

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, find the System Status code below (see Fig. 66) to determine how to correct the problem.

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.

Fig. 66

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. 67). 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 3¹/₈ 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. 68). 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 as shown in Fig. 69. 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.

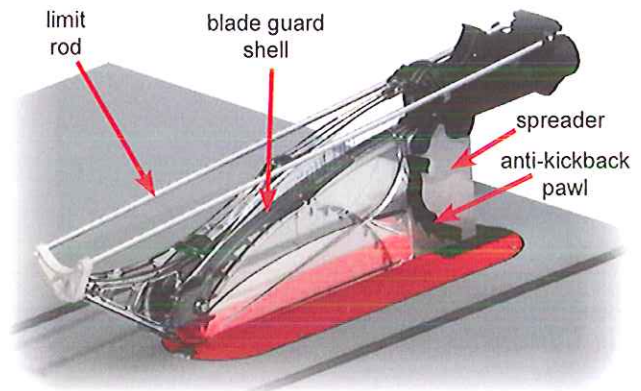


Fig. 67

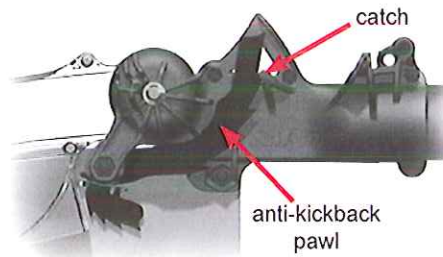


Fig. 68

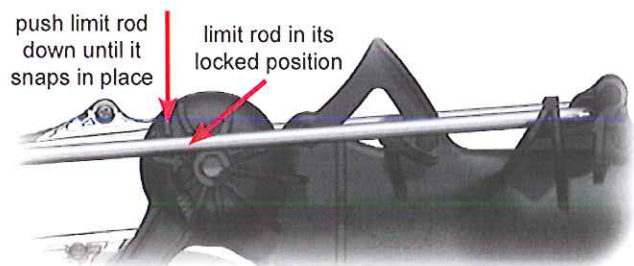


Fig. 69

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. 38 on page 26).

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. 70) 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. 71).

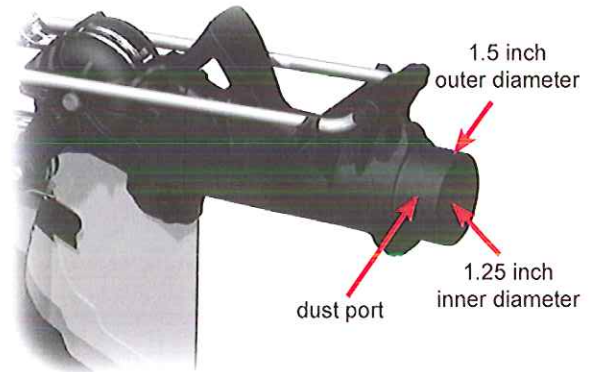


Fig. 70

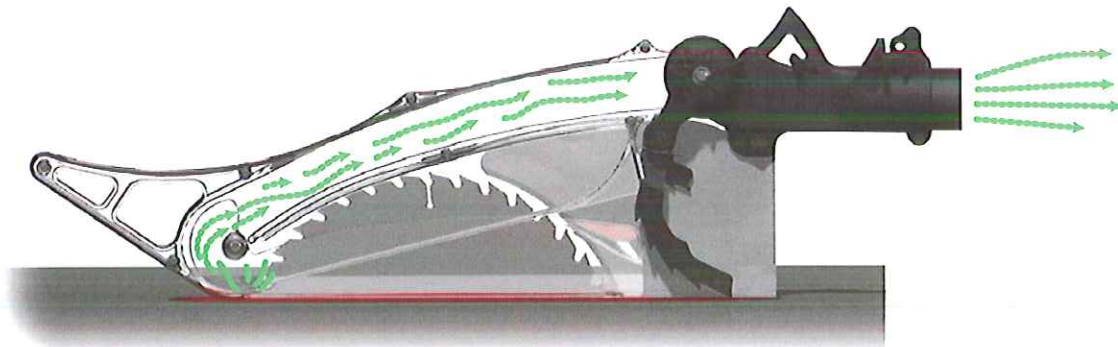


Fig. 71

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. 72). The dust port is shaped for press-fit connections and will hold the hose or pipe in place.



