

Circular Saw Instruction Manual

Important: Read and understand all instructions before using this tool.

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General Safety Rules

Important: Read and understand all instructions listed below. Failure to heed instructions may result in personal injury, electrocution, or fire hazard.

Save These Instructions

Work Area

- ▶ **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
- ▶ **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
- ▶ **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

Electrical Safety

- ▶ **Double insulated tools are equipped with a polarized plug (one blade is wider than the other).** This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
- ▶ **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- ▶ **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- ▶ **Do not abuse the cord.** Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

Extension Cords

All due care should be practiced while using extension cords with this tool.

- ▶ **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electric shock.
- ▶ **Never use an extension cord that is damaged, such as cuts, exposed wires, or bent/missing prongs.**
- ▶ **Use only extension cords rated for the purpose.**
- ▶ **Use only extension cords rated for the amperage of this tool and the length of the cord.** Using too small of an extension cord can cause the saw to lose power and damage the saw.

Extension Cord Ratings	
Cord Length	Size (AWG)
<50 Ft.	14
50-100 Ft.	12
100-150 Ft.	10
>150 Ft.	Not recommended

Personal Safety

- ▶ **Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- ▶ **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
- ▶ **Avoid accidental starting. Be sure the switch is off before plugging in the power cord.** Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents.
- ▶ **Remove adjusting keys or wrenches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
- ▶ **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
- ▶ **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions. (Ordinary glasses are NOT proper eye protection.)

Tool Use and Care

- ▶ **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
- ▶ **Do not force the tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
- ▶ **Do not use the tool if the switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- ▶ **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk.

Service

- ▶ **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
- ▶ **When servicing a tool, use only identical replacement parts.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

Specific Safety Rules for Circular Saws

⚠WARNING: Risk of personal injury.

- ▶ **Keep hands away from the blade and cutting area.** Keep your second hand on the auxiliary handle. If both hands are holding the saw, they cannot be cut by the blade.
- ▶ **Keep your body positioned to either side of the saw blade, but not in line with the saw blade.** Kickback could cause the saw to jump backward. (See "Causes and Prevention of Kickback" below.)
- ▶ **Do not reach underneath the workpiece.** The blade is fully exposed under the workpiece.

⚠CAUTION: Never use a dust extraction system when making cuts that can result in sparks, such as cutting through nails and other ferrous materials. Sparks and hot embers can cause a fire or explosion in the dust extraction system.

- ▶ **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.
- ▶ **Hold the saw by the insulated handles when performing an operation in which the sawblade may contact hidden wiring or its own cord.** Contact with a "live" wire will make the exposed metal parts of the tool "live" and shock the operator.
- ▶ **When ripping, always use a rip fence or straight edge guide.** This improves the accuracy of cut and reduces the chance for blade binding.
- ▶ **Always use blades with the correct size and shape (diamond vs. round) arbor holes.** Blades that do not match the mounting hardware of the saw will run eccentrically, causing loss of control.
- ▶ **Never use damaged or incorrect blade flanges or bolt.** The blade flanges and bolt were specially designed for your saw for optimum performance and safety of operation.

Causes and Prevention of Kickback

Kickback is a sudden reaction to a pinched, bound, or misaligned saw blade that causes an uncontrolled saw to lift up and out of the workpiece toward the operator.

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.

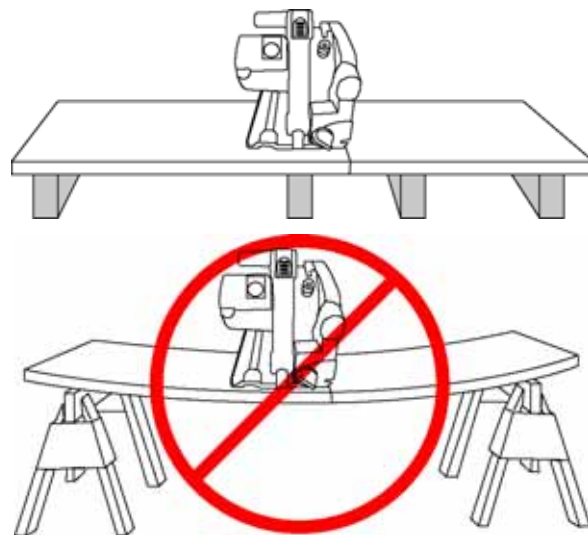
If the blade becomes twisted or misaligned in the cut, the teeth at the back edge of the blade can dig into the top surface of the wood, causing the blade to climb out of the kerf and jump back toward the operator.

Kickback is the result of incorrect operating procedures or conditions and can be avoided by taking proper precautions as described below:

- ▶ **Maintain a firm grip with both hands on the saw and position your body and arm to allow you to resist kickback forces.** Kickback forces can be controlled by the operator if proper precautions are taken.
- ▶ **If the blade is binding or when interrupting a cut for any reason, release the trigger 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. Investigate and take corrective actions to eliminate the cause of blade binding.
- ▶ **When restarting a saw in the workpiece, center the saw blade in the kerf and check that the saw teeth are not engaging the material.** If the saw blade is binding during a restart, it may climb up or kickback from the workpiece.
- ▶ **Do not use a dull or damaged blade.** Dull or improperly sharpened blades cause excessive friction, blade binding, and kickback.
- ▶ **Support large panels to minimize the risk of the blade pinching and causing a kickback.** Large panels tend to sag under their own weight.

Supports must be placed under the panel on both sides, near the line of cut and near the edge of the panel as shown.

- ▶ **The bevel adjusting knobs must be fully tightened before making a cut.** If the blade tilts during a cut, it will bind and cause a kickback.
- ▶ **Use extra caution when making a plunge cut into existing walls or other blind areas.** The protruding blade may cut objects that can cause kickback.



Respiratory Exposure Warning

⚠WARNING: Various dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- ▶ lead from lead-based paints,
- ▶ crystalline silica from bricks and cement and other masonry products, and

- ▶ arsenic and chromium from chemically-treated lumber.

The risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

Tool Description



Figure 1

- 1-a **Plunge Release and Trigger Safety Release.** Press this lever up to release the plunge lock and move the sawblade into the work. This lever must be pressed before the power trigger can be engaged.
- 1-b **Trigger (On/Off Switch).** Pull back on the trigger to turn the saw on. Release the trigger to turn the saw off.
- 1-c **Arbor Lock.** Press down on this button to stop the arbor from turning during blade changing.
- 1-d **Auxiliary Handle.**
- 1-e **Dust Extraction Port.**
- 1-f **Bevel Lock Knobs.** The knobs lock the bevel setting. There is one at the front and one at the rear of the saw.
- 1-g **Arbor Access Hole.** During a blade change, the arbor screw can be accessed through this opening.
- 1-h **Riving Knife Access Hole.** The retaining screw for the riving knife is accessible through this opening.

