Institute of Making UCL

Tool description

A jigsaw is a saw which uses a reciprocating blade to cut irregular curves, such as stenciled designs, in wood, metal, or other materials.

General tool Safety

PPE

- Always wear eye protection.
- Wear a dust mask where appropriate
- Wear hearing protection
- DO NOT wear gloves

Personal Safety

- Do not wear loose clothing.
- Remove Jewellery.
- Keep hair tied up.

Do not overreach. Keep proper footing and balance at all times. This enables better control of the tool in unexpected situations.

Consider those around you, inform them before starting the equipment so they can use relevant PPE, ensure there are no trip hazards and reassess the area once all cables and extraction hoses are connected.

Do not use a power tool while tired or rushed. A moment of inattention and incorrect use of PPE while operating power tools may result in serious personal injury and or death.

Dust extraction, ensure this is connected and properly used. Use of dust collection can reduce dust-related hazards.

Power Tool Use and Care

Do not force the power tool.

Correct settings will do the job better and more safely at the rate for which it is designed.

Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be brought to the attention of a technician before further use.

Disconnect the plug from the power source (remove battery) before making any adjustments, changing accessories, or storing the tool. This will reduce the risk of starting the tool accidentally.

Visual bade inspection. With the saw unplugged, inspect the blade. Always check the saw blade to make sure it does not have missing teeth or is bent. Do not use a damaged saw blade. bring this to the attention of a technician before continuing. Properly maintained tools with sharp cutting edges are less likely to bind and are easier to control.

Check material condition before cutting. Remove any foreign objects such as nails or screws from the material to prevent damaging the tool and its cutting blade. Do not use green or wet wood as the water and sap content can damage the tool and its cutters.

Specific Safety Rules for Reciprocating Saws

Keep hands away from the blade and cutting area.

Do not reach underneath the workpiece. The blade is fully exposed under the workpiece.

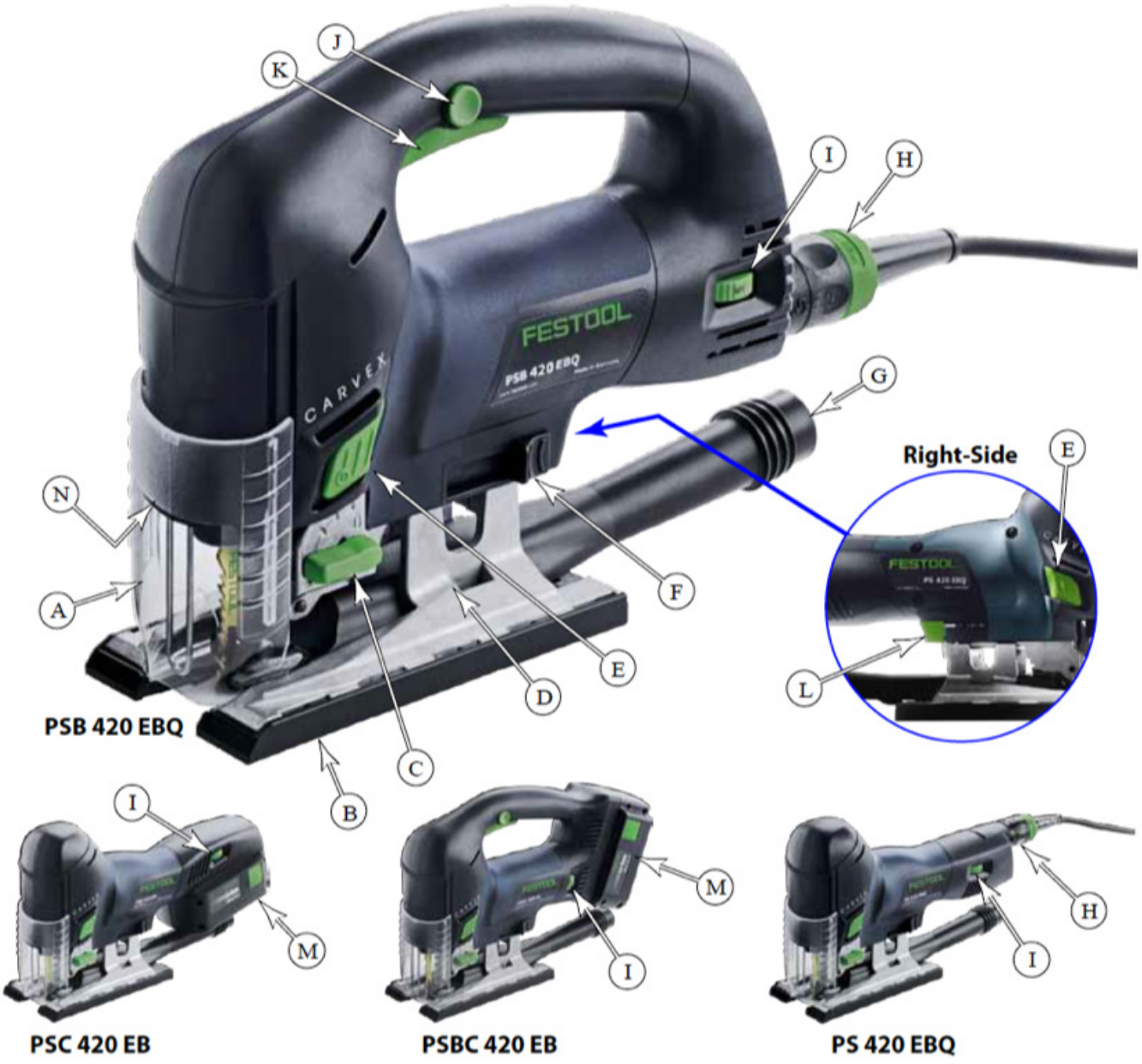
Never hold the piece being cut in your hands or across your leg. It is important to support the work properly to minimize body exposure, blade binding, or loss of control.

