

# CIRCULAR SAW SAFETY

Reviewed 9/24/2007

## 1. General Safety Rules

- **DANGER** -- Keep hands away from cutting area behind the saw blade since kickback could cause the saw to jump backwards over your hand. Keep your body positioned to either side of the saw blade.
- Check lower guard for proper closing before each use. If saw is accidentally dropped, lower guard may be bent. Raise the lower guard only with the Lower Guard Lift Lever. Make sure it moves freely and does not touch the blade or any other part in all angles and depths of cut. Do not operate saw if lower guard does not move freely and close instantly. Never clamp or tie the lower guard into the open position.
- Disconnect plug from power source. Periodically remove the blade and clean the upper and lower guards. Check operation and condition of the lower guard spring. If it is not operating properly, have it replaced. Should the lower guard operate slowly or sluggishly due to gummy deposits or a buildup of caked up debris, clean the hub area with kerosene and wipe it dry, or blow it clean with compressed air.
- Always observe that the lower guard is in the blade covering position before placing saw down on the bench or floor. Be aware of the time it takes for the blade to stop after switch is released.
- Keep your second hand on auxiliary handle, or motor housing, not near the blade. Do not reach underneath the work, or attempt to remove cut material when blade is moving.
- It is important to support the work properly and to hold the saw firmly to prevent loss of control which could cause personal injury. NEVER hold pieces for cutting in you had or across you leg.
- Making "Pocket Cuts" into existing walls or other blind areas is dangerous. Protruding blade may cut "live wires" or objects that can cause KICKBACK.
- When cutting is interrupted, or blade is binding, release the trigger immediately and hold the saw motionless in the material until the blade comes to a complete stop. Never attempt to remove the saw from the work or pull the saw backward while the blade is in motion or KICKBACK may occur.

- Use rip fence. Always use a rip fence or straight edge guide when ripping.
- Avoid cutting nails. Inspect for and remove all nails from lumber before cutting.
- Do not run saw while carrying it at your side.
- Be certain the depth and bevel adjusting locking levers are tight and secure before making cut.
- Do not use dull or damaged blades. Unsharpened or improperly set blades produce narrow kerf causing excessive friction, blade binding and KICKBACK.
- Always use blades with correct size diamond arbor holes. Round arbor hole blades do not allow proper vari-torque clutch engagement. Never use defective or incorrect blade washers or bolts.
- Depending upon use, the switch may not last the life of the saw. If the switch should fail in the “OFF” position, the saw may not start. If it should fail while the saw is running, the saw may not shut off. If either occurs, unplug the saw immediately and do not use until repaired.
- The circular saw should not be mounted to a table and converted to a table saw.
- Understand the operation and settings of the VARI-TORQUE clutch. It can reduce the intensity of KICKBACK.

## 2. KICKBACK

- When the blade is pinched or bound tightly by the kerf closing down, the blade stalls and the motor reaction drives the unit rapidly back toward the operator.
- If the blade becomes twisted or misaligned in the cut, the teeth at the back edge of the blade can dig into the top surface of the wood causing the blade to climb out of the kerf and jump back toward the operator.
- Using a dull blade or improperly supported work will increase the tendency for KICKBACK.

- Using the saw with an excessive depth of cut setting increases loading on the unit and susceptibility to twisting of the blade in the kerf. It also increases the surface area of the blade available for pinching under conditions of the kerf close down.
- Wet lumber, green lumber or pressure treated lumber require special attention during cutting operation to prevent KICKBACK.
- Proper setting of the VARI-TORQUE clutch combined with firm handling of the saw will allow you to control KICKBACK.

### 3. Attaching the Blade

- **WARNING** -- Always disconnect the plug from power source before making any adjustments or attaching any accessories.
- Press the lock button, if saw comes equipped with one, and turn wrench until lock button engages. Saw shaft is now locked. Continue to depress button, turn wrench clockwise and remove Blade Stud and Outer Washer.
- Retract the lower guard all the way up into the upper guard. While retracting the lower guard, check operation and condition of the Lower Guard spring.
- Make sure saw teeth and arrow on the blade point in the same direction as the arrow on the lower guard.
- Slide blade through slot in the foot and mount it against the Inner washer on the shaft. Be sure the large diameter on the Inner and Outer washers lay flush against the blade.
- Reinstall Outer Washer. First tighten Blade Stud finger tight, then tighten Blade Stud 1/8 turn (45 degrees) with the wrench provided.
- Do not use wrenches with longer handles, since it may lead to over tightening of the Blade Stud.
- **VARI-TORQUE CLUTCH** – This clutching action is provided by the friction of the Outer Washer against the Blade and permits the blade shaft to turn when the blade encounters excessive resistance. When the Blade Stud is properly tightened, the blade will slip when it encounters excessive resistance, thus reducing saw's tendency to KICKBACK.

- One setting may not be sufficient for cutting all materials. If excessive glade slippage occurs, tighten the Blade Stud a fraction of a turn more (less than 1/8 turn). **OVERTIGHTENING THE BLADE STUD NULLIFIES THE EFFECTIVENESS OF THE CLUTCH.**

#### 4. Depth Adjustment

- Disconnect plug from power source. Loosen the depth adjustment lever. Hold the foot down with one hand and raise or lower saw by the handle. Tighten lever at the depth setting desired. Check desired depth.
- Not more than one tooth length of the blade should extend below the material to be cut, for minimum splintering.

#### 5. Cutting Angle Check (90 degrees)

- Disconnect plug from power source. Set foot to maximum depth of cut setting. Loosen bevel adjustment lever, set to 0 degrees on quadrant, retighten bevel adjustment lever first, then the depth adjustment lever and check for 90 degree angle between the blade and bottom plane of foot with a square.