Fig. 72

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. 73). Hose adapters or duct tape may be used to connect the hoses to the splitter depending on the port sizes available.

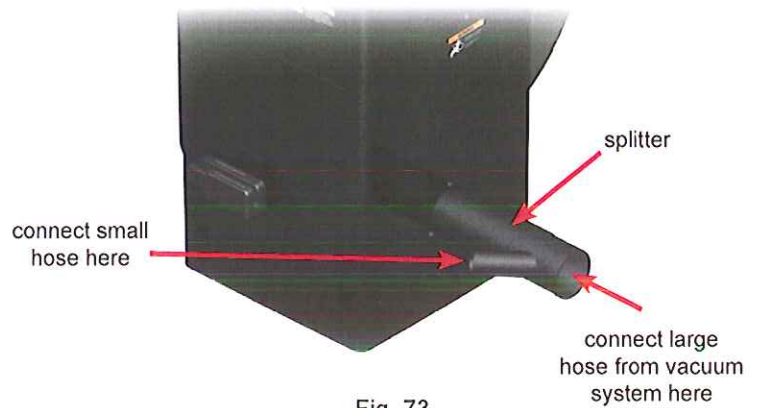


Fig. 73

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.

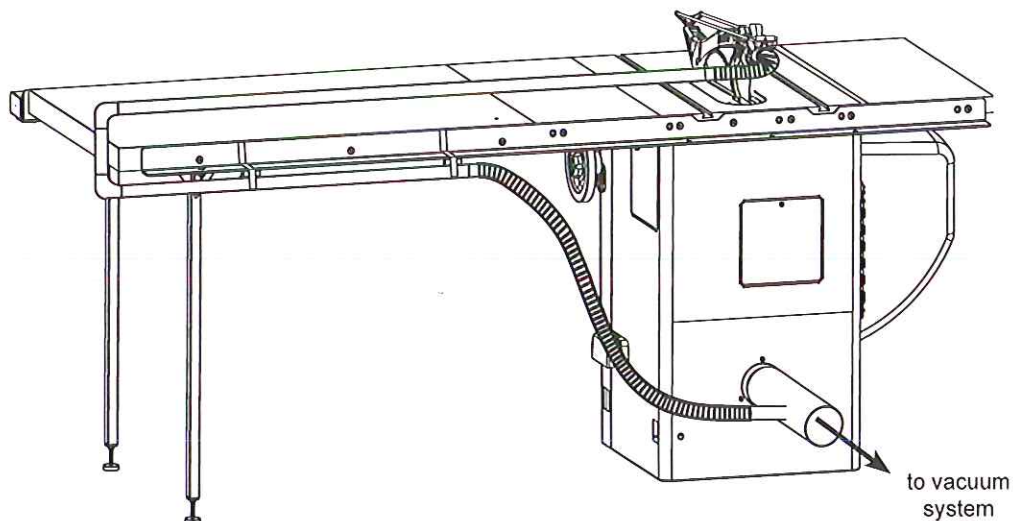


Fig. 74

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. 75). 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. 37 on page 26).

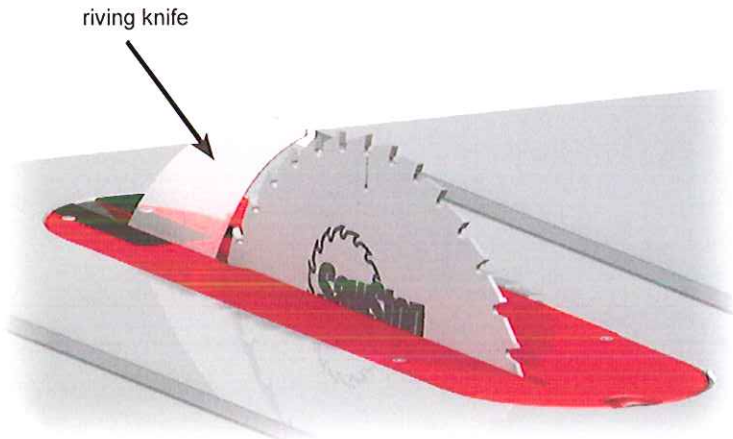


Fig. 75

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. 76).