Check that there is enough space under the workpiece for the reciprocating saw blade. If the saw blade strikes another object, it may cause a kickback.

Never cut material that is thicker than the length of the saw blade.

Do not touch the saw blade after prolonged cutting. The saw blade may be hot and cause burns.

Functional description



Item	Name or Description	Ref. Page(s)
A	Chip Guard	15
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C	Pendulum Lever	10
D	Main Base	10
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Item	Name or Description	Ref. Page(s)
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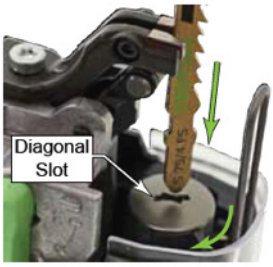
Changing the saw blade



The Jigsaw features tool-free blade changing. Used blades can be ejected from the saw without touching the potentially hot blade. New blades are inserted into the holder with just a simple twist.

WARNING! Always disconnect the saw from the power supply (power cord or battery) before making any adjustments to the saw or installing or removing the blade.
CAUTION! After prolonged use, the used sawblade may be hot. Take care not to touch the sawblade until it has cooled.

1. Unplug the saw or remove the battery. This procedure may require you to touch the blade with your fingers, so make sure the saw cannot start unexpectedly.

2. If the splinter guard is installed, remove it as described further down in this induction.

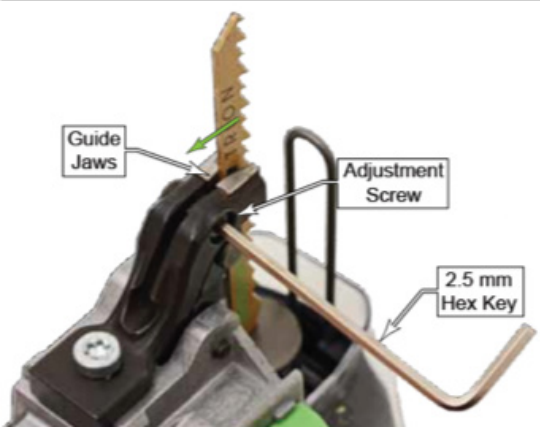
3. Slide the blade release lever forward until the blade is ejected from the spring loaded holder.