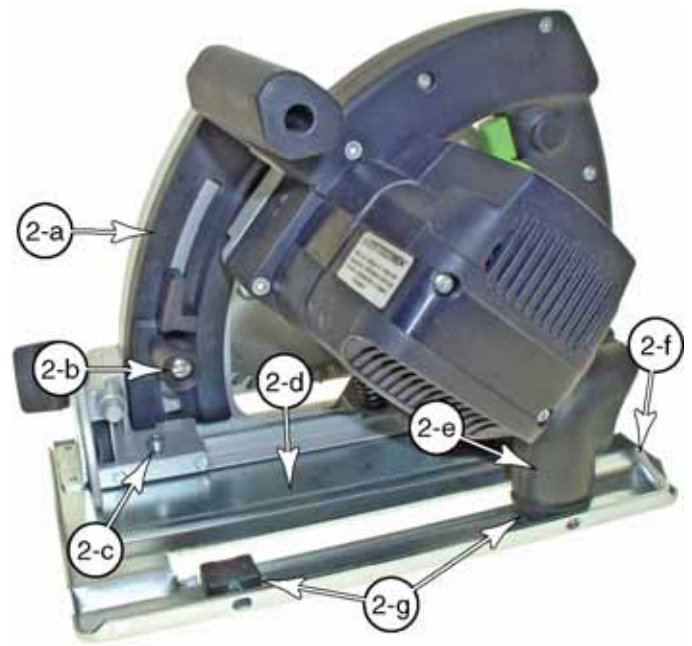


Figure 2

- 2-a **Plunge Depth Scale.** Used with the plunge depth stop (2-b), this sets the depth of cut.
- 2-b **Plunge Depth Stop.** This sets the limit on how deep the blade will travel into the cut.
- 2-c **90-degree Stop Screws.** The screws are for fine adjustment so the blade is at 90 degrees to the sole plate.
- 2-d **Sole Plate.**
- 2-e **Dust Deflector Storage.** When the saw is used with a vacuum, the dust deflector can be stored on top of the rear guide rail gib.
- 2-f **Hex Key Storage.** The hex key for changing the blade is stored here.
- 2-g **Guide Rail Gibs.** These are adjusted so the saw fits snugly on the guide rail. (The second gib is not visible underneath the dust deflector (2-e).

Single-point Entry



Single point entry means that the sawblade always enters the cut at the same location regardless what the bevel angle is set to. The pivot point of the bevel adjustment is located at the bottom edge of the splinter guard (3-a). This means that the cut will always be along the splinter guard for any bevel setting.

(Note that this is applicable only when the guide rail is used. When the guide rail is not under the saw, the bevel cut will move slightly outward, away from the main body of the saw.)

Motor Controls



Figure 4

- 4-a **Speed Control Knob.** The ATF 55E has electronic variable speed control that maintains a constant speed under varying loads. Turn this dial to change speed from 2100 to 5100 RPM.
- 4-b **Speed Control Pointer.** When setting the speed control, line up the numbers on the speed control knob with this pointer.
- 4-c **Motor Power (Green).** This green LED indicates when the motor is receiving power. This LED should be ON during normal cutting operations.
- 4-d **Motor Overload (Red).** This red LED indicates when the motor is being loaded within 70% of maximum power. When this LED turns ON, you should slow the feed rate of your cut.

Additional Motor Features

Soft Start: When the motor is first started, it will come up to speed slowly. This prevents the saw from jumping during startup. This also extends the life of the components within the saw.

Overcurrent Protection: If the motor is loaded to the point where it can no longer maintain its set speed and the current exceeds the safe limitation of the motor, it will shut down operation to protect the motor.

Thermal Overload Protection: To protect the motor under excessive loading, it is equipped with thermal overload protection. This prevents the motor from being damaged due to overheating. The motor is disabled until it has cooled down. Wait 3 to 5 minutes for the overload protection to automatically reset.

Riving Knife



Figure 5

- 5-a **Riving Knife:** The riving knife is a safety feature that prevents the cut from closing and binding on the sawblade. This reduces the chances for a kickback. (See page 4 for more information on kickbacks.)
- 5-b **Retaining Screw:** The retaining screw holds the riving knife in position. Use this screw when removing or adjusting the riving knife. (See page 11 for more information on removing and adjusting the riving knife.)

Technical Specifications

Power Consumption	1200 Watts (10 amps @ 120 volts)
Weight	4.9 kg (10.8 lbs)
Speed Range	2,100 to 5,100 RPM
Blade Diameter	160 mm
Arbor Diameter	20 mm/Round
Maximum Depth of Cut (using the guide rail)	50 mm @ 90°, 37 mm @ 45° (1-15/16 in. @ 90°, 1-7/16 in. @ 45°)
Bevel Angle	0 to 45 degrees
Certifications	IEC 745, UL745, CSA C22.2/745

All metric dimensions are binding.
Only metric sawblades should be used.

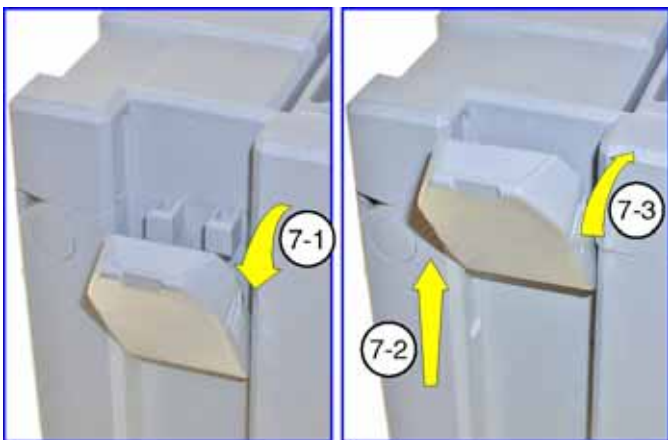
Systainer (System Container)

Every Festool product is shipped in its own unique system container, called a "Systainer". This provides protection and storage for the tool and accessories. All Systainers are stackable and can be interlocked together, including stacking and locking atop Festool dust extractors.



Figure 6

- 6-a **Carrying Handle.** The handle folds flat when not in use.
- 6-b **Cover Latches.** These secure the cover and also secure one systainer to another as described below.
- 6-c **Stacking Tabs.** These are used to lock two systainers together. There are four sets of tabs (two on the front and two on the sides) of each systainer.
- 6-d **Stacking Latches.** These are similar to the cover latches, but they serve the purpose of latching onto the side stacking tabs of a systainer stacked above the systainer.



Stacking Systainers (Figure 7)

Figure 7 shows how the four latches (2 stacking latches and 2 cover latches) are repositioned so they will engage the stacking tabs of the upper systainer.

1. Place one systainer on top of the other.
2. Release all four latches on the lower systainer by pulling back at their top edges (step 7-1).
3. Slide all four latches upward (step 7-2) as depicted by the two views of figure 7.
4. Snap all four latches back to their flat position (step 7-3) so they engage the stacking tabs (item 6-c) of the upper systainer.

Setup and Adjustments

Setting up and Adjusting a New Saw

⚠WARNING: Always disconnect the saw from the power supply before making any adjustments to the saw or installing or removing any accessory!

