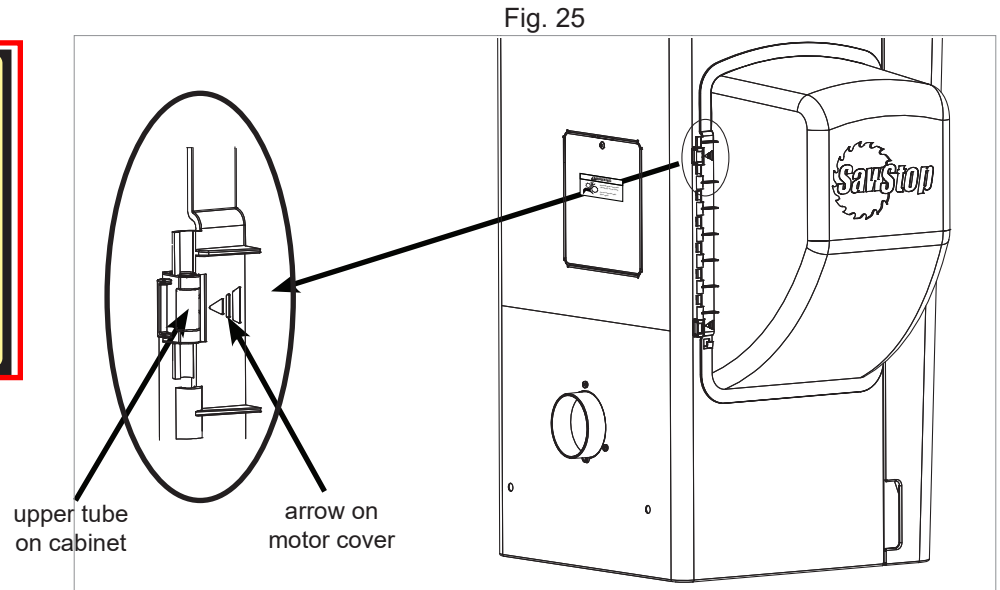
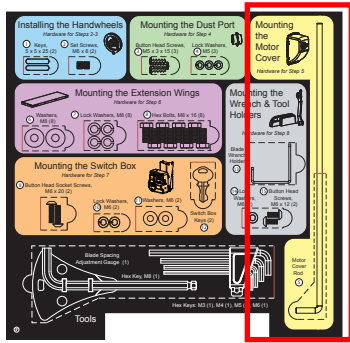


Fig. 24

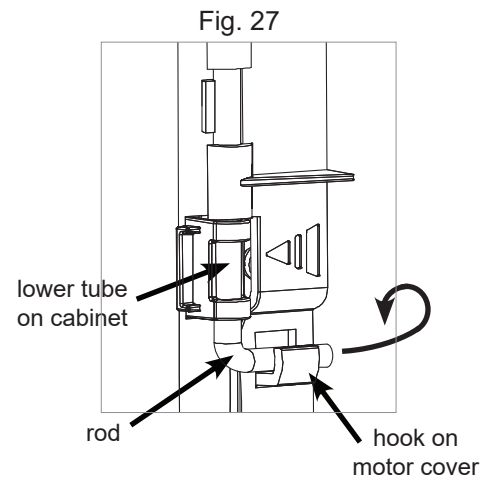
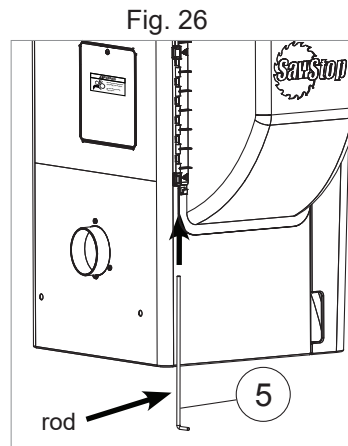
# Assembling Your Saw

## Installing the Motor Cover

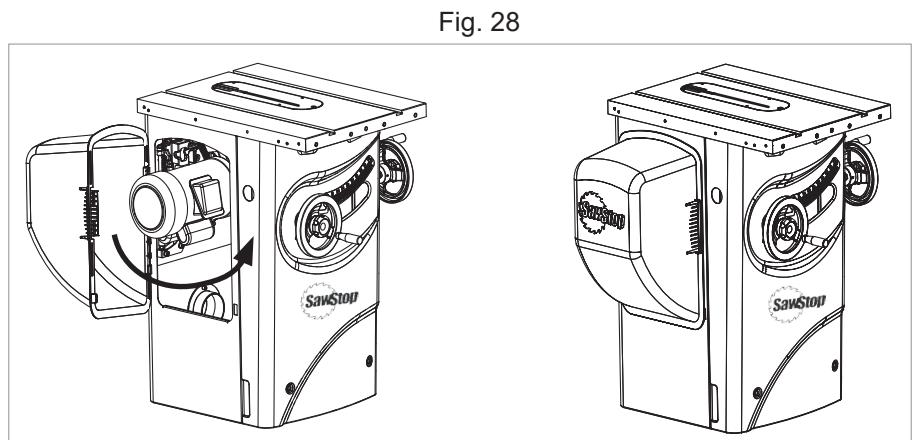
5. Locate the motor cover and remove the motor cover rod from the area with the yellow background on the Table Saw Hardware Pack. Hold the motor cover against the side of the saw over the motor such that the two arrows on the side of the cover point to the two metal tubes on the side of the cabinet (see Fig. 25).



Slip the straight end of the motor cover rod up through the bottom tube then through the row of half-cylinders along the edge of the motor cover and finally through the upper tube (see Fig. 26). Rotate the motor cover rod so that the bent end of the rod fits into the hook on the motor cover just below the bottom metal tube (see Fig. 27).



To open the motor cover press on the ribbed section on the front of the motor cover until it unlatches and swing the cover away from the cabinet. Reverse the process to close the cover (see Fig. 28).



# Assembling Your Saw

## Mounting the Extension Wings

- The hardware required to mount the cast iron extension wings to the cast iron table top is located in the area with the purple background on the Table Saw Hardware Pack. Position one of the extension wings next to the left side of the cast iron table with the chamfer toward the front and align the holes in the side of the wing with the four threaded holes on the side of the table (see Fig. 29). Mount the left extension wing with four M8 washers, four M8 lock washers and four M8 x 20 hex bolts, but do not tighten. Repeat the same procedure to mount the other extension wing to the right side of the table.

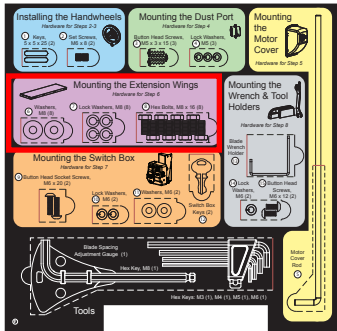
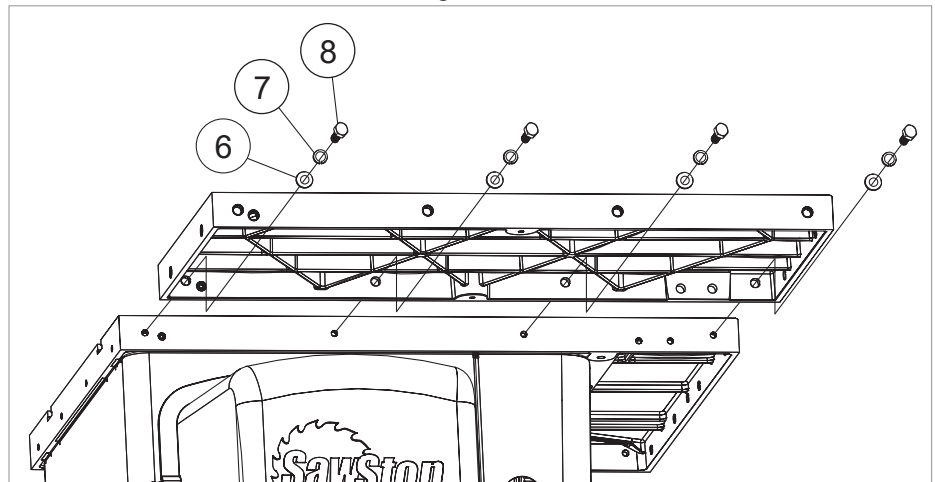
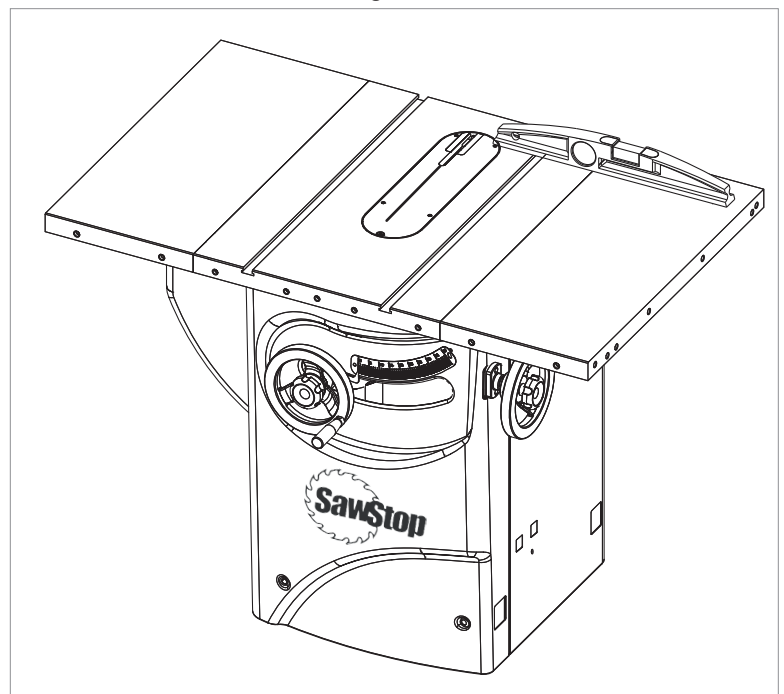


Fig. 29



Use a straight-edge to level the extension wings with the cast iron table top and tighten all of the M8 x 20 hex bolts with a 13 mm wrench (see Fig. 30).

Fig. 30



# Assembling Your Saw

## Mounting the Switch Box

7. The hardware required to mount the switch box is located in the area with the orange background on the Table Saw Hardware Pack. Remove two M6 x 20 button head socket screws, two M6 lock washers and two M6 washers and place a lock washer followed by a washer on the end of each screw. Mount the switch box under the left extension wing by inserting the screws into the two holes at the upper end of the switch box mounting bracket (see Fig. 31) and threading them into the holes towards the front of the left extension wing (see Fig. 52). Tighten the screws with a 4 mm hex key.

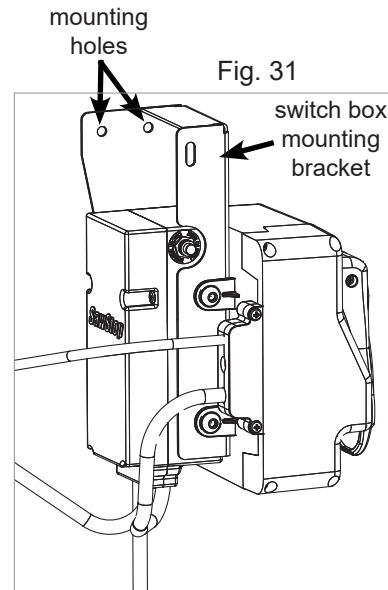
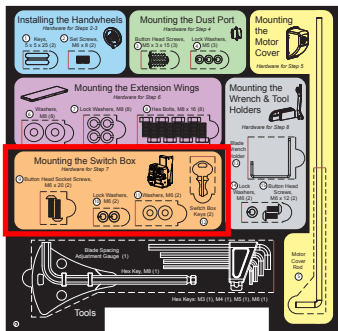
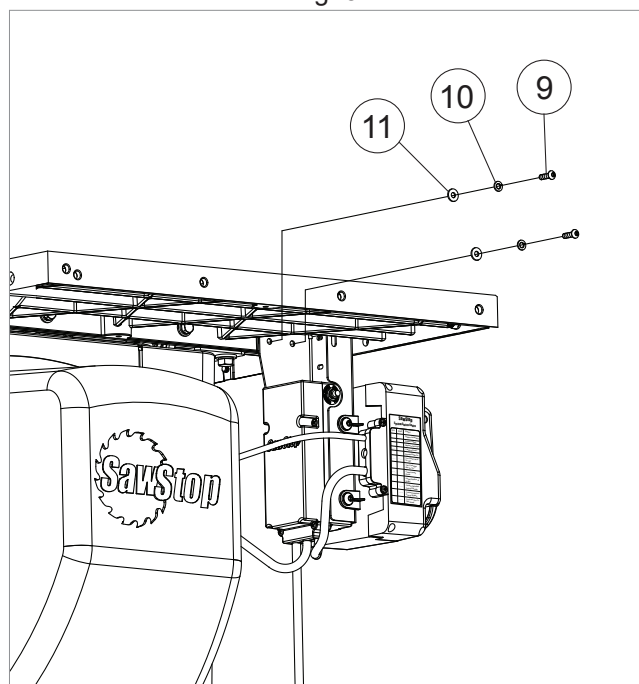


Fig. 32



# Assembling Your Saw

## Mounting the Accessory Holders

8. Your saw comes with two tool holders to store saw accessories. The blade wrench holder provides a place to hang the wrenches that came with your saw. The accessory tool holder provides a place to store your riving knife, miter gauge and blade guard. The hardware required to mount the two accessory holders is located in the area with the gray background on the Table Saw Hardware Pack. To mount the blade wrench holder, remove the blade wrench holder, one M6 x 12 button head screw and one M6 lock washer from the Table Saw Hardware Pack. Place the lock washer on the screw, insert the screw through the hole in the blade wrench holder and then thread the screw into the hole on the left side of the cabinet behind the switch box (see Fig. 33). Tighten the screw with a 4 mm hex key.

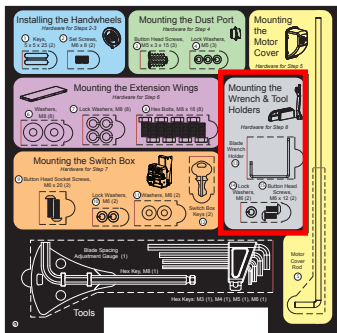
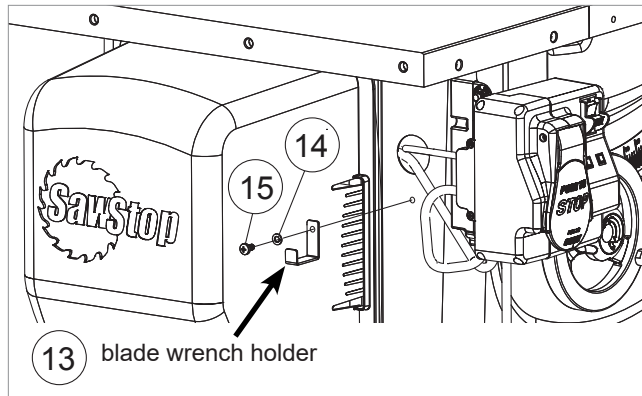
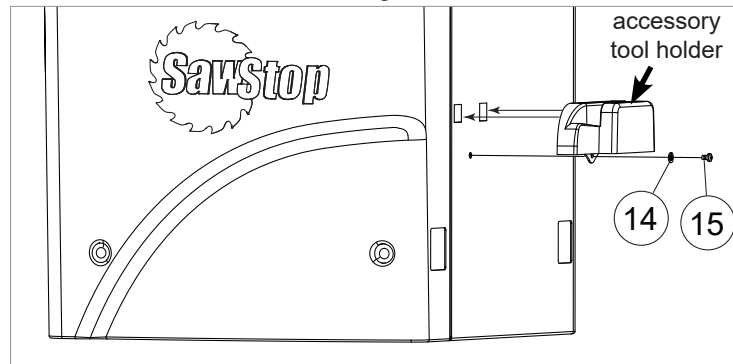


Fig. 33



To install the accessory tool holder, locate the accessory tool holder and remove the other M6 x 12 button head screw and M6 lock washer from the Table Saw Hardware Pack. Place the lock washer on the screw and insert the screw through the hole at the bottom of the accessory tool holder. Mount the accessory tool holder to the cabinet by slipping the ends of the hooks on the side of the tool holder into the corresponding slots on the front lower corner of the right side of the cabinet and threading the screw into the hole in the cabinet (see Fig. 34). Tighten the screw with a 4 mm hex key.

Fig. 34



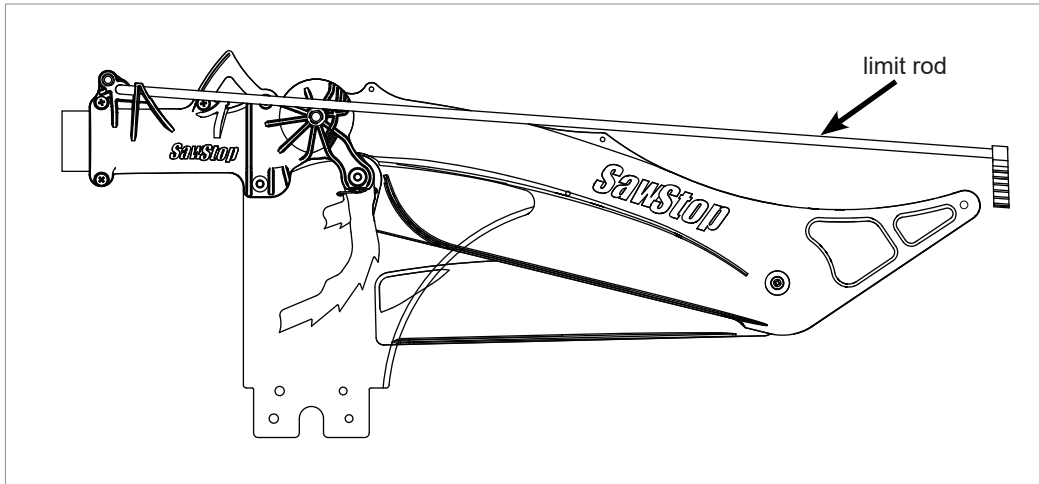
# Assembling Your Saw

## Installing the Blade Guard Limit Rod

9. The next step in assembling your saw is to install the blade guard limit rod on the blade guard. The blade guard limit rod prevents material that is taller than the height of the blade from entering the blade guard and engaging the blade.

Locate the blade guard and the blade guard limit rod. The limit rod fits roughly horizontally along the blade guard (see Fig. 35).

Fig. 35



To install the limit rod, hold the rod vertical with the open ends pointed downward (see Fig. 36). The two open ends of the limit rod fit into holes at the top, back of the blade guard (see Fig. 37) which allow the limit rod to pivot. Pull the ends of the rod apart just enough to fit each end of the limit rod into the holes at the back of the blade guard. Make sure that the "V" shaped wood stop at the end of the limit rod is oriented so that the tip of the "V" will be pointed downward when the limit rod is pivoted downward to a horizontal position along the blade guard. Once the ends of the limit rod are in place, pivot the limit rod downwards (see Fig. 38).

Fig. 36

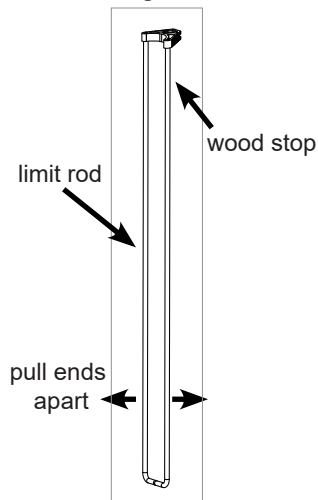


Fig. 37

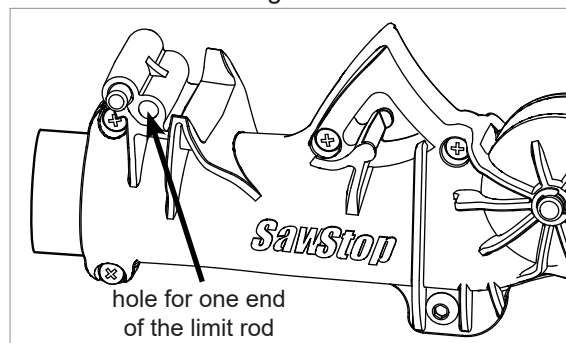
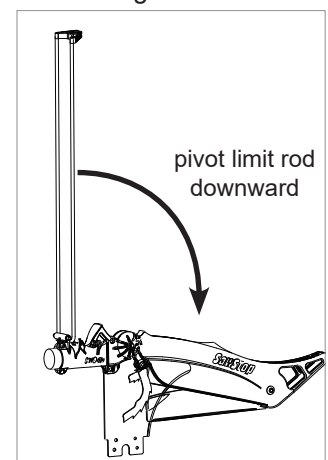


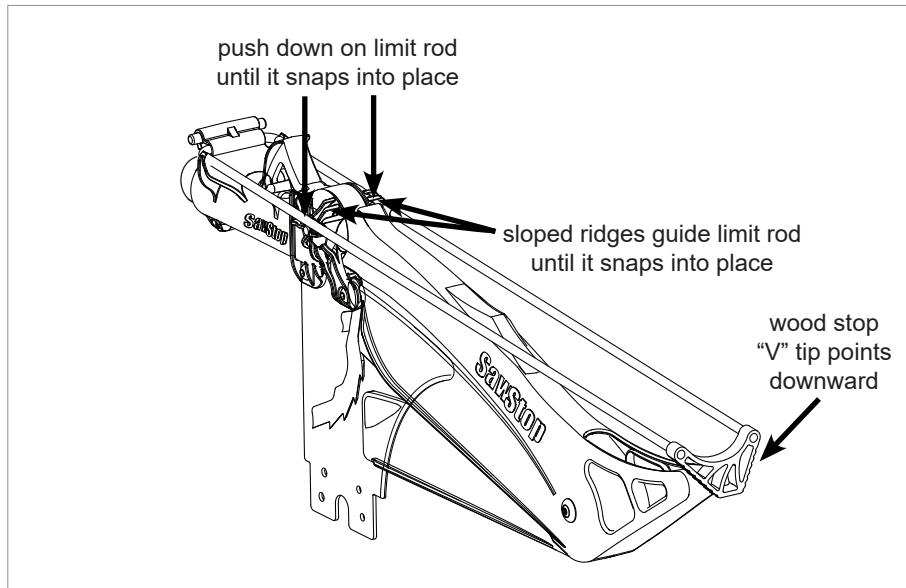
Fig. 38



# Assembling Your Saw

Apply downward pressure to the limit rod at the sloped ridges on each side of the blade guard until the limit rod snaps into place (see Fig. 39).

Fig. 39



**Congratulations, your saw is now assembled.**

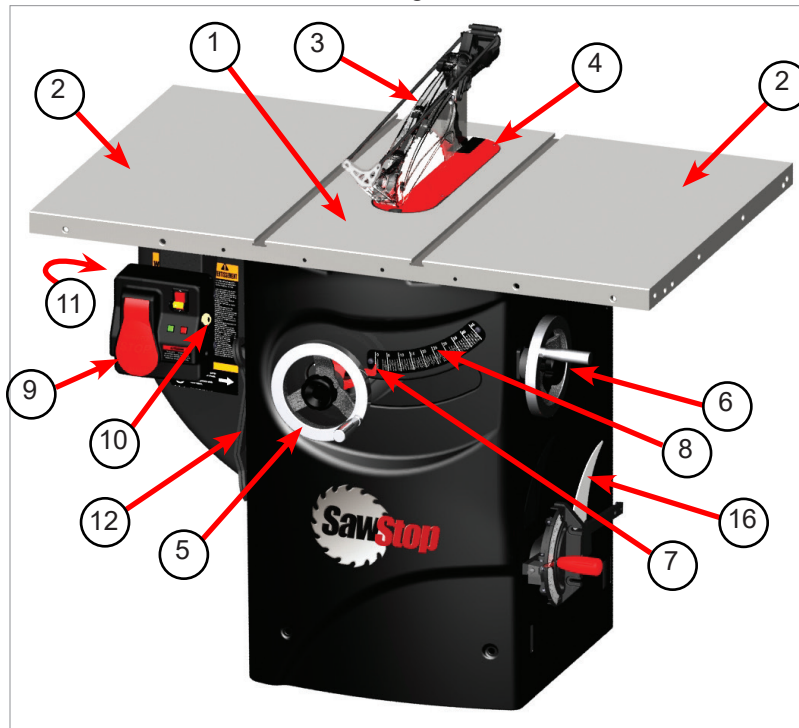
**Note:** You must install a rip fence prior to using the saw. Refer to the manual accompanying your rip fence for instructions on how to install the fence.



# Get to Know Your Saw

The major components of your saw are identified below. Make sure you can identify these components in order to follow the instructions in this manual.

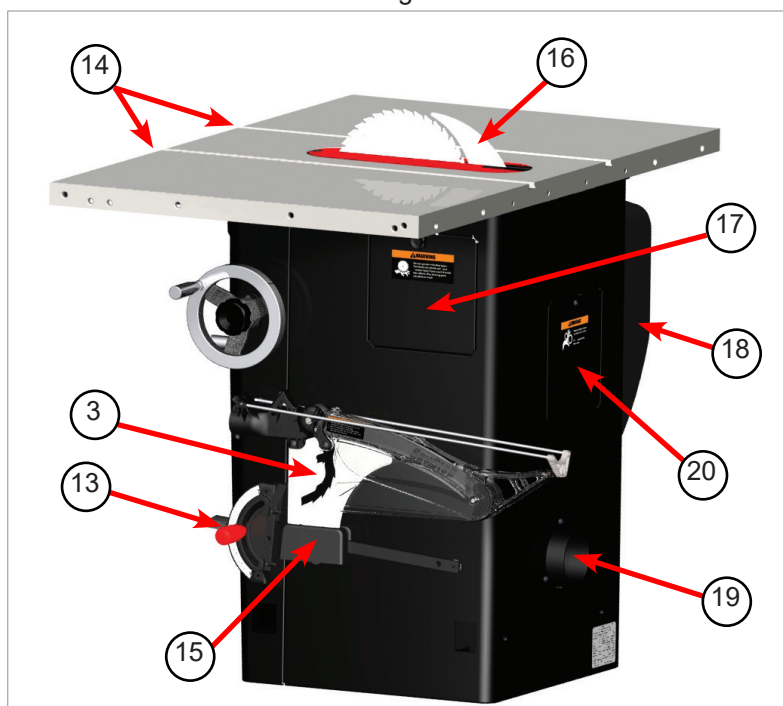
Fig. 40



## External Components

1. Table Top
2. Extension Wings
3. Blade Guard Assembly
4. Standard Table Insert
5. Elevation Handwheel
6. Tilt Handwheel
7. Tilt Angle Indicator
8. Tilt Angle Scale
9. Switch Box
10. Bypass Key
11. Thermal Overload Switch
12. Blade Wrenches (2)
13. Miter Gauge
14. Miter Gauge Slots
15. Accessory Tool Holder
16. Riving Knife
17. Side Access Panel
18. Motor Cover
19. Dust Port
20. Rear Access Panel

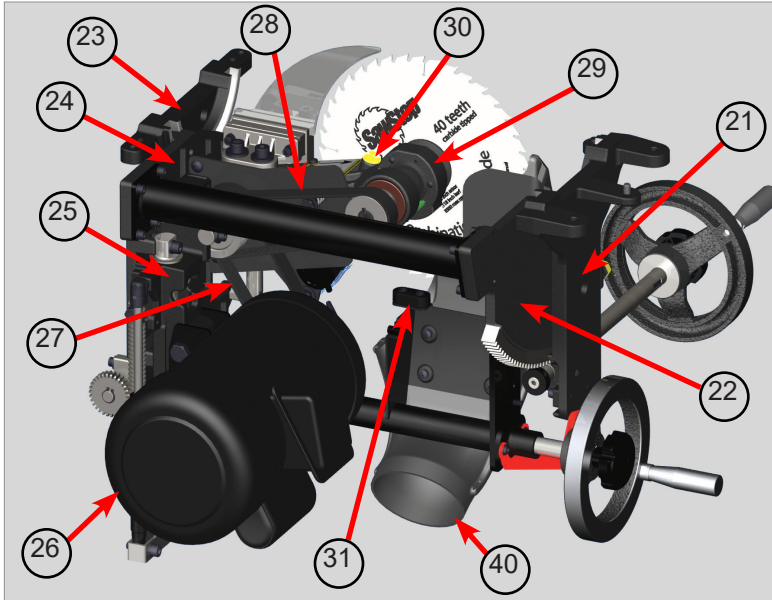
Fig. 41





# Get to Know Your Saw

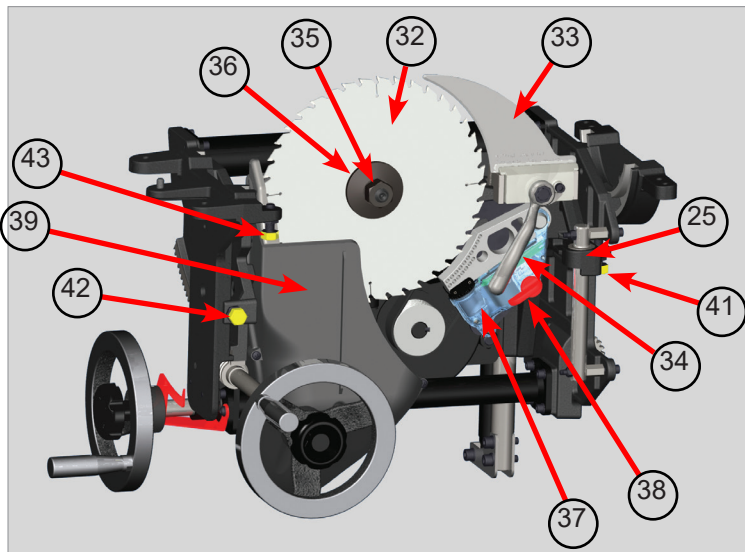
Fig. 42



## Internal Components

- 21. Front Trunnion Bracket
- 22. Front Trunnion
- 23. Rear Trunnion Bracket
- 24. Rear Trunnion
- 25. Elevation Plate
- 26. Motor
- 27. Motor Belt
- 28. Arbor Belt
- 29. Arbor Block
- 30. Brake Positioning Bolt
- 31. Arbor Bumper
- 32. Saw Blade
- 33. Riving Knife
- 34. Quick-Release Clamp Handle
- 35. Arbor Nut
- 36. Arbor Washer
- 37. Brake Cartridge
- 38. Cartridge Key
- 39. Dust Shroud
- 40. Dust Port
- 41. Upper Elevation Limit Stop
- 42. 0° Tilt Limit Stop
- 43. 45° Tilt Limit Stop

Fig. 43



# Preparing Your Saw for Use

## Saw Placement

Position the saw on a level surface away from sources of moisture and electrical noise. Make sure there is sufficient room to allow free access to all sides of the saw.

## Table Insert Removal and Installation

Your saw is shipped with a high-quality, zero-clearance table insert. The insert is factory-adjusted to fit securely in the table opening and below the table surface. If you wish to perform additional adjustment on the insert, see page 75 for instructions.

**WARNING!** Always turn off the main power switch and unplug the power cord before removing or installing the table insert on your saw.

The rear of the table insert is held in place by two lock-down screws in the bottom rear of the insert and two lock-down screws in the table opening. It is held down in the front by latches formed at the ends of a rotating lock-down lever. The lock-down lever allows you to easily remove the insert without the use of tools.

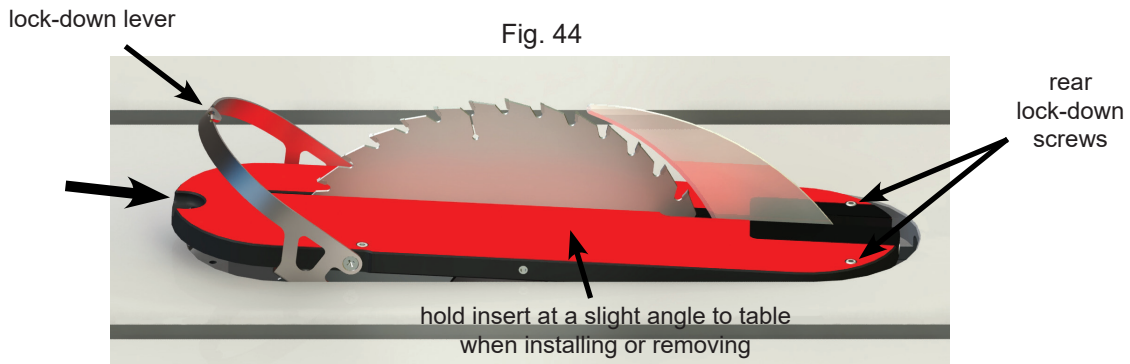
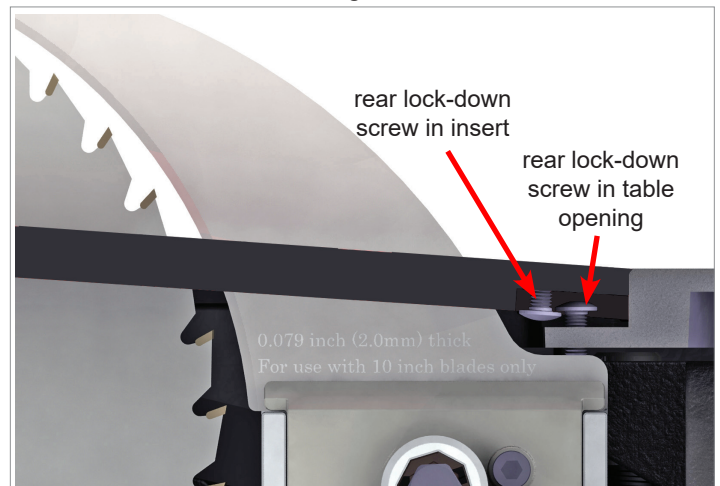


Fig. 45

To install the table insert, hold it at a slight angle, with the lock-down lever rotated upwards and the rear of the insert lower than the front (see Fig. 44). Slide the rear of the insert around the spreader or riving knife and against the back of the table opening so that the heads of the rear lock-down screws in the bottom of the insert slide under the heads of the lock-down screws in the table opening (see Fig. 45). Then, with the lock-down lever rotated upwards, lower the front end of the insert into the table opening until the insert lies flat. Finally, rotate the lock-down lever all the way down so that it fits along the edge of the table insert. Be certain that no part of the table insert extends up beyond the table surface; it should be flush or just below the table surface.



**WARNING!** Never operate the saw without the table insert in place.

**CAUTION!** Do not use table inserts with metal or other electrically-conductive parts that could contact the blade. This can cause the brake to be activated unnecessarily.

# Preparing Your Saw for Use

## Blade or Dado Installation

The SawStop® Professional Cabinet Saw is designed to be used with a 10 inch saw blade or an 8 inch dado set. A dado set is made up of two circular saw blades on either side of a set of removable knives or chippers. You can use a dado set to cut a groove or slot in a workpiece. Other sizes or types of blades are not compatible with a SawStop saw. If you attempt to use an incompatible blade, the safety system will display an error code and prevent the motor from starting.

**WARNING!** Always turn off the main power switch and unplug the power cord before removing or installing a blade or dado set on your saw.