4. Place the new blade into the diagonal slot on the blade holder, press it fully in, and rotate the blade until it locks into place with the teeth facing forward. If the blade does not rotate easily, it is not pressed in far enough. The small tabs on the side of the blade must be inside the blade holder.

5. Adjust the blade guide as described below.

Adjusting the Blade Guide

The Jigsaw features a lower blade guide to ensure that the blade stays straight and true in the cut.



WARNING! Always disconnect the saw from the power supply (power cord or battery) before making any adjustments to the saw or installing or removing the blade.

1. Unplug the saw or remove the battery. This procedure may require you to touch the blade with your fingers, so make sure the saw cannot start unexpectedly.

2. Install a blade in the saw as described above.

3. Remove the Main Base as described on further down.

4. Using the provided 2.5 mm hex key, loosen the adjustment screw enough to ensure the blade fits loosely between the jaws of the blade guide.

5. Carefully push back on the blade to ensure it is fitting between the parallel faces of the blade guide jaws.

6. While wiggling the blade back and forth, tighten the adjustment screw until the jaws are almost touching the blade.

Take care not to over-tighten the adjustment screw. If the jaws are too tight to the blade, you will have excessive wear on the jaws, and it may even prevent proper pendulum action.

If the jaws are too loose, the blade won't be well guided in the cut.
For optimal adjustment, you should be able to wiggle the blade side-to-side just a little bit.

Changing Base Inserts

Standard Insert: This is a general purpose insert that is supplied with the saw, and may be used in all applications.

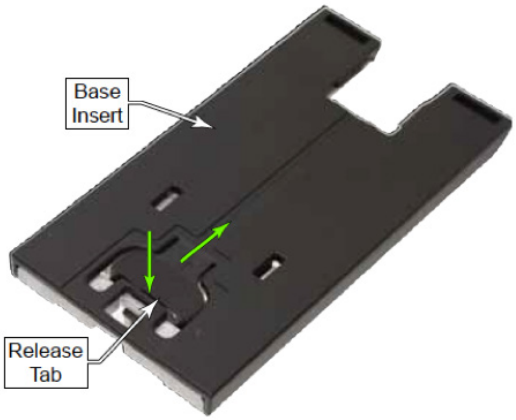
Felt Insert: The felt insert provides a soft felt surface to the base of the jigsaw for mar-free cutting on finished materials. The bottom of the felt insert has a tight hook- &-loop surface that holds the replaceable/disposable felt pads in place.

Phenolic Insert: This insert provides a smooth, hard, and low-friction base for abrasive environments that could scratch softer inserts.

Dimpled Insert: This insert is designed to provide smooth operation on rough surfaces, such as rough-sawn lumber. The dimples (rounded studs) glide over and between the rough features of the workpiece surface.

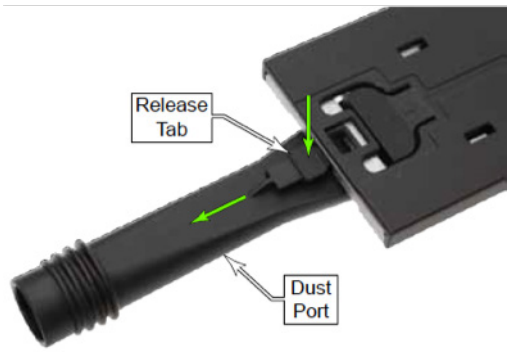
Stainless Steel Insert: This insert is ideal for working on steel, aluminum, and other very hard materials that would scratch even the phenolic insert.

1. Remove the dust collection port as described below. The release tab on the base insert cannot be pressed in when the dust collection port is in place.
2. Either remove the main base from the saw, or remove the sawblade.
3. Press down on the back of the release tab and slide the base insert forward about 1/2 inch.
4. Lift the base insert off the main base to remove it.



Installing/Removing the Dust Collection Port

The dust port is used to connect a dust extractor to the jigsaw. It may be used with the standard base or the guide rail base. However, the dust port cannot be used with the angled base.