The main bar of the miter gauge fits in the T-shaped slots in the table (see Fig. 38 on page 26). 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. 79 on page 51.

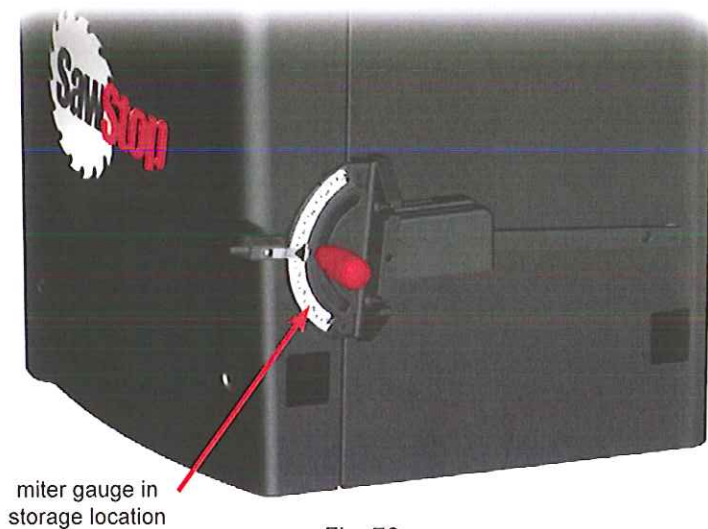


Fig. 76

Using Your Saw

A guide plate is mounted on the end of the main bar (see Fig. 77) 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° 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. 77). 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° , 0° , 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° 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.

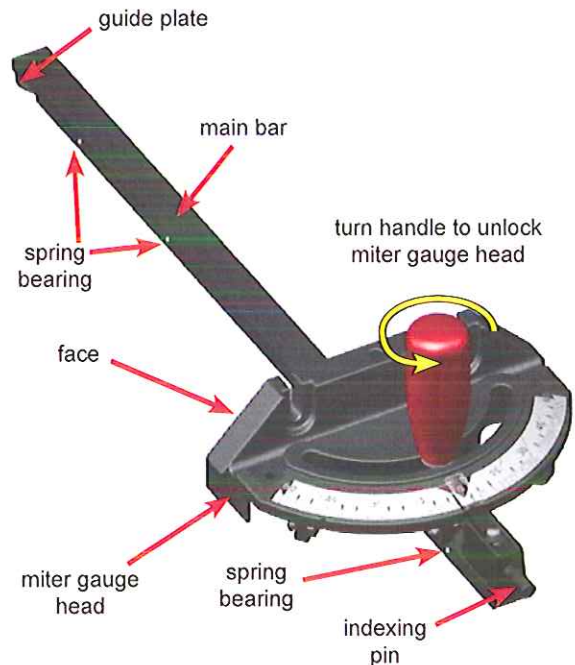


Fig. 77

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 Figs. 78 and 79 on page 51). 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.

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.

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.

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.

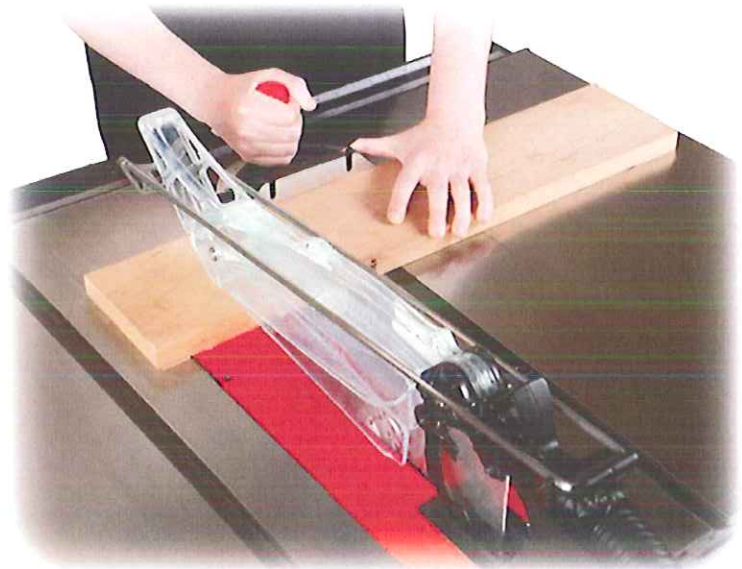


Fig. 78



Fig. 79

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. 80). 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.