**WARNING!** Only install 10 inch blades or 8 inch dado sets (with optional dado cartridge and optional dado table insert). Do not install other size blades or dado sets. Do not install molding heads or other non-standard cutters. Use of these non-standard blades or cutters may cause serious injury.

The Professional Cabinet Saw comes with a 40 tooth, 10 inch combination saw blade. The blade may be lightly coated in oil to prevent rusting. Clean the blade thoroughly before you use it for the first time. If you wish to install a different blade, use a high quality blade that does not have anti-rust coatings on the teeth (e.g., lacquer, wax, etc.). Such coatings can interfere with (or potentially defeat) the ability of the system to detect contact. **Blades with depth-limiting shoulders** may take longer to stop in the event of an accident than standard blades, and you could receive a more serious injury. Therefore, SawStop recommends using blades without depth-limiting shoulders.

Fig. 46

The SawStop safety system is designed for use with standard 10 inch blades with kerfs from  $\frac{3}{32}$  inch to  $\frac{3}{16}$  inch. Blades with kerfs much thinner than  $\frac{3}{32}$  inch should not be used because those blades might not be strong enough to withstand the force applied by the brake when it activates. As a result, those blades might deform and stop more slowly in the event of an accident, resulting in a more serious injury. Blades with kerfs much thicker than  $\frac{3}{16}$  inch are heavier than standard  $\frac{1}{8}$  inch kerf blades, and should not be used because they may stop more slowly than standard blades in the event of an accident, resulting in a more serious injury.

To install the blade or dado set, use the open end of one of the blade wrenches included with the saw to hold the arbor behind the arbor flange, and use the closed end of the other blade wrench to loosen the arbor nut (see Fig. 46). The arbor nut is right-hand threaded so turn the nut counter-clockwise to loosen it and clockwise to tighten it. After removing the arbor nut and arbor washer, install the blade or dado set and reinstall the arbor washer and arbor nut. For dado widths larger than about  $\frac{3}{8}$  inch, do not use the arbor washer. Instead, tighten the arbor nut directly against the dado set. Use the blade wrenches to tighten the arbor nut securely.



If you install a dado set, you will also need to install an optional dado brake cartridge and an optional dado table insert (see pages 58 and 98). A dado set cannot be used with the standard SawStop® brake cartridge or table insert.

**WARNING!** Do not attempt to use saw blades made of materials that are electrically non-conductive (e.g., abrasive blades, blades with plastic hubs, etc.). The SawStop® safety system will not allow the saw to operate if these blades are installed.

**WARNING!** Never install the blade backwards. The brake might not stop a blade that is installed backwards and you may receive a serious injury.

# Preparing Your Saw for Use

## Brake Position Adjustment

It is important to accurately adjust the spacing between the brake cartridge and the blade (see Fig. 47). If the brake is too far from the blade, the safety system will take longer than necessary to stop the blade. On the other hand, if the brake is too close to the blade, a portion of the blade might contact the brake and cause it to activate.

**WARNING!** Always turn off the main power switch and unplug the power cord before removing, installing, or adjusting the brake cartridge on your saw.

The exact diameters of 10 inch blades will vary. In addition, blades that have been resharpened one or more times will usually be under 10 inches. **Therefore, always check the spacing between the blade and the brake when installing a different blade or brake cartridge.**

Fig. 47

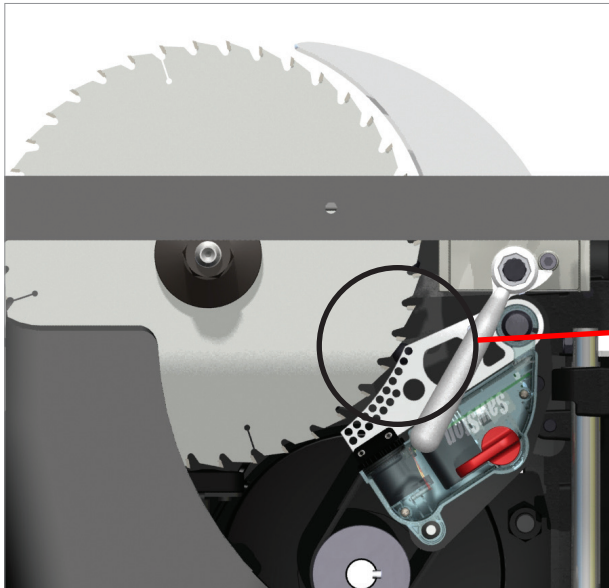
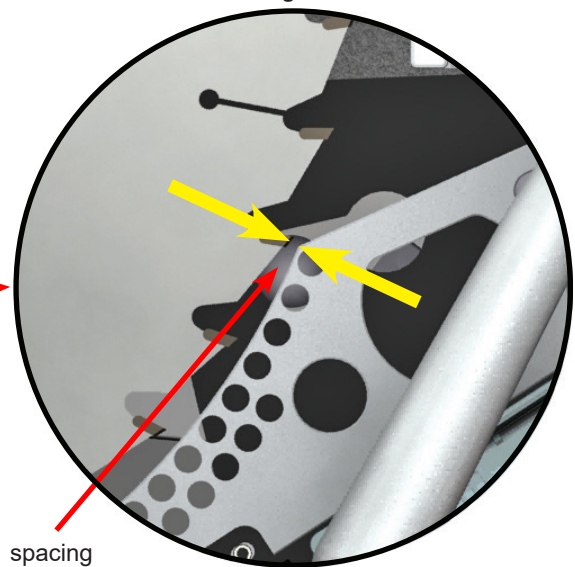


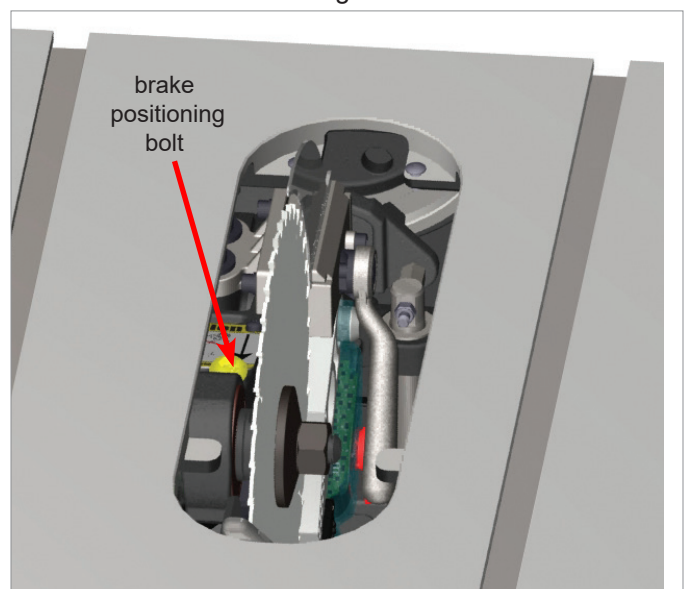
Fig. 48



The spacing between the brake cartridge and the blade is adjusted by the yellow brake positioning bolt mounted in the top of the arbor block (see Fig. 49). To access the brake positioning bolt, set the tilt angle to 0° and adjust the blade elevation to approximately 1½ inches above the table top. The bolt will be accessible through the opening in the table top.

Using the 8 mm hex key included with the saw, turn the brake positioning bolt clockwise to decrease the spacing between the brake cartridge and the edge of the blade, or counter-clockwise to increase the spacing. Adjust the brake position as needed to set the spacing between the teeth of the blade and the closest point on the brake cartridge to between 1/16 and 1/8 inch (see Fig. 48).

Fig. 49





# Preparing Your Saw for Use

A blade spacing adjustment gauge is included with the tools in the Table Saw Hardware Pack and can be placed between the closest points on the blade and brake cartridge to set the appropriate spacing (see Fig. 50). The two slots on the blade spacing adjustment gauge can be used to store the 8 mm hex key that is used to adjust the brake position. The blade spacing adjustment gauge also contains magnets so it can be attached to the side of the Professional Cabinet Saw housing.

Alternatively, you can place a U.S. nickel between the brake cartridge and the edge of the blade to set the correct spacing.

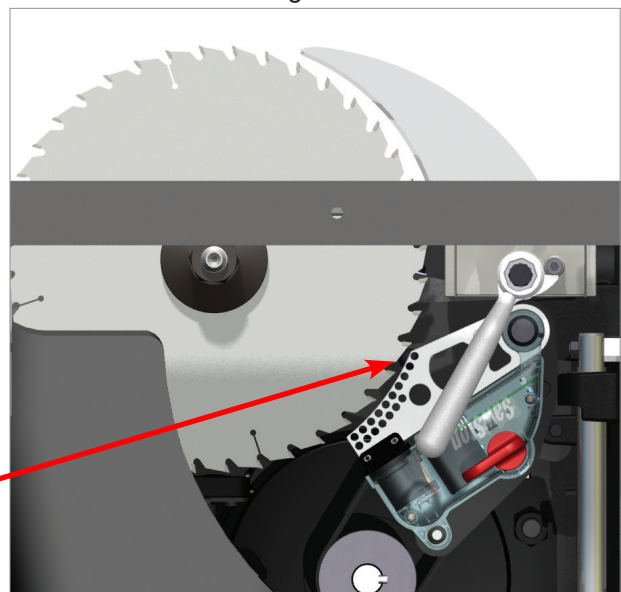
Fig. 50



use the tip of the blade spacing adjustment gauge to set the correct spacing between the blade and the brake

After adjusting the brake position and before starting the saw, spin the blade by hand at least one full revolution to verify that the blade does not hit the brake (see Fig. 51).

Fig. 51



spin the blade by hand to make sure the blade does not touch the brake

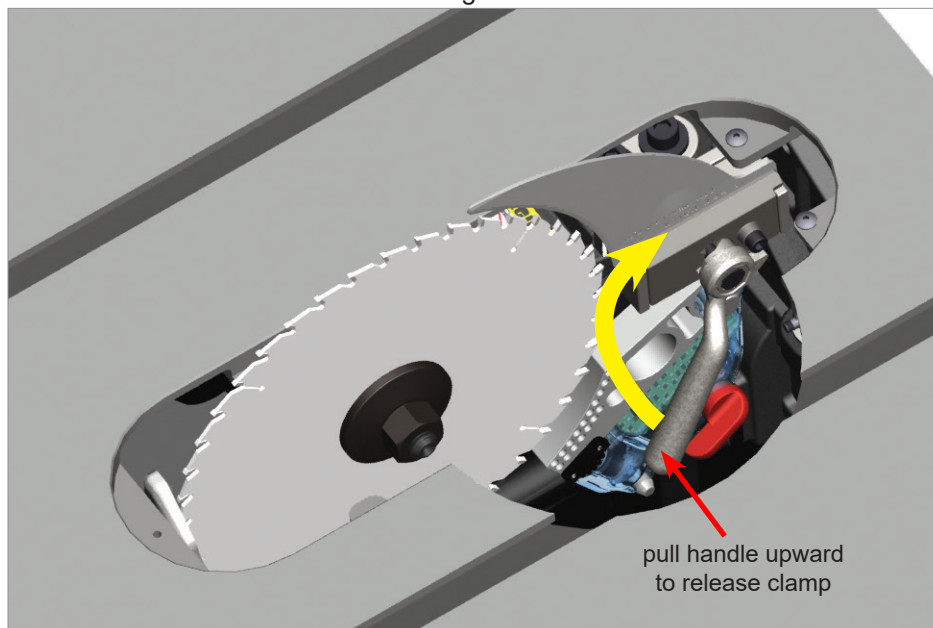
# Preparing Your Saw for Use

## Blade Guard and Riving Knife Installation

Your SawStop® Professional Cabinet Saw includes a unique, quick-release blade guard mounting system. This mounting system was developed to allow you to quickly remove and install the blade guard and riving knife without the use of tools and without the need for realignment. The mounting system is factory-aligned to the arbor flange and should not require adjustment. If you wish to change the alignment, see page 77 for instructions.

The saw is shipped with the riving knife installed. The riving knife is an extremely important tool for reducing the potential for kickback when the blade guard cannot be used. The riving knife should always be used whenever you need to make rabbet or other non-through cuts (where the blade does not cut through the top of the wood) and narrow cuts where the guard would interfere with the rip fence.

Fig. 52



**WARNING!** Always turn off the main power switch and unplug the power cord before removing or installing the blade guard or riving knife on your saw.

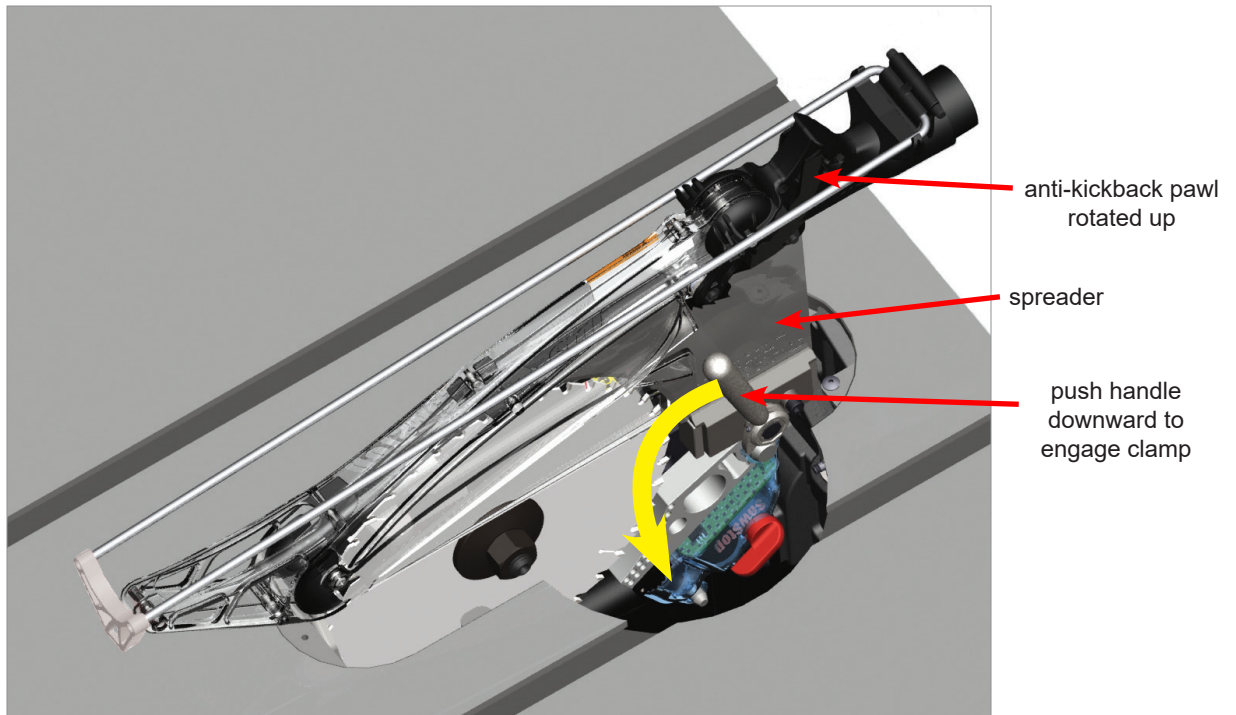
For the majority of sawing operations, including all through-sawing (where the blade cuts through the top of the wood), the blade guard should be used. To install the blade guard, first remove the riving knife by lifting the clamping handle fully upward until the clamping plate moves away from the riving knife (see Fig. 52). Then move the riving knife slightly toward the right to clear the positioning pins, and lift it out of the clamp.

**WARNING!** Use the blade guard and spreader for every operation for which it can be used, including all through-sawing.

# Preparing Your Saw for Use

To install the blade guard, first pivot the large anti-kickback pawls upwards and guide them into the catches on either side of the guard to hold them out of the way (a close-up view is shown in Fig. 71). Then position the spreader in the clamp and flat against the base plate. The positioning pins will align the spreader in the correct position. Lower the clamping handle completely to lock the spreader in place (see Fig. 53). If the clamping handle is difficult to lower, make sure the spreader is positioned flat against the base plate.

Fig. 53



To remove the blade guard, use the same procedure as removing the riving knife. Similarly, to install the riving knife, use the same procedure as installing the blade guard.

The clamping force used to hold the spreader and riving knife in place can be increased if the spreader and riving knife are not held securely, or decreased if too much force is required to lower the clamping handle. See page 82 for instructions on adjusting the clamping force.

See pages 46 and 49 for instructions on the operation and use of the blade guard and the riving knife.

**Note:** when using a dado set, neither the blade guard nor the riving knife may be used. Instead, use other protective devices such as push sticks, push blocks and featherboards (see pages 94, 96 and 97).

**Note:** both the spreader and the riving knife are 2.3 mm (0.090 inch) thick. Do not use a saw blade with a kerf less than 2.35 mm with these tools. The kerf of a saw blade is the width of the cut produced by the blade.

# Preparing Your Saw for Use

## Dust Collection

Your SawStop® Professional Cabinet Saw includes a dust shroud around the blade to provide superior dust collection to ordinary saws. A flexible hose connects the dust shroud to a dust port that mounts to the back of the cabinet (see Fig. 42). Connect a suitable dust collection system to the dust port and always use the dust collection system when making a cut.

SawStop recommends the use of a dust collection system that provides at least 350 CFM of flow at the dust port. Attach a 4 inch diameter flexible hose between the inlet port on your dust collector and the dust port at the back of the cabinet (see Fig. 54). If you power your dust collector and SawStop® saw from the same electrical circuit, ensure the circuit and breaker have sufficient capacity for both machines.

For more information on dust control and installing a dust collection system, see *Woodshop Dust Control*, by Sandor Nagyszalanczy, The Taunton Press, 2002.

Fig. 54



**WARNING!** Some types of dust created by sawing, power sanding, grinding, drilling, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive toxicity or harm. Some examples of these chemicals are lead from lead-based paints, crystalline silica from bricks, cement, and other masonry products, and arsenic and chromium from chemically treated lumber. In addition, wood dust has been listed as a known human carcinogen by the U.S. government. The risk from exposure to these chemicals and to dust varies depending on how often you do this type of work. To reduce your exposure, work in a well ventilated area and work with approved safety equipment including dust masks or respirators designed to filter out such dust and chemicals.



# Preparing Your Saw for Use

## Electrical Power Connection for a 208-240V, 3 hp Saw (PCS31230)

**WARNING!** Do not connect the saw to electrical power until the saw is completely assembled and you have read and understood this entire manual.

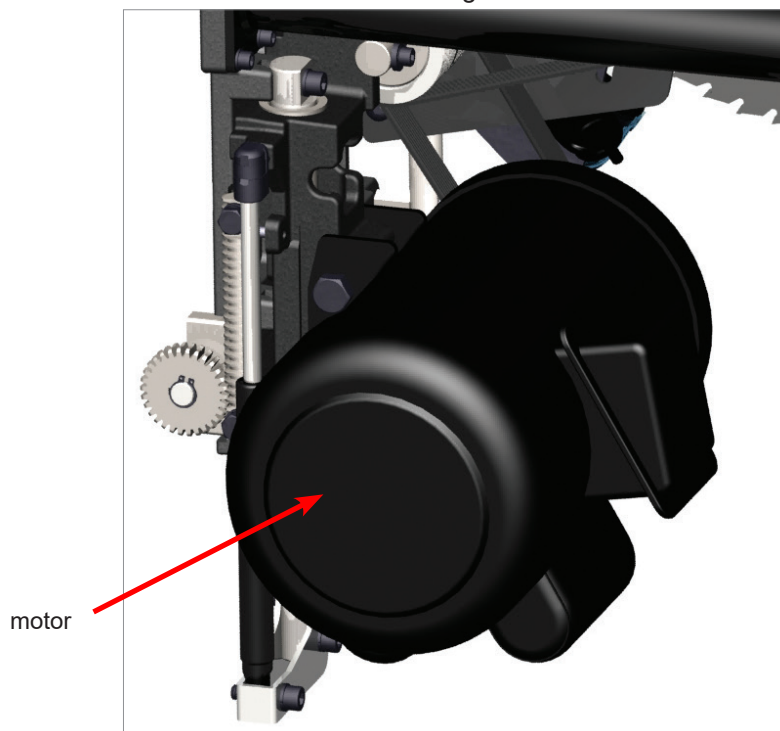
The Professional Cabinet Saw model number PCS31230 comes with an AC motor that is rated at 3 hp and operates at 60 Hz. It can be used with single phase 208-240V power. The motor draws 13 amps at 208-240V power. Do not use any other motor to power your saw.

The Professional Cabinet Saw model PCS31230 is shipped with a 9 ft power cord that has a NEMA 6-15P plug designed for use with matching single phase 230V, 60Hz power outlets. If you need a longer cord, or if you need to replace the plug with a different style of plug designed for 208-240V, follow the instructions on page 36.

The Professional Cabinet Saw model PCS31230-AU is shipped with a power cord that has an AL-303-B plug designed for use with matching single phase 230V, 50Hz power outlets.

Attempting to operate the Professional Cabinet Saw model PCS31230 with power other than 208-240V single phase power will void all warranties and may result in serious injury as well as damage to, or a malfunction of, the saw or safety system.

Fig. 55



**WARNING!** This saw must be connected to a grounded wiring system, or to a system having an equipment-grounding conductor. Failure to connect this saw to an adequate electrical ground may cause the safety system to malfunction and could result in a serious injury or electric shock.

# Preparing Your Saw for Use

## Changing the Plug or Power Cord on a 208-240V, 3 hp Saw (PCS31230)

The Professional Cabinet Saw model number PCS31230 comes with a NEMA 6-15P plug attached to the end of a 9 ft power cord. If you need to replace the plug with a different style plug or if you need a longer cord, follow the instructions below.

### Replacing the Power Cord Plug

If you need to replace the plug that came with your Professional Cabinet Saw model number PCS31230, replace it with a 3-prong, 208-240V, UL-listed plug. There are numerous styles of 208-240V plugs, so select a plug that matches the single phase 208-240V power outlet from which you intend to power the saw. Connect the white and black wires to the two “hot” plug terminals. Connect the green wire to the ground plug terminal. Follow the manufacturer’s specific wiring instructions that come with your 208-240V plug.

### Replacing the Power Cord

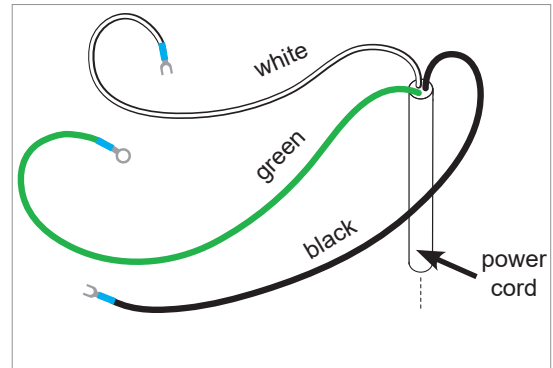
You may replace the 9 ft power cord that came attached to your saw with a longer cord. If you replace the cord, use a 3-conductor cable heavy enough to carry enough current for the motor. A cord that is undersized or too long can cause a voltage drop that will decrease the power supplied to the motor and could result in overheating. See Table 1 for cord length and gauge recommendations for 208-240V wiring.

Cord Recommendations for 208-240V Wiring	
Length	Gauge
0 - 50 Feet	14 AWG
50 - 100 Feet	12 AWG
over 100 Feet	Not Recommended

Table 1

Prepare your new power cord by cutting about 6 1/2 inches of the cable housing off of one end of the cord so that you have access to the three insulated wires in the power cord. Strip off the insulation at the tips of each of the three wires and secure terminal forks at the end of the white and black wires and a ring terminal on the green wire (see Fig. 56). Make sure the connections are secure and not loose and that none of the wires are left uninsulated below the terminal fork or ring.

Fig. 56

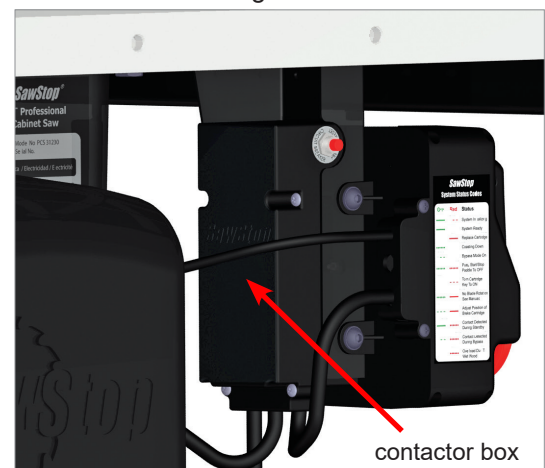


**WARNING!** Loose electrical connections can cause fires.

**WARNING!** Make sure the saw is unplugged from the wall outlet before proceeding with the following instructions.

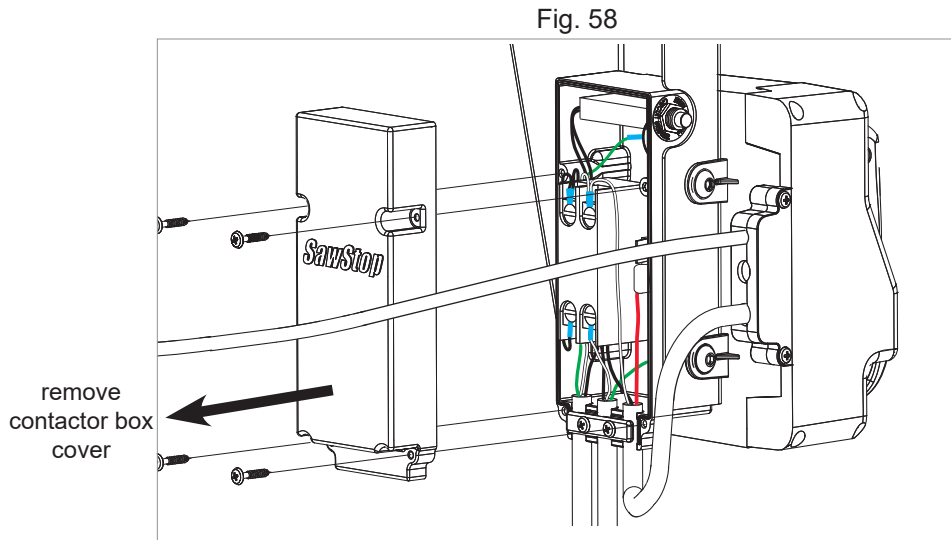
Fig. 57

Locate the contactor box which is mounted to the back side of the switch box bracket (see Fig. 57). To access the contactor box, remove the motor cover and tilt the blade to 45°.

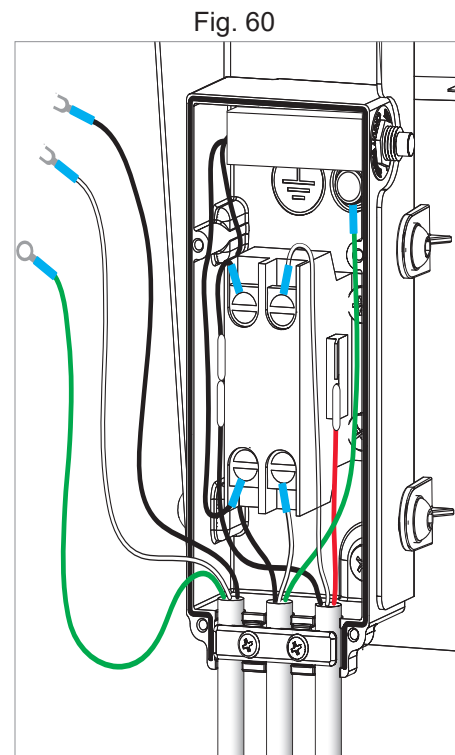
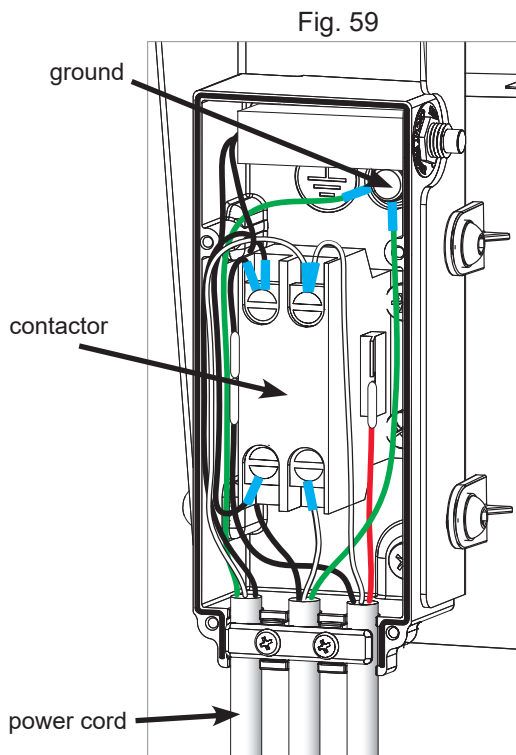


# Preparing Your Saw for Use

With the saw unplugged, use a Phillips screwdriver to remove the four screws on the cover of the contactor box and remove the contactor box cover (see Fig. 58).



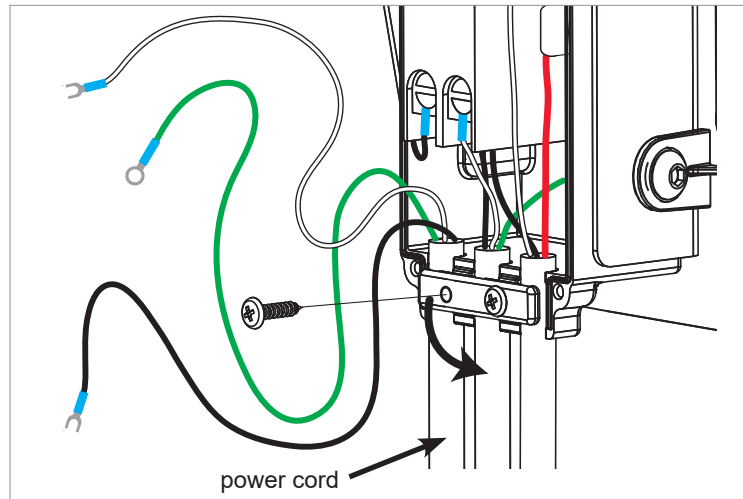
Locate the contactor to which the black and white wires from the power cord are attached and the ground connection to which the green wire from the power cord is attached (see Fig. 59). Disconnect the power cord from the contactor box by using a Phillips screwdriver to loosen the two screws at the top of the contactor and removing the ends of the black and white power cord wires from the screws and then removing the end of the green power cord wire from the ground connection (see Fig. 59 and Fig. 60).



# Preparing Your Saw for Use

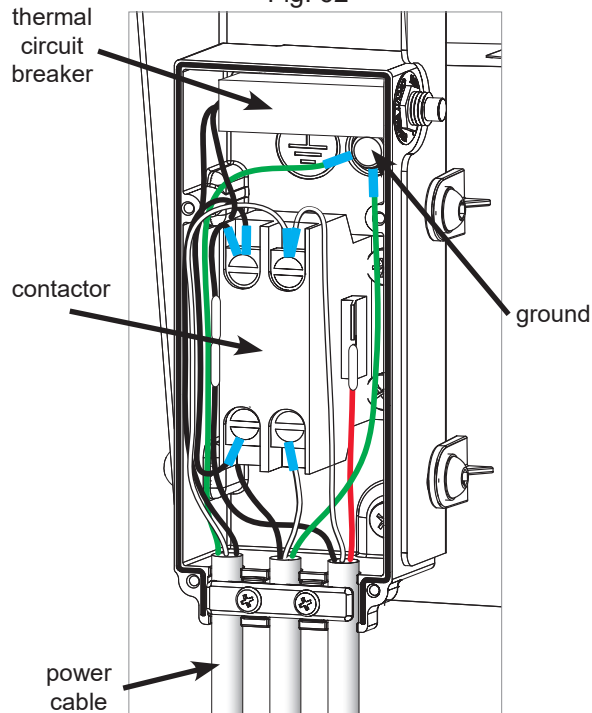
Using a Phillips screwdriver, remove the left screw that attaches the bar across the cords entering the contactor box and loosen the right screw. Then rotate the bar downwards far enough to remove the power cord (see Fig. 61).

Fig. 61



Now install the new power cord in the contactor box. Connect the ground wire (the green wire) to the ground, the white wire to the right, top terminal connection on the contactor, and the black wire to the left, top terminal connection on the contactor (see Fig. 62). A wiring diagram is shown in Fig. 63.

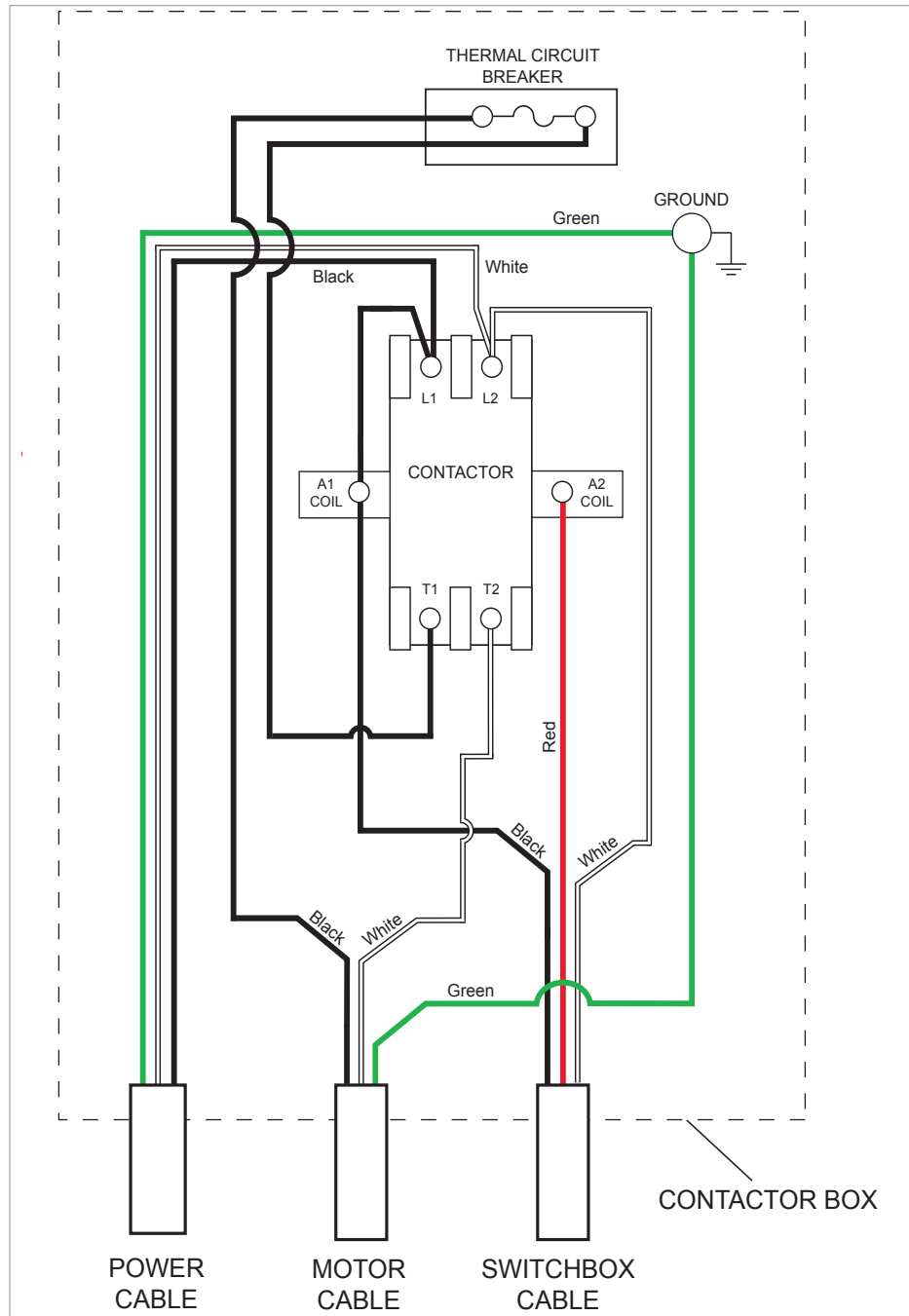
Fig. 62



# Preparing Your Saw for Use

## Contactor Box Wiring Diagram:

Fig. 63



# Using Your Saw

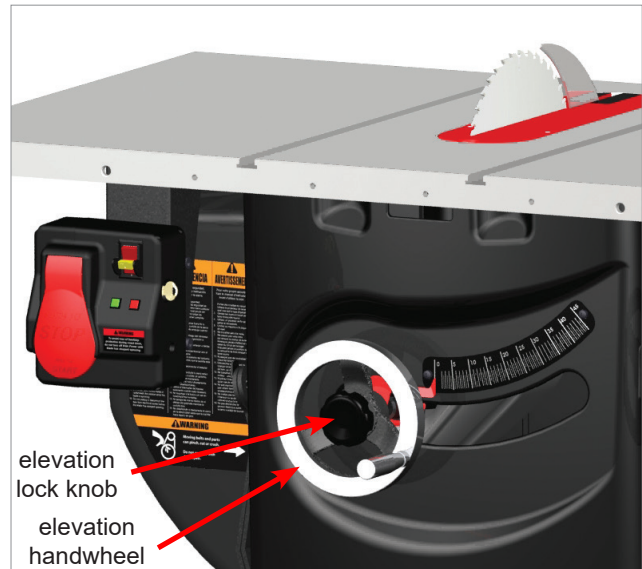
## Adjusting the Blade Height

To maximize safety, the height of the saw blade above the table should be as low as possible while still allowing a complete and precise cut. For through-cuts (i.e., cuts where the wood is cut through its entire thickness), the blade height should be adjusted so that the top of the blade is no more than  $\frac{1}{8}$  inch to  $\frac{1}{2}$  inch above the workpiece.