Follow this sequence of inspections and adjustments before using a new saw. It is important that this sequence be followed before cutting the zero-clearance splinter guard.

1. With the saw unplugged, inspect the blade for damage and make sure it is properly secured to the arbor. (Refer to "Changing the Sawblade" on page 12 for more information).

⚠WARNING: Check regularly whether the saw blade is in good condition. Saw blades which are cracked, damaged, or deformed should no longer be used.

2. Verify that the riving knife is properly secured and adjusted (refer to page 11 for more information).

⚠CAUTION: The ATF 55 E is fitted with a riving knife. All saw work, with the exception of plunge cuts, should be carried out only with the riving knife installed and correctly set!

3. Perform the guide rail gib adjustment procedure described on page 8.
4. Only after all other inspections and adjustments have been completed, cut the zero-clearance splinter guard as described on page 8.

Adjusting the Guide Rail Gibs

The guide rail gibs keep the saw's sole plate tightly aligned with the rib of the guide rail system. There is one adjustment gib at the front of the saw and one at the rear. Both need to be adjusted.



Figure 8

8-a Adjustment Gib

8-b Adjustment Screw (not visible)

8-c St

Setting the Blade Perpendicular to the Sole plate

This adjustment ensures that cuts are made square to the workpiece surface. This adjustment is completed at the factory and shouldn't need to be adjusted unless the tool has been modified or serviced.

The most accurate method for checking the square of the blade is to make a cut with the saw and examine the resulting cut.

For even greater accuracy, the procedure below uses a method that amplifies a small measurement into a larger measurement to make it easier to observe. This doubles the accuracy of the adjustment.

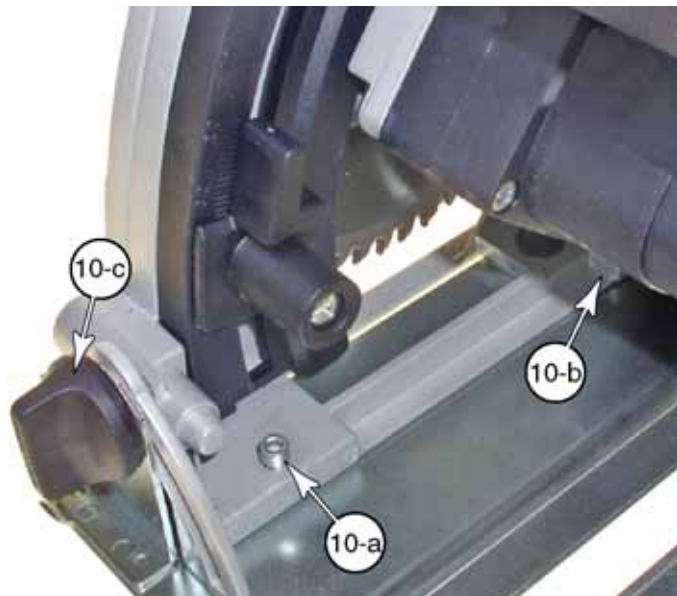


Figure 9

- 10-a Front 90-degree Stop Screw
- 10-b Rear 90-degree Stop Screw (not visible)
- 10-c Bevel Lock knobs (one front and one rear)

Adjustment Procedure

1. Using the guide rail, carefully cut a small piece of wood in half.
 - ▶ This is a precision adjustment. Make sure the guide rail and workpiece are securely clamped.
 - ▶ The piece should be at least 20 mm thick and about 30 cm square ($\frac{3}{4}$ inch thick by 12 inches square).
 - ▶ The thicker the piece, the more accurate the adjustment will be.
 - ▶ For best results, the material should have a consistent center, such as Medium Density Fiberboard (MDF), plastic, or solid lumber.
2. Place the two pieces back together to verify that the original cut-line is tight (11-b). If the cut-line is not tight, make a new cut.
3. Flip the offcut board (11-a) end-for-end so the cut-line is still together, but the board is upside down. (Don't flip the board that was under the saw.)
4. Inspect the joint between the two boards:
 - ▶ If there is no gap then the adjustment is correct.
 - ▶ If the gap is at the top of the two boards (11-c), then turn the adjustment screws clockwise.
 - ▶ If the gap is at the bottom of the two boards (11-d), then turn the adjustment screws counterclockwise.
5. Loosen the front and rear bevel lock knobs (10-c).
6. Turn the two stop screws (10-a and 10-b) in the direction determined in step 4. (Make sure to turn both screws the same amount.)

Each turn of the adjustment screw will have the following effect:

 - ▶ 1 turn equals 1 degree of adjustment.
 - ▶ 1 turn equals $\frac{1}{2}$ mm of gap between the boards shown above (assuming 20 mm ($\frac{3}{4}$ inch) thick)

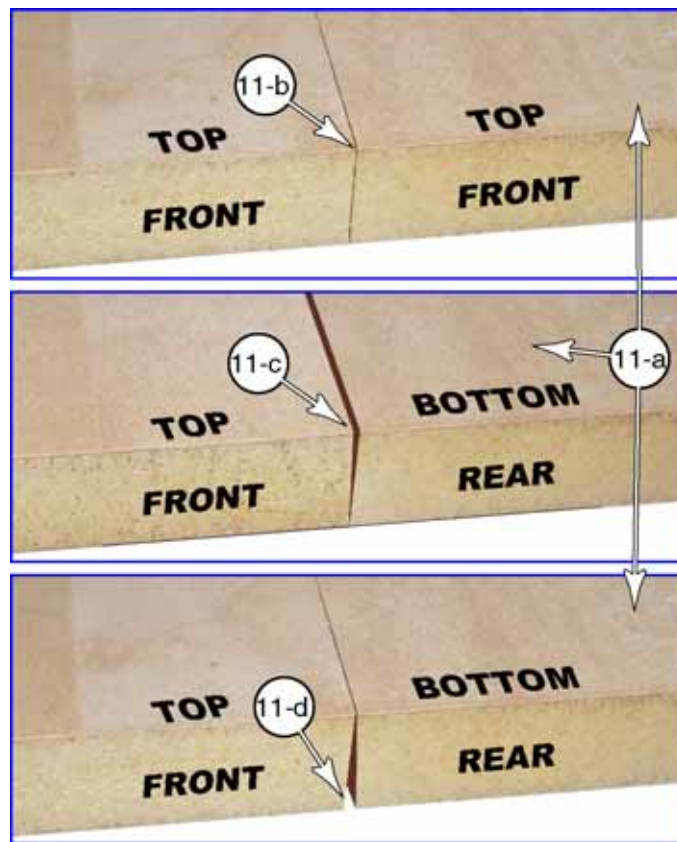


Figure 11

Figure 11 shows three views of a board that has been cut in half with the saw. This is used to calibrate the adjustment.

- 11-a **Offcut.** This is the scrap-side of the cut.
- 11-b After being cut, the two halves of the board are placed back together to verify that the original cut-line is tight.
- 11-c and 11-d After the offcut is flipped end-for-end, the bevel-error becomes visible.

