Bosch Dual-Bevel Hinge Slide Miter Saw

The miter saw is a power tool that can be used to make straight, mitered, beveled or compound cuts in wood up to 12” wide and 5” thick. The saw blade hinges downward to cut through the material and can extend outward for wider cuts. The Foundry’s saw is built into a work table to accommodate the cutting of long pieces.
TERMINOLOGY

A miter saw is technically a different tool than a chop saw. While both saws have circular blades that drop downward on an arm, chop saws can only make 90° cuts, whereas miter saws can make mitered, beveled and compound cuts, in addition to 90° cuts. While not technically correct, the names are sometimes used interchangeably. The saw at the Foundry is a miter saw, but you might also hear it referred to as a chop saw.

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<td>0° miter cut</td>
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A miter cut is a cut angled across the horizontal plane (the surface) of the material.

A bevel cut is a cut angled through the vertical plane (the thickness) of the material.

A compound cut combines a miter cut and a bevel cut and is therefore angled both across the horizontal plane and through the vertical plane of the material.

SAFETY

For the Woodshop in general...

- **Shop Buddy:** You are not allowed to work alone in the Woodshop. A buddy is there to ensure your safety and to call for help if needed. Your buddy does not have to be Woodshop trained, but if untrained, they are not allowed to use the Woodshop equipment. If an untrained buddy uses the Woodshop equipment, your Woodshop access will be immediately and permanently revoked.
- **Eye Protection:** These machines can send sawdust, wood chips and other fragments flying—safety glasses protect your eyes from harmful material.
- **Close-Toed Shoes:** Tools, pieces of wood and other sharp objects can fall and close-toed shoes will protect your feet cuts, bruises and even breaks.
- **Long Pants:** Long pants will protect your legs from cuts, bruises and splinters that might come from handling wood.
- **No Jewelry:** Rings, bracelets, dangling necklaces, watches, headphones and sweatshirt strings can all get caught in the spinning blades or bits, which can drag you into the machine.
- **Long Hair Secured:** Like jewelry, long hair can also get entangled in machines, and potentially drag you into the machine.
- **No Food or Drink:** Sawdust and woodchips, in addition to the glues and paints used on the wood, can get into your food or drink and be toxic.
- **No Metal:** Using metal on any of these machines will produce sparks, which can ignite sawdust, resulting in a fire or explosion.

For the Miter Saw specifically...

- **Short Sleeves:** Gloves and long sleeves can be caught in the spinning blade, make sure that your hands and forearms are free from extra or loose fabric.
- **Properly Sized Wood:** The miter saw is best for cutting 2x4s and other thin, narrow boards. It can only cut wood narrower than 12”, thinner than 5” and longer than 12”.
- **Ear Protection:** The miter saw is loud and extended use can cause hearing damage. If you are cutting for a long time, you may want to wear earmuffs.
- **Dust Mask:** The miter saw produces sawdust, and if you are cutting a lot of wood, you might want to wear a dust mask.

### MACHINE ANATOMY

**Handle:** Allows you to move the blade into and out of the material you are cutting.

**Power Switch:** A rectangular button on the inside of the handle. Depressing the power switch, in conjunction with pressing one of the off release buttons, will start the blade spinning.

**Off Release Buttons:** Secondary safety buttons, one of which must be pressed, in conjunction with the power switch, in order to turn on the blade.

**Miter Detent Override Lever:** Allows detent action (the automatic setting of the blade to ten, preset common miter angles) to be ignored, allows for micro adjustments.

**Miter Lock Knob:** When tightened, locks the blade at any desired miter angle.

**Miter Detent Lever:** Releases the table from the detent.

**Bevel Lock Lever:** Locks the blade at the desired bevel angle.

**Miter Gauge:** Indicates the miter angle of the blade.

**Glide Lock:**
**Depth Stop Screw:** Turn this to adjust the blade depth, good for cutting grooves.

**Head Assembly Lock Pin:** When pulled out, allows for the head of the saw to rise to the proper cutting position. In the Foundry the miter saw is always stored with the pin in place and the head locked down.

**Bevel Gauge:** Indicates the bevel angle of the blade.

**Blade:** Circular blade that spins in order to cut through your material. At the Foundry the blade is an $\frac{1}{8}$" wide, which means that an $\frac{1}{8}$" of material will be removed from your material when you cut. The width of material removed is referred to as the kerf.

**Blade Shield:** Protects you from the spinning blade when cutting.

**Fence:** Supports the workpiece while cutting and has a ruler to help measure.
OPERATING THE MACHINE

Marking Your Stock
1. Using a measuring tool, measure and mark the place you want to cut your material with a pencil. Remember to account for the width of the blade (kerf), which is about 1/8”.
2. Clearly, indicate on which side of your line you want to cut to account for this. This can cut up to 12” wide in a single cut and up to 5” thick.

Cutting Straight Cuts (Without a Miter or a Bevel)
1. Check that you are in compliance with all aforementioned safety procedures.
2. Make sure that the vacuum hose is connected to the machine.
3. Turn on the dust collector.
4. Unlock the miter saw padlock by punching in the code: 26109. Remove the padlock from the hole in the handle and set aside until you are done using the machine.
5. Pull the handle down slightly and slide out the red safety lock pin on the right side of the machine so that the saw blade can move up. You will notice the blade shield slide over the blade as it rises. NOTE: the red safety lock pin is very hard to slide out without pulling down on the handle!

6. Make sure the miter gauge is set to 0°. If it is not, loosen the miter lock knob, lift up the miter detent lever and slide the blade to 0° by lining up the pointed edge of the red indicator to the “0” mark.