The blade can be adjusted from  $\frac{1}{8}$  inch below the table top to  $3\frac{1}{8}$  inch above the table top. To adjust the height of the blade, loosen the elevation lock knob and turn the elevation handwheel until the blade is at the desired height (see Fig. 64). Turn the handwheel clockwise to raise the blade, and counter-clockwise to lower the blade. Lock the blade height by turning the elevation lock knob clockwise until tight.

The saw includes limit stops to prevent the height of the blade from being adjusted past the maximum and minimum set points. The upper limit stop is adjustable and pre-set at the factory. It should not need further adjustment but if you decide to adjust the upper blade elevation limit stop, see page 72 for instructions.

Fig. 64



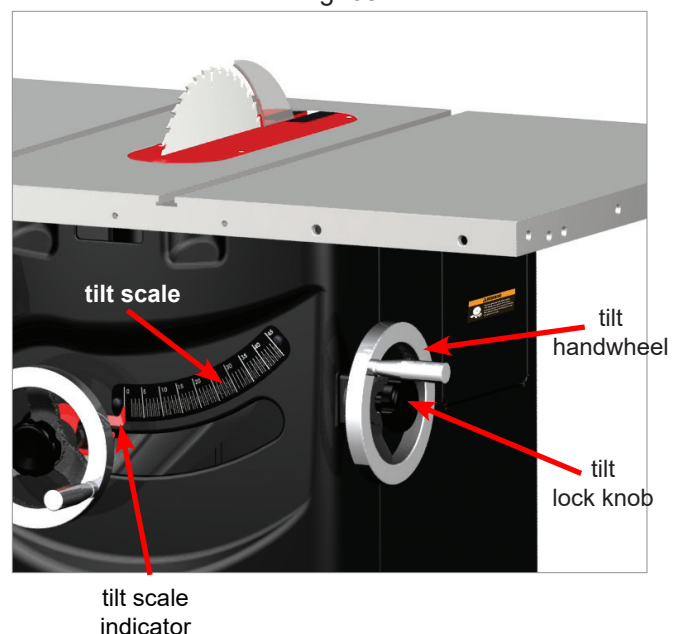
**CAUTION!** When adjusting the height or tilt angle of the blade, reverse the handwheel slightly to release tension after reaching the limit stops. This prevents any slight twisting of the cast iron assembly that might affect blade alignment.

## Adjusting the Blade Tilt Angle

The tilt (bevel) angle of the blade can be adjusted between  $0^\circ$  and  $45^\circ$ . To adjust the tilt angle of the blade, loosen the tilt lock knob and turn the tilt handwheel until the blade is at the desired angle (see Fig. 65). The tilt angle of the blade is indicated by the position of the tilt angle indicator on the tilt angle scale. Turn the tilt handwheel counter-clockwise to increase the tilt angle, and clockwise to decrease the tilt angle. Lock the tilt angle by turning the tilt lock knob clockwise until tight.

The saw includes limit stops to prevent the tilt angle from being adjusted past the  $0^\circ$  and  $45^\circ$  set points. These limit stops are pre-set at the factory and should not need adjustment. If you decide to adjust the blade tilt limit stops, see page 73 for instructions.

Fig. 65





# Using Your Saw

## Turning on Main Power and Starting the Motor

Your SawStop® saw is equipped with a main power switch to supply power to the SawStop® safety system and a Start/Stop paddle to turn the motor on and off. Both the main power switch and the Start/Stop paddle are mounted on the switch box (see Fig. 66).

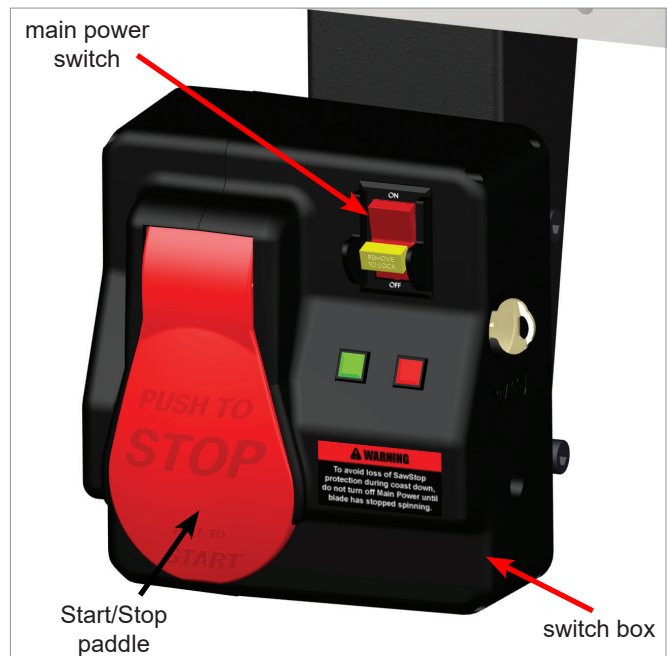
**WARNING!** Never start the saw when the blade is in contact with the workpiece or any other object.

To start your saw, first make sure the Start/Stop paddle is in the “OFF” position (i.e., pushed in) and then turn the main power switch to the “ON” position by flipping the toggle upward. This will turn on power to the SawStop® safety system, and the system will run through a brief initialization routine to test whether the system is operating properly. During this initialization period (approximately 5–10 seconds), red and green lights on the switch box may blink in different patterns as the safety system runs through various self-check steps. These lights are light-emitting diodes (LEDs) and they display the current status of the safety system and saw. Once the safety system completes the initialization routine, the LEDs will display the “READY” status display (green LED on solid, red LED off). The saw is now ready for use.

To start the motor, pull the Start/Stop paddle out. To stop the motor, push the Start/Stop paddle in. The paddle is designed so that it can be pushed in by the operator’s upper leg or knee in an emergency.

If the READY status is not displayed after 15 seconds, the safety system has detected an error that must be corrected before the saw can be used. See page 43 for a key to the LED status codes and an explanation of the error detected for each code. A label describing the LED displays is also positioned on the side of the switch box.

Fig. 66



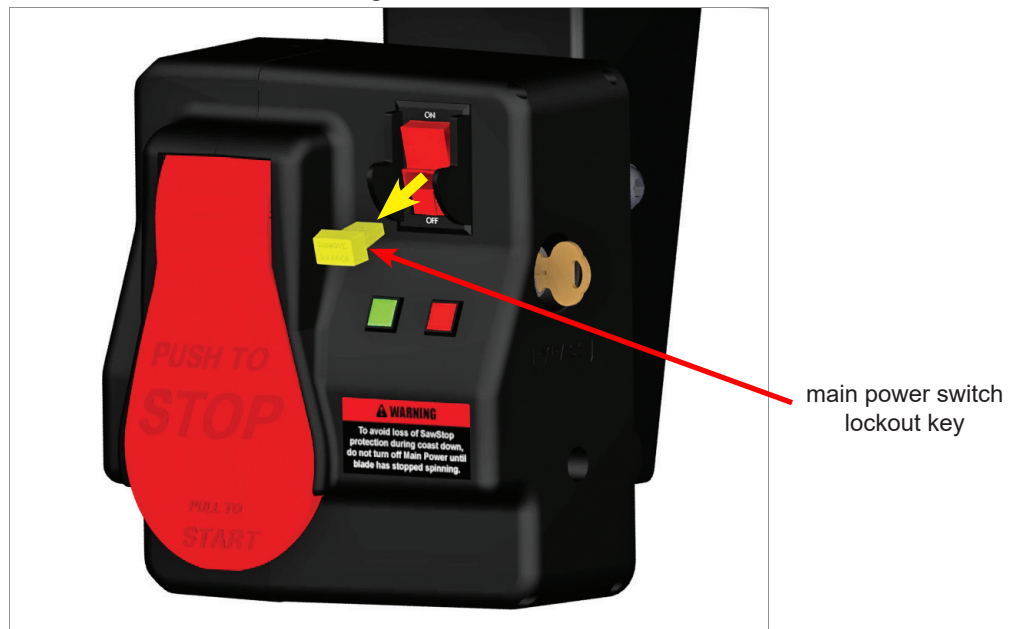


# Using Your Saw

It is not necessary to turn off the main power switch after pushing in the Start/Stop paddle to turn off the motor. If you plan to make several cuts with the saw, you can leave the main power switch in the **ON** position between cuts to eliminate the delay due to the initialization routine. Once you have finished using the saw, turn the main power switch to **OFF** to reduce the likelihood of inadvertent start-up.

In addition, the main power switch has a lockout key that you can remove to prevent children or other non-authorized users from turning the saw on. To remove the key, pull it out, away from the switch. To replace the key, press it back into the socket until it snaps into place (see Fig. 67). When the key is removed, the main power switch can be turned **OFF**, but it cannot be turned **ON**.

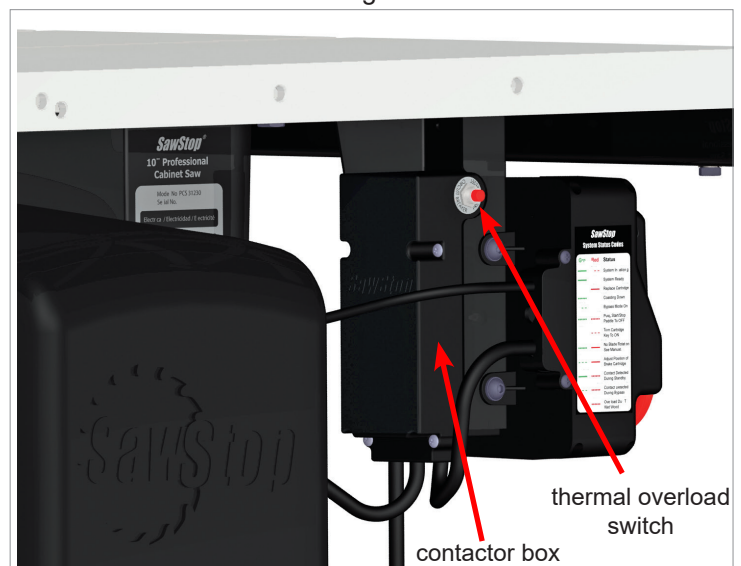
Fig. 67



Your saw also comes equipped with a thermal overload switch that will cut power to the motor if the motor starts to overheat (see Fig. 68). The motor could overheat, for example, if it is overloaded or if a workpiece is fed too rapidly into the blade.

If the thermal overload switch cuts power to the motor, wait a minute or two for the motor to cool down to a safe operating temperature and then push the red thermal overload reset button on the contactor box behind the left side of the switch box. An audible click will indicate that the thermal overload switch has been reset and the saw is ready to use. Double check the electrical circuit and all electrical connections and always use an appropriate feed rate for the material that you are cutting.

Fig. 68



# Using Your Saw

## System Status Codes

The LED lights on the front of the switch box display the current status of the safety system. Each light may be off, or may be on, and if it is on, it may be blinking slowly, blinking quickly, or not blinking at all, which we call “on solid.” Together, the red and green lights display a code, referred to as the System Status Code, which tells you if the saw is operating normally or if there is a problem. When you first turn the Main Power switch on, the safety system will complete an initialization routine to verify the safety system is operating normally. After the initialization routine is completed, you should not see the red light unless there is a System Status problem. If this happens, reference the following System Status codes to determine how to correct the problem.

Fig. 69

SawStop System Status Codes		
Grn	Red	Status
		System Initializing
		System Ready
		Replace Cartridge
		Coasting Down
		Bypass Mode On
		Push Start/Stop Paddle To OFF
		Turn Cartridge Key To ON
		No Blade Rotation See Manual
		Adjust Position of Brake Cartridge
		Contact Detected During Standby
		Contact Detected During Bypass
		Overload Due To Wet Wood

### Symbol Key

	Green LED blinks fast
	Green LED blinks slowly
	Green LED is on solid
	Red LED blinks fast
	Red LED blinks slowly
	Red LED is on solid

**WARNING!** Always make sure the main power switch is in the OFF position and the power cord is unplugged before performing adjustments or maintenance to the saw.

**System Initializing** — this code indicates that the system is performing self-checks and energizing the brake system to activate in the case of an accident. This condition should clear within 15 seconds after the main power switch is turned on. If the ambient temperature is very low (below about 0° F), this code may take longer to clear. The safety system detects such low temperatures within the brake cartridge. If necessary, the system turns on a heater inside the cartridge to raise the temperature of the electronics. This code will continue until the temperature inside the brake cartridge is within the normal operating range.

**System Ready** — this code indicates that all self-checks have been completed, the safety system is operating properly, and the saw is in Standby mode ready to run.

# Using Your Saw

**Replace Cartridge** — this code indicates that the brake cartridge has fired or there is some other permanent defect that cannot be corrected. If the cartridge has not been fired, turn off the main power and turn it back on. If the error continues, install a new cartridge.

**Coasting Down** — this code indicates that the blade is coasting down and that the safety system is ready to activate the brake if contact is detected. The safety system monitors the rotation of the blade while it is coasting down. If you touch the blade while this code is flashing, the brake will activate.

**ALWAYS MAKE SURE THE BLADE HAS COME TO A COMPLETE STOP AND THE COAST DOWN STATUS CODE HAS CLEARED BEFORE TOUCHING THE BLADE!**

**Bypass Mode ON** — this code indicates that the saw is running in Bypass Mode and **will not** activate the brake in the event of accidental contact with the blade. Bypass Mode allows you to cut electrically conductive materials such as aluminum without activating the brake. When the saw is in Bypass Mode, the safety system disables the brake. See page 56 for instructions on how to use the saw in Bypass Mode.

**Push the Start/Stop Paddle to OFF** — this code indicates that the Start/Stop paddle was in the *ON* position (i.e., pulled out) before the main power switch was turned on. Push the paddle in to the *OFF* position to clear this error. This is a safety feature to prevent the saw from restarting after a power loss or after the safety system has turned the saw off due to an error detected during use.

**Turn Cartridge Key to ON** — this code indicates that the cartridge locking key is not turned to *ON*. To clear this error first turn the main power switch to *OFF*, and then make sure the cartridge locking key is correctly installed and turned to *ON*. See page 61 for instructions on how to install and turn on the cartridge key.

**No Blade Rotation** — this code indicates that the motor is not able to spin the blade as expected. In most cases this is because the thermal overload switch has cut power to the motor to prevent overheating. If the thermal overload switch cut power to the motor, wait a minute or two for the motor to cool down to a safe operating temperature and then push the red thermal overload reset button on the contactor box behind the left side of the switch box. An audible click will indicate that the thermal overload switch has been reset and the saw is ready to use. This error code may also indicate that the motor belt is broken and must be replaced.

**Adjust Position of Brake Cartridge** — this code indicates that the blade is either too far from or too close to the brake cartridge. To clear this error first turn the main power switch to *OFF*, and then adjust the position of the brake cartridge as described on page 30. This error code will also be displayed if there is no blade installed, if a blade smaller than 10 inches is installed, or if a non-conductive blade (e.g. abrasive blade) is installed.

**Contact Detected During Standby** — this code indicates that the safety system detected contact with the blade (or a portion of the arbor) when the blade was not spinning. This code will be displayed if you come into contact with the blade or arbor while the system is in Standby mode. The brake will not be activated and the code will automatically clear within 5 seconds after contact is ended. The system will not allow the motor to start while this code is displayed.

# Using Your Saw

**Contact Detected During Bypass** — this code indicates that contact was detected while the saw was running in Bypass Mode. As described above, the brake will not activate while in Bypass Mode but the safety system will continue to monitor for contact. If this code is displayed, then it indicates that the brake would have activated if the system had not been in Bypass Mode. This error will automatically clear once the blade has finished coasting down.

## Material Conductivity Test

The “Contact Detected During Bypass” code also allows you to test a particular material to see if it is too conductive to cut during normal operation. For example, if you have a new material you need to cut and are not sure if it is conductive, you can make several cuts in Bypass Mode. If the “Contact Detected During Bypass” error code is displayed, it means the material is too conductive and must be cut in Bypass Mode to prevent the brake from activating. If the error code is not displayed after several trial runs, then it is likely that the material is not conductive and you can make future cuts in normal mode. (See page 56 for instructions on how to operate the saw in Bypass Mode.)

**Overload Due to Wet Wood** — this code indicates that the wood being cut is too wet or too green. You can cut most wet or green wood with the safety system active. However, extremely wet or green wood can interfere with the safety system’s ability to detect contact. Accordingly, the system monitors for wet and green wood and, if the wood is too wet or too green, the system will shut off the motor and display this error code. To clear this error, turn the Start/Stop paddle to *OFF* and turn the main power switch to *OFF* and then back to *ON*.

In addition, wet pressure-treated wood may cause an overload error or even cause the brake to activate. The chemicals used to pressure treat wood often contain large amounts of copper, which is conductive. When pressure-treated wood is wet, the combination of copper and water substantially increase the conductivity of the wood. Therefore, allow wet pressure-treated wood to fully dry before cutting. Typically, the wood will be sufficiently dry if left unstacked in a dry location for 24 hours. If you must cut wet pressure-treated wood, you can use the Material Conductivity Test described above to test whether the wood is too wet. If the test indicated the wood is too wet to cut with the safety system active, you must either allow the wood to dry or make the remaining cuts in Bypass Mode.

**Note:** if the saw shuts down due to an overload error, do not attempt to finish cutting that piece of wood until it has dried. The overload error indicates that the system was close to firing the brake before it went into overload. Therefore, repeatedly attempting to cut a wet piece of wood could result in an unnecessary activation of the brake.

# Using Your Saw

## Using the Blade Guard

Using the blade guard is one of the most important steps you can take to prevent injury. Many table saw injuries occur when the blade guard is either not being used or not being used properly. The blade guard on your SawStop® Professional Cabinet Saw was designed to have a narrow profile that allows you to use the guard even when making narrow rip cuts (see Fig. 70). As a result, there are only a few situations where the blade guard cannot be used (e.g., dado cuts, rabbet cuts, and extremely narrow cuts).

Install the blade guard as described on page 32. The guard shell is mounted to the spreader so that it can pivot freely to automatically adjust to the height of the workpiece (up to 3<sup>1</sup>/<sub>8</sub> inches high). Both the guard shell and the limit rod can pivot upward to a balance point where they will stay without further support. This allows you to change the blade without removing the guard.

The spreader helps minimize kickback by preventing a workpiece from pinching or shifting into the back of the blade. The spreader also supports a set of large and small anti-kickback pawls to further minimize kickback. The large anti-kickback pawls can be disabled or held out of the way by rotating them upwards and guiding them into the catches on either side of the blade guard (see Fig. 71). The small anti-kickback pawls may be disabled by raising the blade slightly so that they do not contact the wood.

To use the blade guard, set the blade elevation and tilt angle to the desired settings and, if necessary, swing the blade guard shell down so that it rests on the table or insert. If the limit rod is up, rotate it down as well and push on it until it snaps into place (see Fig. 72). Make sure the limit rod is locked in place before use.

Cut the workpiece as described beginning on page 51. The guard will “float” on the top of the workpiece as the workpiece passes under the guard. The limit rod will prevent material that is taller than the height of the blade from entering the blade guard. The guard shell is constructed of clear polycarbonate to allow you to clearly see the blade and the workpiece as it passes under the guard. After making the cut, the cut-off portion of the workpiece may be held beneath one of the anti-kickback pawls. In this case, turn off the motor and wait until the blade stops before pushing the cut-off portion past the anti-kickback pawl.

Fig. 70

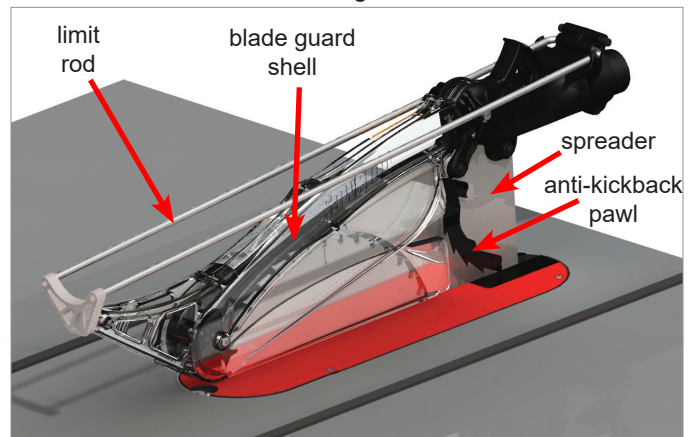


Fig. 71

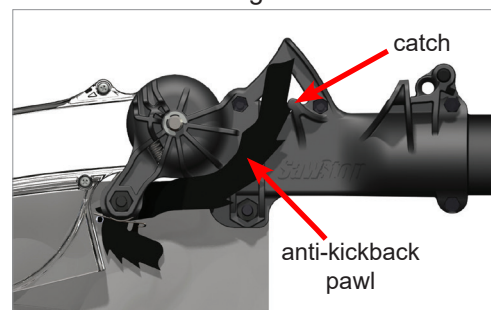
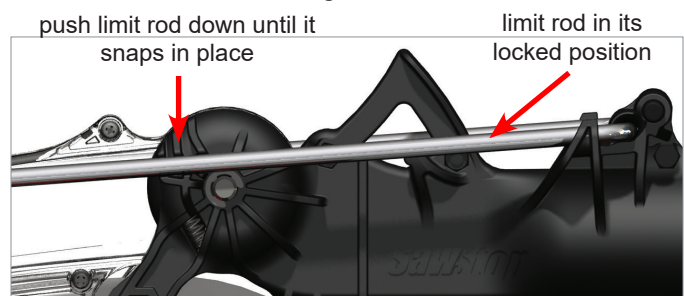


Fig. 72



**WARNING!** Use the blade guard for every operation for which it can be used, including all through-sawing.



# Using Your Saw

Keep the guard shell clean and free of dust to allow unobstructed viewing of the blade and workpiece. For successful operation, the spreader must remain flat, and the blade guard shell, blade guard shell side extensions and anti-kickback pawls must pivot freely. If any portion of the blade guard ceases to function properly, replace or repair it before continuing to use the saw. When not in use, the blade guard can be stored by inserting the bottom of the spreader in the outer slot of the accessory tool holder mounted to the side of the saw (see Fig. 41).

Your blade guard comes equipped with a dust collection port for superior dust collection above the table surface. The dust collection port extends out the back of the blade guard just above the spreader (see Fig. 73) and is designed to accommodate the end of a hose or pipe.

The blade guard works by redirecting dust through a dust channel formed in the guard shell above the blade. Below the dust channel the guard closely surrounds the spinning blade to create a powerful airstream that drives dust into the dust channel and out the port (see Fig. 74).

Fig. 73

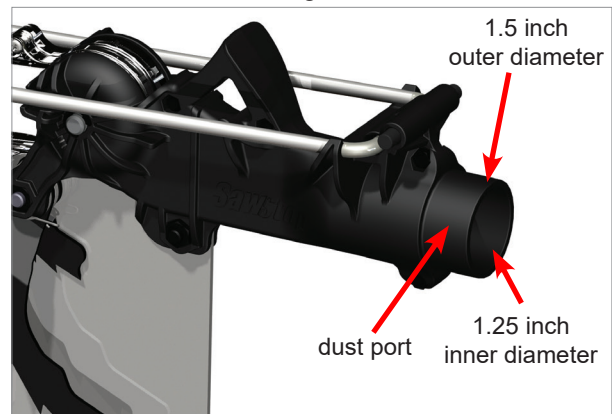


Fig. 74

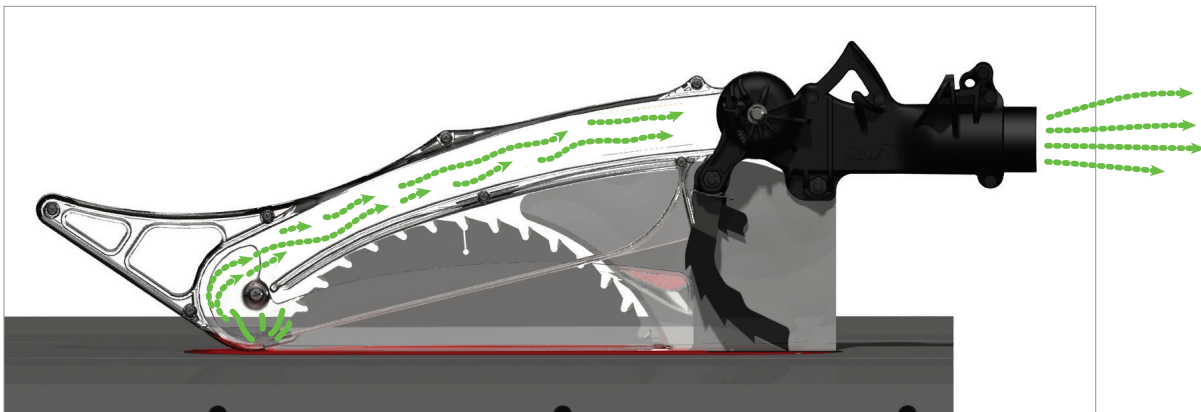


Fig. 75

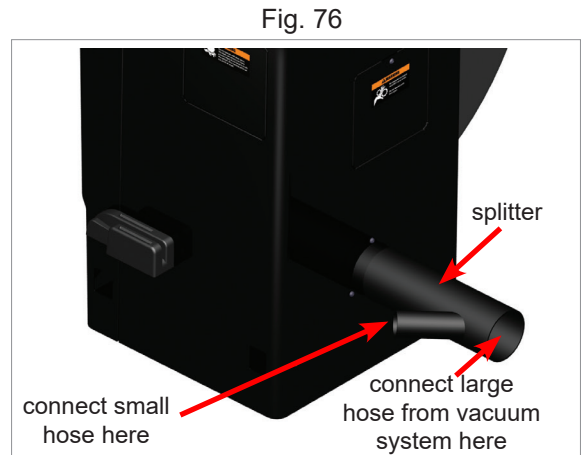


The design of the blade guard creates such a powerful airstream that it effectively removes dust even without a vacuum system connected. However, for best dust collection performance, connect a vacuum hose or pipe to the dust port. The end of a hose or pipe may either be inserted into or slipped over the end of the dust port. The inner diameter of the dust port is 1.25 inch and the outer diameter is 1.5 inch. Select an appropriately sized hose or pipe and press it firmly on the end of the dust port (see Fig. 75). The dust port is shaped for press-fit connections and will hold the hose or pipe in place.

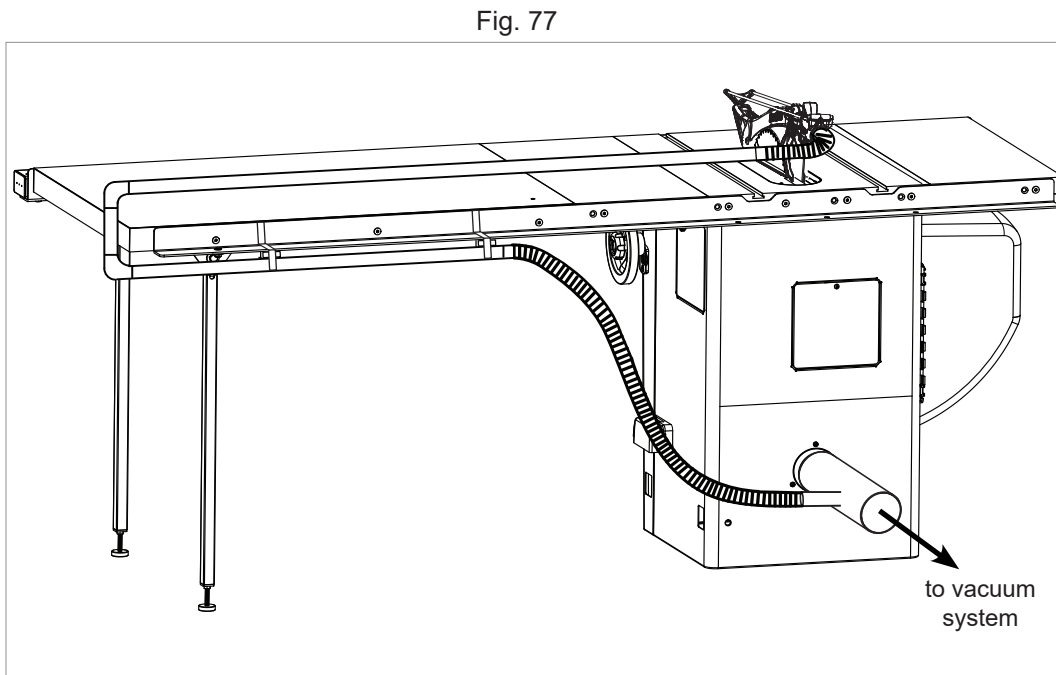


# Using Your Saw

The other end of the hose can be hooked up to a splitter (available at woodworking and hardware stores) that connects both the hose from the blade guard and the 4 inch hose from the back of the cabinet to the dust collection vacuum system (see Fig. 76). Hose adapters or duct tape may be used to connect the hoses to the splitter depending on the port sizes available.



The hose or pipe connected to the blade guard dust collection port will have to be routed up from the saw so that it is kept out of the way of the wood that moves past the spreader as it is being cut. There are many ways to create a structure to reroute the hose from the dust port on the blade guard to a vacuum system. One possibility is to route the hose up vertically overhead from the back of the blade guard. Another possibility is to reroute the hose to the side along the saw as shown below.



A structure like the one shown above can be put together using PVC pipes and fittings, adapters, splitters, flexible vacuum hoses and duct tape which can commonly be found at hardware and woodworking stores.

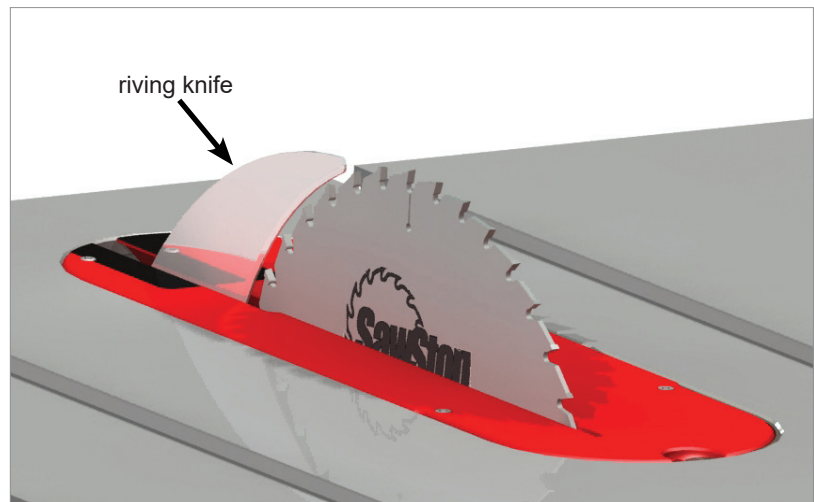
# Using Your Saw

## Using the Riving Knife

To use the riving knife, remove the blade guard and install the riving knife as described on page 32. The riving knife should be used whenever the blade guard cannot be used (see Fig. 78). The only operations where neither the blade guard nor the riving knife can be used are operations such as making dado cuts. When the riving knife is properly aligned, it will be positioned below the top of the blade and inside the kerf of the blade. As a result, the riving knife can be used even for rabbet cuts and other non-through cuts.

For successful operation, the riving knife must remain flat so that the full height of the riving knife is positioned inside the kerf of the blade. In the event the riving knife becomes bent, replace or straighten it before continuing to use it. When not in use, the riving knife can be stored in the accessory tool holder on the right side of the saw (see Fig. 41).

Fig. 78



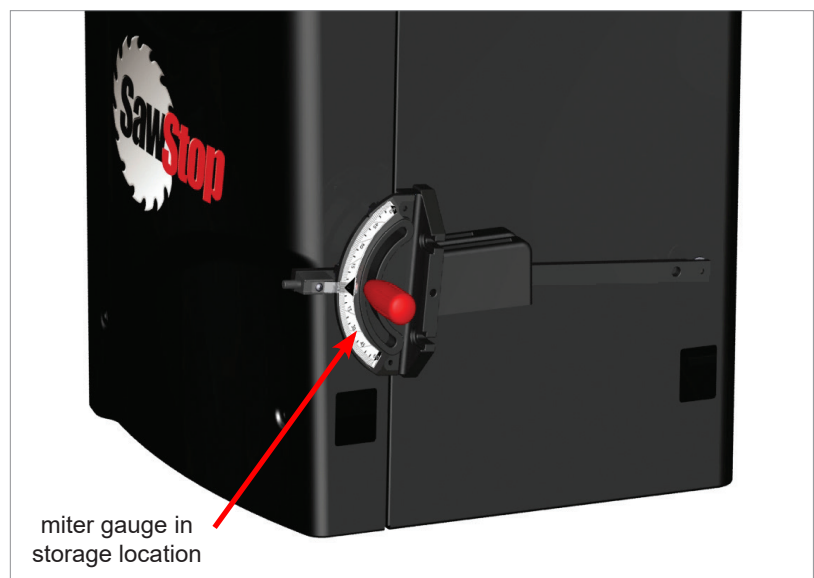
**WARNING!** Use the riving knife for every operation where the blade guard cannot be used. Neither the blade guard nor the riving knife can be used when making dado cuts.