#### 6. Bevel Adjustment

- Disconnect plug from power source. The foot can be adjusted up to 45 degrees by loosening the bevel adjustment lever. Align to desired angle on calibrated quadrant. Then tighten bevel adjustment first, then depth adjustment lever. Because of the increased amount of blade engagement in the work and decreased stability of the foot, blade binding may occur. Keep the saw steady and the foot firmly on the workpiece.

#### 7. Line Guide

- For a straight 90 degree cut, use the large notch in the foot. For a 45 degree bevel cuts, use the small notch. The cutting guide notch will give an approximate line of cut. Make sample cuts in scrap lumber to verify actual guide of cut. This will be helpful because of the number of different blade types and thicknesses available. To be sure minimum splintering on the good side of the material to be cut, face the good side down.

#### 8. Switch

- **WARNING** -- When starting the tool, hold it with both hands. The torque from the motor may cause the tool to twist.
- To turn tool “ON”, squeeze the trigger. To turn the tool “OFF”, release the trigger switch, which is spring loaded and will return to the off position automatically.
- Your saw should be running at full speed BEFORE starting the cut, and turned off only AFTER completing the cut. To increase switch life, do not turn switch on and off while cutting.

## 9. General Cuts

- Always hold the saw handle with one hand and the auxiliary handle or motor housing with the other. Maintain a firm grip and operate the switch with a decisive action. Never force the saw. Use a light and continuous pressure.
- **WARNING** -- After a cut, be aware of the necessary time it takes for the blade to come to a complete stop. Do not allow the saw to brush against your leg or side, since the lower guard is retractable, it could catch on your clothing and expose the blade. Be aware of the necessary blade exposures that exist in both the upper and lower guard areas.
- When cutting is interrupted, to resume cutting: squeeze the trigger and allow the blade to reach full speed, re-enter the cut slowly and resume cutting.
- When cutting across grain, the fibers of the wood have a tendency to tear and lift. Advancing the saw slowly minimizes this effect. For a finished cut, a cross cut blade or miter blade is recommended.

## 10. Cutting Masonry/Metal

- Circular saws are not recommended for continuous and general usage with metal or masonry cut-off wheels. If you use you saw for cutting these materials, use the appropriate wheel for the material being cut.
- When cutting masonry, do not cut at a depth of more than ¼ inch. Make successive passes to achieve desired depth. Apply a light forward pressure. Do not overload motor. Disconnect plug from power source and clean dust from air vents frequently. Metal cutting is done at full depth.

- **WARNING** -- When cutting masonry materials, the lower guard may become sluggish. Clean guards frequently to assure a rapid return. Wear safety goggles and dust mask.
- **WARNING** -- The safe speed rating of the wheels must be greater than nameplate RPM rating of the saw. Because of sparks from the wheels, do not use near flammable materials or liquids.
- **WARNING** -- Do not use water feed attachment with the saw.

## 11. Pocket Cuts

- Disconnect the plug from the power source before making adjustments. Set the depth adjustment according to material to be cut. Tilt saw foreword, with cutting guide notch lined with the line you've drawn. Raise lower guard, using lift lever and hold the saw by the front and rear handles.
- With the blade just clearing the material to be cut, start the motor. Gradually lower the back end of the saw using the front end of the foot as the hinge point. **WARNING** – As the blade starts cutting the material, release the lower guard immediately. When the foot rests flat on the surface being cut, proceed cutting in forward direction to end of cut. **WARNING** – Allow blade to come to a complete stop before lifting the saw from cut. Also, never pull the saw backward since blade will climb out of the material and KICKBACK will occur. Turn saw around and finish the cut in the normal manner, sawing forward. If corners of your pocket cut are not completely cut through, use a jigsaw or hand saw to finish the corners.

## 12. Cutting Large Sheets

- Large sheets and long boards sag or bend, depending on support. If you attempt to cut without leveling and properly supporting the piece, the blade will tend to bind, causing KICKBACK and extra load on the motor.
- Support the panel or board close to the cut. Be sure to set the depth of the cut so that you cut through the sheet or board only and not the table or work bench. The two-by-fours used to raise and support the work should be positioned so that the broadest sides support the work and rest on the table or bench. Do not support the work with the narrow sides as this is an unsteady arrangement. If the sheet or board to be cut is too large for a table or work bench, use the supporting two-by-fours on the floor and secure.

- When ripping large sheets without a rip fence guide, clamp or nail a straight piece of 1' material to the sheet as a guide. Use the right side of the foot against the board guide.

### 13. Maintenance

- SERVICE – Preventative maintenance performed by unauthorized personnel may result in misplacing of internal wires and components which could cause serious hazard. All tool service should be performed by an Authorized Service Center.
- CLEANING – **WARNING** -- To avoid accidents, always disconnect the tool from power source before cleaning or performing any maintenance. The tool may be cleaned most effectively with compressed dry air. Always wear safety goggles when cleaning tools with compressed air.
- Ventilation opening and switch levers must be kept clean and free of foreign matter. Do not attempt to clean by inserting pointed objects through openings.
- CAUTION – Certain cleaning agents and solvents damage plastic parts. Some of these are: gasoline, carbon tetrachloride, chlorinated cleaning solvents, ammonia and household detergents that contain ammonia.

### 14. Care Of Blades

- Blades become dull even from cutting regular lumber. If you find yourself forcing the saw forward to cut instead of just guiding it through the cut, chances are the blade is dull or coated with wood pitch.
- When cleaning gum and wood pitch from blade, unplug the saw and remove the blade. Remember, blades are designed to cut, so handle carefully. Wipe the blade with kerosene or similar solvent to remove the gum and pitch. Unless you are experienced in sharpening blades, do not try