To remove the dust port from the base, press down on the release tab and slide the port out from the base.

To install the dust port, slide it into the base until the release tab clicks into place.

Changing the Main Base

Three bases are available for the Jigsaw. The bases can be installed and removed without tools.

Standard Base:
The standard base is used to mount any of the optional base inserts. The standard base can be used with the dust collection.

Guide Rail Base: Also called the adapter base, is used to guide the saw using either a Festool guide rail, or the Festool trammel (for cutting circles). The guide rail base can be used with dust collection.

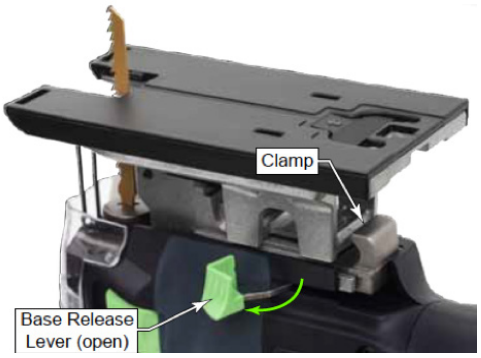
Angle Base: The angle base is used for making bevel cuts with the jigsaw. The two pads can be angled from +45° to -45°. The Angle base cannot be used with dust collection.

Standard Base **Guide Rail Base** **Angle Base**

1. Unplug the saw or remove the battery to prevent accidental startup.

2. Rotate the base release lever outward until the clamp is clear of the main base.

3. Lift the main base off the bottom of the saw.



NOTE: Make sure the guide rail base is installed parallel with the blade by wiggling it side to side before closing the release lever. If it is installed with a slight skew to the saw blade, it may cause the saw to drift off the cutting line when using the saw with a guide rail or trammel.

WARNING! Always disconnect the saw from the power supply (power cord or battery) before making any adjustments to the saw or installing or removing the blade.

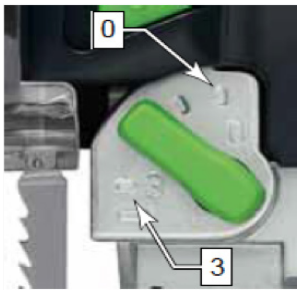
Installing/Removing the Battery

To install the battery, slide it into the receptacle on the rear of the saw until it clicks into place. To remove the battery, press in on both left and right release buttons, and slide the battery out of the receptacle.

Setting the Pendulum Stroke

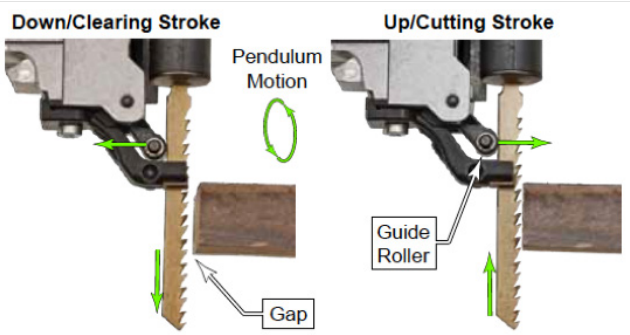
A pendulum jigsaw moves the blade in an orbital motion. On the downstroke, the blade is guided away from the cut, and on the upstroke, the blade is guided toward the cut.

The Jigsaw has 4 settings for the pendulum stroke, ranging from a wide orbit to no orbit (straight up and down). Because a jigsaw cuts only on the upstroke, this orbital type of motion is more efficient.



The orbital motion allows the saw to cut more aggressively and improves the life of the blade. However, the larger the orbit and more aggressive the cut, the rougher the cut may be.