## Using the Miter Gauge

The miter gauge included with your saw allows you to make miter cuts and cross-cuts (cuts across the grain of the wood). When not in use, the miter gauge can be stored by inserting it into the miter gauge slot in the accessory tool holder mounted to the side of the saw (see Fig. 79).

The main bar of the miter gauge fits in the T-shaped slots in the table (see Fig. 41). There is one slot on each side of the blade and the miter gauge can be used in either slot. However, do not use the miter gauge in the slot on the left of the blade when making bevel cuts. Positioning the miter gauge in the left slot when making bevel cuts causes the blade to be tilted toward the miter gauge and the operator's hand which could result in a serious injury. The miter gauge is shown in use during a cross-cut in Fig. 82.

Fig. 79



# Using Your Saw

A guide plate is mounted on the end of the main bar (see Fig. 80) and fits in the bottom of the slots to hold the front of the miter gauge in place when the miter gauge head is positioned in the front of the forward edge of the table. Three spring bearings are mounted in the side of the main bar to ensure the bar slides smoothly in the slots without excessive play. These spring bearings are preset at the factory to allow smooth operation of the miter gauge, and should not require further adjustment. If you wish to adjust the spring bearings, see page 83 for instructions.

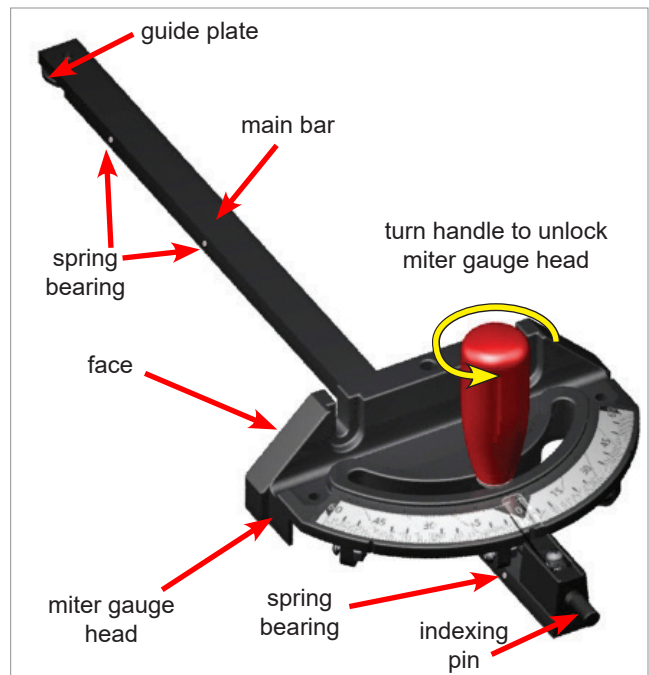
The face of the miter gauge can be adjusted between  $-60^\circ$  and  $+60^\circ$  relative to the blade. To adjust the miter angle, turn the handle counter-clockwise approximately  $\frac{1}{2}$  turn to unlock the miter gauge head (see Fig. 80). Pull the indexing pin out until it stops, and then rotate the head until the indicator is positioned over the desired angle on the miter gauge scale. Use an angle gauge to set the angle between the miter gauge head and the blade if precise alignment is needed. Once the angle is correct, turn the handle clockwise to lock the miter gauge head.

Adjustable index stops at  $-45^\circ$ ,  $0^\circ$ , and  $+45^\circ$  are provided to allow quick and precise alignment at those angles. To use the index stops, rotate the miter gauge head until the angle indicator reads approximately  $5^\circ$  higher (more positive) than the desired angle, and then push the indexing pin forward until it stops. Next, rotate the miter gauge head counter-clockwise until the index stop hits the indexing pin, and then tighten the handle to lock the gauge at the desired angle. The index stops are preset at the factory so further adjustment should not be necessary. If you wish to adjust the index stops, see page 83 for instructions.

For added safety, an optional wood face can be mounted to the miter gauge face to provide additional support when cutting large or small workpieces. To mount the face, use wood screws with shanks sized to fit through the slots in the miter gauge head. The wood face should be at least 1 inch higher than the maximum depth of cut, and should extend beyond the edges of the miter gauge head.

When using the miter gauge, start with the workpiece and miter gauge well in front of the blade. Grip the miter gauge handle with the hand closest to the blade, and place your other hand on the workpiece opposite the blade (see Fig. 81 and Fig. 82). Make sure the workpiece is held squarely and firmly against the miter gauge face and the table. Move the miter gauge and workpiece slowly and smoothly past the blade. For through-cuts, shift the workpiece slightly away from the blade before pulling the miter gauge and workpiece back toward the front of the saw. Do not touch the portion of the workpiece that was cut off until the blade is stopped.

Fig. 80



**WARNING!** Never make freehand cuts. Never hold or touch an unsupported piece of wood while the blade is spinning.

# Using Your Saw

## Cross-Cutting

Cross-cutting (cutting perpendicular to the grain of the workpiece) is performed using the miter gauge. To lessen the risk of kickback, the rip fence should be removed or positioned so that it does not contact the workpiece during cross-cutting.

Fig. 81

To begin, make sure the motor is off and the blade is completely stopped. Tilt the blade to the desired tilt angle and adjust the blade elevation to about  $\frac{1}{8}$  inch above the workpiece. Place the miter gauge in the right miter slot for bevel cuts, or in either the right or left miter slots for making non-bevel cuts. Adjust the miter gauge to the desired miter angle (see page 50).



Position the workpiece against the miter gauge head and slowly push the miter gauge toward the non-spinning blade until the workpiece is almost touching the blade. Next, slide the workpiece to the left or right until the blade is aligned with the point on the workpiece to be cut. Pull the miter gauge and workpiece back away from the blade before starting the motor.

Fig. 82

Once the motor reaches full speed, you can begin your cut. Holding the miter gauge and workpiece firmly, move the miter gauge and workpiece slowly and smoothly past the blade.



**WARNING!** To reduce the potential for kickback and a serious injury, move the rip fence out of contact with the workpiece when cross-cutting to prevent the workpiece from binding between the rip fence and the blade.

# Using Your Saw

## Using a Fence

You must install a rip fence prior to making rip cuts with the saw.

The *SawStop*® T-Glide™ Professional Series II Fence System is specifically designed for the Professional Cabinet Saw (see Fig. 83). The fence is constructed from heavy-duty steel tubing for maximum rigidity and includes high-quality, non-conductive face plates that maintain their flatness over time. The system also includes steel front and rear rails, a steel clamp tube, and SawStop's proprietary design that makes the fence glide smoothly along the rail. This fence system is available in either a 36 or 52 inch version.

Fig. 83



You can learn more about the *SawStop*® fence systems from an authorized SawStop distributor or at [www.sawstop.com](http://www.sawstop.com).



# Using Your Saw

## Rip Cutting

Rip cutting or cutting with the grain of the workpiece must be performed with a rip fence to support and guide the workpiece. The miter gauge should not be used when making rip cuts. The blade guard should be used for all through cuts.

To begin, make sure the motor is off and the blade is completely stopped. Tilt the blade to the desired tilt angle and adjust the blade elevation to about  $\frac{1}{8}$  inch above the workpiece. Position the rip fence for the desired rip width and lock the fence in place. Refer to the owner's manual that accompanied your rip fence for instructions on using your fence.

Fig. 84



**WARNING!** A rip fence must always be used when making rip cuts. Never perform a ripping operation freehand or a serious injury may result.

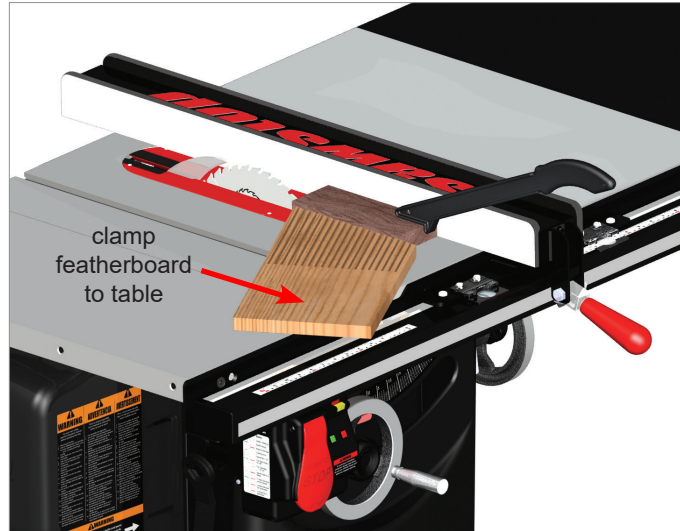
Position the workpiece flat on the table and flush against the side of the rip fence. Turn on the motor. Use both hands to push the workpiece smoothly toward the blade, as shown in Fig. 84 and Fig. 88. It is important to always maintain at least 6 inches between your hands and the blade. If your hand that is closest to the blade comes within 6 inches of the blade, remove that hand from the workpiece and continue the cut using the hand that is closest to the fence or with both hands near the fence. If your hand closest to the fence also comes within 6 inches of the blade, remove that hand and use a push stick to finish the cut. A push stick is a tool that is used to push the work piece forward to make a cut while allowing the user to keep their hands at a safe distance from the blade. (See page 94 for instructions on making a push stick.)



# Using Your Saw

When using a push stick to feed your workpiece toward the blade, it can be difficult to maintain the position of the workpiece flush against the side of the rip fence. In these situations, use a featherboard to hold the workpiece against the fence (See page 97 for making a featherboard). Clamp the featherboard to the top of the table against the side of the workpiece opposite the rip fence to hold the workpiece flush against the fence (see Fig. 85).

Fig. 85

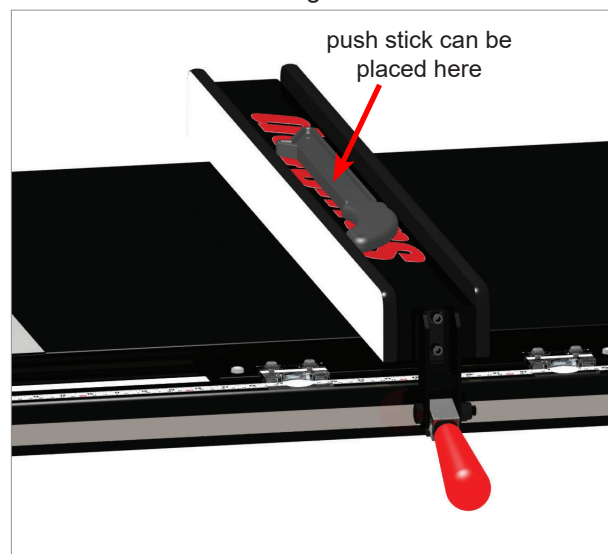


When not in use, the push stick should be stored on the blade wrench holder (see Fig. 86). During periods of use, the push stick can be placed on top of the Professional Series II fence where it is more easily accessible (see Fig. 87).

Fig. 86



Fig. 87



# Using Your Saw

If your cut requires the fence to be positioned too close to the blade to use a push stick, use an auxiliary fence and a push block to make the cut. (See pages 95 and 96 for instructions on making an auxiliary fence and a push block.) In this case, clamp the auxiliary fence to the rip fence and slide the workpiece along the auxiliary fence. When your hand comes within 6 inches of the blade, remove your hand from the workpiece and finish the cut using the push block. Use a featherboard as described above to hold the workpiece flush against the side of the rip fence.

**WARNING!** To reduce the chance of a serious injury, always use a push stick or push block when your hand comes within 6 inches of the blade.

Continue pushing the workpiece toward the back of the saw until it clears the anti-kickback pawls on the spreader. Turn off the motor. Do not attempt to remove the cut-off portion until the blade has come to a complete stop.

When ripping pieces longer than approximately 4 feet, use rollers, an out-feed table or a similar support to prevent the workpiece from dropping off the back of the table.

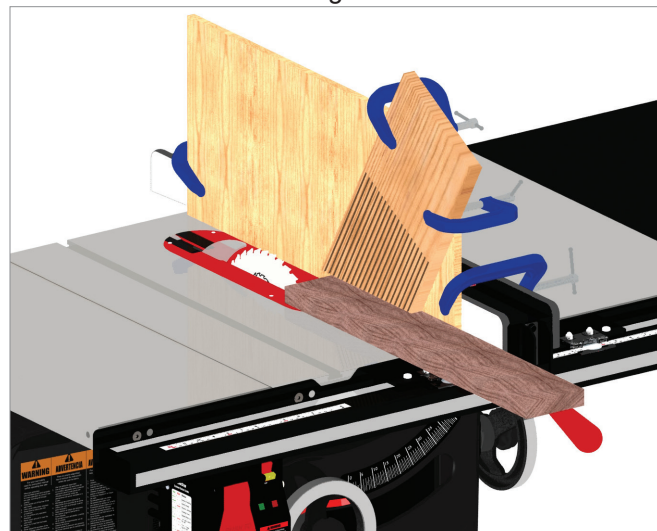
Fig. 88



When making non-through cuts, the blade guard and spreader must be removed. For these cuts, install the riving knife (except when making dado cuts) and use one or more featherboards to hold down the workpiece and help prevent kickback. (See page 97 for instructions on making a featherboard.) The featherboard should be clamped to the rip fence.

Alternatively, the featherboard can be clamped to an extender board that is clamped to the rip fence (see Fig. 89). A second featherboard can be clamped to the top of the table as discussed above, to hold the workpiece against the fence.

Fig. 89



# Using Your Saw

## Using the Saw in Bypass Mode

If you need to cut electrically conductive materials such as aluminum with this saw, you must operate the saw in Bypass Mode to prevent the brake from activating. In order to operate the saw in Bypass Mode, the safety system requires you to follow the procedure below to ensure that the saw is never placed in Bypass Mode accidentally. If you are unsure whether a particular material is conductive, you can use the Material Conductivity Test described on page 45.

**Note:** The saw will not start in Bypass Mode unless the brake cartridge is properly installed and all error codes are cleared. It is not possible to “override” an error by starting the saw in Bypass Mode.

To Operate the Saw in Bypass Mode:

- a. Make sure the Start/Stop paddle is in the OFF position and then switch the Main Power switch to ON. Wait until the safety system completes the initialization routine and the system status code indicates the saw is ready for operation.
- b. Turn the Bypass Key clockwise and hold it for at least 1 second (see Fig. 90). The green LED will begin blinking slowly and the red LED will flash once to let you know when the 1 second has elapsed.

*Note:* to prevent unauthorized use of the saw in Bypass Mode, remove the Bypass Key from the saw when not in use.

- c. While still holding the Bypass Key turned, pull the Start/Stop paddle out to the ON position. The blade will start to spin.
- d. Continue to hold the Bypass Key turned for at least 1 second after the motor starts—the red LED will flash once again to let you know when the 1 second elapses. If you release the Bypass Key before 1 second has elapsed, the motor will stop and the “Push Start/Stop Paddle to OFF” error code will be displayed. If this happens, switch the Start/Stop paddle to OFF and repeat this procedure from the beginning.
- e. When you have completed your cut, push the Start/Stop paddle in to turn off the motor. The safety system will remain in Bypass Mode until the blade comes to a complete stop. Once the blade has stopped, the safety system returns to normal Standby Mode. The next time you start the motor, the safety system will be active unless you repeat the procedure described above to start the motor in Bypass Mode.



**WARNING!** Never run the saw in Bypass Mode unless necessary to cut conductive materials. The brake system will not activate when the saw is in Bypass Mode and a serious injury could result.

**CAUTION!** Always check the saw blade after cutting conductive materials. Sometimes a shard of aluminum or other conductive material will become embedded on the end of a saw blade tooth. If that occurs and the saw is started, then the shard could contact the aluminum brake pawl and cause the brake to activate.

# Using Your Saw

## Using a Mobile Base

The PCS is a stationary saw. In some situations it is important to be able to relocate your stationary saw from one position to another in your workshop. For example, you may want to store any stationary saw against a wall in your workshop and then move the saw away from the wall to use it. An optional mobile base allow you to reposition your stationary saw with ease.

The **SawStop® Professional Cabinet Saw Mobile Base** is designed specifically for your saw (see Fig. 91). It attaches to the cabinet and automatically lifts the saw onto the wheels when you step on a lever. When the wheels are down, you can roll the saw from one location to another. Stepping on a release will then raise the wheels and lower the saw back onto its feet.

Fig. 91



The **SawStop® Mobile Base Conversion Kit** enables the **SawStop® Industrial Mobile Base** designed for the **SawStop® Industrial Cabinet Saw** to be used with the **SawStop® Professional Cabinet Saw** (see Fig. 92). The **SawStop® Industrial Mobile Base** comes with four caster wheels to provide more flexible mobility. A foot operated hydraulic jack and quick release lever allow for the saw to be easily raised off the floor and lowered again.

Fig. 92



You can learn more about the **SawStop® Professional Cabinet Saw Mobile Base** and the **SawStop® Mobile Base Conversion Kit** for use with the **SawStop® Industrial Mobile Base** from an authorized **SawStop** distributor or at [www.sawstop.com](http://www.sawstop.com).



# Using Your Saw

## Changing the Brake Cartridge

The *SawStop*® brake cartridge (see Fig. 93) includes a sealed housing containing the *SawStop*® system electronics, and an aluminum block called a brake pawl. The sealed housing also includes a high-speed actuator that pushes the brake pawl into the teeth of the saw blade in the event accidental contact is detected.

Like any electronic component, brake cartridges should be handled with care. Store brake cartridges in a safe, dry place when not in use. Do not drop, hit or otherwise subject brake cartridges to abuse as this may damage the cartridge. In addition, the high speed actuator could be unexpectedly triggered due to damage, thereby causing the brake pawl to be pushed away from the housing at very high speed and with a large amount of force.

The brake cartridge must be changed in the event the brake is activated. The brake cartridge must also be changed whenever swapping between 10 inch standard blades and dado sets. For dado cuts, the optional dado brake cartridge must be installed (see Fig. 94). The *SawStop*® dado cartridge is identical to the standard brake cartridge with the exception of the brake pawl. The dado brake pawl is larger than the standard brake pawl to accommodate the width and diameter of 8 inch dado sets. Other size dado sets or standard 10 inch blades are not compatible with the 8 inch dado cartridge.

Fig. 93

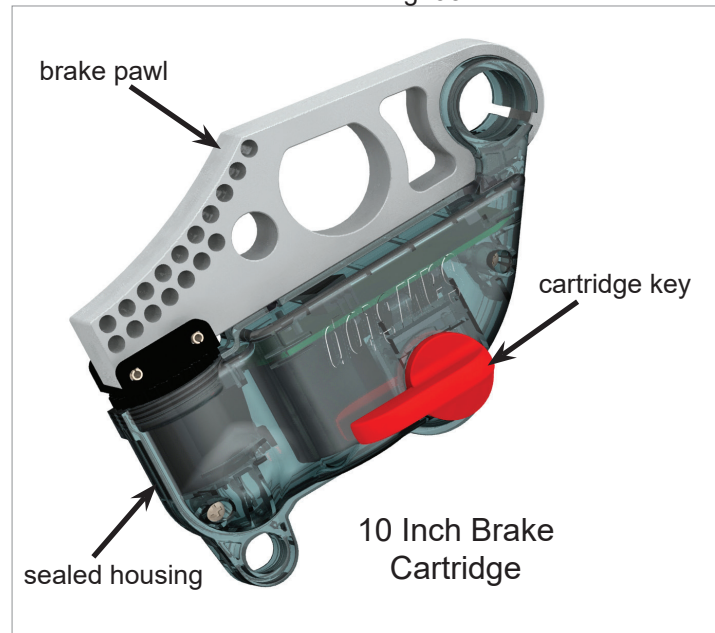
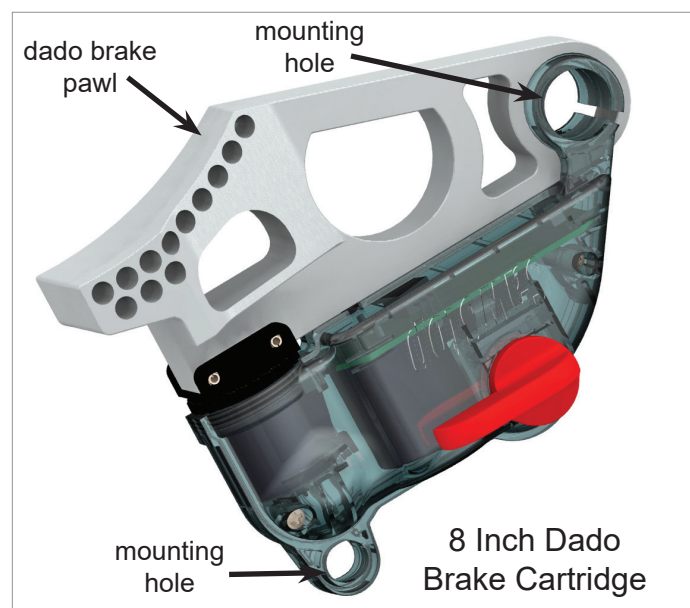


Fig. 94



**WARNING!** Never drop or otherwise subject a brake cartridge to misuse as this may damage the brake cartridge and potentially cause the brake pawl to be released unexpectedly and result in a serious injury.

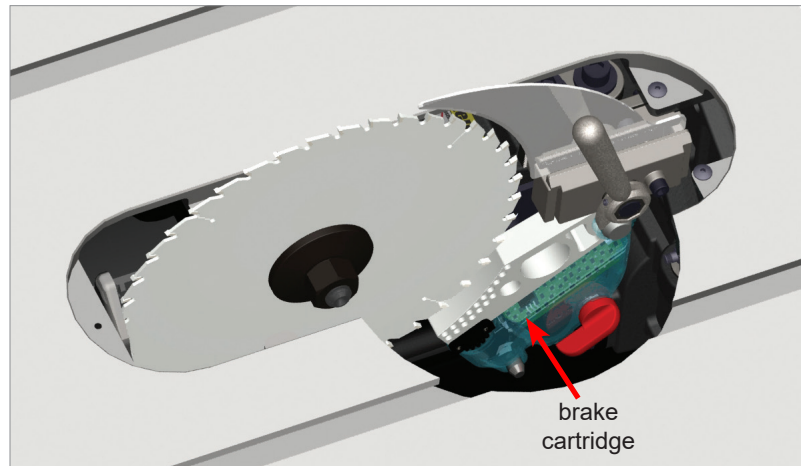
# Using Your Saw

Changing the brake cartridge is both simple and foolproof. The safety system will not allow the motor to start unless the brake cartridge is correctly installed. Before changing the brake cartridge, make sure the Start/Stop paddle is pushed in to the *OFF* position, the main power switch is toggled down to the *OFF* position, and the power cord is unplugged.

The brake cartridge is mounted beneath the table and behind the blade (see Fig. 95). To change the cartridge, begin by setting the tilt angle to about 0° and raising the blade elevation to the maximum height. This allows the easiest access to the brake cartridge.

Next, remove the table insert from the table (see page 28). Rotate the blade guard clamping handle fully upward to provide clearance for removing the brake cartridge.

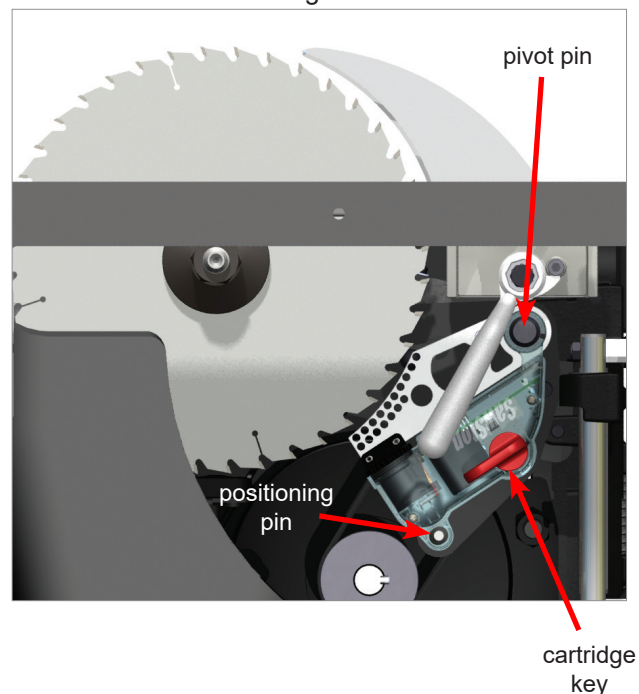
Fig. 95



**WARNING!** Always turn off the main power switch and unplug the power cord before removing or installing the brake cartridge on your saw.

Fig. 96

The brake cartridge is mounted on a large pivot pin and a smaller positioning pin (see Fig. 96). Both the pivot pin and positioning pin extend outward from a cartridge mounting bracket that sets the position of the cartridge. The cartridge mounting bracket also holds a computer cable that self-aligns to the connector in the side of the cartridge. A cartridge key is used to lock the brake cartridge in place against the cartridge mounting bracket.



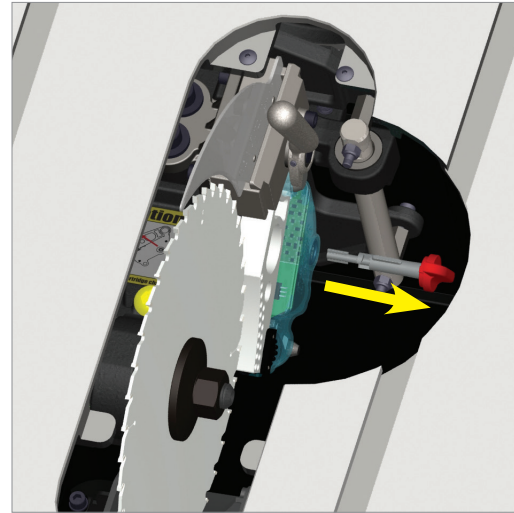


# Using Your Saw

To remove the cartridge, first remove the cartridge key by turning it 90° clockwise and then pulling it away from the cartridge (see Fig. 97). Set the cartridge key aside for use with the new cartridge.

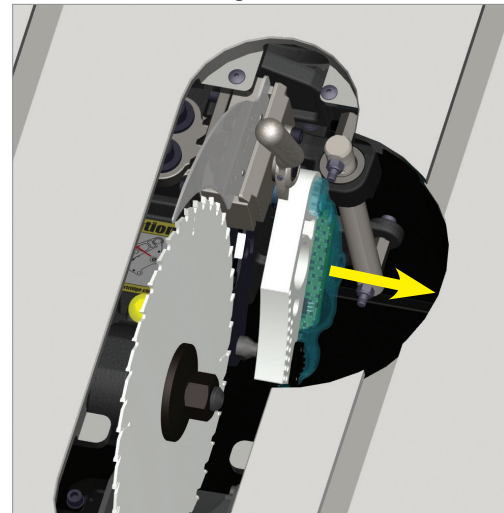
It may take a small amount of force to turn the key and pull it out. Make sure you turn the key a full 90°, as the key cannot be pulled out unless it has been fully rotated.

Fig. 97



If the brake cartridge has not been activated, slide the brake cartridge to the right until it clears both pins (see Fig. 98).

Fig. 98



If the cartridge has been activated, the brake pawl typically will be locked onto the blade or dado set. As a result, it is usually easiest to remove the blade and the brake cartridge together. To remove the cartridge and blade together, first remove the blade nut and washer, and then remove the cartridge key by turning it 90° clockwise and pulling it away from the cartridge (see Fig. 97). You can remove the blade and brake cartridge simultaneously by alternately moving the blade and then the cartridge to the right to “walk” them off the arbor and pins. Often you can “walk” them to the right by hand, but if not, you can use a blade wrench as a lever. To do this, place one end of the wrench between the blade and the side of the arbor block, being careful to maneuver around the dust shroud. Now push the blade a short distance away from the arbor flange (see Fig. 99). **Do not place the wrench against the dust shroud because the dust shroud could break.** Next, place the end of the wrench between the brake pawl and the cartridge mounting bracket to gently pry the cartridge away from the arbor block a short distance (see Fig. 100). Only move the blade and cartridge a short distance each step, for example, a distance equal to one or two threads on the arbor. Otherwise the brake cartridge may bind on the arbor and pivot pin. Repeat these alternating steps to walk the cartridge and blade off. A significant force may be needed to pry the cartridge off the mounting pin if the brake pawl deformed and pinched the pivot pin when it stopped the blade.

# Using Your Saw

Fig. 99

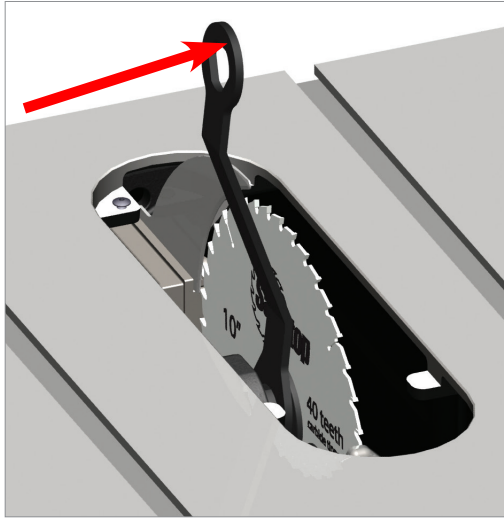
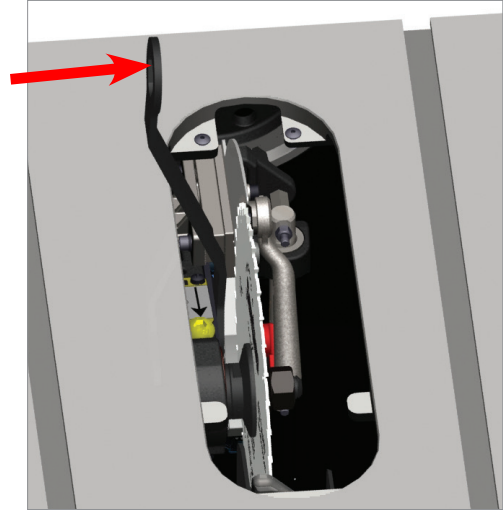


Fig. 100



## Installing a Brake Cartridge

**WARNING!** Always turn off the main power switch and unplug the power cord before removing or installing the brake cartridge on your saw.

To install a brake cartridge, the above process is reversed. Align the mounting holes in the cartridge with the pivot pin and positioning pin in the saw (see Fig. 96) Slide the cartridge onto the pins until the cartridge rests against the mounting bracket. The cartridge will automatically align with a computer cable mounted in the saw.

Next, insert the cartridge key into the hole in the cartridge housing (see Fig. 97). The key shaft has a ridge that must be aligned with a channel in the hole. As a result, the key can only be inserted into the hole when the red handle is pointing toward the brake pawl (see Fig. 97). Insert the key fully into the hole and rotate the key 90° counter-clockwise to lock the cartridge in place (Fig. 96 shows the key in its locked position). The key will not rotate unless it is fully seated against the side of the cartridge housing and the cartridge housing is pressed against the cartridge mounting bracket.

Once the key is rotated to its locked position, it cannot be removed and the cartridge will be locked in place. Rotating the key to the locked position also actuates a switch inside the cartridge that signals to the safety system that the cartridge is correctly installed and locked in place. The system will not allow the saw to start if the switch is not actuated. If you attempt to turn on the saw when the key is not in the locked position, the LED lights on the switch box will flash a status code indicating the key should be turned to ON. Turning the key to ON means turning the key to the locked position.

To complete the installation, the brake cartridge must be correctly positioned relative to the blade or dado set. Once the brake cartridge is installed, fully rotate the blade guard clamping handle counter-clockwise to lock the spreader or riving knife in place. Next, install the blade or dado set as described on page 29, and adjust the brake position as described on page 30. Rotate the blade by hand at least one complete revolution to ensure that the blade does not contact the brake.

**WARNING!** Always check, and if necessary, adjust the position of the brake after changing the brake cartridge or the blade. An improperly positioned brake could increase the time required to stop the blade in the event of accidental contact, or cause the brake to actuate unexpectedly if the blade comes into contact with the brake.

# What to do if the SawStop Safety System Activates

When the *SawStop* safety system is activated, the brake pawl will be pushed into the blade to stop its rotation. If the blade is spinning at a significant speed, the arbor block will retract to lower the blade below the table. Both of these actions will occur within just a few milliseconds. In addition, the safety system will turn off the motor and display the “Replace Cartridge” system status code on the LED lights on the switch box (see page 43).

Once the safety brake is activated, you will need to carry out the 3 steps described below to reset the safety system and the saw before continuing to use the saw.

1. **Reset the Retraction of the Arbor Block:** During normal use, the arbor block is held in place by a spring-loaded support mechanism called the retraction bracket. When the brake is activated, the angular momentum of the spinning blade is transferred to the arbor block, causing it to drop out of the retraction bracket.

To reset the arbor block into the retraction bracket, turn the elevation handwheel counter-clockwise until the lower elevation limit stop is reached. The arbor block will automatically engage the retraction bracket. Now turn the elevation handwheel clockwise to raise the arbor block and blade.

2. **Replace the Brake Cartridge:** The *SawStop* brake cartridge must be replaced in the event the brake is activated. The brake pawl and components inside the sealed housing are expended when the brake is activated. Therefore, the brake cartridge cannot be reused after the brake is activated and it may be discarded. Once the activated cartridge has been removed, obtain another brake cartridge that has not been activated and follow the instructions on page 61 to install it.

*If the brake activated due to accidental contact between the blade and an operator, please return the cartridge to SawStop.* During use the cartridge is constantly measuring data about the operation of the saw and the signal received from the blade. When the brake is activated, the most recent data is stored into memory and SawStop can download the data from the activated cartridge. This data is very important to our continuing research and development program. Therefore, contact SawStop to arrange shipment of the cartridge back to SawStop. Once SawStop’s engineers verify the brake activated due to accidental skin contact, you will receive a replacement cartridge free of charge.

If you are unsure why the cartridge activated, you can return the cartridge to SawStop for analysis by SawStop’s service engineers. When the cartridge data is downloaded, it is usually possible to determine what caused the brake to activate so that unintended activations can be prevented.

**WARNING!** Always turn off the main power switch and unplug the power cord before replacing the brake cartridge on your saw.

3. **Change the Blade:** When the brake is activated the aluminum brake pawl will pivot into the teeth of the saw blade with a large amount of force and speed. This usually causes the brake pawl to lock-up on the blade. If you remove the brake pawl from the blade, one or more of the carbide teeth on the blade will usually be pulled off. Therefore, it is almost always necessary to replace or repair the blade after the safety system has been activated.

Once the retraction of the arbor block has been reset and the brake cartridge and blade have been replaced, the saw is ready for operation.