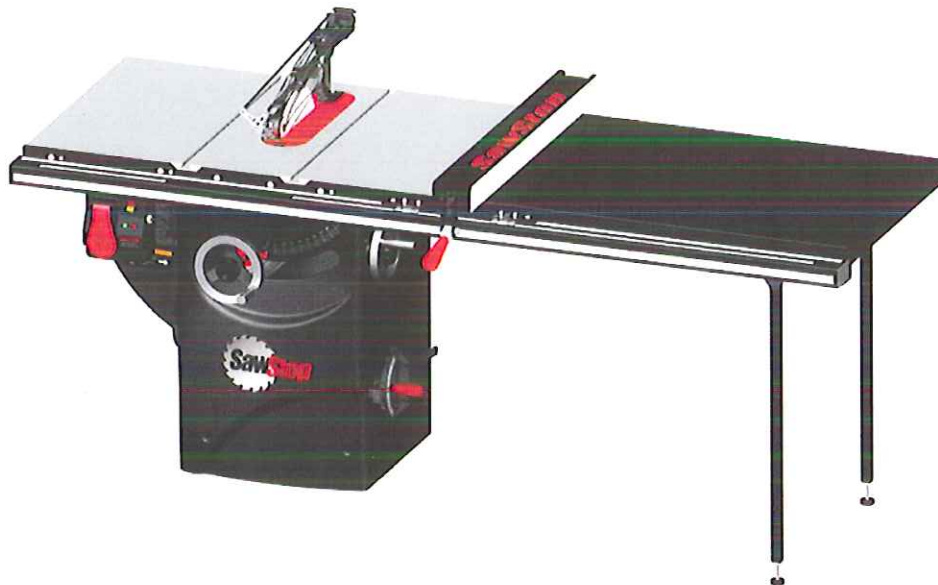


Fig. 80

You can learn more about the SawStop® fence systems from an authorized SawStop distributor or at 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.

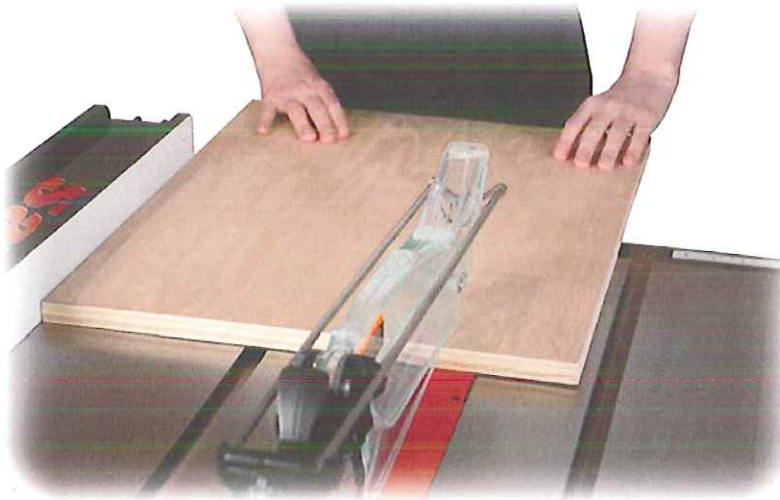


Fig. 81

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. 81 and Fig. 85 on page 55. 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. 82).