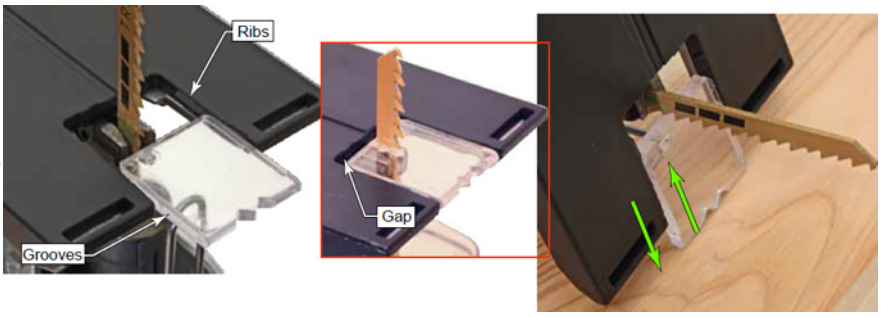
To change the pendulum stroke, rotate the lever to settings 0 (off) through 3 (maximum orbit). The lever/setting may be changed regardless whether the saw is running or not.



Use a larger orbit (higher number) for aggressive cutting in softer materials. Use a smaller orbit, or no orbit, for harder materials such as harder woods or when smoother cuts are desired. Also, when cutting thinner materials, a lower orbit setting may produce better results. The pendulum stroke should be set to zero when using a tungsten carbide blade.

Installing the Splinter Guard

The clear plastic splinter guard serves as a zero-clearance throat along the blade to reduce splintering of the topside of the workpiece. The splinter guard is a consumable component that is replaced when it wears or when blades of different thicknesses are used.



1. Unplug the saw or remove the battery to prevent accidental starting.

2. Rotate the pendulum stroke lever to the zero position as shown above.

3. Slide the plastic splinter guard onto the ribs on the main base, but not far enough to touch the blade.

4. Turn the saw on, and press the front of the splinter guard against a table to allow the sawblade to cut into the splinter guard as it slides the rest of the way on the base.

5. For added life, as the splinter guard wears, you can push it farther back into the base until the gap is gone.

Setting the Variable Speed

To set the speed of the saw, rotate the speed dial to the desired setting. The speed may be adjusted while the saw is running.

The more you press in on the variable trigger, the faster the saw will operate, until it reaches the speed setting of the speed dial.

The optimal speed of the saw is somewhat subjective, but is predominately determined by the type of material being cut.

The actual speed that delivers the best results for a specific cut may depend on other factors, such as blade type, workpiece
brittleness, desired smoothness of cut, etc. The table provides a general guideline for blade speeds, but your actual speeds may vary (“A” indicates maximum speed).

Material	Speed
Soft wood products and veneer plywoods	4-A
Hard wood products	3-A
Plastic laminate countertops	4-A
Hard plastics	3-A
Soft plastics	1-4
Plaster and cementitious hardboard	2-A
Aluminum, Ceramic	3-5
Steel	1-4

Turning the saw On & Off

The saw has power switches on the left and right side of the main housing.

The saw also has a variable speed trigger in the handle.

To use the power switches on the barrel, slide either switch forward to start the saw, and then release the switch. The saw will continue to run until you slide either of the switches forward again. Practice your hand positioning on these switches with the saw off before cutting for the first time.

The speed of the saw will be determined by the speed control dial described above.

It is not necessary to hold the switch forward while the saw is running.

Either switch may be used to turn the saw on or off.

To use the variable speed trigger, press in on the trigger release and pull up on the trigger.

The speed of the saw will be controlled by how much the trigger is pulled, but the speed control dial determines the maximum available speed.

It is not necessary to continue to hold the trigger release button, but it is necessary to continue to hold the variable trigger depressed for the saw to run.

The automatic speed control function is not available when the trigger is used.

Sawblade Selection

The shank of Festool sawblades are color coded according to their general usage intention. These colors are listed below. The specialty blades are an exception in that each blade will have its own special purpose and material type. These include carbide tipped blades, ceramic cutting blades, and serrated foam blades.

Wood Plastic Metal Specialty

- Using Dust Extraction

To use the dust extraction system, install the dust collection port seen above.