# Making Adjustments to Your Saw

Your SawStop Professional Cabinet Saw has been factory adjusted to rigid specifications to provide the highest quality performance and results. Additional adjustment or alignment should not be necessary. Nevertheless, your SawStop Professional Cabinet Saw has been designed to allow a wide range of adjustments and alignments to achieve the ultimate in precision. Before changing the alignment of any portion of the saw, make sure you read and understand the entire alignment procedure.

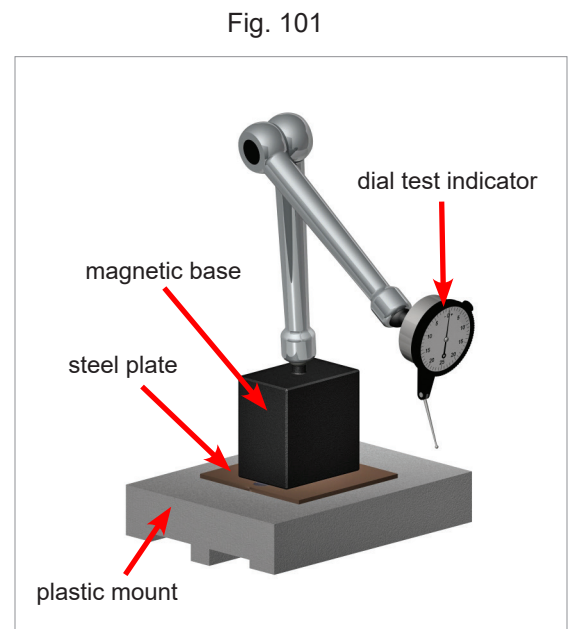
**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

## Aligning the Table

For accurate cuts with the miter gauge, the miter slots in the table should be parallel to the blade. This is also important for rip cuts since the rip fence should be aligned to the miter slots. Two procedures for aligning the table are described below. The preferred procedure is described first and provides an accuracy of about  $\pm 0.002$  inch. An alternative procedure is also described which provides an accuracy of about  $\pm 0.010$  inch.

### Preferred Table Alignment Procedure

To align the table precisely, you will need a dial test indicator with a resolution and accuracy of at least 0.0005 inches, and a mount for the indicator that will slide smoothly in the miter slots. The mount should slide on the table on either smooth plastic glide plates or on ball bearing rollers. The mount should also include a lower rail or similar structure that fits relatively tightly in the miter slot, but not so tight as to prevent the mount from sliding. A sample mount is shown in Fig. 101.



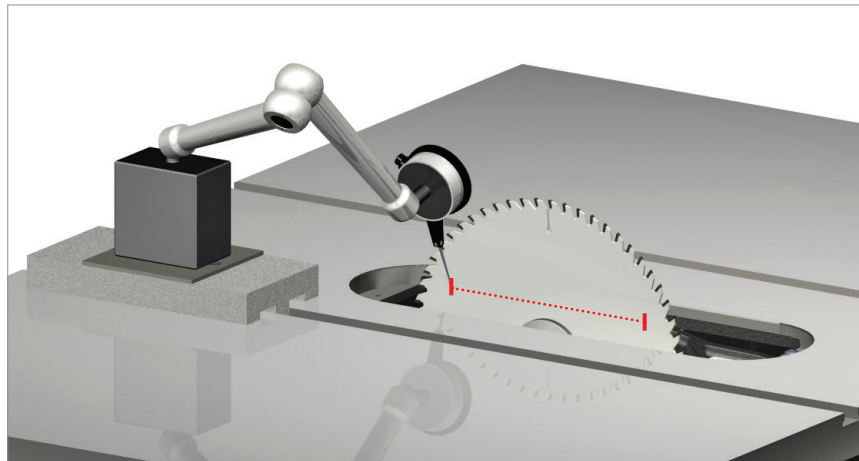
Begin by removing the table insert as described on page 28, and installing a clean, high-quality blade or precision blank onto the arbor as described on page 29. The blade should be flat and parallel to within 0.001 inch or less, and should not be coated with paint or similar materials that may affect the measurement. Attempting to align the table using a blade that is not very flat will cause similar inaccuracy in the alignment.

# Making Adjustments to Your Saw

Next, set the tilt angle to 0°. When setting the tilt angle and blade elevation, be sure to back the handwheels off slightly after reaching the limit stops. As with all table saws, pulling the handwheels tight against the limit stops can cause a slight twisting of the trunnion assembly and lead to inaccurate alignment measurements.

Raise the blade elevation to about 3 inches above the table. Position the dial test indicator so that the measurement arm rests against the right side of the blade and about  $\frac{1}{4}$  inch above the center of the arbor flange. Slide the mount forward until the measurement arm is about  $\frac{1}{2}$  inch inside the front edge of the blade (see Fig. 99).

Fig. 102



Set the dial indicator to zero. Slide the dial test indicator mount smoothly toward the back of the saw until the measurement arm is about  $\frac{1}{2}$  inch inside the rear edge of the blade. Note the reading of the dial indicator as the mount moves across the blade.

If the dial indicator moves positive and then negative (or vice versa) a substantial amount, or if there is a sudden change in the reading rather than a gradual change, this indicates a non-flat area of the blade. If this happens, try rotating the blade  $\frac{1}{4}$  turn and retesting. Repeat this process until you get a reading that is not significantly affected by blade flatness. If you cannot get a good reading, try a different blade.

If there is a gradual and continuous change in the dial reading of over 0.002 inch in either the positive or negative direction, rotate the blade  $\frac{1}{2}$  turn. Slide the dial indicator mount back toward the front of the blade and reset the indicator to zero. Now slide the mount toward the back of the saw again while noting the dial reading. If there is similar change but in the opposite direction, this indicates that the left and right surfaces of the blade are not parallel. Rotate the blade  $\frac{1}{4}$  turn and repeat the process from the beginning. If you cannot get consistent readings, try a different blade.

If the dial indicator reads a relatively consistent difference between the front and rear of the blade, take the average of the readings. A measurement of 0.002 inch or less indicates that the table is aligned within the margin of error for this measurement and no further alignment is necessary. For measurements larger than 0.002 inch, you can adjust the position of the table to improve the parallelism between the blade and the miter slot.



# Making Adjustments to Your Saw

The bolts that attach the table to the front of the cabinet are shown below. The bolts that attach the table to the back of the cabinet (not shown) can be accessed by opening the motor cover and side access panel. Tilt the blade to approximately 30° to access the left, rear bolt.

Fig. 103



To adjust the alignment of the table, begin by loosening the four mounting bolts (see Fig. 103) that attach the table to the cabinet by using a 17 mm wrench, socket, or adjustable wrench. Slide the dial indicator to the front of the blade and set the readout to zero. Slide the dial indicator mount to the rear of the blade. The dial indicator should now be reading close to the average measurement you made previously. Note the direction of the dial indicator reading, whether it is positive or negative.

The table alignment is set by a pivot pin at the front of the table (see Fig. 104), and by positioning screws near the rear of the table on both the left and right sides (see Fig. 105). You will need to use a 5 mm hex key to adjust the positioning screws. If the measurement is positive, loosen the left positioning screw and tighten the right positioning screw. If the measurement is negative, loosen the right positioning screw and tighten the left positioning screw. Make sure that before tightening one screw you loosen the opposite screw.

Fig. 104



Fig. 105



You should see the readout on the dial indicator change as you adjust the positioning screws. Adjust the screws until the readout is the same, but in the reverse direction. For example, if the initial reading was +0.006 inch, adjust the positioning screw until the reading is -0.006 inch.

Now slide the dial indicator mount back to the front of the blade and re-zero the readout. Slide the indicator mount smoothly toward the back of the saw until the indicator measurement arm is about  $\frac{1}{2}$  inch inside the rear edge of the blade. The new measurement should be much closer to 0.000 inch.

If the new measurement is still too high, repeat the above process until the parallelism between the blade and the miter slot is satisfactory. Now, tighten the positioning screw that you loosened until it stops. Do not apply a lot of torque to this screw since that could push the table back out of alignment.

If you are going to make adjustments in the blade tilt alignment go on to the section “Aligning the Blade to the Tilt Axis” on page 67. Otherwise, tighten the four table mounting bolts to secure the table to the cabinet. For best results, tighten each bolt a little at a time in a “star pattern” until all are tight. Watch the dial indicator while tightening, and if one bolt causes a significant change, tighten the other bolts first.



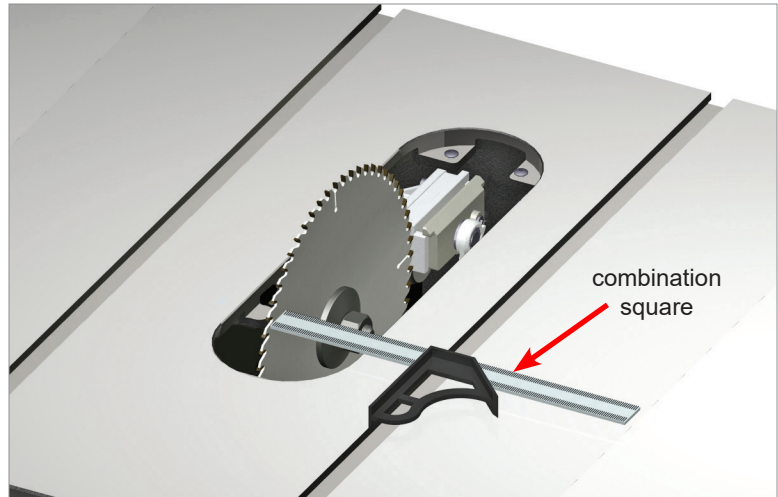
# Making Adjustments to Your Saw

## Alternate Table Alignment Procedure

For this procedure you will need a set of calipers or a combination square. Begin by removing the table insert and installing a blade or reference plate as described in the Preferred Table Alignment Procedure. Set the tilt angle to 0° and raise the blade elevation to approximately 3 inches above the table.

Select a point on the edge of the blade that is between two consecutive teeth and place a mark near that point. Rotate the blade until that mark is just above the table and toward the front of the saw. If you are using calipers, measure the distance between the left edge of the right-hand miter slot and the left side of the blade. *(Make sure to measure the flat plate of the blade rather than the tooth.)* If you are using a combination square, set the end of the ruler flat against the right side of the blade, and position the base to be flush against the left side of the right-hand miter slot (see Fig. 106). Write the measurement down.

Fig. 106



Now rotate the blade until the point you marked is just above the table but toward the back of the saw. Repeat the measurements above (see Fig. 107). If necessary, loosen the table mounting bolts and adjust the position of the table as described in the Preferred Table Alignment Procedure. Repeat the above measurements and table alignment until you are satisfied with the parallelism between the blade and the miter slot. Finally, tighten the table mounting bolts.

Fig. 107



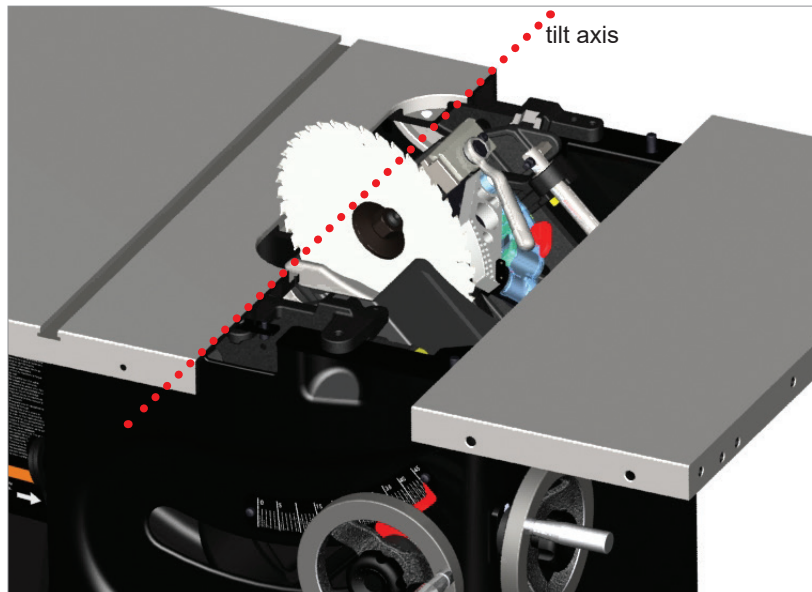
# Making Adjustments to Your Saw

## Aligning the Blade to the Tilt Axis

When making bevel cuts, the blade is tilted on an axis that runs along the surface of the table between the front and rear trunnion brackets (see Fig. 108). If the blade is not parallel to this axis, the blade will move out of parallel with the miter slots when it is tilted away from 0° (this assumes the table has been aligned to be parallel to the blade at 0° tilt angle). SawStop® cabinet saws are the only major cabinet saws that allow you to fine tune the parallelism of the blade to the tilt axis.

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

Fig. 108



**NOTICE!** This alignment procedure is not intuitive. Make sure you read this entire procedure before beginning and follow each step precisely. Any deviation from this procedure may create a substantial misalignment in your saw.

The geometry involved in this alignment procedure is tricky. That is because there is no way to easily measure the parallelism between the blade and the tilt axis. Instead, you must measure the alignment between the blade and the table at both 0° tilt and 45° tilt. The difference in those measurements is proportional to the misalignment between the blade and the tilt axis. To ensure accurate alignment, follow the procedure described below exactly.

To align the blade to the tilt axis, you will need a dial test indicator with a resolution and accuracy of at least 0.0005 inches, and a mount for the indicator that will slide smoothly in the miter slots. An example of a suitable mount is shown in Fig. 101. The blade should be flat and parallel within 0.001 inch or less, and should not be coated with paint or similar materials that may affect the measurement. Attempting to align the blade to the tilt axis using a blade that is not very flat will cause similar inaccuracy in the alignment.

First, align the table as described on page 63, using the precision alignment procedure. Make sure the blade is as close to parallel to the miter slot as possible.

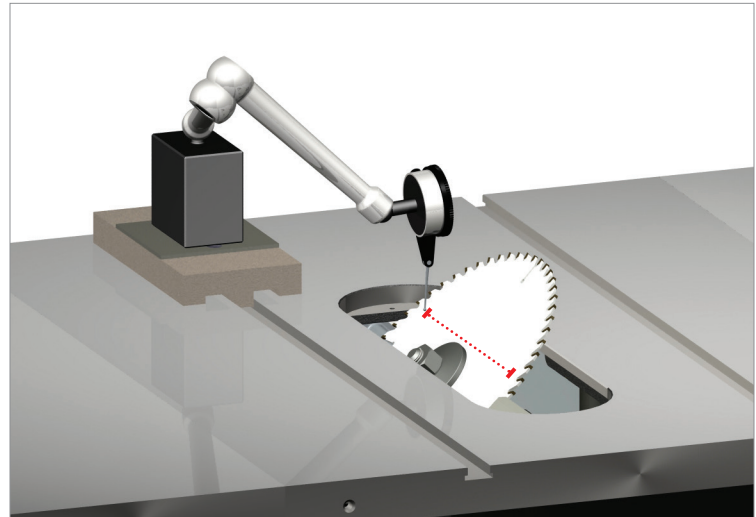
# Making Adjustments to Your Saw

Next, move the dial indicator measurement arm so that it is not touching the blade and tilt the blade to approximately 45°. Make sure not to tighten the tilt handwheel against the 45° limit stop. Now reposition the dial indicator measurement arm against the right side of the blade and about 1/4 inch directly above the arbor flange. Slide the dial indicator mount toward the front of the saw until the measurement arm is about 1/2 inch inside the front edge of the blade (see Fig. 109). Set the dial indicator readout to zero.

Slide the dial test indicator mount smoothly toward the back of the saw until the measurement arm is about 1/2 inch inside the rear edge of the blade. Note the reading of the dial indicator as the mount moves across the blade. Write down the final number, including whether it is positive or negative. This number is proportional to the misalignment between the blade and the tilt axis.

If the measurement is 0.002 inch or less, then the blade is parallel to the tilt axis within the margin of error for this procedure and no further alignment is necessary. For measurements larger than 0.002 inch, you can adjust the angle of the blade to improve the parallelism between the blade and the tilt axis. The adjustment must be made at a 0° tilt angle.

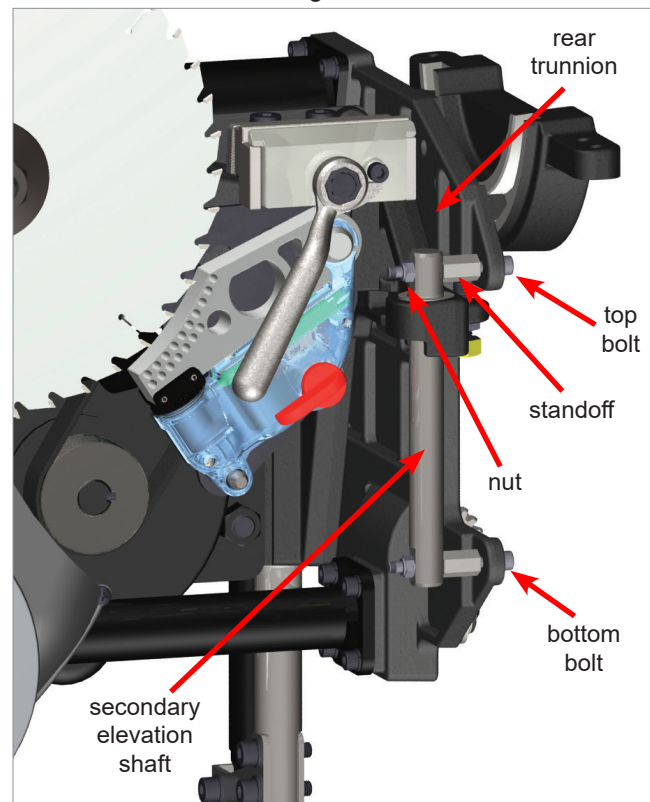
Fig. 109



To do this, move the dial test indicator away from the blade, set the tilt angle back to 0° and reposition the dial test indicator at the front of the blade. When you slide the dial indicator mount across the blade, you should see little or no change in the indicator readout since the table was previously aligned. Now, slide the dial indicator toward the front of the saw until the measurement arm is about 1/2 inch inside the rear edge of the blade. Set the readout to zero.

The angle of the blade relative to the tilt axis is controlled by two bolts that bolt the secondary elevation shaft to the rear trunnion (see Fig. 110).

Fig. 110



# Making Adjustments to Your Saw

To align the blade to the tilt axis, you need to adjust the position of the nut and standoff on the top bolt of the secondary elevation shaft until the misalignment between the blade and the miter slot as measured by sliding the dial indicator across the blade from front to back at a 0° tilt angle is 2.4 times the measurement taken at a 45° tilt angle, *but in the opposite direction*.

*For example:*

*if the measurement taken at 45° was +0.006 inch,*

*then the misalignment at 0° should be adjusted to  $(-2.4) \times (0.006) = -0.014$  inch*

To make the adjustment, use a 10 mm wrench to turn both the small nut and the standoff on the top bolt of the secondary elevation shaft (see Fig. 110). Only make small turns (about one-third of a turn at a time). To create a positive misalignment, first loosen the nut and then turn the standoff counter-clockwise the same amount so that it moves towards the nut. To make a negative misalignment, first turn the standoff clockwise and then turn the nut clockwise the same amount so that it moves towards the standoff. You will see the dial indicator reading go positive as you create a final negative misalignment and negative as you create a final positive misalignment.

Keeping the dial test indicator positioned toward the front of the saw with the measurement arm about  $\frac{1}{2}$  inch inside the front edge of the blade, set the dial readout to zero. Slide the dial indicator mount toward the back of the saw until the measurement arm is about  $\frac{1}{2}$  inch inside the rear edge of the blade. Note the readout.

If the readout is -2.4 times the measurement you took at 45°, the bolt should be correctly adjusted. Otherwise, repeat the above process of adjusting the top bolt on the secondary elevation shaft until the dial indicator at 0° tilt angle reads -2.4 times the measurement taken at 45° as the dial indicator is moved across the blade from the front to the back.

Once the bolt is adjusted correctly, the blade should now be parallel to the tilt axis. Make sure the small nut at the end of the bolt is tight. Since the alignment of the blade has been changed, the table must now be realigned. Align the table as described on page 63, using the precision alignment procedure.

Once the table has been realigned, you can check the parallelism of the blade to the tilt axis by tilting the blade to 45° and measuring the alignment between the blade and the miter slot. If the misalignment of the blade and the miter slot is less than 0.002 inch at both 0° and 45°, then the blade is parallel to the tilt axis. If necessary, you can fine tune the alignment by repeating the above procedure.

# Making Adjustments to Your Saw

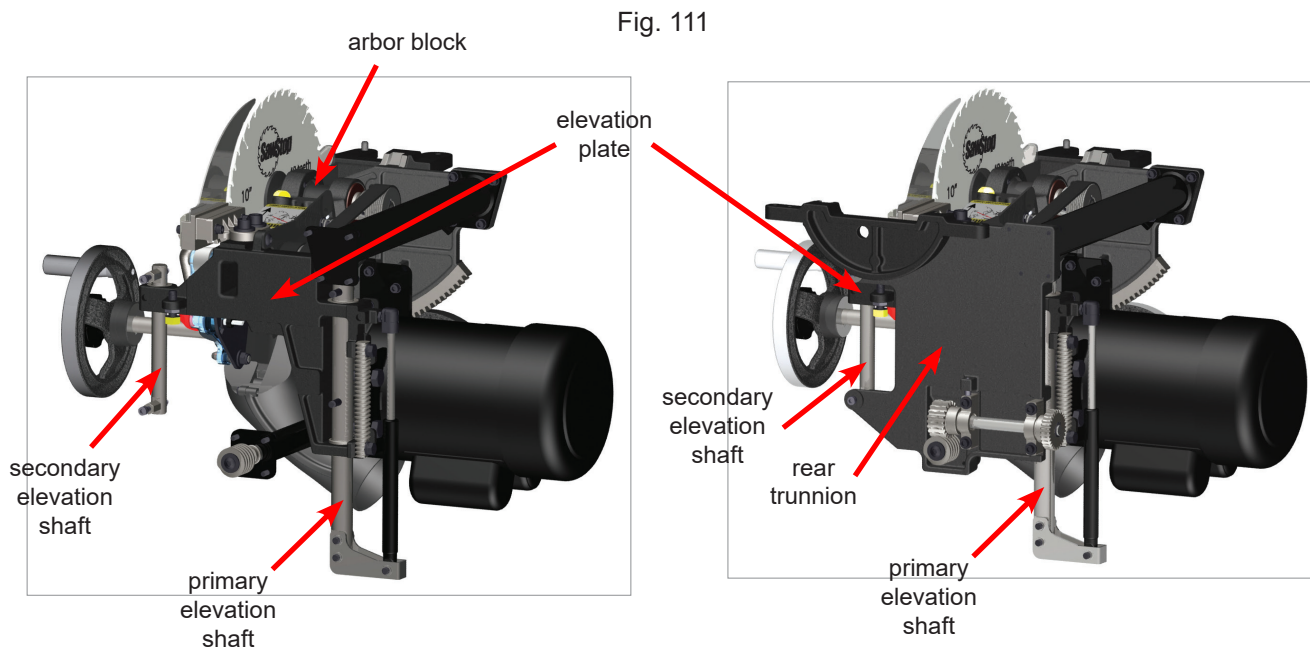
## Aligning the Blade Elevation Assembly

The following blade elevation alignment procedure assumes the blade has already been aligned with the tilt axis. If the blade has not been aligned with the tilt axis, first follow the procedure in the section “Aligning the Blade to the Tilt Axis” on page 67 and then continue with aligning the blade elevation assembly.

The blade elevation assembly controls the motion of the blade as it is raised and lowered. Aligning the blade elevation assembly ensures that there is minimal lateral movement of the blade as it is raised and lowered. Although all table saws suffer from some lateral blade movement due to tolerance stack-ups in machining, only SawStop cabinet saws allow you any adjustment to minimize this problem.

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

The SawStop® Professional Cabinet Saw uses a vertical slide elevation design for ultra smooth operation and rigidity. As shown in Fig. 111, the blade and arbor block are mounted on a large cast iron base called the elevation plate. The elevation plate slides up and down on two shafts that are attached to the rear trunnion. This blade elevation assembly is aligned by adjusting the orientation of the secondary shaft so that it is parallel to the primary shaft. If the shafts are not parallel the blade will rotate about a vertical axis as the blade is raised and lowered. When the blade elevation assembly is aligned, the blade will remain parallel to the miter slots with minimum lateral movement as it is raised and lowered.



First verify that the table is aligned. With the blade fully elevated and at a 0° tilt angle, measure the parallelism of the blade relative to the miter slots in the table as described in the section named “Aligning the Table,” on page 63.



# Making Adjustments to Your Saw

With the blade at a tilt angle of 0°, lower the blade below the table. Make sure to back the handwheels off slightly to release the pressure between the trunnion assembly and limit stops. Next, position the dial test indicator near the right side of the blade. The indicator measurement arm should rest against the blade approximately 1/2 inch inside the front edge of the blade and about 1/2 inch higher than the top of the arbor washer (Fig. 112). Depending on the geometry of your dial test indicator, it may be necessary to position the indicator below the table.

Now measure the parallelism of the blade relative to the miter slots in the table as described in the section “Aligning the Table” on page 63. Note the readout of the dial indicator including whether it is positive or negative.

If the measurement is 0.002 inch or less, then the blade elevation assembly is aligned within the margin of error for this measurement and, therefore, no further alignment is needed. If the measurement is greater than 0.002 inch, you can adjust the bottom bolt on the secondary elevation shaft to reduce the error.

To align the blade elevation assembly, you will need to adjust the position of the nut and standoff on the bottom bolt of the secondary elevation shaft (Fig. 113) until the blade is parallel to the miter slot as measured by sliding the dial indicator across the blade. Use a 10 mm wrench to turn the nut and standoff and make only small turns (about one-third of a turn at a time). If your reading above was negative, first loosen the nut by turning it counter-clockwise and then turn the standoff counter-clockwise the same amount so that it moves towards the nut. If your reading above was positive, first turn the standoff clockwise and then turn the nut clockwise the same amount so that it moves towards the standoff. Measure the parallelism of the blade relative to the miter slots and keep adjusting the nut and standoff until the reading on the dial indicator is zero as you slide the dial indicator across the blade.

Once the blade is parallel to the miter slots with the blade fully lowered, make sure the small nut at the end of the bolt is tight and fully raise the blade. Now measure the parallelism of the fully raised blade. If the blade is not parallel to the miter slots, you will need to start the alignment process over again by first re-aligning the table with the blade fully elevated and at a 0° tilt angle as described on page 63 and then re-aligning the blade to the tilt axis (see page 67) and then re-aligning the blade elevation assembly (see page 70).

Fig. 112

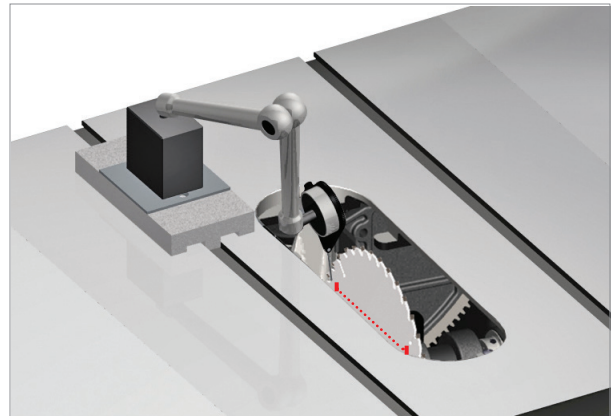
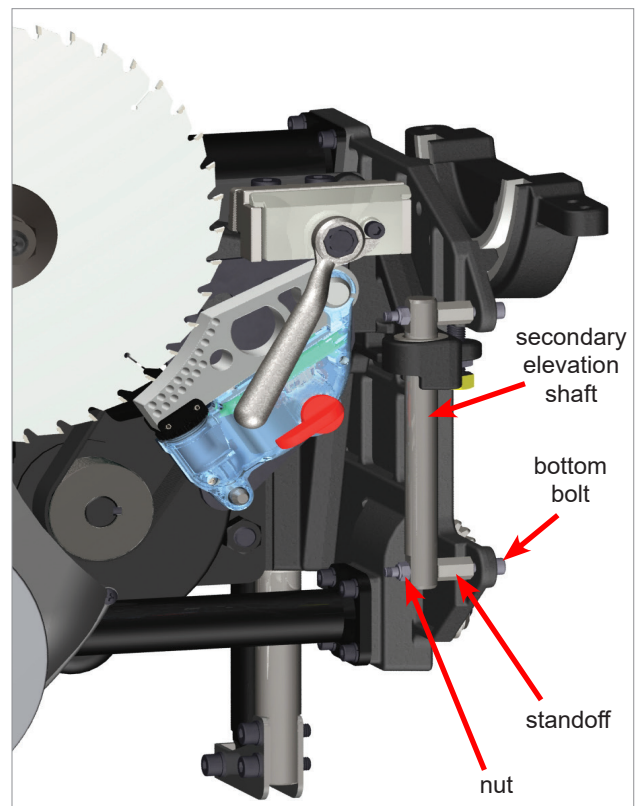


Fig. 113





# Making Adjustments to Your Saw

## Adjusting the Elevation Limit Stops

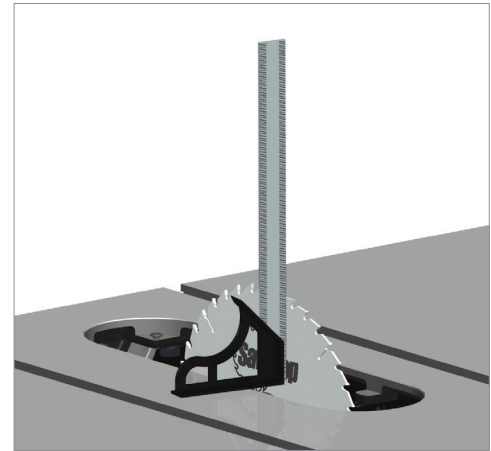
The upper elevation limit stop prevents the arbor block and the motor belt from hitting the underside of the table. The lower elevation limit stop prevents the arbor block or blade from hitting the lower trunnion assembly and dust shroud. The arbor bumper (see Fig. 41) serves as the lower elevation limit and cannot be adjusted. The upper elevation limit stop must be adjusted correctly to ensure proper operation of the saw.

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

### Upper Elevation Limit Stop

To check the position of the upper elevation limit stop, set the blade tilt to 0°, install a 10 inch saw blade on the arbor (see page 29), and turn the elevation handwheel clockwise until the limit stop is reached. Using a combination square or similar tool, measure the distance from the top of the table to the tip of the highest tooth on the blade (see Fig. 114). The maximum height of the blade above the table should be 3 $\frac{1}{8}$  inches. If the blade is 3 $\frac{3}{16}$  inches or higher above the table, the upper elevation limit stop should be adjusted downward. If the blade is less than 3 $\frac{1}{8}$  inches above the table, you can adjust the limit stop upward to 3 $\frac{1}{8}$  inches. Alternatively, you can adjust the limit stop so that the maximum blade height is lower than 3 $\frac{1}{8}$  inches.

Fig. 114

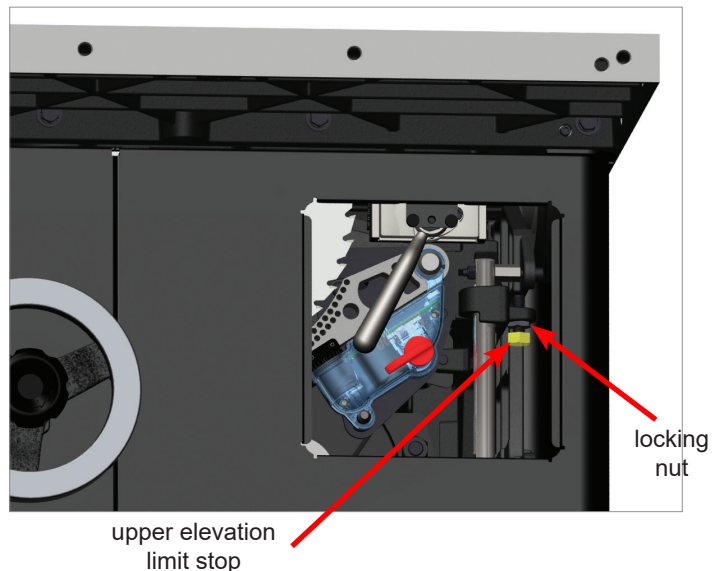


The upper elevation limit stop is fixed by the yellow painted bolt located on the elevation plate (see Fig. 115) and can be accessed through the side panel or the rear access panel with the blade lowered. The upper elevation limit stop can be adjusted by using a 17 mm wrench to turn the bolt and a 14 mm wrench to turn the locking nut.

To raise the maximum blade elevation, first loosen the locking nut and back it off several turns. Then turn the upper limit bolt counter-clockwise several turns. Next, adjust the elevation handwheel until the blade elevation is set to the correct maximum height. If the upper elevation limit stop prevents you from raising the blade to the desired maximum elevation, continue to turn the bolt counter-clockwise until the blade can be raised to the correct elevation. Make sure that neither the arbor block nor the belt comes in contact with the underside of the table or damage can result. Once the blade is set to the correct maximum elevation, turn the upper limit bolt clockwise until it is tight. Finally, turn the locking nut clockwise until it is tight. The upper elevation limit has now been set.

Fig. 115

To lower the maximum blade elevation, first adjust the elevation handwheel until the blade elevation is set to the correct maximum height. Loosen the locking nut and back it off several turns. Next, turn the bolt clockwise until it is tight. If the blade elevation is still set too high, continue loosening the locking nut and turning the bolt clockwise until the blade is set to the correct maximum elevation. Finally, turn the locking nut clockwise until it is tight. The upper elevation limit has now been set.



# Making Adjustments to Your Saw

## Adjusting the Tilt Limit Stops and Tilt Angle Indicator

The tilt limit stops allow you to easily and quickly set the bevel angle to 0° and 45°. However, when making precision cuts, it is always best to check the angle of the blade with a combination square or similar tool.

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

### 0° Tilt Limit Stop

To check the position of the 0° limit stop, install a 10 inch saw blade on the arbor (see page 29). Raise the blade to its full elevation, and turn the tilt handwheel clockwise until the limit stop is reached. Using a square, check to see that the blade is at a 90° angle to the table (see Fig. 116). If you need to adjust the position of the 0° limit stop follow the instructions below.

The 0° tilt limit stop is set by the yellow painted bolt located on the front trunnion (see Fig. 117) and can be accessed through the side panel. You will need a 17 mm wrench to turn the bolt and a 14 mm wrench to turn the locking nut.

If the blade cannot reach a 90° angle with the table at a minimum tilt angle, adjust the position of the 0° tilt limit bolt by first loosening the locking nut and backing it off several turns. Then turn the 0° tilt limit bolt counter-clockwise several turns. Next, adjust the tilt angle until the blade is at 90° to the table. If the blade still cannot reach a 90° angle with the table, keep turning the nut and bolt counter-clockwise until it can. Once the blade is in the correct position, turn the 0° limit bolt clockwise until it is tight. Finally, turn the locking nut clockwise until it is tight. The 0° tilt limit stop has now been set.