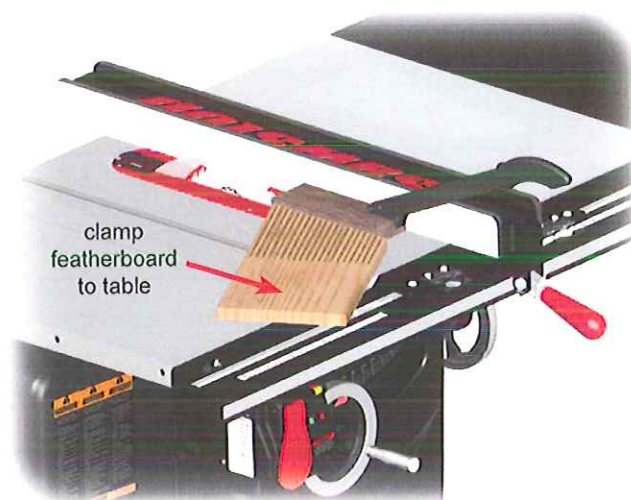


Fig. 82

When not in use, the push stick should be stored on the blade wrench holder (see Fig. 83). 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. 84).



Fig. 83

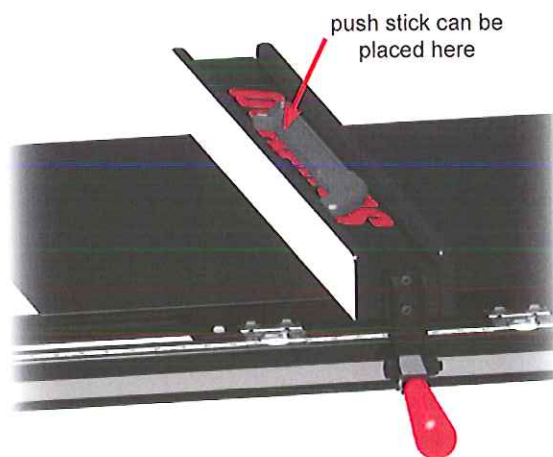


Fig. 84

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. 85

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 (Fig. 86). A second featherboard can be clamped to the top of the table as discussed above, to hold the workpiece against the fence.

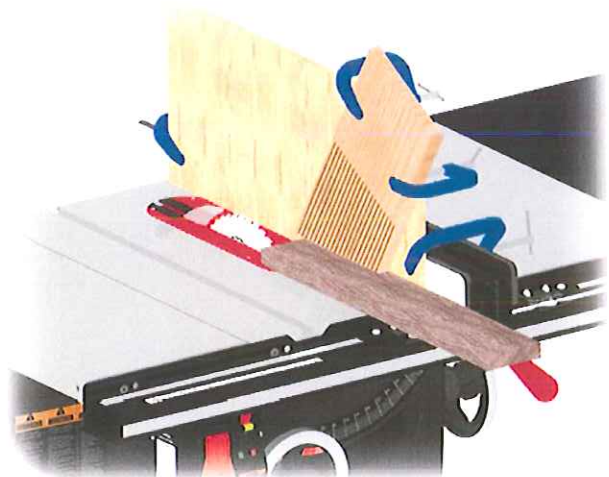


Fig. 86

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. 87). 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.



Fig. 87

Bypass Key

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

In many situations it is important to be able to move the saw from one location to another. For example, you may want to store the saw against a wall in your workshop and then move the saw away from the wall to use it. An optional mobile base allows you to reposition your saw with ease.

The *SawStop*® Professional Cabinet Saw Mobile Base is designed specifically for your saw (see Fig. 88). 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. 88

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. 89). 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. 89

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.

Using Your Saw

Changing the Brake Cartridge

The SawStop® brake cartridge (shown in Fig. 90) 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. 91). 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.