Adjusting the Blade Position

Adjusting the position of the blade with respect to the guide rail system consists of two interrelated adjustments – Blade Distance and Blade Skew. Both of these adjustments are completed at the factory and should be altered only if the saw is damaged, modified, or needs to match other Festool products.

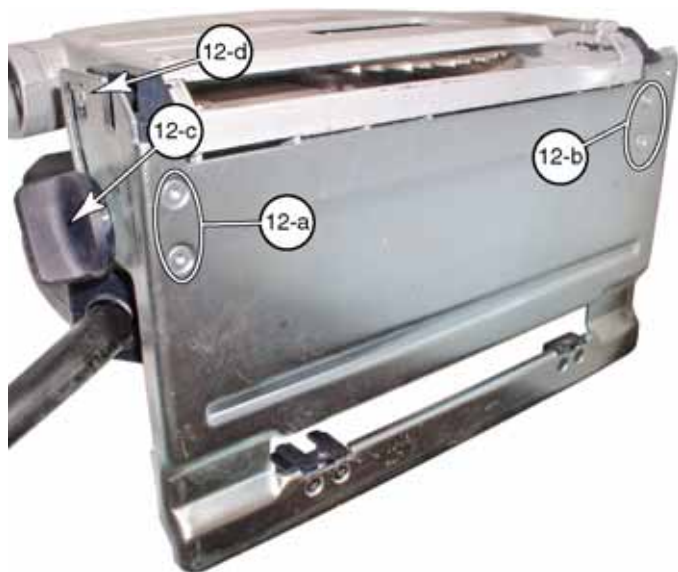


Figure 12

12-a Sole Plate Rear Adjustment Screws.

12-b Sole Plate Front Adjustment Screws.

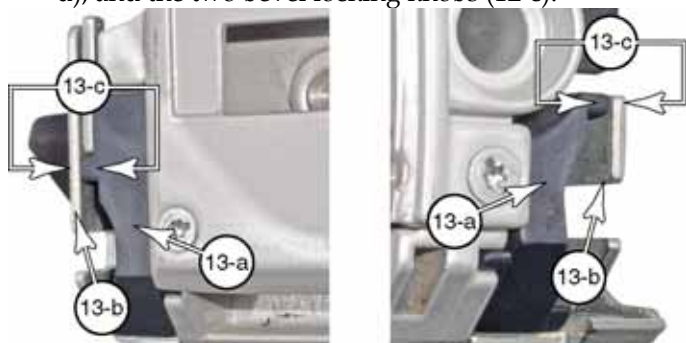
12-c Bevel Locking Knob (front knob not visible).

12-d Bevel Angle Pointer Screw.

Blade Distance

In most cases, only the blade skew needs to be adjusted (the second half of this procedure). Adjust the blade distance only if any of the following are true:

- ▶ The blade is not cutting along the splinter guard,
 - ▶ A new saw needs to be matched to an existing saw or guide rail system, or
 - ▶ To restore the factory default distance prior to replacing the splinter guard. (Do not install a new splinter guard until after this procedure is complete.)
1. Loosen (but do not remove) the four sole plate adjustment screws (12-a and 12-b), the bevel angle pointer screw (12-d), and the two bevel locking knobs (12-c).



2. Slide the sole plate in or out until one of the following conditions is met (depending on the need for this adjustment):
 - ▶ For the factory default setting, align the tips of the hinge blocks (13-a) to be flush with the tips of the hinge brackets (13-b) as show with

4. After the cut is complete, unplug the saw for safety, but leave it on the guide rail.
5. Lower the sawblade to its maximum depth and examine the gap between the blade and the workpiece using a regular piece of paper as a thickness gauge.
 - ▶ The front of the blade should be tight to the workpiece. You should not be able to slip the paper between the blade and workpiece.
 - ▶ The rear of the blade should be 0.15mm away from the workpiece. The paper should fit loosely between the blade
6. If an adjustment is necessary, loosen the rear bevel locking knob and move the back of the saw until the 0.15mm gap is achieved.
7. Retighten the bevel locking knobs before removing the saw from the guide rail, and then retighten the other screws. (Set the bevel pointer to zero before tightening the screw.)

Replacing the Splinter Guard

The splinter guard prevents splintering and chipping of the workpiece by holding the top edge of the workpiece down as the teeth of the sawblade move upward against it. The splinter guard needs to be replaced if it becomes damaged or worn.

Because the splinter guard is trimmed by the sawblade, it is important that the sawblade is properly adjusted before replacing the splinter guard. Verify and/or perform the "Adjusting the Blade Position" procedure described on page 10 before replacing the splinter guard.

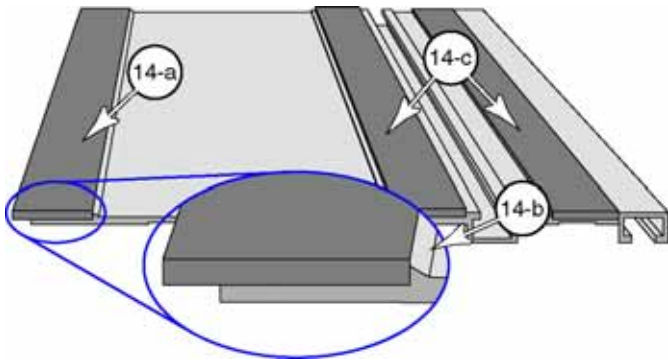


Figure 14

14-a Splinter Guard

14-b Alignment Rib

14-c Friction Strips

Replacement Procedure

1. Peel the original splinter guard away from the guide rail.
2. As needed, clean residual adhesive and debris from the guide rail.
3. Peel off the plastic backing from the new splinter guard to expose the adhesive.
4. Without stretching the rubber, carefully place the new splinter guard on the underside of the guide rail tight to the alignment rib (14-b).
5. Make sure the splinter guard is firmly pressed down to the guide rail.
6. Trim the splinter guard as described on page 8.

Removing/Replacing/Adjusting the Riving Knife

The riving knife must be removed before a plunge cut can be made. After it is reinstalled, it must be adjusted for proper clearance.

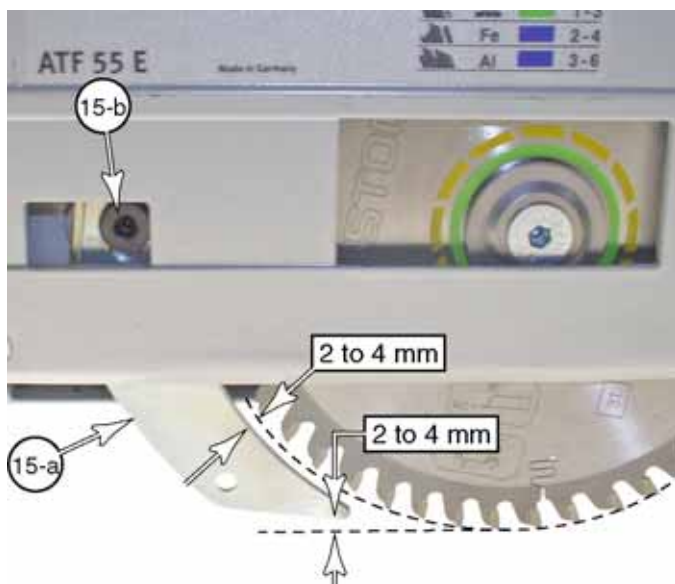


Figure 15

15-a Riving Knife

15-b Adjustment Screw

Removal Procedure

1. Unplug the saw.
2. Loosen the adjustment screw (15-b).
3. Remove the riving knife and retighten the adjustment screw.

Replacement/Adjustment Procedure

1. Unplug the saw.
2. Loosen the adjustment screw (15-b).
3. Insert the riving knife under the adjustment screw.
4. Move the riving knife to achieve the clearance from the blade as shown in figure 15.
5. Tighten the adjustment screw.