Dust extraction

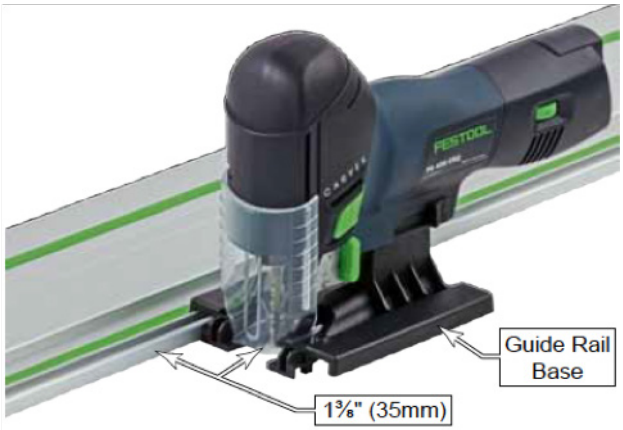
Attach the hose of the extraction to the dust collection port securely.

Remember the extraction will need to be set to manual as the tool is powered by battery.

Keep the extraction hose over your shoulder so you don't trip on it as you move with the saw.

Using the Jigsaw with a Guide Rail

When the optional guide rail base is installed on the jigsaw, the saw may be used with a Festool guide rail for performing straight cuts.
The distance from the rear edge of the guide rail to the center of the blade is approximately (35mm).



1. Install the optional guide rail base

2. Position the guide rail parallel to the desired cut line, and 1⅜" (35mm) away from the center of the cut. Note, you will need to subtract ó the thickness of the blade to set the distance to the edge of the cut instead of the center of the cut.

3. Clamp the guide rail to the workpiece.

NOTE: The body of the jigsaw does not press down on the guide rail. To reduce the chance of slipping, it is recommended to clamp the guide rail.

4. Place the jigsaw base over the rear T-slot of the guide rail and perform the cut as normal.

Using the Trammel to Cut Circles

The optional circle cutter (trammel) permits the jigsaw to cut circular holes in a workpiece from the minimum and maximum sizes shown in the table.

	Min mm	Max mm
Radius	46	1500
Diameter	92	3000

1. Identify the location of the center of the arc or circle you wish to cut.

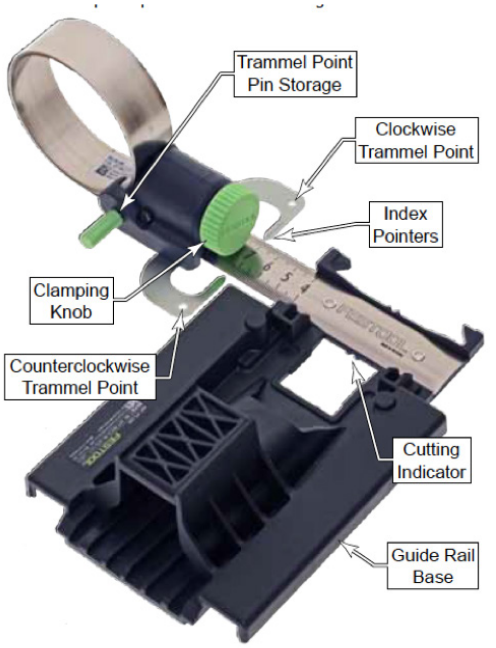
2. Drill a 4mm (5/32") hole at the center of the arc or circle.

3. Loosen the clamping knob and extend the tape measure until the index pointers are pointing to the desired radius. The radius is 1/2 the diameter of a circle.

4. Retighten the clamping knob.

5. Insert the trammel point pin through the trammel point of the circle cutter, and into the hole you drilled into the workpiece above.

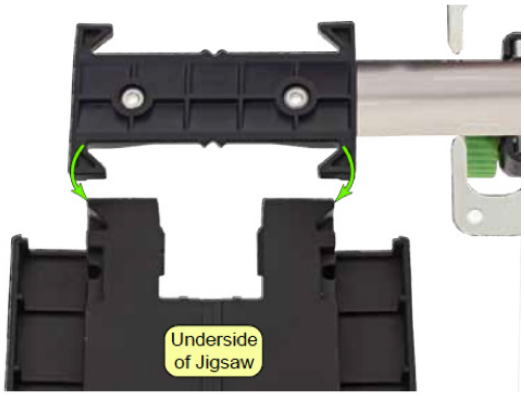
There are 2 trammel points on the circle cutter. One is for clockwise rotation and the other for counterclockwise rotation. Use the trammel point that is directly across from the sawblade when the circle cutter is mounted to the jigsaw.