If the blade moves past a 90° angle with the table at a minimum tilt angle, first position the blade so that it forms a 90° angle with the table. Then loosen the locking nut and back it off several turns. Next, turn the 0° limit bolt clockwise until it is tight. Finally, turn the locking nut clockwise until it is tight. The 0° tilt limit stop has now been set.

Fig. 116

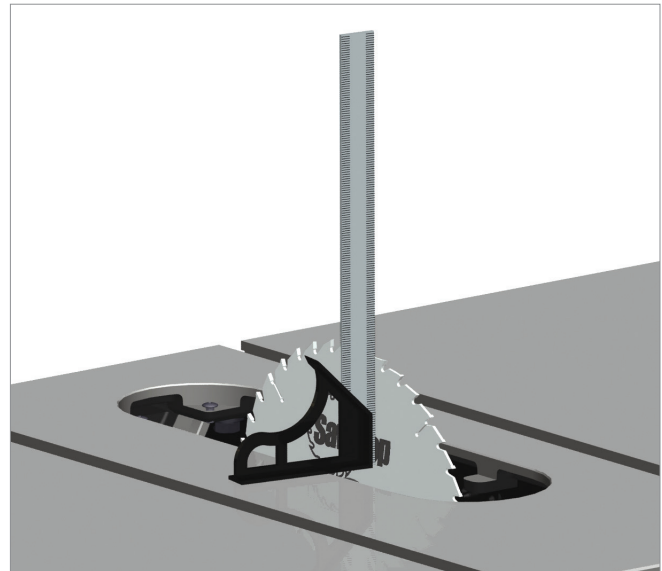
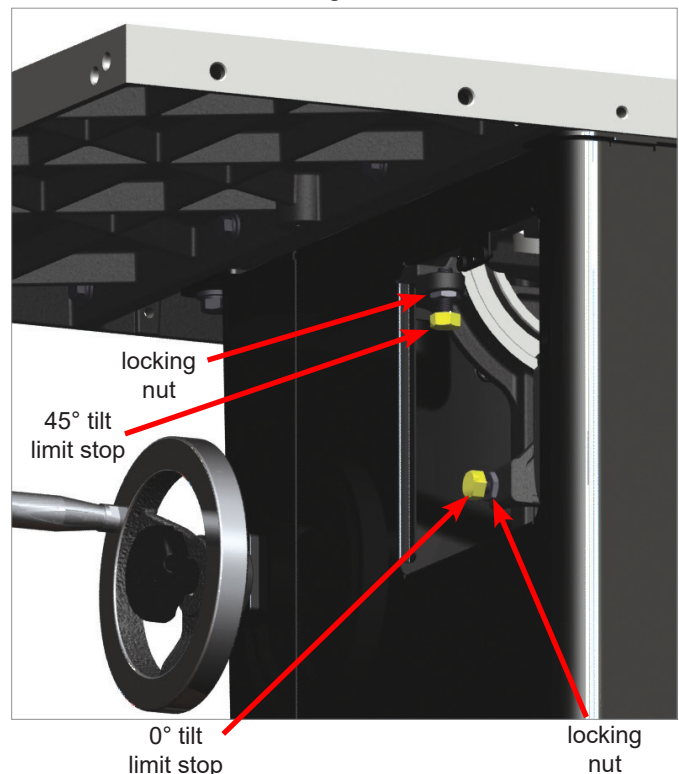


Fig. 117



# Making Adjustments to Your Saw

## 45° Tilt Limit Stop

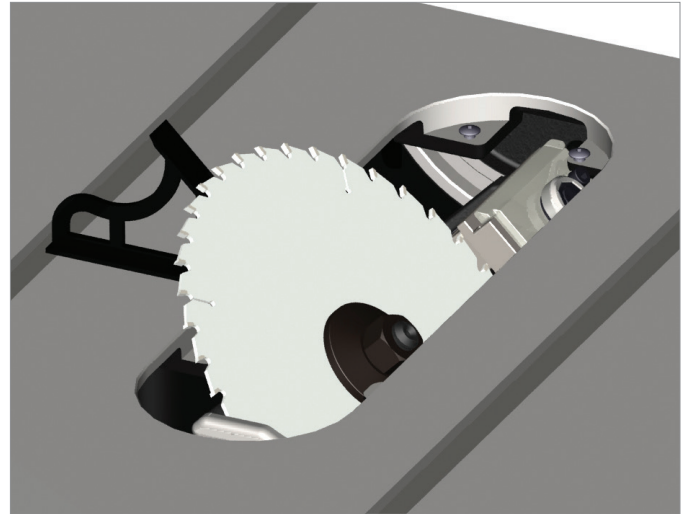
To check the position of the 45° limit stop, install a 10 inch saw blade on the arbor (see page 29). Raise the blade to its full elevation, and turn the tilt handwheel counter-clockwise until the limit stop is reached. Using a combination square, check to see that the blade is at a 45° angle to the table (see Fig. 115). If you need to adjust the position of the 45° limit stop follow the instructions below.

The 45° tilt limit stop is set by the yellow painted bolt located on the front trunnion bracket (see Fig. 117) and can be accessed through the side panel. Use a 17 mm wrench to turn the bolt and a 14 mm wrench to turn the locking nut.

If the blade cannot reach an angle of 45° with the table at maximum tilt, first loosen the locking nut and back it off several turns. Then turn the 45° tilt limit bolt clockwise several turns. Next, set the blade at a 45° angle with the table. If the blade still can't reach a 45° angle with the table, keep turning the nut counter-clockwise and the 45° tilt limit bolt clockwise until the blade is at a 45° angle with the table. Once the blade is in the correct position, turn the 45° tilt limit bolt counter-clockwise until tight. Finally, turn the locking nut clockwise until tight. The 45° tilt limit stop has now been set.

If the blade goes past an angle of 45° with the table at maximum tilt, first loosen the locking nut and back it off several turns. Next, set the blade at a 45° angle with the table. Then turn the 45° tilt limit bolt counter-clockwise until it is tight. Finally, turn the locking nut clockwise until it is tight.

Fig. 118

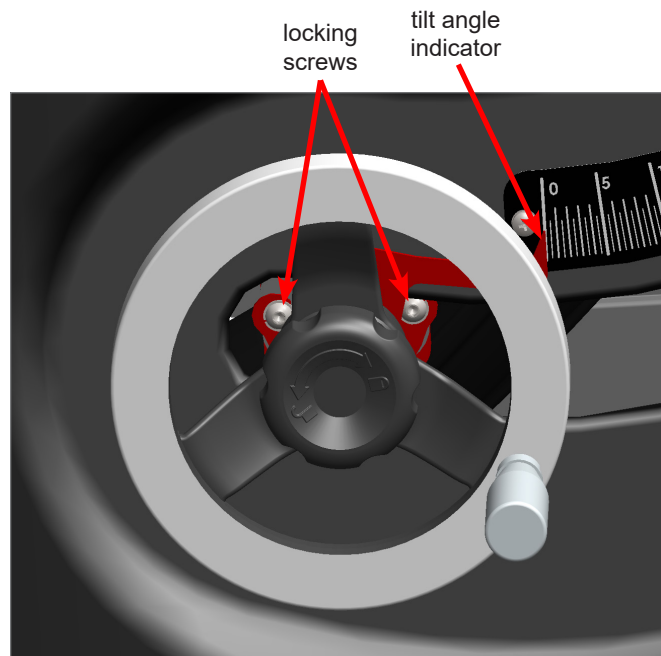


## Tilt Angle Indicator

The tilt angle indicator is located at the front of the Professional Cabinet Saw, just behind the elevation handwheel (see Fig. 119). The indicator shows the current angle of the blade relative to vertical (i.e., perpendicular to the table top).

Once the 0° limit stop is correctly set, turn the tilt handwheel clockwise until the limit stop is reached. Check the reading of the tilt angle indicator. If necessary, adjust the indicator by using a 4 mm hex key to loosen the two locking screws that attach the indicator to the left and right sides of the elevation shaft and repositioning the indicator until it reads 0°. It may be helpful to remove the elevation handwheel to access the screws. Lock the indicator in place by tightening the locking screws.

Fig. 119

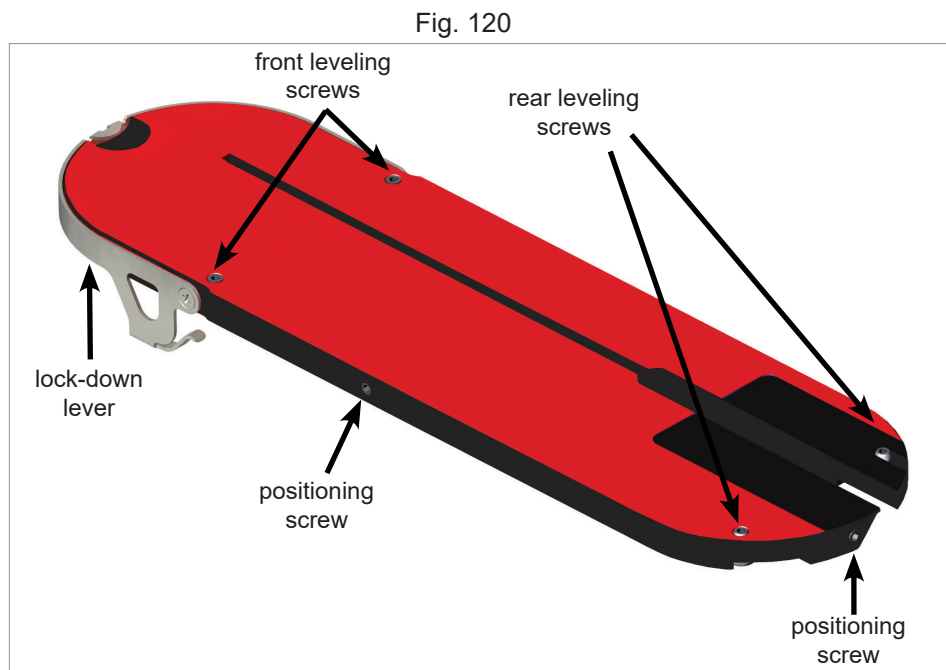


# Making Adjustments to Your Saw

## Adjusting the Table Insert

The SawStop® zero-clearance insert has been designed to fit securely within the table opening and just below the table top. The blade slot in the insert is pre-cut at the factory after all alignments to the saw have been completed.

As shown in Fig. 120, the insert includes front and rear leveling screws to set the height of the insert. In addition, positioning screws at the rear and right side of the insert prevent it from rattling in the table opening. Finally, a lock-down lever at the front prevents the insert from rising unexpectedly.



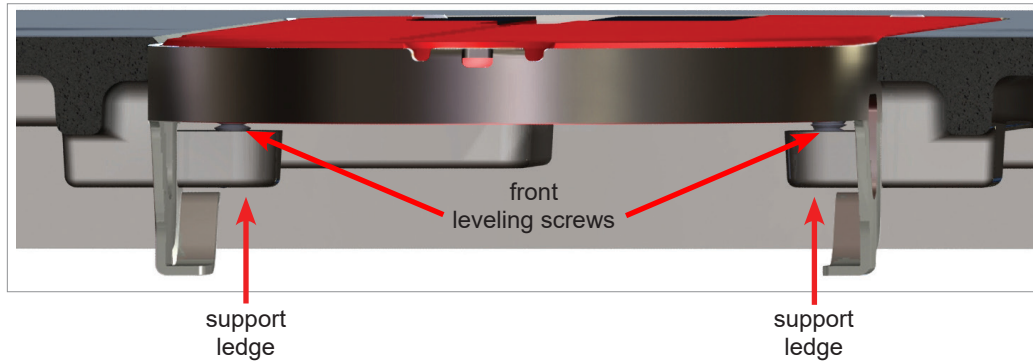
**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

The insert should slide easily into and out of the table opening, but should not be loose in the opening. If the insert is too loose, use the included 3 mm hex key to turn the side and/or rear positioning screw(s) counter-clockwise as needed to reduce the clearance between the insert and the table opening (see Fig. 120). If the insert is too tight, turn the side and/or rear positioning screw(s) clockwise as needed to increase the clearance between the insert and the table opening.

# Making Adjustments to Your Saw

To set the height of the insert, use the included 3 mm hex key to adjust the front and rear leveling screws until the insert is just below the surface of the table. The lower end of each front leveling screw should rest on the corresponding support ledge on the table (see Fig. 118).

Fig. 121

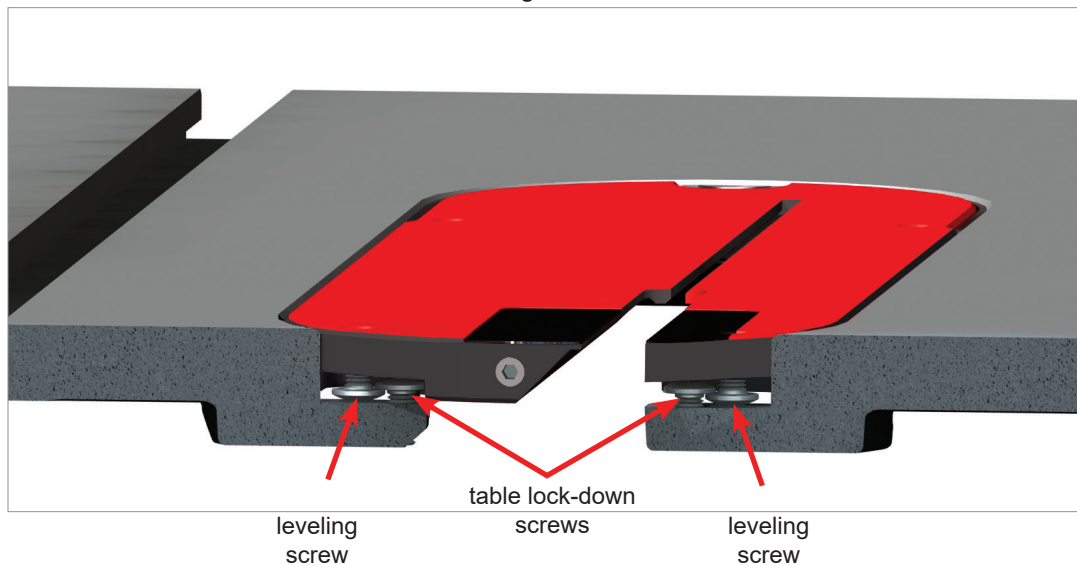


## Adjusting the Rear Lock-Down Screws

The rear of the table insert is held down by a pair of lock-down screws mounted in the table at the rear of the table opening. As shown in Fig. 122, the lock-down screw heads overlap the heads of the rear leveling screws extending down from the insert. The overlapping screw heads hold down the table insert.

The height of the lock-down screws should be adjusted to fit close above the leveling screws, while allowing enough clearance to install and remove the table insert without difficulty. The height of the lock-down screws can be adjusted using the included 3 mm hex key.

Fig. 122



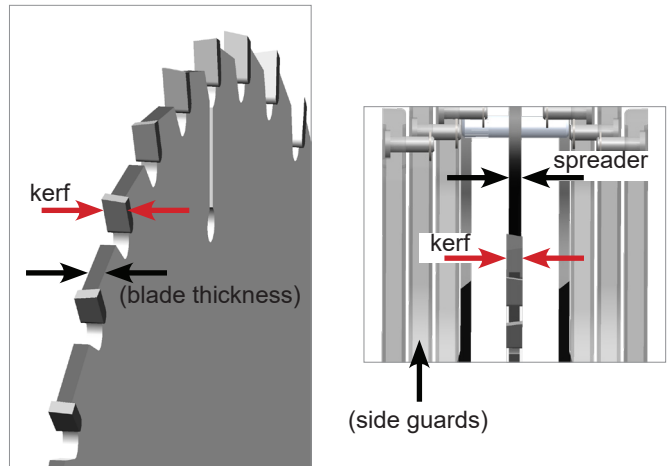


# Making Adjustments to Your Saw

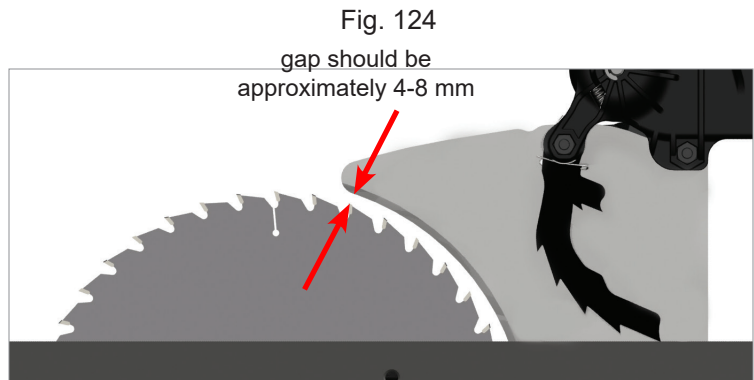
## Aligning the Riving Knife and Spreader to the Blade

For safe operation, the spreader and riving knife should be aligned parallel to the blade and positioned inside the kerf of the blade (see Fig. 123).

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

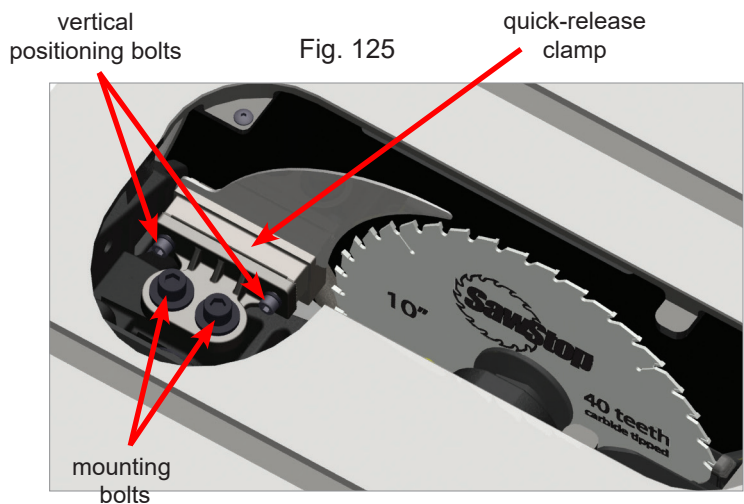


There should also be a gap of approximately 4-8 mm between the front edge of the spreader or riving knife and the teeth of the blade (see Fig. 124). The spreader or riving knife is held in position by a quick-release clamp mounted under the table and behind the blade (see Fig. 125). If the spreader or riving knife is not aligned with the blade or is too close to the blade, then the position of the clamp must be adjusted. Once the clamp is properly adjusted, the spreader and riving knife will automatically align to the blade when installed in the clamp.



To adjust the position of the clamp, set the tilt angle to 0° and remove the table insert. Remove the blade and set it aside. Make sure the spreader or riving knife is installed and lower the blade elevation to zero to provide access to the clamp.

Two mounting bolts hold the quick-release clamp in the saw (see Fig. 125). Loosen both mounting bolts (using an 8 mm hex key) just enough so that you can slide the clamp along its mounting surface with some friction. Reinstall the blade and raise the blade to the fully elevated position.





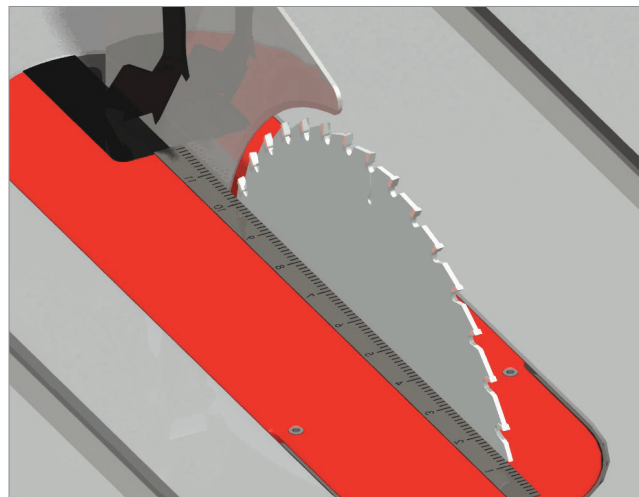
# Making Adjustments to Your Saw

To align the spreader or riving knife so it is within the kerf of the blade, place a straight edge along the left side of the blade, making sure the straight edge runs between the teeth (see Fig. 126). Slide the clamp left or right until the left side of the spreader is flush and flat against the straight edge. If necessary, pivot the left anti-kickback pawl up out of the way while performing this step. If you are using a thin-kerf blade (i.e., kerf is  $\frac{3}{32}$  inch), you may need to place one or more shims between the straight edge and the side of the blade to ensure the spreader is centered with the blade.

To adjust the gap between the front edge of the spreader or riving knife and the teeth of the blade, slide the clamp forward or backward until the spacing is approximately correct.

When the spreader or riving knife is both aligned and spaced properly, tighten the two mounting bolts to hold the quick-release clamp in position. You may need to remove the blade to fully tighten the mounting bolts.

Fig. 126

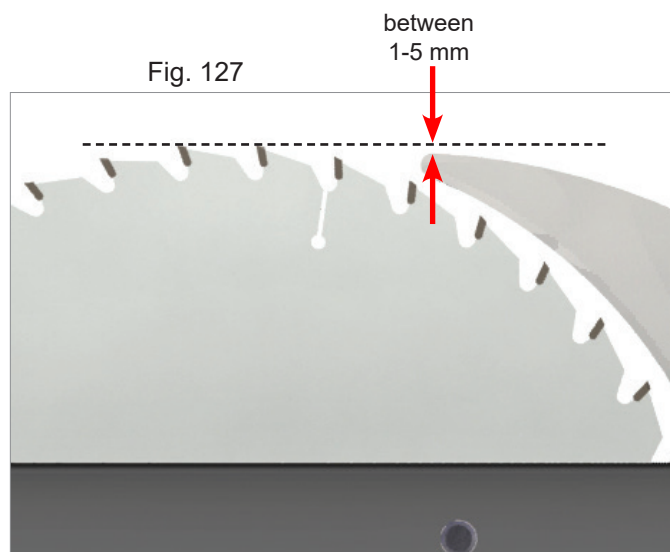


**WARNING!** Make sure there is at least 4 mm spacing between the riving knife and blade at all points. Contact between the blade and either the riving knife or spreader during operation may cause the brake system to be activated.

## Setting the Height of the Riving Knife

When using the riving knife, the top of the riving knife should be between 1-5 mm below the top of the blade (see Fig. 127). This allows the riving knife to be used on rabet cuts and other non-through cuts.

Fig. 127



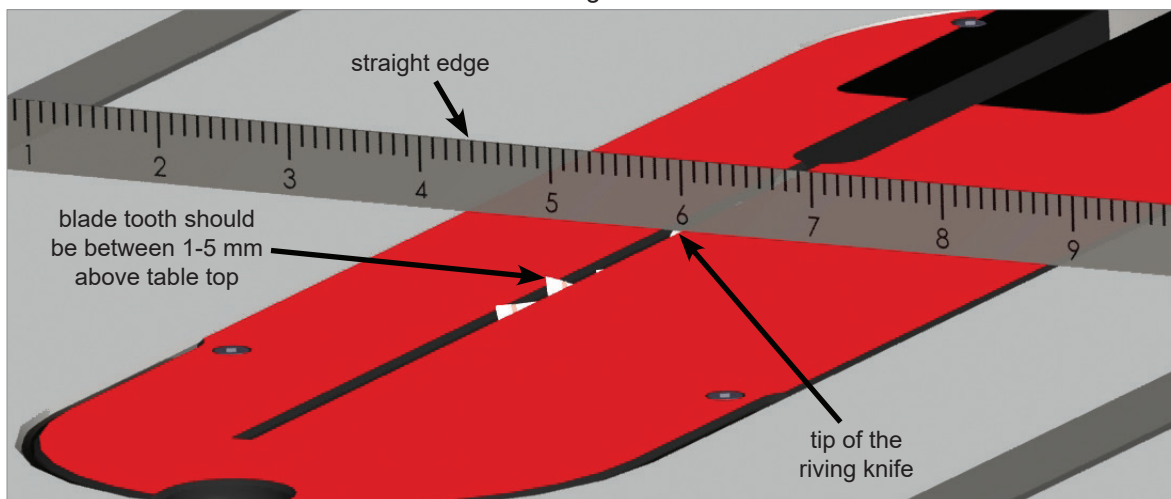
**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

# Making Adjustments to Your Saw

To check the height of the riving knife relative to the blade, lower the blade elevation until the lower limit stop is engaged. Place a ruler or another straight edge on the table so that it lies across the width of the table insert and directly above the tip of the riving knife. Raise the blade elevation until the tip of the riving knife just comes in contact with the straight edge or ruler (see Fig. 128).

Now measure the distance from the top of the table to the top of the blade. If the height of the riving knife is set correctly, the saw blade should be between 1-5 mm above the table. If the distance is between 1-5 mm, no further adjustments are necessary.

Fig. 128



If the height of the riving knife is not correct, use the elevation handwheel to set the top of the blade to be between 1-5 mm above the top of the table. Next, remove the table insert and loosen the two vertical positioning bolts shown in Fig. 125 using the included 5 mm hex key. Loosen the bolts just enough so that you can move the clamp up and down on the clamp mounting bracket.

Next, adjust the position of the clamp up or down to set the height of the riving knife. You can also rotate the clamp forward or backward so that the arc on the front edge of the riving knife is concentric with the blade. When the riving knife is correctly positioned, tighten the two vertical positioning bolts just enough to hold the clamp in position and reinstall the table insert. Check to make sure the tip of the riving knife is level with the table. Repeat the adjustment if necessary. Once the vertical alignment of the riving knife is correct, fully tighten the two vertical positioning bolts on the clamp.

In some cases, adjusting the vertical alignment may cause the spacing between the front edge of the riving knife and the teeth of the blade to be incorrect. If this happens, repeat the steps explained above to adjust the gap between the front edge of the spreader and the teeth of the blade so that it is 4-8 mm.

Once the clamp has been properly positioned, further adjustment should not be necessary. Both the spreader and riving knife will now automatically align when installed in the clamp.

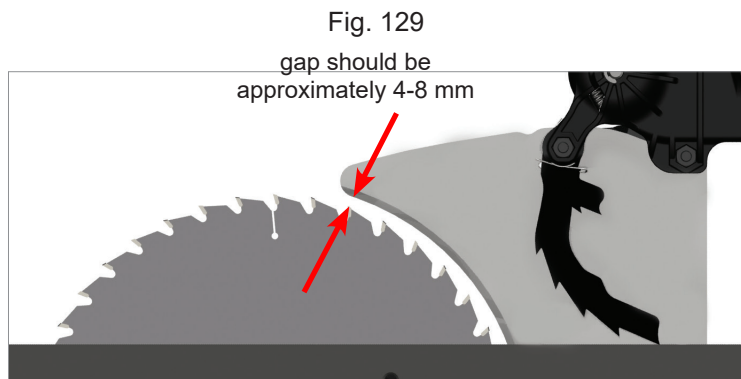
# Making Adjustments to Your Saw

## Adjusting the Height of the Limit Rod Wood Stop

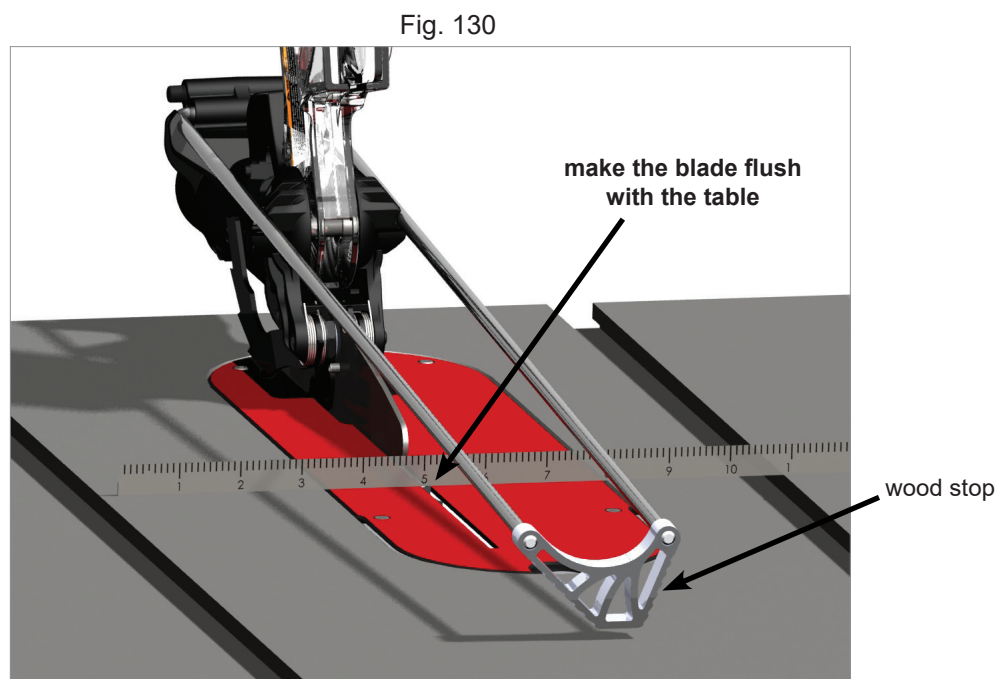
When set correctly, the wood stop at the end of the limit rod will prevent a work piece that is taller than the top of the blade from entering the blade guard and engaging the blade. The height of the wood stop should be adjusted whenever the clamp is adjusted.

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

To check the height of the limit rod wood stop, first install the blade guard in the saw. Next, check to make sure that the distance between the blade and the spreader is 4-8 mm (see Fig. 129). The spreader should be as concentric with the blade as possible maintaining a gap of 4-8 mm. If the spreader needs adjustment, see “Aligning the Riving Knife and Spreader to the Blade” on page 77.



Now lower the blade until the top of the blade is slightly below the top of the table insert. To set the blade flush with the table, lift the blade guard shell, place the edge of a ruler across the table insert and adjust the height of the blade until the tip of the blade contacts the bottom of the ruler.



# Making Adjustments to Your Saw

With the tip of the blade flush with the table, measure the distance between the bottom of the wood stop and the table. The bottom of the wood stop should be 7-10 mm above the table when the top of the blade is flush with the table. If the wood stop is too far above the table or too low, you will need to adjust the height of the wood stop.

Fig. 131

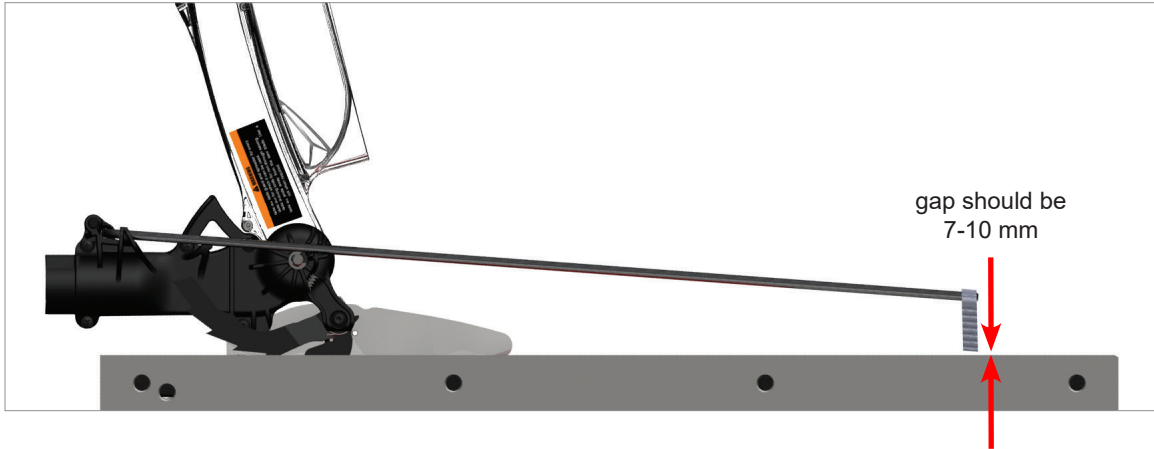
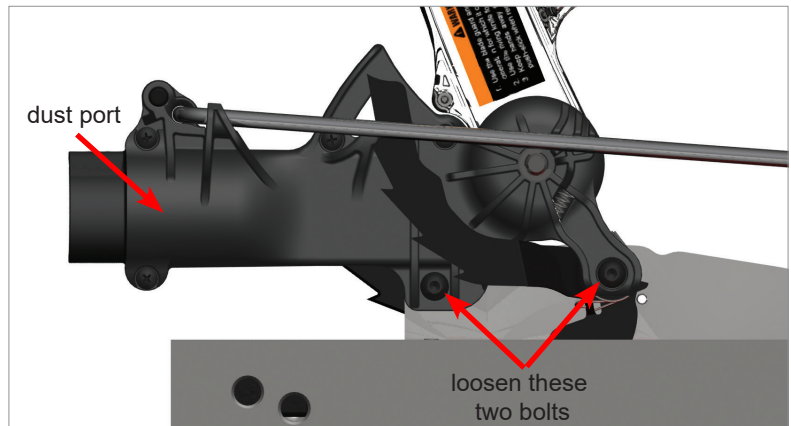


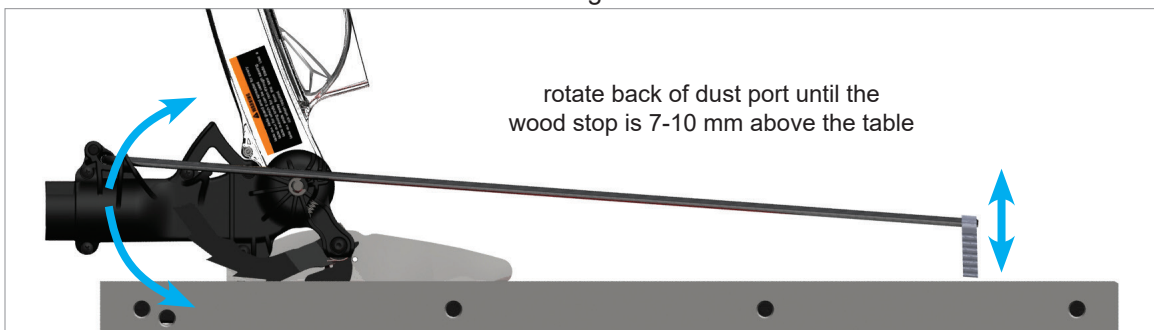
Fig. 132

To adjust the height of the wood stop, loosen the two bolts that attach the blade guard dust port to the spreader (see Fig. 132). To better access the bolts, pivot the left large anti-kickback pawl up and guide it into the catch on the side of the dust port. Use a 4 mm hex key to loosen the bolts.



Rotate the blade guard dust port until the wood stop is 7-10 mm above the table. Once set, tighten the two bolts on the blade guard dust port, but do not overtighten.