Changing the Sawblade

Sawblade Checks and Warnings

- ▶ Use only sawblades that are approved for use with the saw, and appropriate for the type of material being cut.
- ▶ Use only sawblades with a diameter of 160 mm, and an arbor bore of 20 mm.
- ▶ Do not use a sawblade that is bent or warped.
- ▶ Do not use a sawblade with missing or damaged teeth.
- ▶ The hex key provided with the saw is specifically designed not to cam-out and damage the arbor bolt. Do not use a standard Allen wrench or hex key.

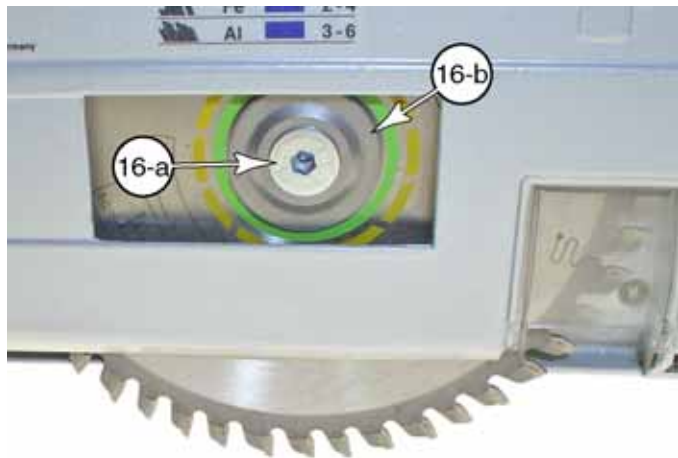


Figure 16

- 16-a Arbor Screw
- 16-b Arbor Flange

Removal Procedure

1. Unplug the saw.
2. Lower the blade until the arbor screw (16-a) is accessible as shown.
3. Press down on the arbor lock (figure 1-c).
4. Using the hex key stored on the sole plate (figure 2-f), unscrew the arbor screw by turning it counterclockwise (standard thread), and remove the arbor screw (16-a) and arbor flange (16-b).
5. Remove the sawblade out the bottom of the saw.

Replacement Procedure

1. Insert the new blade up through the bottom of the saw, and place it on the arbor. Make sure the blade teeth are pointing forward as shown.
2. Place the arbor flange over the arbor, and rotate it until the tabs line up with the slots in the arbor.
3. Make sure the arbor and arbor flange are properly seated with one another.
4. Insert and tighten the arbor screw.

Operation

Setting the Blade Depth

The ATF 55 E is equipped with a plunging depth-stop for setting the blade depth.

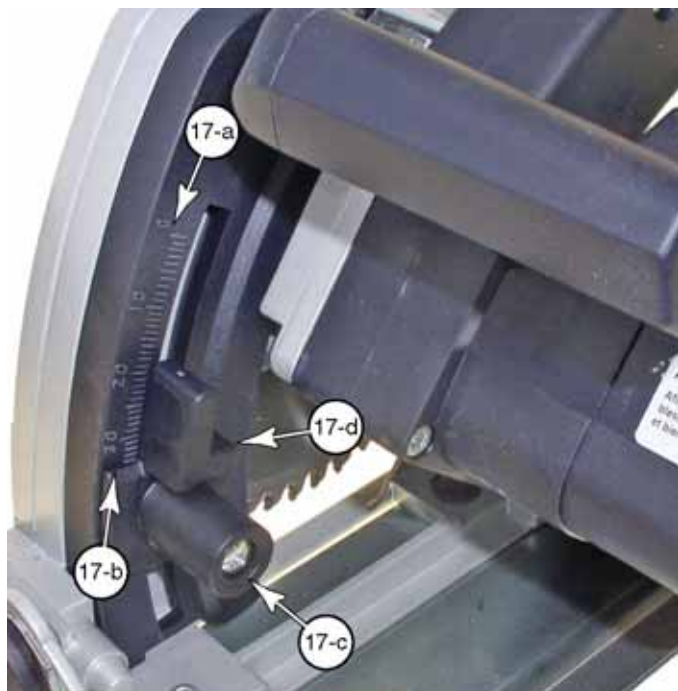


Figure 17

- 17-a Depth Gauge
- 17-b Pointer
- 17-c Lock Button
- 17-d Depth Stop

Adjustment Procedure

1. Determine the optimal blade depth:
 - ▶ The depth of the blade is determined by the depth gauge in millimeters (17-a).
 - ▶ For optimal chip-free cutting in plywood and hard plastics, the sawblade should be slightly below the bottom of the material (about 1/2 of a blade tooth).
 - ▶ For dense hardwoods, softer plastics, and aluminum (where chipping is less of a concern) the blade should be set a little deeper. At a deeper setting, the blade cuts more efficiently.
2. Push in on the lock button (17-c) and slide the depth stop (17-d) to the desired depth.
 - ▶ Add 5 mm to account for the thickness of the guide rail.

Speed Control

The ATF 55E has electronic speed control so the speed of the blade remains constant regardless how much the motor is loaded. The speed of the motor should be set according to the type of material being cut.



Figure 18

18-a Speed Control Knob

18-b Pointer

18-c Power Indicator

Adjustment Settings

Turn the speed control knob (18-a) so the speed indicator lines up with the pointer (18-b).

Material	Speed
Soft wood products and veneer plywoods	6
Hardwood products prone to burning when cut (i.e. cherry and maple)	3-6
Plastic laminate countertops	6
Hard plastics	3-5
Soft plastics	1-4
Masonry and cementitious hardboard	1-3
Aluminum	4-6

Power Switch



Figure 19

19-a Plunge Release Lever

19-b Power Switch (trigger)

To prevent unexpected start-ups, the power switch has an integral safety interlock. Before the saw can be started, the plunge release must be engaged.

1. Press up on the plunge release lever.
2. Pull back on the power trigger.

Bevel Setting



Bevel cuts are made when the blade is tilted with respect to the sole plate.

Figure 20

20-a Front Locking Knob

20-b Rear Locking Knob

20-c Bevel Setting Gauge

Setting the Bevel Angle

1. Loosen the front (20-a) and rear (20-b) locking knobs.
2. Tilt the saw to the desired angle as indicated on the bevel setting gauge (20-c).
3. Re-tighten the two locking knobs.