7. Place your marked stock flush up against the fence.

8. Without squeezing the handle, slowly lower the handle to align the blade with the mark on your material.

9. You may wish to clamp down your stock to the table once it is in place. If you are not clamping down your stock, hold your stock with your non-dominant hand and grab the handle with your dominant hand. DO NOT place your hands or fingers within the “no hands zone” (as marked in red on the machine).

10. Press and hold the red handle lock button with your thumb. There is a lock button on both sides of the handle, one for left-handed and one for right-handed users.

11. While pressing the handle lock button, also squeeze the handle trigger to start the saw. The saw will not start spinning until both triggers are pressed simultaneously. Only start the saw when the handle is all the way up, otherwise, it will jerk backward.

12. Move the handle straight down into your stock and do not release the handle lock button and the handle trigger until the blade has cut entirely through the material.

13. Release the trigger and leave the saw down in the material until the blade stops spinning.

14. After the blade has come to a complete stop, raise the saw back up

15. Once you have finished all of your cuts, continue to the Finishing Up section.

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**Cutting Straight Cuts on Stock Wider than 5”**

This operation is almost identical to a normal straight cut but it uses the saw’s linear extension to extend the distance you can cut.

1. Unlatch the glide lock on the left side of the saw so it can move forward and backward as well as up and down.

2. Place your marked stock flush up against the fence.

3. Without squeezing the handle, slowly lower the handle to align the blade with the mark on your material.

4. You may wish to clamp down your stock to the table once it is in place. If you are not clamping down your stock, hold your stock with your non-dominant hand and grab the handle with your dominant hand. DO NOT place your hands or fingers within the “no hands zone” (as marked in red on the machine).

5. Fully extend the handle toward you before making your cut.
6. Press and hold the red handle lock button with your thumb. There is a lock button on both sides of the handle, one for left-handed and one for right-handed users.

7. While pressing the handle lock button, also squeeze the handle trigger to start the saw. The saw will not start spinning until both triggers are pressed simultaneously. Only start the saw when the handle is all the way up, otherwise, it will jerk backward.

8. Plunge the handle downward and push back into the stock when cutting. DO NOT lower the blade and pull it towards you while cutting, otherwise, you will damage your material.

9. Once you have completed all cuts on material that is wider than 5”, re-latch the glide lock on the left side of the saw.

Cutting Miter Cuts
Making a miter cut is similar to the other saw operations outlined above, except that the cut will not be perpendicular to the fence, rather it will be at an angle.

1. Loosen the blue miter lock knob and squeeze the red miter detent lever to slide the blade along the miter gauge.
2. If you release the red miter detent lever, the saw will automatically lock to 0°, 15°, 22.5°, 45°, 60°.
3. Set the miter gauge to your desired angle by lining up the pointed edge of the red indicator to the appropriate number.
4. If you don’t want the saw to automatically snap to the previously mentioned values, you can lift up on the miter lock handle and then press down on the red miter detent override lever right behind the blue knob. To release this, lift up on the miter lock handle again.
5. You can rotate the saw in either direction, left or right.
6. Lock the saw in this position by tightening the blue Miter Tightening Knob.
7. You can then follow the standard cutting procedure as described in Cutting Straight Cuts.

Cutting Bevel Cuts
Making a bevel cut is similar to the other saw operations except that the blade is rotated along the vertical plane. You can also make a bevel cut while making a miter cut at the same time, this is called a compound cut.

1. To make a bevel cut, lift the bevel lock lever on the left side of the machine.
2. This lever is very hard to lift, so don’t be afraid to put some force into it. This will unlock the saw so it can be rotated up to 45° left or right.
3. Rotate the saw by putting one hand on the handle and the other on the motor block. DO NOT try to rotate the saw by pushing on the blade or the blade cover.
4. The saw blade will default to rotating left, but it can be rotated right as well. To rotate the blade to the right, rotate it back to the left slightly and then turn
the red dial knob on the right side of the machine to “0-45° Right”.
5. Rotate the blade to the right to the desired angle as indicated on the bevel gauge.
6. For any bevel cuts beyond 15°, you will need to remove the fence so the blade can come down without cutting the fence. You can do this by unscrewing the red knobs on the back side of the fences. This is extremely important to remember, otherwise, you may end up cutting into the fence and damaging the blade.
7. Before cutting, lock down the bevel lock lever by pressing it back down.
8. You can follow the standard cutting procedure as described in Cutting Straight Cuts.
9. When you are done with your bevel cuts, return the saw to its original position and put the fences back up.

Cutting Notches (Advanced)
This saw has an additional feature that allows you to make cuts without the blade going all the way through your material. This could be useful in creating notches in your material.
1. To do this, locate the red depth stop screw next to the safety lock that has a spring built into it. This is a screw that goes through a black metal plate.
2. By sliding out this black metal plate to the right and twisting the red cap, you can set a distance for the saw to go down.
3. Fully extending this screw raises the saw blade about 2 ¼” above the table.
4. Using this feature, you can create notches in your stock by making repeated cuts next to one another to cut away an entire section of material.

This is a more advanced operation and should only be done with the assistance of a Scout.

Finishing Up
When you are finished making your cuts, please make sure to leave the saw cleaner than you found it.
1. Use the shop vac or dust bin to suck up any loose sawdust in the workspace to make it cleaner for the next person.
2. Lower the blade into its lowest position and lock it by pushing in the safety lock pin.
3. Relock the padlock.
4. Make sure he bevel gauge is set back to 0° and the miter gauge set to 60°.