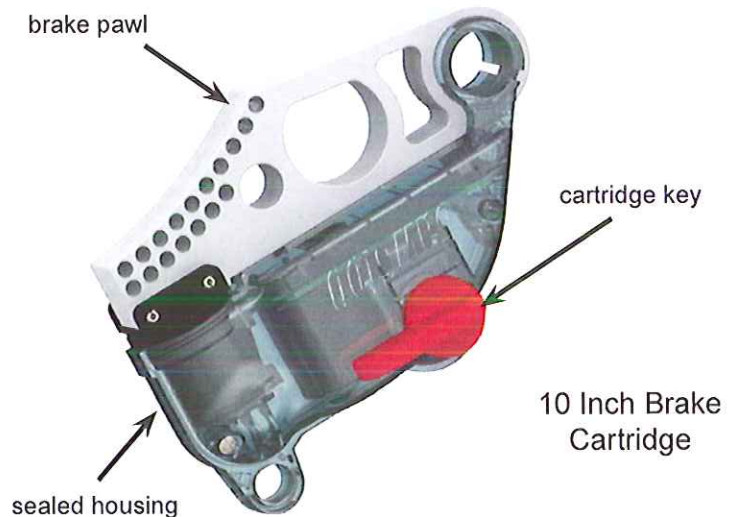


Fig. 90

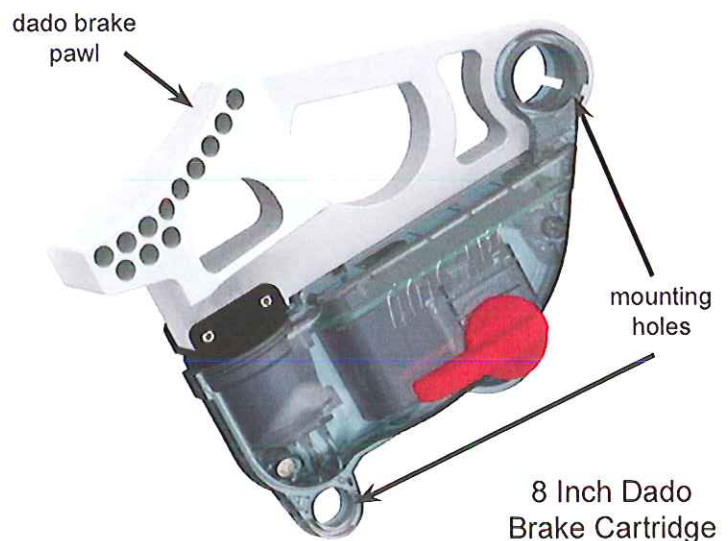


Fig. 91

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.

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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. 92). 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.

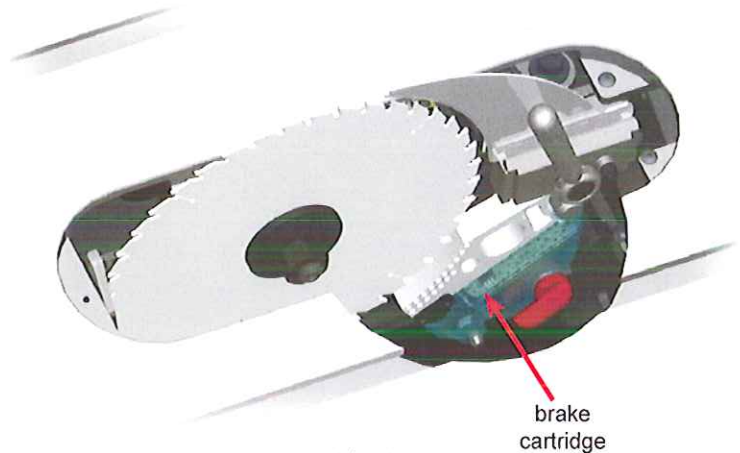


Fig. 92

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

The brake cartridge is mounted on a large pivot pin and a smaller positioning pin as shown in Fig. 93. 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.