Dust Extraction

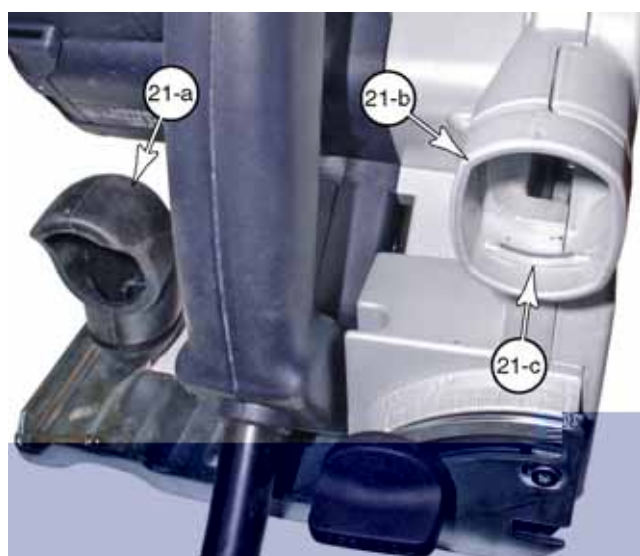


Figure 21

- 21-a Diverter Storage
- 21-b Dust Port
- 21-c Retaining Ribs

The ATF 55E can be used with the standard dust extraction diverter or with a vacuum system. When not in use, the diverter is stored on the sole plate of the saw (21-a). For best performance, a vacuum system is recommended.



Figure 22

Figure 22 shows the diverter (22-a) installed and directing the dust to the side. The diverter can be rotated so dust can be directed downward or to the side.

Connect either the diverter or a vacuum hose, by pressing the end into the dust port (21-b) of the saw. The dust port has two ribs (21-c) that hold the extractor in place. Tilting the hose slightly to engage one rib first and then the other works best.

Basic Sawing

Intended Use

The ATF 55 E is designed exclusively for the sawing of wood, wood-like materials and plastics. With the special saw blades for aluminum offered by Festool, this tool can also be used for sawing aluminum. This tool should not be used for processing other materials. The saw should not be converted

or modified for any other form of use, other than as specified in these operating instructions.

⚠WARNING: The user is solely responsible for any damage or accident should the machine be used for other than its intended purpose



Figure 23

- 23-a The optional guide rail clamp holds the guide rail to the workpiece.
- 23-b The blade is lowered to cutting depth before entering the cut.
- 23-c The optional cord guide prevents the power cord and vacuum hose from catching on the end of the guide rail.

Safety Checks

- ▶ Inspect the saw for loose parts and for proper operation.
- ▶ Inspect the area underneath the cutting path to make sure you will not cut through other objects.
- ▶ Make sure the power cord is behind the saw and not within the cutting path.
- ▶ Before beginning the cut, make sure the sawblade is at operating speed.
- ▶ During the cut, if the "Motor Overload" light turns on, slow down the feed rate of the saw (see Motor Controls on page 6).
- ▶ Push the saw forward to cut. Never pull the saw back, as this can cause the saw to jump backward unexpectedly.

Operation

1. Set the plunge depth (page 12).
2. Set the motor speed (page 13).
3. Place the saw on the guide rail and behind the start of the cut as shown in figure 23.
4. Press upward on the plunge release lever and pull back on the power trigger.
5. Wait for the motor to come up to full speed.
6. Plunge the saw down until it reaches the depth stop.
7. Firmly hold the saw with both hands and push it through the cut, away from your position.
8. After the cut is complete, release the power trigger and hold the saw steady until the blade comes to a complete stop.

Making Plunge Cuts



Figure 24

- 24-a **Guide Stop.** This guide rail accessory limits the travel of the saw and is necessary for safely making plunge cuts (also shown in 25-a).
- 24-b **Clamping Knob.** Tighten this knob to secure the stop to the guide rail.
- 24-c **Direction Arrow.** This arrow must point forward.
- 24-d The leading edge of the guide stop overlaps the saw's sole plate to stop the saw from lifting up (causing a kickback) during the initial plunge.

Operation

1. Remove the riving knife as described on page 11.
2. Place the saw on the guide rail where the cut should begin. (A mark on the face of the saw indicates the back of the cutting position when the blade is set to full depth.)
3. Slide the guide stop (24-a and 25-a) up to the sole plate and lock it down.
4. Set the blade speed. (To avoid burning the wood during the initial plunge, set the blade speed lower than normal for the type of material.)
5. Turn on the saw and slowly plunge the blade into the cut.
6. Move the saw forward until the cut is complete.

Troubleshooting

Symptom	Possible Causes
Motor does not start and no indicator lights come on	<ul style="list-style-type: none"> ▶ Check that the cord is properly plugged into an outlet. ▶ Make sure the outlet has power. Check the circuit breaker or try another outlet. ▶ If used with a Festool dust extractor, make sure the selector switch is pointing to "Auto". The auxiliary outlet on the dust extractor has power only when the selector is at Auto. ▶ Inspect the power cord (including extension cords) for damage or missing prongs.
Motor does not start but the power indicator (Green LED) is illuminated	<ul style="list-style-type: none"> ▶ The brushes have worn and need replacement. When the brushes wear to a certain point, the saw stops running to prevent damage to the motor.
The overload light (Red LED) comes on frequently	<ul style="list-style-type: none"> ▶ The saw may not be getting enough power due to a voltage drop caused by a long or light gauge extension cord. Use a heavier gauge cord. ▶ The wrong blade is being used or the feed rate is too fast. ▶ The rear of the blade may be too close to the cut. Adjust the blade skew setting on page 10. ▶ The motor bearings may be worn. Send the saw in for service.
The saw makes a "Growling" sound when it is first turned on or idling.	<p>This sound is normal and expected. It is the result of the gears in the saw's heavy duty drivetrain reacting to the speed control of the motor.</p> <p>The speed of the motor is controlled by turning the motor On and Off very rapidly. This form of speed control is called "Pulse-Width Modulation" (PWM), and is common in most power tools with a variable speed control. When there is no load on the sawblade, the pulsations of the motor cause the gears to rapidly engage and disengage (called backlash), and this is the sound you are hearing.</p>
The saw makes wavy cuts	<ul style="list-style-type: none"> ▶ Make sure the guide rail gibs are properly adjusted. ▶ Inspect the blade for damage. ▶ Make sure the sole plate is not rocking on the guide rail. It is acceptable if the center of the sole plate is concaved, but all four corners should touch the guide rail. ▶ Keep the blade depth consistent during the cut; don't raise and lower the blade. ▶ Forcing an ATB-type blade into the cut too fast can cause the blade to deflect. ▶ The rear of the blade may be too close to the cut. Adjust the blade skew setting on page 10.
Saw cuts are burning	<ul style="list-style-type: none"> ▶ Make sure to use the correct blade for the material. ▶ Make sure the blade is sharp. ▶ Make sure the blade is installed correctly (not turning backward). ▶ Reduce the motor speed. ▶ The rear of the blade may be too close to the cut. Adjust the blade skew setting on page 10. ▶ If possible, increase the blade depth.
Excessive chipping on the lower edge of the cut	<ul style="list-style-type: none"> ▶ Make sure to use the correct blade for the type of material and type of cut. ▶ The rear of the blade may be too close to the cut. Adjust the blade skew setting on page 10. ▶ A very shallow blade depth can cause chipping on the underside if the teeth are barely protruding below the surface. Increase the blade depth.
Excessive chipping on the top edge of the cut	<ul style="list-style-type: none"> ▶ Make sure to use the correct blade for the type of material and type of cut. ▶ Inspect the splinter guard. Make sure it is flush with the cut line for its entire length. ▶ Materials prone to splintering may splinter more if the blade is set too deep.