6. Install the desired sawblade into the saw.

7. Install the guide rail base on the saw as described on

8. If you are cutting a full circle, you will need a starting point for the sawblade that lines up with your circle.
8a. Using a pencil and the cutting indicator, trace out a portion of the circle where you will manually begin cutting.
8b. Drill a hole on the waste-side of your circle large enough to insert the sawblade into.
8c. Use this starting hole to manually begin cutting the circle just enough to get the sawblade lined up with the cut.



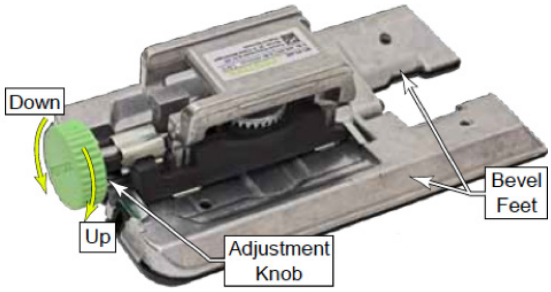
9. Place the jigsaw onto the circle cutter and continue with the cut.

10. Before completing the cut, make sure that both the waste piece and the saved piece are supported.

Making Bevel Cuts

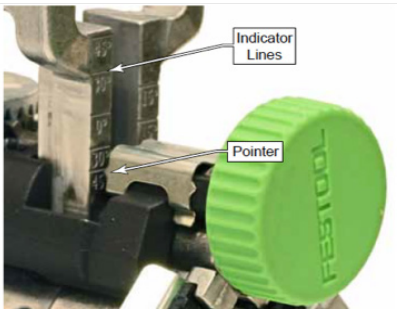
Bevel cuts may be made with the optional angle base. The angle base provides bevel angles up to 48° to the left and to the right. It can also function on both inside and outside corners for edge registration.

To adjust the bevel angle, rotate the adjustment knob on the rear of the angle base. Rotating the knob clockwise raises the bevel feet. Rotating the knob counterclockwise lowers the bevel feet.



For setting the approximate angle, the angle base includes a built-in angle indicator that shows the angle between the base and the blade.

The best way of setting the bevel angle is to set the angle between the left and right bevel feet. The angle between the bevel feet will be twice the bevel angle.



Housekeeping

Before starting any cleaning, disconnect the tool from the power supply.

You may need to intermittently stop operations to clean away dust build from the area of work and the tool.

The tool should be cleaned after every use. Use a vacuum with the brush attachment for the outside of the tool. For safe and proper working, always keep the machine and ventilation slots clean.

Never used compressed air to clean the tool. This will cause dust to be pushed into the atmosphere for you and others to breath in as well force dust into the motor and fixings of the tool.

Ensure the tool and accessories are placed back where they belong.
Do not leave tools out. If you are unsure where tools are stored, please speak to a technician.

Tips

- Protect high gloss finishes by covering your cutting area with masking tape.
- To cut from the center of a workpiece, drill a hole to start from. This will also help to go round right angled corners, allowing you to rotate the blade freely
- Control your speed, the harder the material, the slower the speed should be. This will help reduce strain on the blades.
- Bring the jig saw up to speed before engaging with the material. This will help prevent kickback.
- When cutting metal, sandwich it between two pieces of scrap wood to prevent shredding
- Jigsaws can give a rought finish to your cut as it cuts on the upwards pull, unlike a bandsaw or circular saw. Finer tooth blades will reduce this but it is always best to cut outside your line to leave room for finishing
- Corners can be tricky with a jigsaw, instead of forcing the blade round, reverse and adjust the angle bit by bit.