Fig. 133



# Making Adjustments to Your Saw

## Adjusting the Quick-Release Clamp

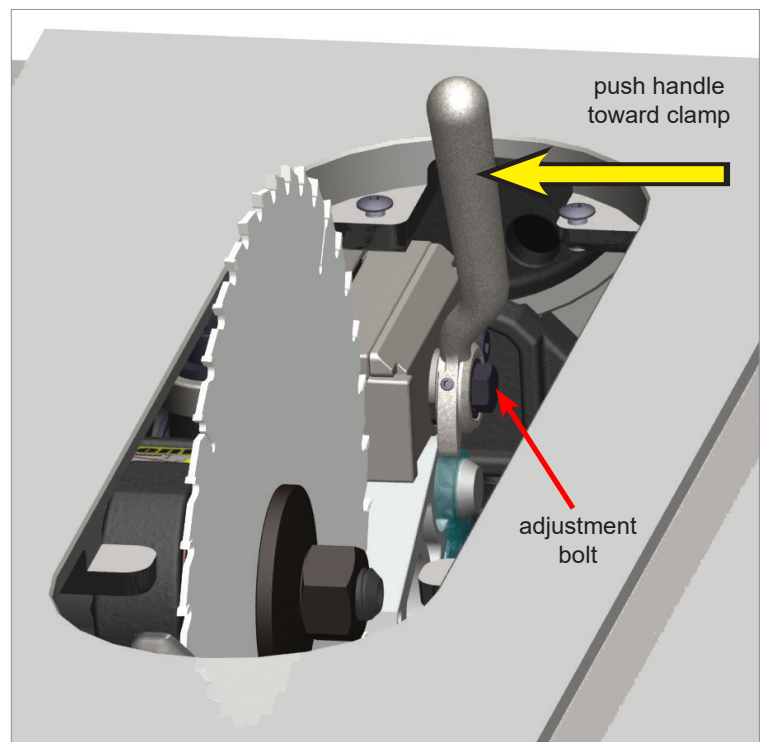
The clamping pressure holding the spreader or riving knife in the quick-release clamp is factory adjusted to require approximately 5-10 lbs of force to push the handle to the fully down and clamped position. This is a moderate amount of force to apply with one hand. If excessive force is required to move the handle down, or if you are unable to move the handle down by hand, then the clamp should be adjusted to reduce the clamping pressure. Alternatively, if the handle moves down with only light pressure, then the clamping force should be increased. When evaluating the clamping force, make sure the riving knife or spreader is properly seated in the clamp.

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

To adjust the clamping force, begin by removing the riving knife or spreader. Raise the handle so that it faces upward, and push the handle toward the clamp. The clamp assembly includes an internal spring designed to push the clamp open when the handle is raised. Therefore you will have to push the handle toward the clamp against the force of the spring.

When the handle is fully pressed against the clamp, an adjustment bolt will be exposed (see Fig. 134). Turn the adjustment bolt clockwise a slight amount to increase the clamping pressure, or counter-clockwise a slight amount to decrease the clamping pressure. Release the handle and allow the spring to push it away from the clamp and re-engage the adjustment bolt. Now reinstall the spreader or riving knife and test the clamping pressure. Repeat the adjustment as necessary until the correct clamping pressure is achieved.

Fig. 134



**WARNING!** It is important to maintain the correct clamping pressure on the riving knife and spreader. If the pressure is too low these important safety devices may not function properly and a serious injury could result. In addition, the spreader or riving knife may come into contact with the blade and cause an unintended activation of the safety system.

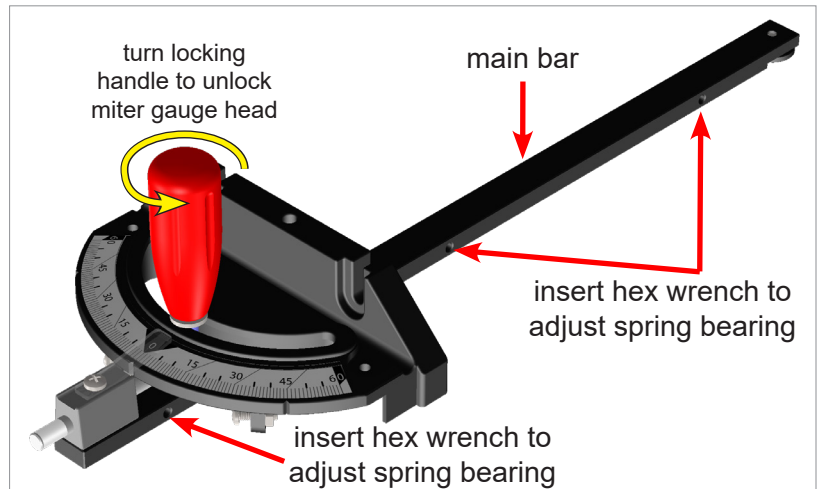


# Making Adjustments to Your Saw

## Adjusting the Miter Gauge

The miter gauge bar includes three spring bearings which ensure a close fit between the miter gauge main bar and the miter gauge slots in the table. The bearings can be adjusted to protrude further outward from the side of the main bar to tighten the fit between the main bar and the miter slots. Alternatively, the bearings can be adjusted inward to loosen the fit. To adjust the position of the spring bearings, insert a 2.5 mm hex wrench into the back of the bearing (see Fig. 135). Turn the wrench clockwise to tighten the fit, or counter-clockwise to loosen the fit.

Fig. 135



The miter gauge also includes indexing stops to allow you to quickly set the gauge to  $-45^\circ$ ,  $0^\circ$ , and  $+45^\circ$ . If necessary, you can adjust these indexing stops to increase the precision of your miter cuts.

To begin, loosen the miter gauge head by turning the locking handle counter-clockwise about  $\frac{1}{2}$  turn.

Next, for the indexing stop you want to adjust, loosen the corresponding locking nut on the bottom of the miter gauge head and turn the set screw counter-clockwise several turns (see Fig. 136). Place the miter gauge in either the left or right miter slot, and set a combination square to the desired angle (e.g.,  $-45^\circ$ ,  $0^\circ$ , or  $+45^\circ$ ). Position one leg of the square flush against the blade and rotate the miter gauge head until it is flush against the other leg of the square.

Next, turn the handle clockwise until tight to lock the miter gauge head at the correct angle. Make sure the indexing pin is pressed in toward the miter gauge bar, then turn the set screw clockwise until it hits against the indexing pin. Finally, tighten the locking nut to prevent the set screw from moving.

Repeat the above process for the other indexing stops if desired.

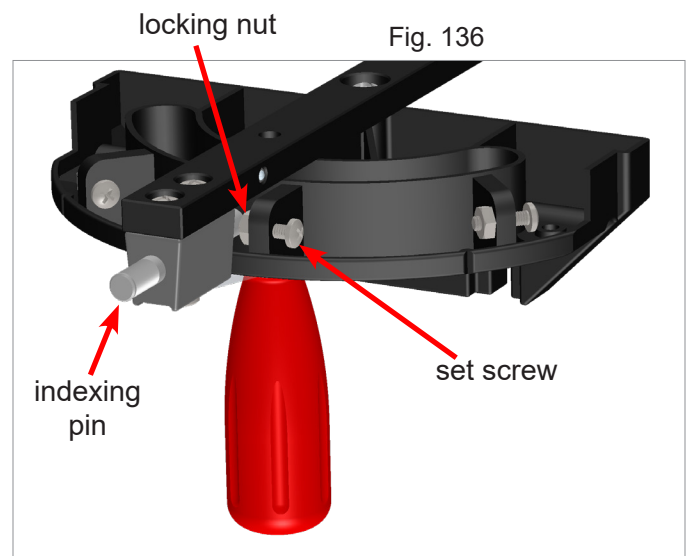


Fig. 136

# Making Adjustments to Your Saw

## Adjusting the Motor Belt Tension

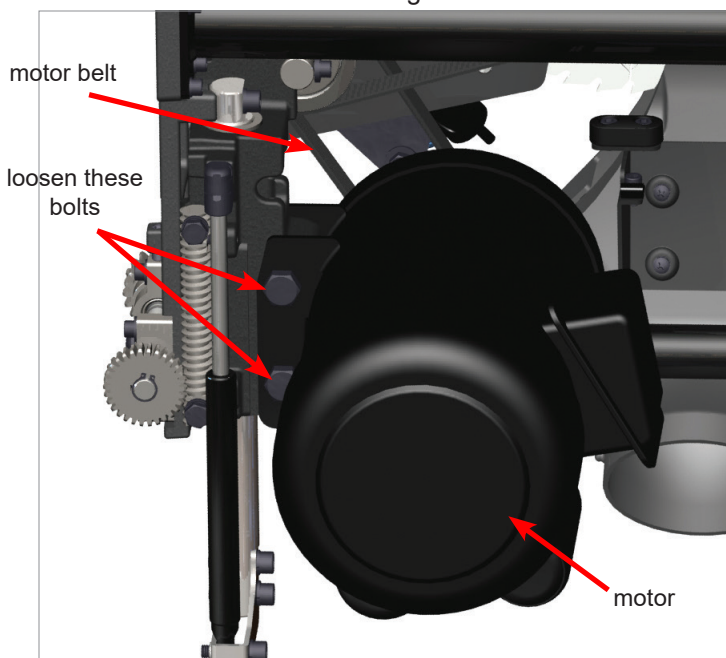
The tension of the motor belt should be such that light finger pressure on one side of the belt causes no more than about  $\frac{1}{4}$  inch deflection. If there is more than  $\frac{1}{4}$  inch deflection, the belt should be tightened. This is accomplished by adjusting the position of the motor.

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

Open the motor cover to access the motor. While supporting the motor with one hand, loosen the two motor bolts (see Fig. 137) with a 19 mm socket wrench. An extension on the socket will allow the wrench handle to clear the motor so that the wrench can be turned more easily.

Once the bolts are loose the motor can be lowered slightly to tighten the belt. Lower the motor and then tighten the two bolts with the wrench. Check the tension in the belt and repeat the procedure if the belt is still too loose.

Fig. 137



## Adjusting the Tilt Gearing

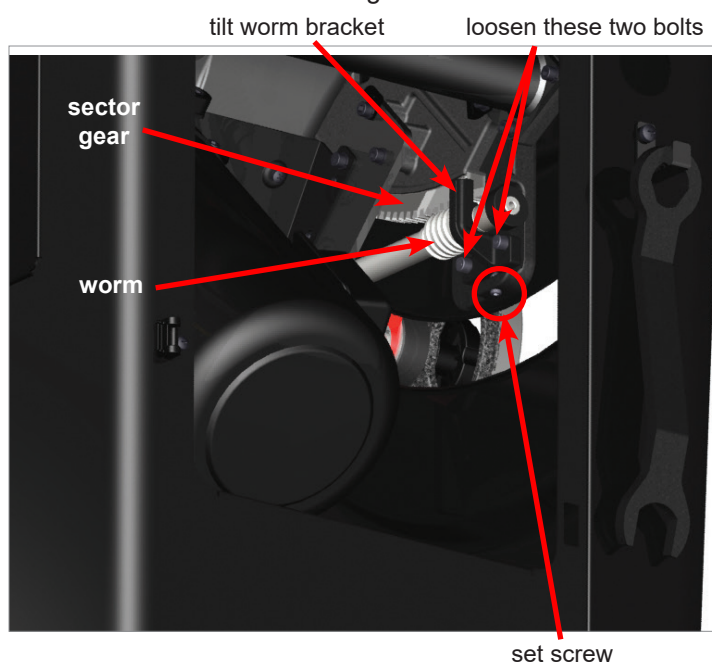
The position of the worm at the end of the tilt handwheel shaft can be adjusted if necessary so that it meshes properly with the tilt sector gear. This is accomplished by adjusting the set screw at the bottom of the front trunnion bracket (see Fig. 138).

**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

Tilt the blade to  $45^\circ$  and open the motor cover to access the set screw and the two bolts that attach the tilt worm bracket to the front trunnion bracket. Loosen the two bolts with a 5 mm hex key.

Next, use a 4 mm hex key to turn the set screw clockwise to move the worm closer to the tilt sector gear. Tighten the two bolts that mount the tilt worm bracket to the front trunnion bracket and then turn the tilt handwheel through its full range of motion from  $0^\circ$  to  $45^\circ$ . If there is extra play when turning the handwheel, tighten the set screw farther, but if the handwheel binds or is difficult to turn then the set screw should be loosened.

Fig. 138



# Making Adjustments to Your Saw

## Adjusting the Elevation Gearing

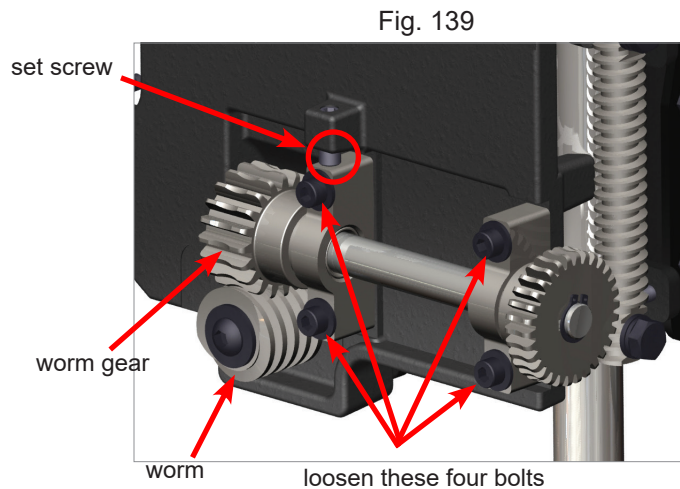
**WARNING!** Always turn off the main power switch and unplug the power cord before making any adjustments to your saw.

### Elevation Worm Adjustment

The position of the worm at the end of the elevation handwheel shaft can be adjusted if necessary so that the worm meshes properly with the worm gear. This is accomplished by adjusting the set screw on the lower back of the rear trunnion (see Fig. 139).

First tilt the blade 20-30 degrees and open the rear access panel. Loosen the four bolts that mount the two brackets on the back of the rear trunnion by turning each bolt about one-quarter turn using a 5 mm hex key.

Use a 4 mm hex key to turn the set screw clockwise to move the position of the worm gear closer to the worm. Tighten the four bolts on the brackets and turn the elevation handwheel through its full range of motion. If there is extra play when turning the handwheel, tighten the set screw farther, but if the handwheel binds or is difficult to turn then the set screw should be loosened.

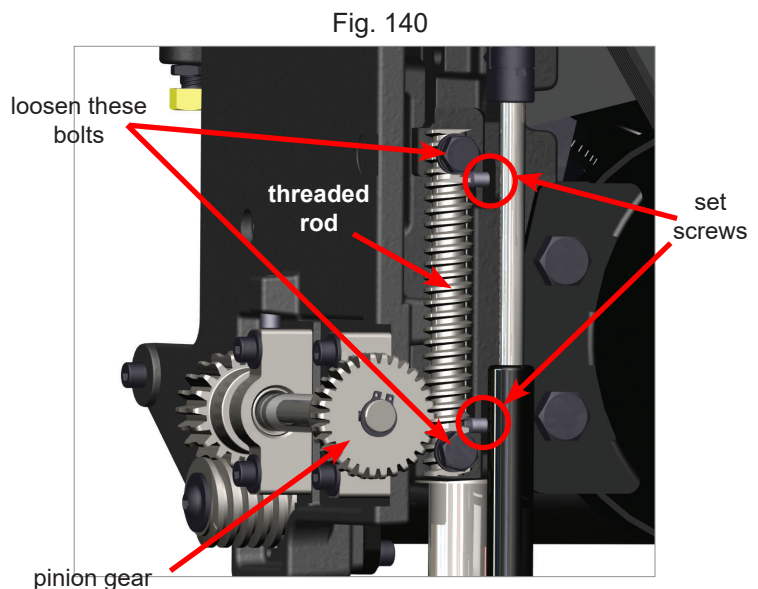


### Elevation Threaded Rod Adjustment

The thread engagement between the threaded rod and the pinion gear can be adjusted if necessary so that the elevation plate moves up and down smoothly without binding. This is accomplished by adjusting the two set screws (see Fig. 140) that contact the front of the threaded rod. This changes the position of the threaded rod with regard to the pinion gear allowing the gears to mesh properly.

To make the adjustment, first remove the motor cover to gain access to the set screws. Using a 13 mm wrench, loosen the two bolts that mount the threaded rod to the side of the elevation plate.

Next, use a 3 mm hex key to turn each of the set screws clockwise to move the threaded rod closer to the pinion gear. Make sure to turn each set screw the same amount. Tighten the two bolts that mount the threaded rod to the elevation plate and turn the elevation handwheel through its full range of motion. If there is extra play when turning the handwheel, tighten the set screws farther, but if the handwheel binds or is difficult to turn then the set screws should be loosened.



# Maintenance

**WARNING!** Always turn off the main power switch and unplug the power cord before doing any maintenance on your saw.

## SawStop Safety System

The safety system performs continuous self-checks both before and during saw operation. If a problem is detected, the appropriate status code will be displayed on the LEDs on the switch box and the appropriate action should be taken. No other maintenance is required.

## Brake Cartridge

The condition of the cartridge should be checked after approximately every 50 hours of saw use. The cartridge is sealed to prevent the entry of dust or other contaminants into the housing. While a small amount of dust within the housing will not affect its operation, you should replace the cartridge if a significant amount of dust is visible inside the clear plastic housing. This would indicate that the cartridge housing seal has been damaged. The brake cartridge requires no other maintenance.

**WARNING!** Do not use a brake cartridge if more than a small amount of dust can be seen inside the clear housing. If sawdust becomes packed inside the housing, the brake may fail to activate or may activate more slowly, thereby resulting in a serious personal injury.

## Elevation and Tilt Mechanisms

The elevation shafts and the tilt and elevation gearing should be kept clean and well lubricated. Periodically check the condition of the elevation worm gear, the elevation threaded rod and the tilt sector gear as well as the front and rear trunnion brackets. If necessary, clean off any dust, dirt, pitch or other debris using a wire brush, and then re-apply a good quality, non-hardening grease. The bushings for the tilt and elevation handwheel shafts should also be kept lubricated with a lightweight penetrating oil. Lubrication points are shown in Fig. 141 and Fig. 142.

## Cabinet

The interior of the cabinet should be kept free of accumulated saw dust, wood chips and other debris. Although most of the dust is collected by the dust collection system, it is normal to have some dust collect in the cabinet. Periodically check the dust inside the bottom of the cabinet and trunnion assembly. Vacuum out the cabinet and trunnion assembly if needed.

## Table and Extension Wings

The surface of the table and extension wings should be kept clean and free of any rust. If rust develops on the surface, you can remove it by spraying the surface with a light coat of WD-40® and scrubbing with a fine abrasive pad such as Scotch-Brite™ 7448 hand pads. To prevent the table from rusting, coat it with a surface protectant such as GlideCote™ or TopSaver™, available in many woodworking stores. If you do not plan to use the saw for an extended period of time, you can protect the table by applying a light coating of oil and then covering the table with wax paper.

## Belts

The arbor belt and motor belt should be checked periodically for wear or damage. Replace any worn or damaged belts. In addition, check the tension of the motor belt. If light finger pressure on one side of the belt causes more than about 1/4 inch deflection, the belt should be tightened by adjusting the position of the motor as described on page 84. The arbor belt cannot be tightened, and therefore must be replaced if it does not have sufficient tension to prevent slipping under load.



# Maintenance

## Lubrication Points

Points that need to be kept lubricated are shown in the following figures. The front trunnion, rear trunnion, and sector gear are most easily accessed through the motor cover opening with the blade tilted to 45°. The sector gear should be lubricated on both sides that run along the teeth as well as the teeth. The worm gear and threaded rod can be accessed through the rear access panel with the blade tilted to 45°.

Fig. 141

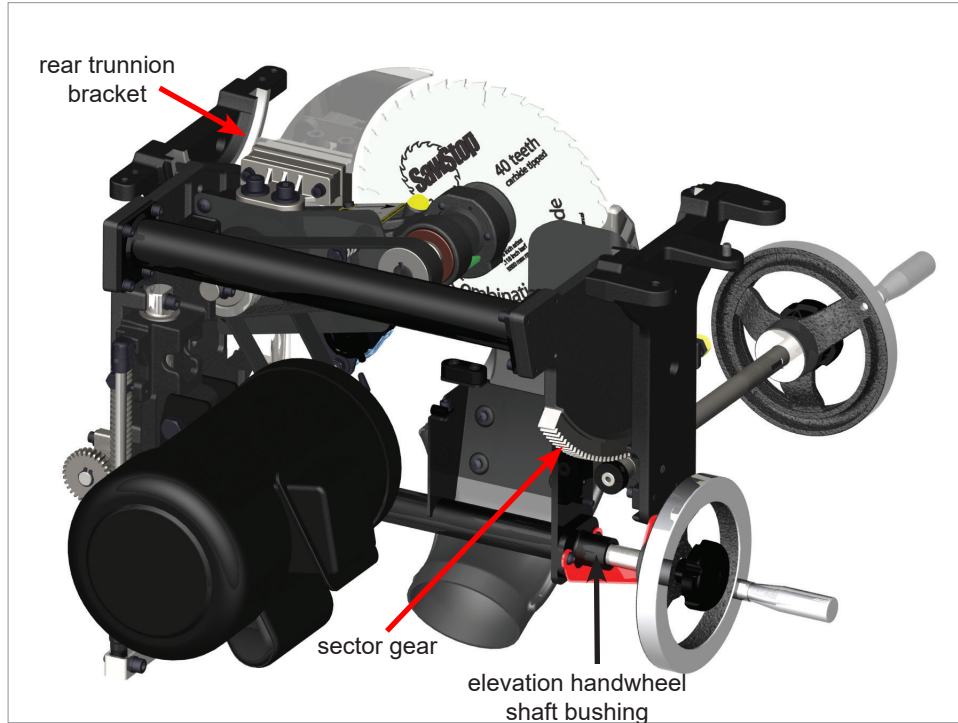
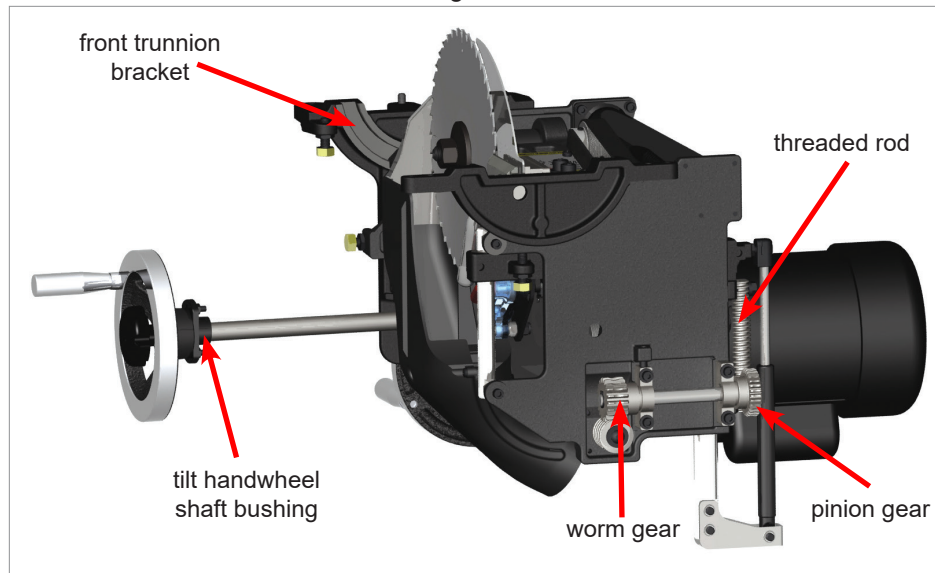


Fig. 141





# Troubleshooting

<b>Problem</b>	<b>Possible Cause(s)</b>	<b>Solution</b>
The motor will not start and both LEDs on the switch box are off.	1. There is no power to the saw.	1. Ensure that the electrical supply to the saw is on and that the correct voltage is being supplied.
	2. There is no brake cartridge installed in the saw.	2. Install the brake cartridge.
	3. The brake cartridge is defective.	3. Replace the brake cartridge with a new cartridge.
The motor will not start and at least one LED on the switch box is on.	1. The safety system has detected a system error and is displaying an error code on the LEDs.	1. Consult the list of System Status Codes to determine the cause of the error and the corrective action.
	2. The cartridge is defective.	2. Try a different brake cartridge.
	3. The thermal overload switch cut power to the motor to prevent overheating.	3. Press the thermal overload reset button on the contactor box behind the left side of the switch box.
The motor starts slowly and/or fails to reach nominal speed.	1. The electrical supply voltage is too low.	1. Ensure that the correct voltage is being supplied to the saw.
	2. The belts are worn or slipping.	2. Adjust the tension in the belts or replace if worn.
The motor stopped unexpectedly during use but the brake did not activate.	1. The Start/Stop paddle was bumped.	1. Ensure the Start/Stop paddle is in the <i>OFF</i> position and restart the saw.
	2. The material being cut is overloading the safety detection system (e.g., green or wet wood).	2. Use different wood or cut in Bypass Mode.
	3. The safety system has detected a system error and is displaying an error code on the LEDs.	3. Consult the list of System Status Codes to determine the cause of the error and the corrective action.
	4. Electrical power to the system was lost at least temporarily.	4. Ensure that the electrical supply to the saw is on and that the correct voltage is being supplied.
	5. The cartridge is defective.	5. Try a different brake cartridge.
The blade slows down when cutting, but does not stop.	1. One of the belts is worn, damaged or not properly tensioned.	1. Check the tension of the motor belt and arbor belt. If the motor belt is too loose, adjust the position of the motor to provide the correct tension on the motor belt. If the arbor belt is too loose, replace it with a new belt. Replace any worn or damaged belts.
	2. The blade is binding on the wood.	2. Ensure the spreader or riving knife is aligned with the blade. If using the rip fence, ensure it is aligned parallel to the blade.
	3. The blade is installed backwards.	3. Remove the blade and reinstall in the correct orientation.
	4. The voltage supplied to the motor is incorrect.	4. Ensure the motor is wired to match the power that is being supplied. If using an extension cord, ensure the extension cord is the correct gauge.

# Troubleshooting

Problem	Possible Cause(s)	Solution
Cannot turn the saw on in Bypass Mode.	1. The sequence for starting the saw in Bypass mode was not completed.	1. Follow the steps for starting the saw in Bypass mode exactly.
	2. The safety system has detected a system error and is displaying an error code on the LEDs.	2. Consult the list of System Status Codes to determine the cause of the error and the corrective action.
	3. The Bypass key is not fully seated.	3. Insert the Bypass Key fully and ensure it turns a full 90°.
The brake activated even though there was no accidental contact.	1. Some electrically conductive material contacted the blade, arbor or arbor pulley.	1. Make sure no metal or other conductive material is touching the blade, arbor or pulley. Use Bypass Mode to cut conductive materials.
	2. The spreader or riving knife came into contact with the blade.	2. Ensure that the spreader or riving knife is accurately aligned and securely clamped in place. There should be a gap of at least 4-7 mm between the blade and the spreader or riving knife.
	3. The blade made contact with the brake pawl.	3. Make sure there is a gap of $\frac{1}{16}$ inch to $\frac{1}{8}$ inch between the teeth of the blade and closest point on the brake cartridge (See pages 30 and 31).
The blade hits the brake pawl during installation.	1. The brake position is adjusted too close to the blade.	1. Turn the brake positioning bolt counter-clockwise until the closest point between the brake pawl and the blade is about $\frac{1}{16}$ inch to $\frac{1}{8}$ inch.
	2. The blade is the wrong size.	2. Use only a 10 inch blade with a standard brake cartridge, or an 8 inch dado set with a dado cartridge.
Cannot remove the brake cartridge.	1. The cartridge key is still installed.	1. Remove the cartridge key.
	2. The cartridge is bound up on the pivot pin and the positioning pin.	2. Pry the cartridge off the pins with a blade wrench as described on page 60.
	3. The quick-release clamp handle is in the way.	3. Swing the clamp handle fully upward to clear the cartridge.
Cannot install the brake cartridge.	1. The holes in the cartridge shell are not aligned with the pivot pin and positioning pin.	1. Make sure the mounting holes in the cartridge are aligned with the pivot and positioning pins.
	2. There is debris on the pivot or positioning pins, or in the cartridge mounting holes.	2. Make sure the pins and mounting holes are clean and free of obstructions.
	3. The blade is interfering with the brake pawl.	3. Adjust the brake positioning bolt to move the cartridge mounting bracket away from the blade.
Cannot remove the cartridge key.	1. The cartridge key is not turned to the UNLOCKED position.	1. Turn the key clockwise until it stops.
	2. The shaft of the cartridge key is binding in the cartridge or on the cartridge mounting bracket.	2. Try turning and removing the key while pressing upward or downward on the key or cartridge.

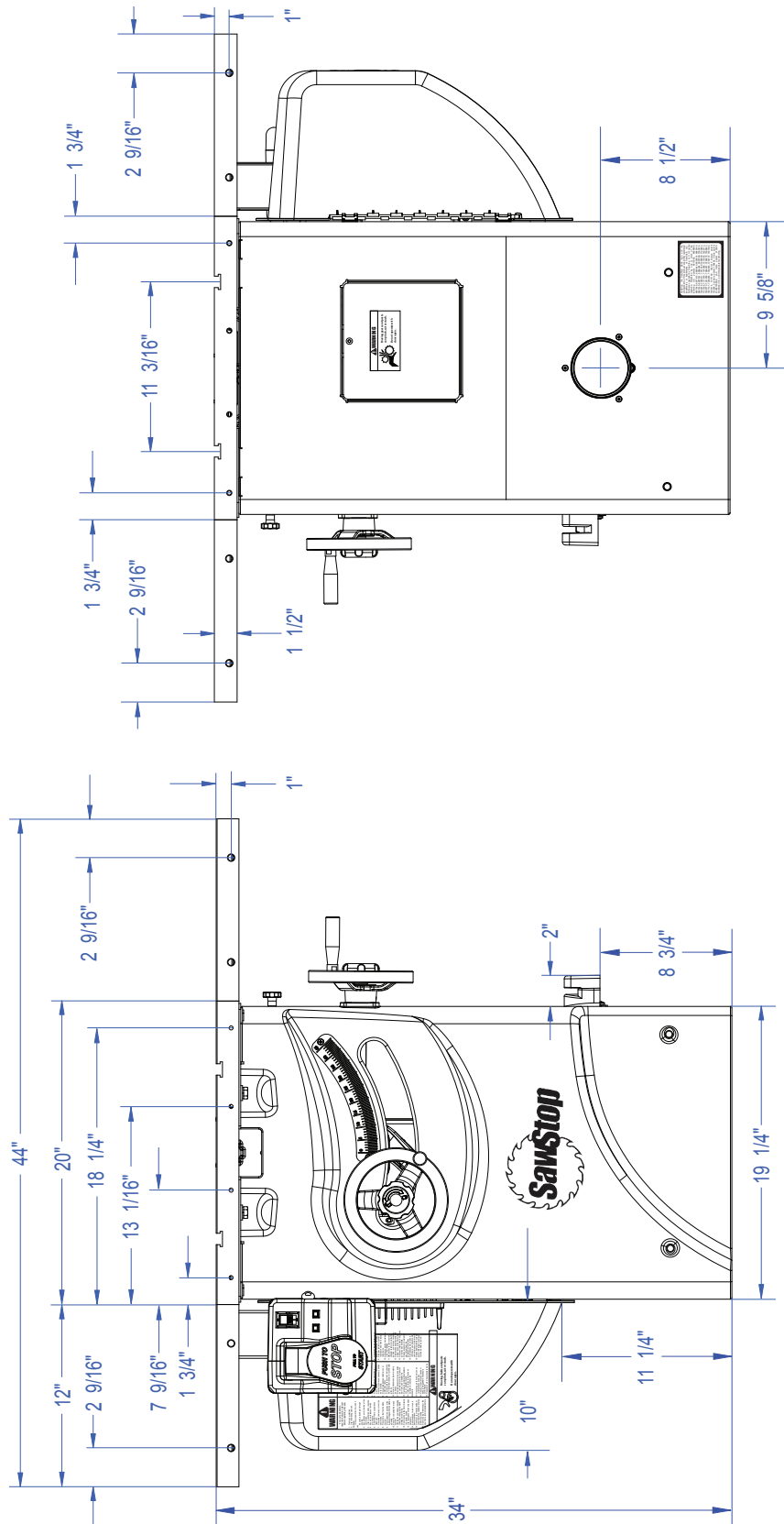
# Troubleshooting

<b>Problem</b>	<b>Possible Cause(s)</b>	<b>Solution</b>
Cannot install the cartridge key.	1. The key is not rotated properly to align with the keyhole in the cartridge.	1. Rotate the key so that the handle is pointing directly toward the brake pawl.
	2. The shaft of the cartridge key is binding in the cartridge or on the cartridge bracket.	2. Try installing the key while pressing upward or downward on the key or cartridge.
Cannot lower the blade below the table.	1. There may be interference due to sawdust accumulation within the trunnion assembly.	1. Check for interference from compacted sawdust.
The gears sound/feel rough when raising or lowering the blade.	1. There is dust or debris on the elevation gears or elevation shafts.	1. Clean and grease components.
	2. The elevation locking knob has not been released.	2. Turn the elevation locking knob counter-clockwise to release the elevation handwheel.
There is play in the tilt control so that the tilt handwheel can be turned at least 1/8 revolution without changing the tilt angle of the blade.	1. The tilt worm is not engaged fully on the front trunnion sector gear.	1. Adjust the position of the tilt worm bracket to ensure the tilt worm engages fully with the sector gear.
There is play in the elevation control so that the elevation handwheel can be turned at least 1/8 revolution without changing the elevation of the blade.	1. The elevation worm is not engaged fully on the worm gear and/or the threaded rod is not fully on the pinion gear.	1. Adjust the positions of the worm gear and threaded rod to ensure the elevation worm engages fully with the worm gear and the rod meshes fully with the pinion gear.
The saw does not make accurate bevel cuts.	1. The tilt limit stops are not adjusted properly.	1. Adjust the tilt limit stops.
	2. The tilt angle indicator is not adjusted properly.	2. Adjust the tilt angle indicator.
The saw does not make accurate miter cuts.	1. The miter gauge is not adjusted properly.	1. Adjust the miter gauge.
The material binds when making a rip cut.	1. The rip fence is not aligned with the blade.	1. Align the fence to the blade.
	2. The material is warped.	2. Select another piece of material.
	3. The feed rate is too high.	3. Try again at a lower feed rate.
	4. The spreader or riving knife is not aligned with the blade.	4. Align the spreader or riving knife.
The cuts are not clean or even.	1. The blade is dull.	1. Replace or sharpen the blade.
	2. The blade is coated with pitch, gum or other material.	2. Clean or replace the blade.
	3. The blade is not the correct blade for the material or cut.	3. Replace the blade.
	4. The rip fence is not aligned with the blade.	4. Align the rip fence with the blade.
The saw vibrates too much.	1. The blade is damaged or unbalanced.	1. Replace the blade.
	2. The floor is uneven.	2. Move the saw to a level, even surface.
	3. The bearings are worn.	3. Replace the bearings.
	4. The belts are worn.	4. Replace the belts.