Maintenance

Routine Maintenance

Any maintenance or repair work that requires opening of the motor or gear housing should be carried out only by an authorized Customer Service Center (name supplied by your dealer)! Maintenance or repair work carried out by an unauthorized person can lead to improper connection of electrical wires or other components, which can result in injury.

To prevent injury or electrocution, always unplug the tool from the power supply outlet before performing any maintenance or repair work on the tool!

Do not use compressed air to clean the motor housing of the tool, as you could inject foreign objects into the motor through the ventilation openings. Compressed air may be used on other components, but personal safety protection should be employed (hearing, vision, and respiratory).

Certain cleaning agents and solvents are harmful to plastic parts. Some of these include, but are not limited to: Gasoline, Acetone, Methyl Ethyl Ketone (MEK), Carbonyl Chloride, cleaning solutions containing Chlorine, Ammonia, and household cleaners containing Ammonia.

To ensure proper cooling of the tool and motor, the cooling vents in the motor housing must always be kept clear and clean.

Keep the Saw Clean

Dust and debris from some materials can be extremely abrasive and cause components within the saw to wear prematurely. It is important to keep moving parts cleared of abrasive dusts.

- ▶ As a general rule, keep the saw clean of all dust and debris. Even soft-wood dust can be abrasive over time.
- ▶ Examine all moving parts for dust and debris.
- ▶ Keep the bevel hinges (figure 13) clean of dust using compressed air or cotton swabs. If the hinges wear due to abrasive particles, the saw will not perform optimally.

- ▶ Keep the blade area and dust extraction ports clean of debris. Debris can cause wear and reduce the effectiveness of the dust extraction system.

Keep the Sawblades Sharp

Using a dull sawblade can be extremely dangerous and provide poor cut quality.

- ▶ Never attempt to sharpen a sawblade manually. Special equipment is necessary to properly sharpen a circular sawblade. An improperly sharpened sawblade can injure the operator, destroy the saw, and damage the workpiece.
- ▶ The sawblades should be sharpened regularly, and only by a qualified sharpening service.
- ▶ Improper grinding of the carbide teeth of a sawblade can result in serious injury to the saw operator.

Adjust and Inspect the Saw

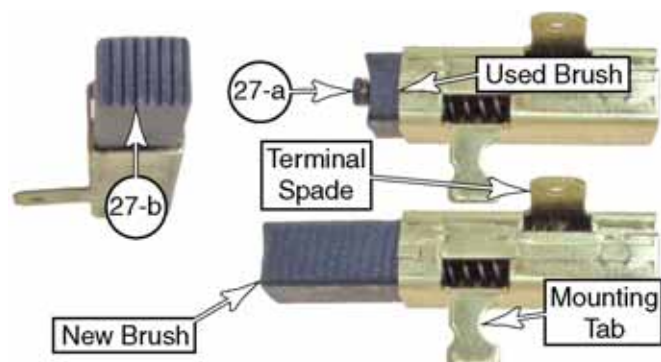
To ensure the saw is in proper working order, periodically inspect the operation of the saw and ensure it is properly adjusted.

- ▶ Observe the function of the saw during normal operation.
- ▶ Unusual sounds are indicative of pending problems.
- ▶ A reduction in the cut quality indicates the saw is either improperly adjusted or not functioning properly.
- ▶ A reduction in cutting power or speed may indicate a dull blade or a motor problem.
- ▶ If any of the safety devices on the saw are inoperable or disabled, immediately stop using the saw and have it serviced.
- ▶ Periodically inspect the guide rail gibs for wear and proper adjustment. If the gibs are worn or misadjusted, the saw will not cut straight.

Changing the Motor Brushes

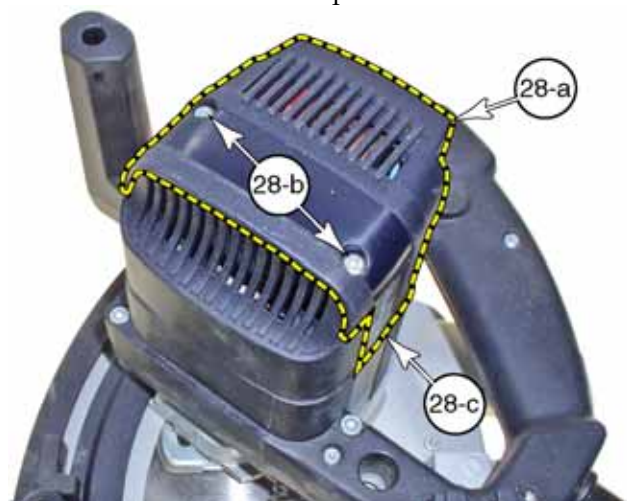
This procedure should be completed only by an authorized Festool service representative. Opening the motor cover WILL void your warrantee. This procedure is presented as informational only.

The motor brushes are graphite bars that provide an electrical connection between the motor controller and the rotating armature. The brushes wear over time and need to be replaced. When the brushes have worn past their useful length, spring loaded pins (27-a) are exposed that separate the brush from the armature contacts. This disables the motor to prevent damage. When the brushes are worn, the green power indicator (figure 4-c) will illuminate when the saw is powered, but the motor will not run. For a shorter break-in period without excessive arcing, new brushes have ribs (27-b) that quickly form to the curve of the armature.

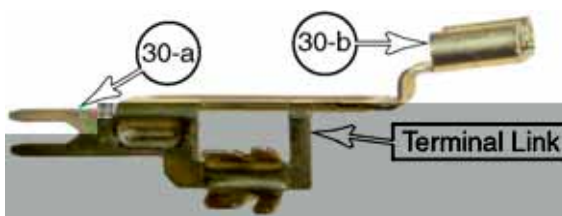


⚠WARNING: Make sure the power cord is unplugged before beginning this procedure. Failure to do so may result in electrocution.