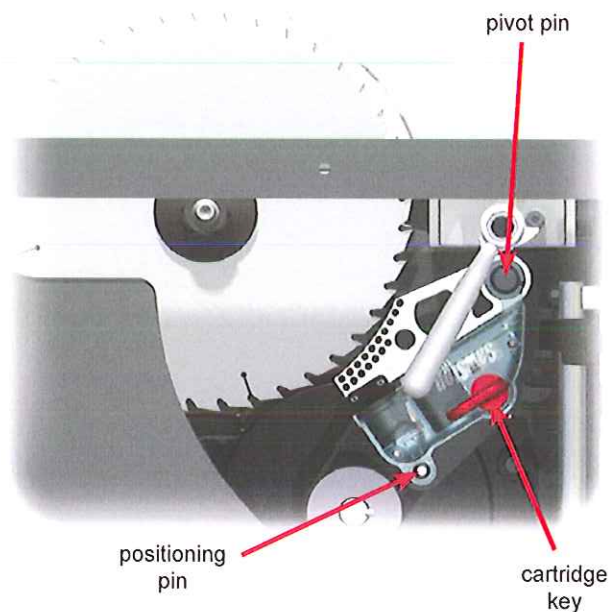


Fig. 93

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To remove the cartridge, first remove the cartridge key by turning it 90° clockwise and then pulling it away from the cartridge (see Fig. 94). 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.

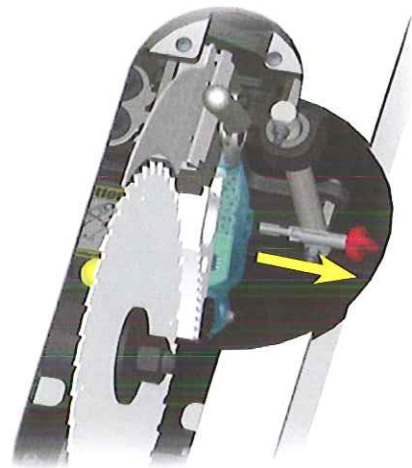


Fig. 94

If the brake cartridge has not been activated, slide the brake cartridge to the right until it clears both pins as shown in Fig. 95.

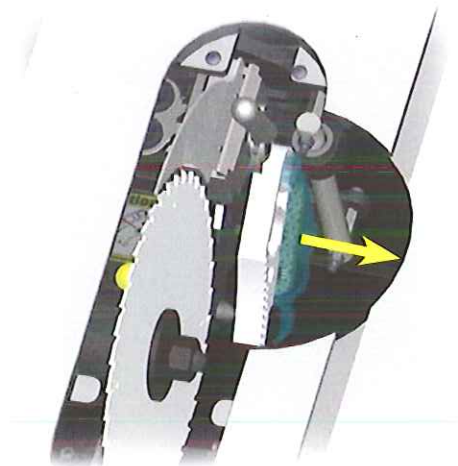


Fig. 95

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. 94). 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. 96 on the next page). **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. 97 on the next page). 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.

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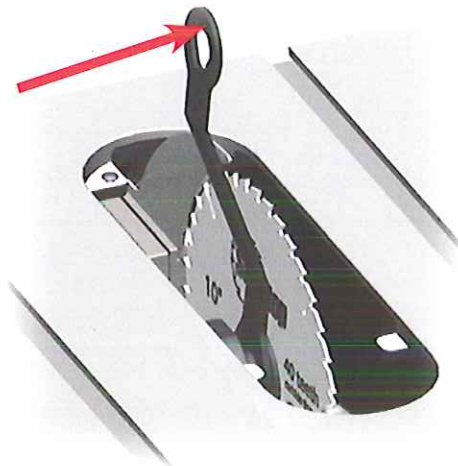


Fig. 96

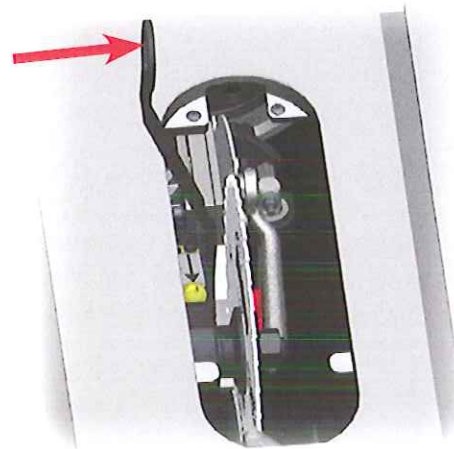


Fig. 97

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. 93 on page 59). 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. 94 on page 60). 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 (as shown in Fig. 94 on page 60). Insert the key fully into the hole and rotate the key 90° counter-clockwise to lock the cartridge in place (Fig. 93 on page 59 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. You can also reset the arbor block manually by pulling the arbor sharply upward until you feel the arbor block engage the retraction bracket.

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.