# Professional Cabinet Saw Specifications

Overall saw dimensions:	44" w x 29 <sup>3</sup> / <sub>4</sub> " d x 34" h (table saw only) 69 <sup>1</sup> / <sub>8</sub> " w x 33" d x 34" h (w/ T-Glide Fence System & 36" rails) 85 <sup>1</sup> / <sub>4</sub> " w x 33" d x 34" h (w/ T-Glide Fence System & 52" rails)
Cabinet footprint:	19 <sup>3</sup> / <sub>8</sub> " w x 19 <sup>3</sup> / <sub>8</sub> " d
Cast iron table:	20" w x 27" d, 44" w x 27" d (w/ extension wings)
Extension wing:	12" w x 27" d
Extension table (optional):	23 <sup>3</sup> / <sub>4</sub> " w x 27" d (36" rails), 40 <sup>1</sup> / <sub>8</sub> " w x 27" d (52" rails)
Weights (approx.):	335 lb (table saw with extension wings only) 426 lb (w/ T-Glide Professional Series II Fence System, 36" rails & table) 449 lb (w/ T-Glide Professional Series II Fence System, 52" rails & table) 35 lb (cast iron extension wing)
Shipping weight (approx.):	390 lb (boxed table saw)
Blade:	40-tooth, professional grade, 5/8" arbor
Blade diameter:	10"
Blade tilt:	Left
Blade kerf:	0.118" (3 mm)
Blade plate thickness:	0.078" (2 mm)
Max. depth of cut, blade at 0°:	3 <sup>1</sup> / <sub>8</sub> "
Max. depth of cut, blade at 45°:	2 <sup>1</sup> / <sub>4</sub> "
Max. rip, right of blade:	36" (w/ optional 36" rails) 52" (w/ optional 52" rails)
Max. rip, left of blade:	12" (w/ T-Glide Professional Series II Fence System)
Dado diameter:	8" (requires a separate brake cartridge and table insert)
Dado max. width:	29 <sup>9</sup> / <sub>32</sub> "
Arbor diameter at blade:	5/8"
Main bearing size:	62 mm OD x 30 mm ID
Second bearing size:	52 mm OD x 25 mm ID
Table in front of blade (max. elevation):	10 <sup>1</sup> / <sub>4</sub> "
Table behind blade (max. elevation):	7 <sup>1</sup> / <sub>2</sub> "
Arbor runout:	0.001" maximum allowable runout
Table flatness measured diagonally:	0.010" maximum gap
Blade alignment with miter slot:	0.010" maximum displacement
Deviation of miter gauge indexing stops from actual angle:	±0.25°
Alignment between spreader and blade:	0.010" maximum difference
Miter slots:	T-shaped, 3/4" at top, 1" at bottom, 3/8" deep
Cabinet dust collection port diameter:	4"
Blade guard dust collection port inner diameter:	1.25"
Blade guard dust collection port outer diameter:	1.5"
Riving knife / spreader thickness:	0.090" (2.3 mm)
Blade guard:	polycarbonate, extends only 1 <sup>3</sup> / <sub>16</sub> " to right of blade
Standard Insert:	zero-clearance, phenolic core, melamine surfaces
Belts:	2 V-ribbed belts — arbor belt is static dissipative
Handwheels:	7" diameter, cast iron chrome plated
Overall table and extension wing flatness:	0.025" Maximum gap
Motor options:	3hp, 230V, 60 Hz motor for Model PCS31230 and PCS3120-KR 3hp, 230V, 50 Hz motor for Model PCS31230-CH and PCS31230-AU

# Professional Cabinet Saw Dimensions

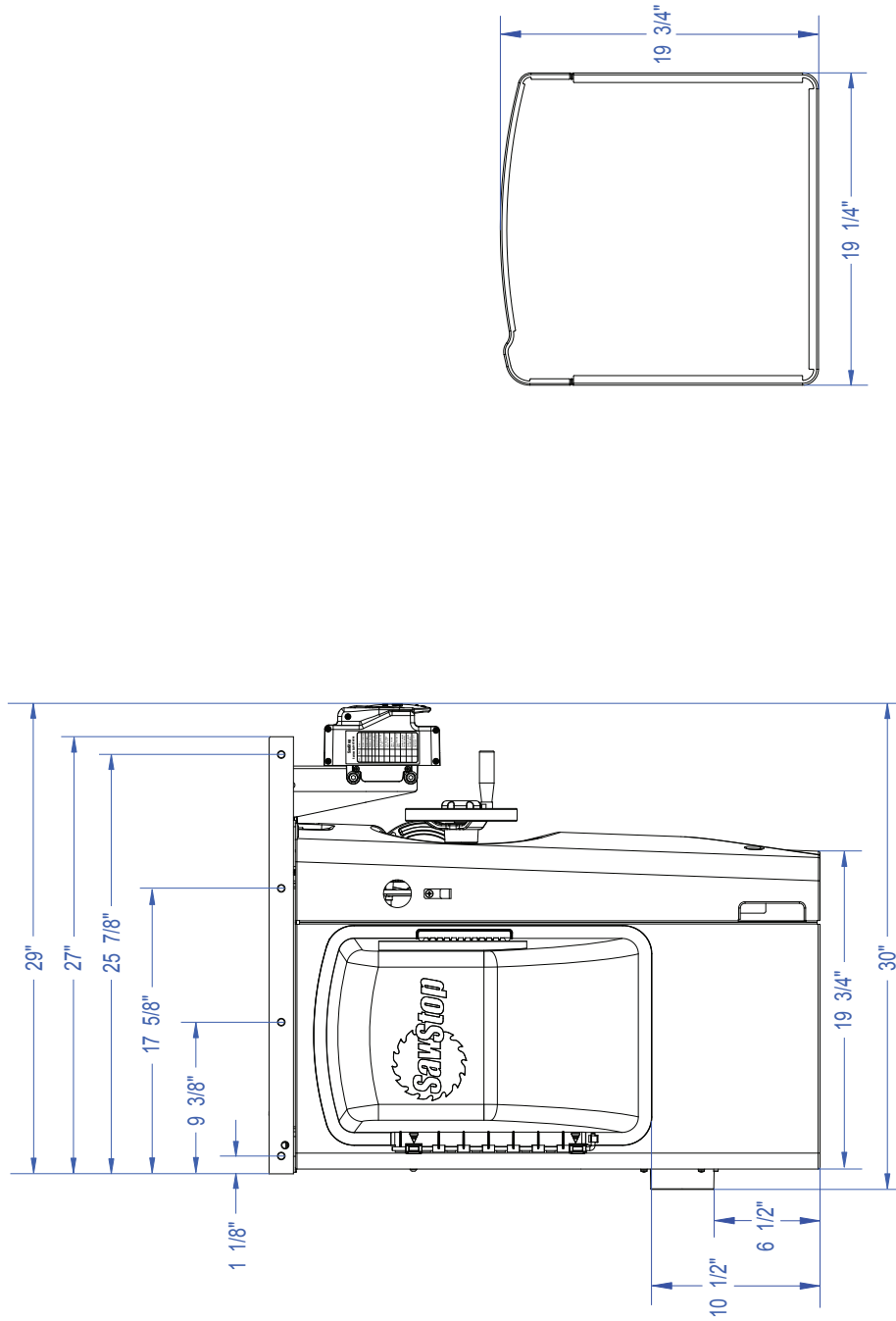


Rear View

Front View



# Professional Cabinet Saw Dimensions



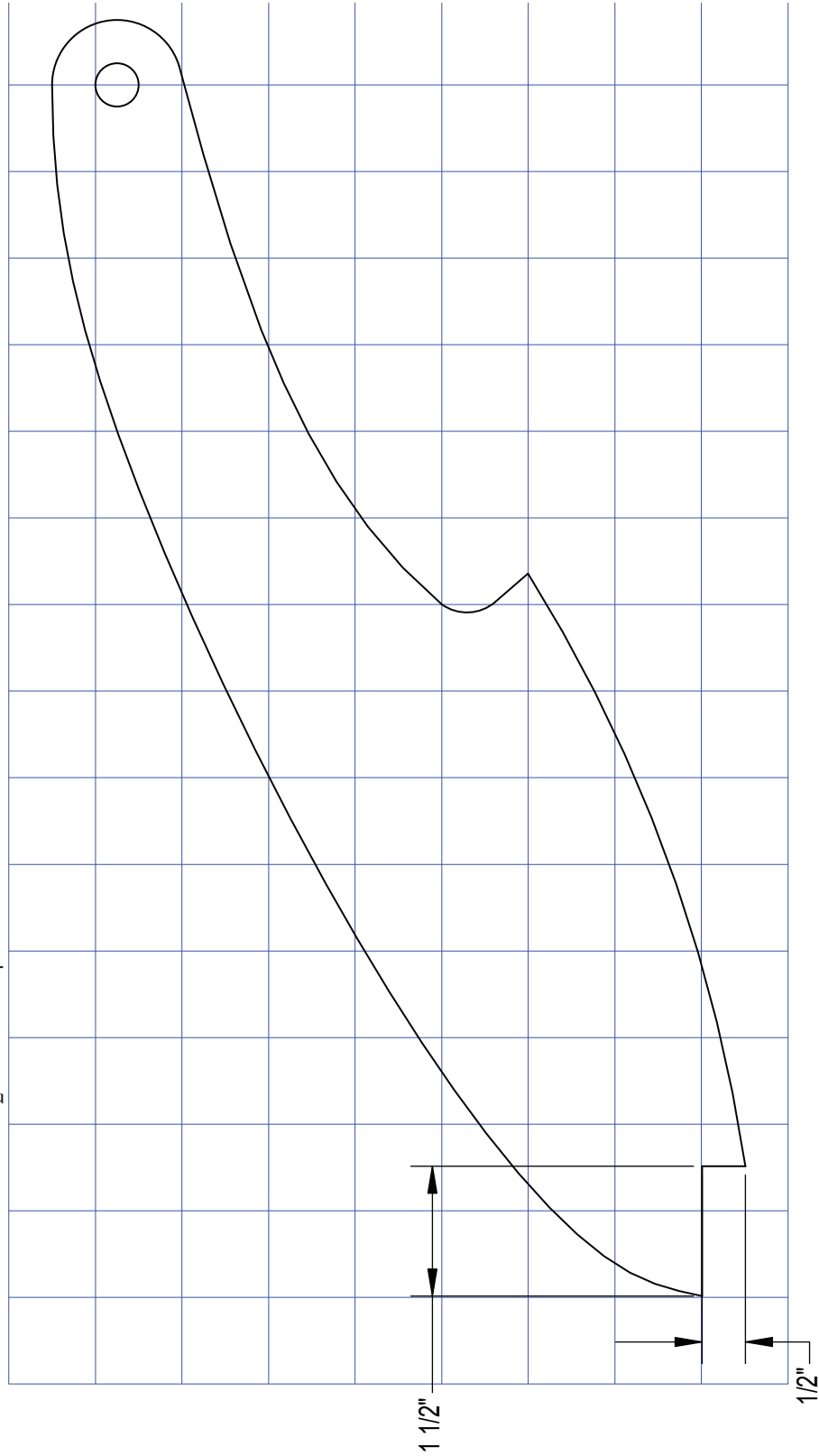
Footprint

Left Side View

# Push Stick Construction

Squares are 1 inch.

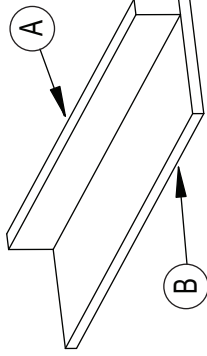
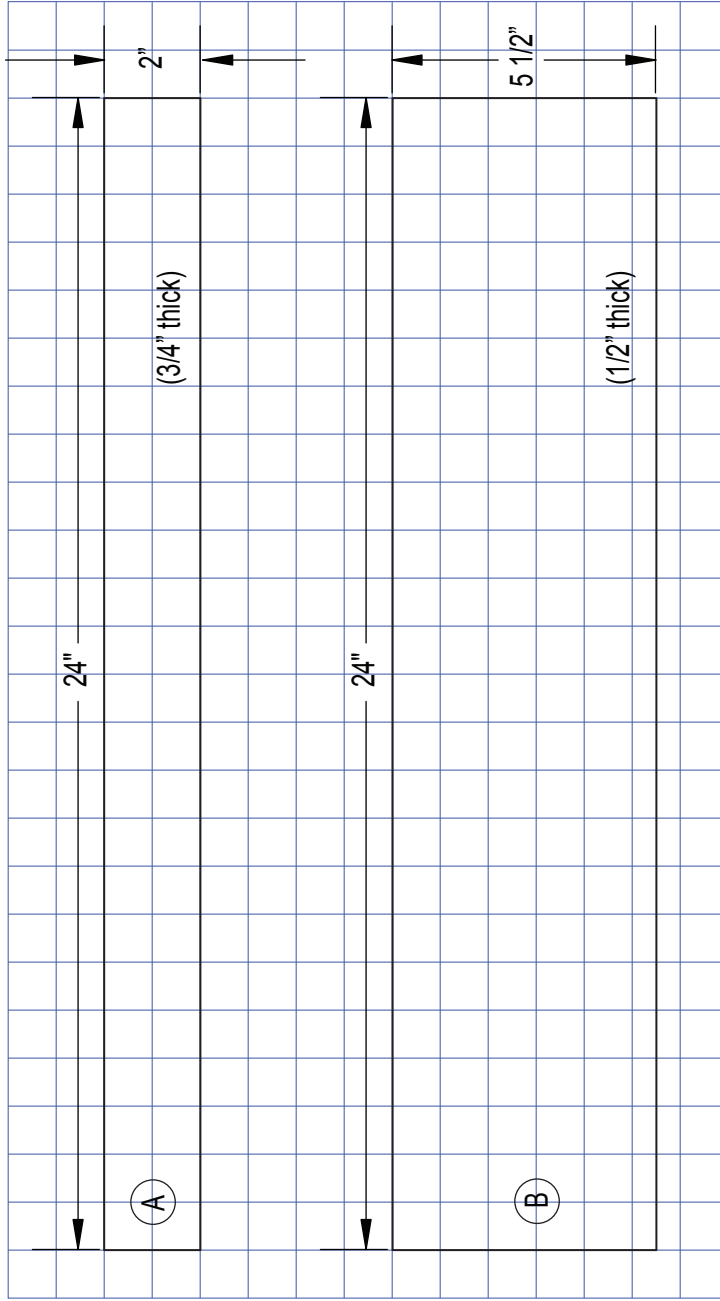
Push stick should be  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch thick.



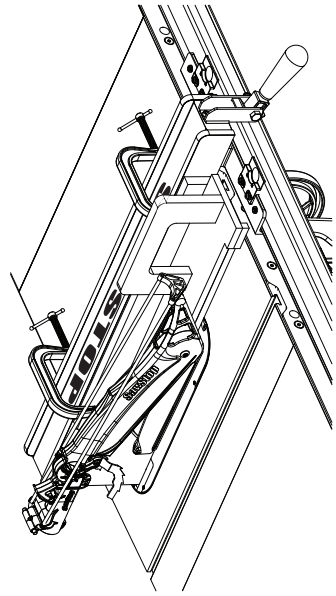
This diagram illustrates a typical push stick. Push sticks should be constructed from material that is sturdy and electrically non-conductive such as scrap wood. Push sticks should always be used when rip cutting pieces narrower than 6 inches.

# Auxiliary Fence Construction

Squares are 1 inch.

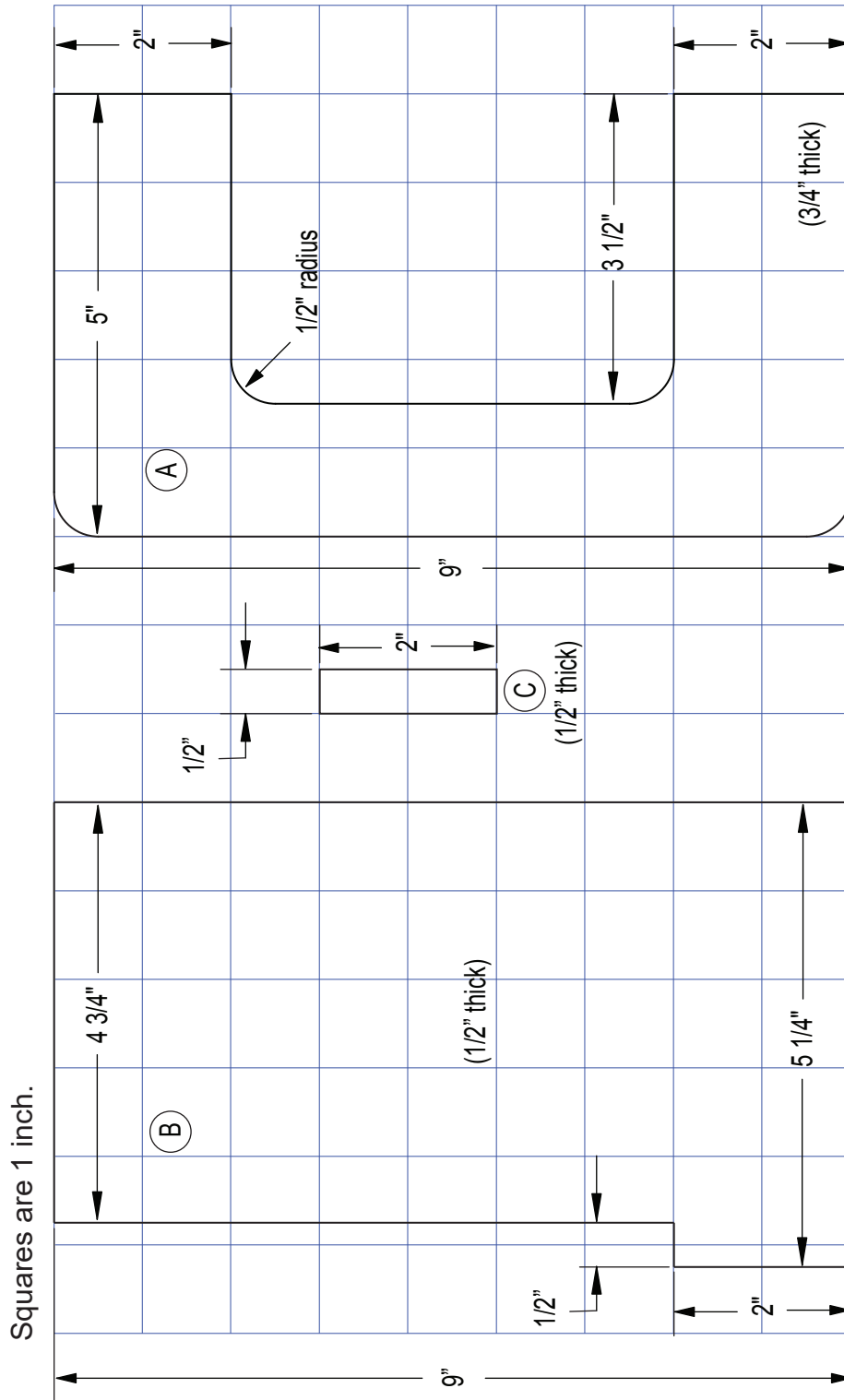


This diagram illustrates a typical auxiliary fence for use with the push block shown on page 96. Cut piece A out of  $\frac{3}{4}$  inch thick hardwood and cut piece B out of  $\frac{1}{2}$  inch thick plywood. Position piece A along the edge of piece B as shown in the drawing above, and attach it using wood glue and counter-sunk wood screws.

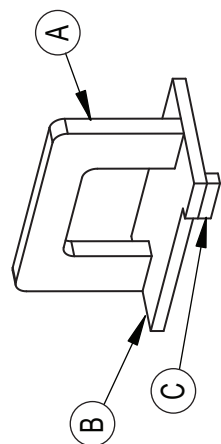


To use the auxiliary fence, place it on the saw with piece B flat on the table top and piece A against the left side of the rip fence. Position the auxiliary fence so that the front edge of piece B is 1-2 inches back from the front edge of the table, and then clamp piece A securely to the rip fence. Position the rip fence so that the spacing between the left edge of piece B and the blade is the width you want to cut, and then lock the rip fence in place. Slide the workpiece along the edge of piece B closest to the blade. If your hand comes within 6 inches of the cut, remove your hand from the workpiece and use the push block to finish the cut, as shown in the drawing to the left.

# Push Block Construction

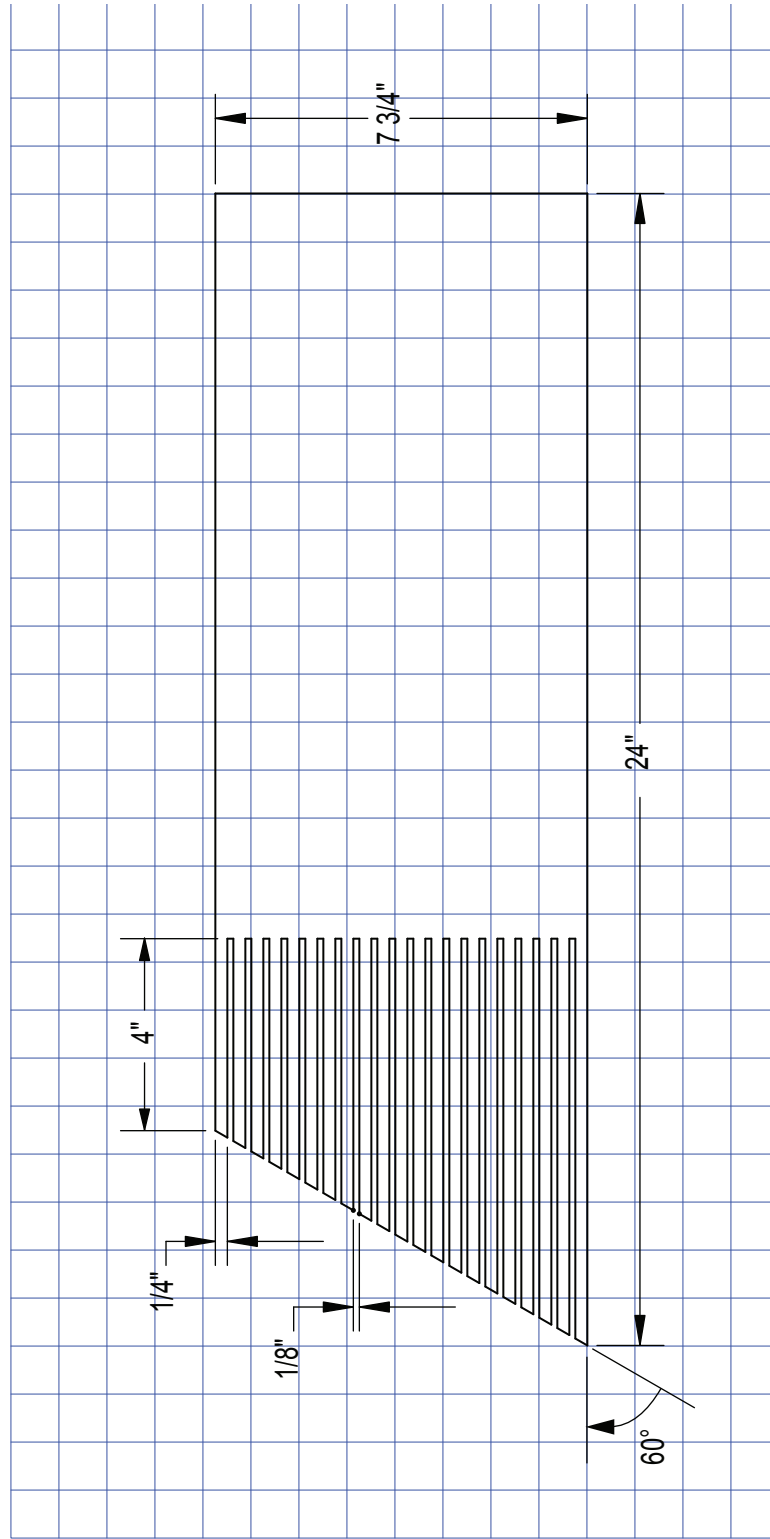


This diagram illustrates a typical push block. It includes the three pieces shown here labeled A, B, and C. Cut piece A out of 3/4 inch thick hardwood and cut pieces B and C out of 1/2 inch thick plywood. Attach piece A to the center of piece B using wood glue and counter-sunk wood screws. Attach piece C to piece B as shown in the drawing to the left using wood glue only. Do not use metal fasteners to attach piece C to piece B.



# Featherboard Construction

Squares are 1 inch.  
Featherboard should be approximately  $\frac{3}{4}$  inch thick.



This diagram illustrates a typical featherboard. Featherboards should be constructed from good quality wood that is free of knots. Use featherboards to help keep the material being cut in contact with the table and to help prevent kickback. Do not use featherboards when cutting with the miter gauge.



# Accessories

SawStop recommends the following accessories for use with your SawStop® Professional Cabinet Saw. Contact your local authorized SawStop Dealer or SawStop at 1-866-SAWSTOP for more information.

## 1. SawStop Brake Cartridges:

Standard Brake Cartridge for 10 inch saw blades	p/n	TSBC-10R2 or TSBC-10R3
Dado Brake Cartridge for 8 inch Dado sets	p/n	TSDC-8R2 or TSDC-8R3

## 2. Precision Saw Blades:

40 Tooth Combination Saw Blade	p/n	PCS-182
60 Tooth Professional Saw Blade	p/n	CB104 184
Titanium Series 40 Tooth ATB Combination Rip Blade	p/n	BTS-R-40ATB
Titanium Series 80 Tooth ATB Plywood / Laminate Blade	p/n	BTS-P-80HATB

## 3. Table Inserts:

Standard Zero-Clearance Table Insert Assembly (with Lock-Down Lever) (phenolic core with melamine surface)	p/n	TSI-SLD
Dado Zero-Clearance Table Insert Assembly (with Lock-Down Lever)	p/n	TSI-DLD

## 4. Rip Fences and Extension Tables:

T-Glide™ Fence System - Professional Series II		
Fence Assembly	p/n	TGP2-FA
36 Inch Rails Assembly	p/n	TGP2-R36A
36 Inch Extension Table Assembly (for use with 36 inch rails)	p/n	TGP2-T36A
52 Inch Rails Assembly	p/n	TGP2-R52A
52 Inch Extension Table Assembly (for use with 52 inch rails)	p/n	TGP2-T52A

## 5. Miscellaneous Accessories:

Blade Guard Assembly	p/n	TSG-DC
Replacement Guard Shell Assembly	p/n	TSG-DC-031
Over-Arm Dust Collection	p/n	TSA-ODC
Riving Knife	p/n	PCS-161
Miter Gauge Assembly	p/n	PCS-220
Professional Cabinet Saw Mobile Base	p/n	MB-PCS-000
Mobile Base Conversion Kit (The conversion kit is for use with the Industrial Mobile Base p/n MB-IND-000 which must be ordered separately.)	p/n	MB-IND-500
Out-Feed Table	p/n	OFT30-CNS-000
Push Stick	p/n	PCS-241
Sliding Table Attachment	p/n	TSA-SA48

# Index

## A

- Accessories: 7, 10-13, 98
- Accessory Tool Holder: 12, 23, 26, 49
- Accidental Contact: 5, 9-11, 44-45, 58, 61, 62, 88
- Activation of Brake (see Brake: Activation)
- Adjustments
  - blade height: 40
  - blade tilt (bevel): 40, 73-74
  - brake position: 10, 30-31, 89
  - elevation gearing: 85
  - limit stops
    - elevation: 40, 72
    - tilt: 40, 73-74
  - miter gauge: 50, 83
  - motor belt tension: 84
  - quick-release clamp: 77, 82
  - table insert: 75-76
  - tilt gearing: 84
- Alignment
  - blade elevation assembly: 70
  - ripping knife and spreader: 77-78
  - table: 63, 66
  - tilt axis: 67
- All through-sawing: 32, 46
- Ambient Temperature: 43
- Anti-Kickback Pawl(s): 46
- Arbor
  - belt: 11, 27, 86, 88, 91
  - block: 27, 60, 62, 72
  - diameter: 91
  - nut: 11, 27, 29
  - runout: 91
  - washer: 11, 27, 29
- Assembling Your Saw: 16-25
- Auxiliary Fence: 55, 95

## B

- Blade(s)
  - abrasive blade: 10, 29, 44
  - coating(s): 10, 29
  - coast down: 9, 43-45
  - dado set (see Dado: Set)
  - damaged: 10, 90
  - elevation (see Elevation)
  - kerf: 29, 33, 49, 77-78, 91
  - non-conductive: 10, 11, 29, 44
  - retraction: 9, 11, 62
  - standard blade: 10, 11, 29, 58, 91
  - with depth-limiting shoulders: 11, 29
  - wrench: 12, 26, 29, 60

# Index

## Blade Guard

- anti-kickback pawl: 46
- guard: 7, 10, 12, 24-25, 26, 32-33, 46-47, 53, 91,98
- installation: 32-33
- spreader: 32-33, 46, 55, 77-79, 82, 88-90, 91
- using: 46

Blade Spacing Adjustment Gauge: 31

## Brake

- activation: 9, 10-11, 61, 62
- cartridge: 5, 7, 9, 27, 44, 58-61, 62, 88-90
- cartridge key: 27, 43-44, 58, 59-60, 61, 89
- dado: 10-11, 29, 58, 89, 98
- changing the brake cartridge: 59-61
- pawl: 9, 58, 60-61, 62, 89-90
- position adjustment: 30-31

Brake Positioning Bolt: 27, 30, 89

## Bypass

- key: 26, 56, 89
- mode: 5, 9-11, 43-45, 56, 89

## C

### Cabinet Saw

- dimensions: 92-93
- specifications: 91

Cartridge (see Brake Cartridge)

Cartridge Key: 27, 43-44, 58, 59-61, 89-90

Clamping Handle (for spreader or riving knife): 27, 32-33, 59

Coast-down: 9, 43-44

### Contact Box

- installing new power cord: 36-39
- wiring diagram: 39

Cross-cuts: 49, 51

### Cutting

- cross-cuts: 49-51
- narrow cuts: 32, 46
- non-through cuts: 10, 32, 49, 55, 78
- rabbet: 32, 46, 78
- rip cuts: 46, 52, 53, 55, 90

## D

### Dado

- brake cartridge: 10-11, 29, 58, 89, 98
- cuts: 10, 46, 49, 55, 58
- insert: 29, 98
- set: 10-11, 29, 33, 58, 60, 61, 89, 91

Depth of Cut: 50, 91

Detection of Accidental Contact: 1, 5, 9-11, 43-45, 62

Dial Test Indicator: 63, 64, 68, 71

# **Index**

Dimensions: 92-93

## Dust

collection: 34, 47-48

hazard: 6, 34

port

cabinet: 13, 19, 27, 34, 91

blade guard: 47-48, 91

Dust Shroud: 11, 27, 34

## **E**

### Electrical

grounding: 6, 35

power connection: 6, 8, 11, 35, 42, 88

contactor box wiring diagram: 39

### Elevation

changing the blade elevation: 40

elevation handwheel: 12, 17, 26, 40, 90, 91

elevation locking knob: 12, 17, 40, 90

elevation plate: 27, 70

limit stops: 40, 72

pinion gear: 85, 87, 90

primary and secondary elevation shafts: 68, 70, 71

threaded rod: 85, 86-87, 90

worm: 85, 90

worm gear: 85, 86-87, 90

### Extension Wing(s)

assembly: 13, 21, 26

cleaning: 16, 86

## **F**

Featherboard(s): 33, 55, 97

Fence: 7, 11, 25, 51, 52, 53-55, 91, 98

Freehand: 7, 50, 53

Front Trunnion: 27

Front Trunnion Bracket: 27

## **G**

Get to Know Your Saw: 26-27

GlideCote™: 86

Green Wood: 45, 88

Guard (see Blade Guard)

## **H**

Handwheel(s): 12, 17-18, 26, 40, 90, 91

# Index

## I

Insert (see Table Insert)

## K

Kerf: 33, 49, 77-78, 91

Kickback: 7, 32, 46, 51, 97

## L

LED(s): 41, 43, 56, 61, 62, 86, 88

Limit Rod: 13, 24-25, 46, 80-81

Limit Stop(s)

    elevation: 72

    tilt: 73-74

Lockout key: 42

Lubrication Points: 86-87

## M

Main Power Switch: 7, 9, 11, 41-42, 43-45

Maintenance: 5, 7, 86-87

Material Conductivity Test: 45

Miter Gauge

    adjustment: 83

    indexing pin: 50, 83

    index stop(s): 50, 83

    slot(s): 26

    using: 12, 26, 49-51

Mobile Base: 57, 98

Motor: 9, 27, 35, 41-42, 44, 88

Motor Belt: 27, 44, 84, 86, 88, 90

Motor Cover: 13, 20, 26

## O

Overload (of the detection system): 43, 45

## P

Pinion Gear (see Elevation, pinion gear)

Preparing Your Saw for Use: 28-39

Pressure-Treated Wood: 11, 45

Push Block: 33, 55, 95, 96

Push Stick: 10, 12, 33, 53-55, 94

## Q

Quick-Release Clamp: 27, 32, 33, 77-78, 82

# **Index**

## **R**

Rear Access Panel: 26

Rear Trunnion: 27, 70

Rear Trunnion Bracket: 27, 67

Retraction: 9, 11, 62

Rip

cutting: 53-55

fence: 7, 25, 52, 53, 55, 88, 98

narrow rip cuts: 46

Riving Knife

adjusting: 77-79, 82

installation: 32-33

using: 26-27, 49, 88-90

## **S**

Safety: 6-7, 9-11

Saw

placement: 28

standing up the saw: 14-15

SawStop Safety System

activation: 5, 10-11, 45, 58, 62, 82, 89

bypass mode: 5, 9-11, 43-45, 56, 89

overview: 9

system status codes(s): 43-45

Scotch-Brite™: 86

Sector Gear (see Tilt, sector gear)

Shipping Weight: 91

Side Access Panel: 26

Specifications: 91

Spreader: 32-33, 46, 55, 77-79, 82, 88-90

Standby Mode: 43-44

Start/Stop Paddle: 41-42, 43-45, 56, 88

Static Electricity: 11

Switch Box: 13, 22, 26, 41-42, 43, 56, 86, 88

System Status Code(s): 43-45

## **T**

T-Glide™ Fence System - Professional Series II: 52, 91, 98

Table Insert

adjustment: 75-76

dado insert: 29, 98

lock-down lever: 28

removal and installation: 28

standard insert: 13, 26, 28, 98



# **Index**

Thermal Overload Switch: 26, 42, 44, 88

Thin-Kerf blade: 78

Threaded Rod (see Elevation, threaded rod)

Tilt

angle: 40, 73-74

angle indicator: 26, 40, 74, 90

angle scale: 26, 40

handwheel: 12, 17, 18, 26, 40, 91

limit stop: 73-74

locking knob: 17, 18, 40

sector gear: 84, 86-87, 90

worm: 84, 90

TopSaver™: 86

Troubleshooting: 88-90

## **U**

Unpacking Your Saw: 12-13

Using Your Saw: 40-61

## **W**

Warning Labels: 8

Warranty: 1, 5, 11, 35

WD-40®: 86

Wet Wood: 11, 43, 45, 88

Wiring (see Electrical, power connection and schematic)

Wood Stop (see Limit Rod)

Worm (see Elevation, worm or Tilt, worm)

Worm Gear (see Elevation, worm gear) : 85, 86-87, 90

Wrench holder: 23, 26

## **Z**

Zero-Clearance Table Insert (see Table Inserts)

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