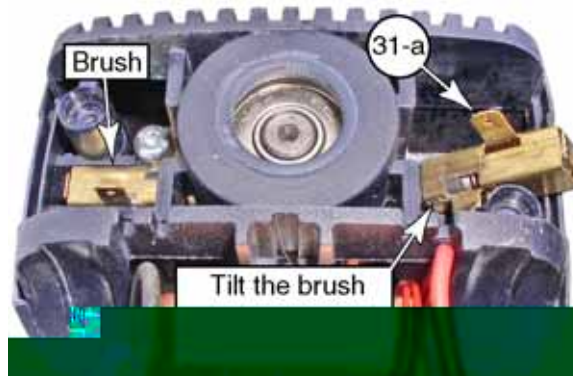
1. Remove the two screws (28-b) that secure the access cover (28-a) to the motor.
2. As necessary, cut or remove any labels that may cover the seams between the motor and the access cover (28-c, both sides).
3. Remove the cover to expose the motor and brushes.



4. Lift the terminal links (29-a and figure 30) straight up off the brushes and out of their sockets (29-c).
5. Remove the two screws (29-b) that secure the brushes to the motor housing. Be careful not to drop the screws into the motor.



6. The brushes are spring-loaded in their brass sleeves. During both removal and replacement, tilt the brushes as shown in figure 31 to clear the motor housing.

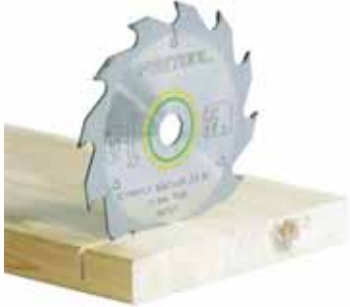







Replacement Notes

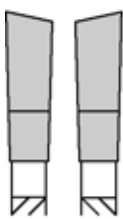
- ▶ When replacing the brushes, tilt them into position as shown in figure 31, and compress the spring loaded brush assembly as you insert them into their mounting slots.
- ▶ When replacing the terminal links (figure 30), make sure the forked spades (30-a) are inserted into the sockets (29-c), and the lugs (30-b) are connected to the spades on the brushes (31-a).
- ▶ Finish the procedure by reversing the remainder of the removal steps.
- ▶ Note that during the break-in period while the new brushes conform to the shape of the armature contacts, the brushes may exhibit more arcing (sparking) than normal. The ribs (27-b) on the new brushes are intended to minimize the arcing during the break-in period.

Accessories

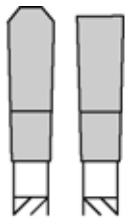
Sawblades

			
Description	Coarse Crosscut	Ripping (Panther)	Combination
Purpose	With a low tooth count and a high hook angle, this blade easily cuts through general construction materials.	The high hook angle of the Panther blade makes for effortless ripping without burning the cut.	With a moderate tooth count and hook angle, this blade provides good results when a single blade is needed for crosscutting and ripping.
Tooth Type	ATB, 12 teeth	ATB, 14 teeth	ATB, 28 teeth
Hook Angle	20°	37°	15°
Item Number	487 377	439 685	490 516
			
Description	Fine Crosscut	Fine Laminate	Aluminum and Plastic
Purpose	With a high tooth count, this blade provides excellent, chip-free crosscutting of lumber and fine (cabinet-grade) plywood.	The ultra-hard TCG teeth on this blade provide chip-free cutting of laminates and solid surface materials without dulling.	The negative hook angle and high TCG tooth count of this blade provides grab-free control for cutting aluminum and hard plastic.
Tooth Type	ATB, 48 teeth	TCG, 48 teeth	TCG, 56 teeth
Hook Angle	12°	4°	-5°
Item Number	491 952	489 457	439 686

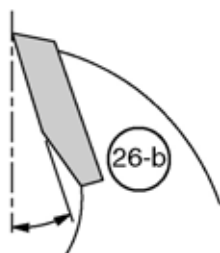
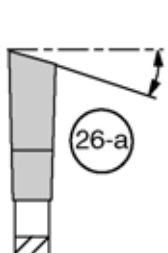
Notes



ATB



TCG



ATB: Alternate Top Bevel. The ATB type blade slices through wood fibers, first on one side and then on the other for clean cuts in natural and manmade materials.

TCG: Triple Chip Grind. The TCG type blade is designed to cut through hard materials. The trapezoidal tooth cuts the center of the kerf and the flat raker tooth cuts the edges. This type of blade design is more resistant to dulling.

26-a Bevel Angle: All of the ATB-type blades shown above have a bevel angle of 15°. This moderate bevel angle provides good chip-free cutting without rapidly dulling.

26-b Hook Angle: The higher the hook angle, the more the tooth grabs the material and pulls it into the cut. Ripping blades have a very high hook angle to cut aggressively. Lower hook angles are used for harder materials where greater control is needed.

Tooth Count: The more teeth a blade has, the smoother it will cut. Conversely, blades with fewer teeth cut more aggressively.

Guide Rail Accessory Kit

Item Number: 492 396

Contains: Miter Gauge, Splinter Guard, Guide Stop, Cord Guide, Guide Rail Connection Bars, Guide Rail Clamps, Systainer.



Universal Tool (Toolie)

Item Number: 490 833

This single tool contains all of the drivers and keys necessary to adjust any Festool tool. (**Exception:** Note that the arbor bolt on the saw uses a special hex key for changing blades. Using the Toolie can damage the arbor bolt.)

Contains: 2.5, 4.0, 5.0, 6.0 mm Hex Keys; T10, T15, T20 Torx Drivers; 4.5 mm Straight Blade; #2 Pozidrive



Rip Fence

Item Numbers: 483 278 and 484 583

Use the rip fence instead of the guide rail for making a rip using the edge of the workpiece as a reference.



Warranty

Conditions of 1+2 Warranty

You are entitled to a free extended warranty (1 year + 2 years = 3 years) for your Festool power tool. Festool shall be responsible for all shipping costs during the first year of the warranty. During the second and third year of the warranty

the customer is responsible for shipping the tool to Festool. Festool will pay for return shipping to the customer using UPS Ground Service. All warranty service is valid 3 years from the date of purchase on your receipt or invoice.

Festool Limited Warranty

This warranty is valid on the pre-condition that the tool is used and operated in compliance with the Festool operating instructions. Festool warrants, only to the original consumer purchaser, that the specified tool will be free from defects in materials and workmanship for a term of one year from the date of procurement. Festool makes no other warranty, express or implied, for Festool portable power tools. No agent, representative, distributor, dealer or employee of Festool has the authority to increase or otherwise change the obligations or limitations of this warranty. The obligations of Festool in its sole discretion under this warranty shall be limited to the repair or replacement of any Festool portable power tool that is found to be defective as packaged with the User Manual.

Excluded from coverage under this warranty are: normal wear and tear; damages caused by misuse, abuse or neglect; damage caused by anything other than defects in material and workmanship. This warranty does not apply to accessory items such as circular saw blades, drill bits, router bits, jigsaw blades, sanding belts, and grinding wheels. Also excluded are "wearing parts", such as carbon brushes, lamellas of air tools, rubber collars and seals, sanding discs and pads, and batteries.

Festool portable power tools requiring replacement or repair are to be returned with the receipt of purchase to Festool (call 800-554-8741 for address details).

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Written and illustrated by Rick Christopherson.

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