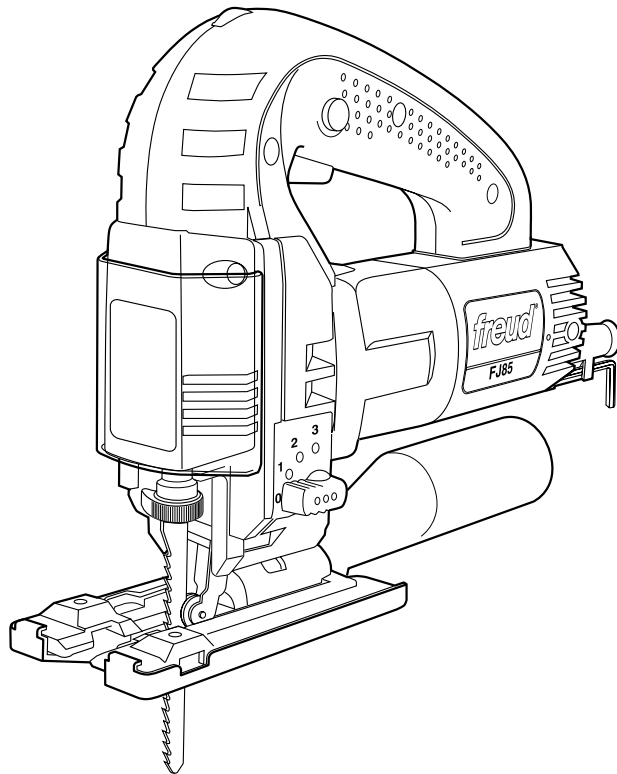


OPERATING INSTRUCTIONS

freud[®]



FJ85 Orbital Jigsaw

⚠ WARNING: To reduce the risk of injury, the user must read and understand the operating instructions before using this product.



TABLE OF CONTENTS

	Page
Safety	3
General Safety Rules.....	3
Additional Safety Rules for Jig Saws.....	3
 Functional Description and Specifications	
Symbols	
Parts and Features Diagram	
Specifications	
 Assembly and Operation	
Prior to Operation	
Blade Installation	
Adjusting Blade Speed	
Base Plate Adjustment	
Splinter Guard	
Chip Guard	
Dust Extraction	
 Cutting	
Wood Cutting	
Metal Cutting	
Cutting straight lines, curves, circles, and arcs	
Pocket Cutting	
Angular Cutting	
Blade Selection	
 Maintenance & Inspection	
Service	
Tool Lubrication	
Bearings	
Brushes	
Commutator	
Inspect Blade	
Inspect Tool Screws	
 Accessories	
Standard	



SAFETY

⚠ WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious personal injury.

SAVE THESE INSTRUCTIONS

GENERAL SAFETY RULES

1. Work Area

- a) Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents which could result in personal injury
- b) 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.
- c) Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

2. Electrical Safety

- a) 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.
- b) Prevent 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.
- c) Do not expose power tools to rain. Do not use power tools in damp or wet locations. Water entering a power tool will increase the risk of electric shock.
- d) Do not abuse the cord. Never carry the tool by the cord or yank the cord to pull the plug from a receptacle. Keep cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
- e) 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.

3. Personal Safety

- a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not operate a tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
- b) Dress properly. Do not wear loose clothing or jewelry. Wear protective hair covering to 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. Rubber gloves and non-skid footwear are recommended when working outdoors.
- c) Avoid unintentional starting. Be sure switch is off before plugging in. Do not carry tools with your finger on the switch or plug in tools that have the switch turned on
- d) Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
- e) Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in any situation.
- f) Use safety equipment. Always wear protective glasses. Also use a face or dust mask if cutting operation is dusty.



4. Tool Use and Care

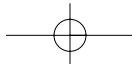
- a) Secure your work. Use clamps or a vise to secure and support the work piece to a stable platform. Securing the work with a clamp or vise frees both hands to operate the tool. Holding the work by hand or against your body is unstable and may lead to loss of control.
- b) Do not force tool. The power tool will do the job better and safer at the rate for which it was intended.
- c) Use the correct tool for your application. Do not use tools for purposes for which they were not intended.
- d) Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired. Have defective switches replaced by an authorized Freud service center.
- e) Disconnect the plug from the power source when not in use, before servicing, and when changing accessories such as blades, bits, and cutters. Such preventive safety measures reduce the risk of starting the tool accidentally and causing personal injury.
- f) Store idle tools when not in use. Tools should be stored in a dry, high, or locked-up place and out of the reach of children.
- g) Maintain tools with care. Keep cutting tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have repaired by an authorized Freud service center. Inspect extension cords regularly and replace if damaged. Keep handles dry, clean, and free from oil or grease. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
- h) Check for damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully inspected to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, mounting, and other conditions that may affect the operation of the tool. A guard or other part that is damaged should be properly repaired or replaced by an authorized Freud service center unless otherwise indicated elsewhere in this instruction manual.
- i) Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used with another tool.

5. Service

- a) Tool service must be performed only by a Freud authorized service center. Service or maintenance performed by unqualified personnel could result in a risk of injury.
- b) When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury. Certain cleaning agents such as gasoline, carbon tetrachloride, ammonia, etc. may damage plastic parts.

ADDITIONAL SAFETY RULES FOR JIG SAWS

- 1. Hold tool by insulated gripping surfaces. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.
- 2. Never perform an operation where the cutting tool may contact hidden wiring or its own cord such as cutting into a wall that might contain electrical wiring.
- 3. Keep hands away from the cutting area. Do not reach under the material being cut. The proximity of the blade to your hand is hidden from your sight.
- 4. Keep hands from between the gear housing and saw blade holder. The reciprocating blade holder can pinch your fingers.
- 5. Use only sharpened saw blades in perfect condition and immediately change the blade if deformed or notched. Bent blades can break easily or cause kickback.





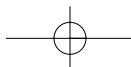
6. In no case should the tool be turned on with the blade already in contact with the material. Only insert the saw blade into the material after the tool has fully reached its desired speed. If the blade speed is too low at the beginning of a cut, undue strain is placed on the blade and the tool can vibrate or potentially kick back.
7. Make sure the base plate is securely in contact with the work before beginning the cut.
8. Do not force the saw feed. Allow the tool to cut at a moderate rate of speed.
9. Secure material before cutting. Never hold it in your hand or across legs. Small or thin material may flex or vibrate with the blade, causing loss of control.
10. Make certain all adjusting screws and the blade holder are tight before making a cut. Loose adjusting screws and holders can cause the tool or blade to slip and loss of control may result.
11. Make certain the power cord and extension cord are kept to the rear of the tool during operation. This practice lessens the likelihood of accidentally cutting the cords during use.
12. When removing the blade from the tool, avoid contact with skin and use proper protective gloves when grasping the blade or accessory. Accessories may be hot after use.
13. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known 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 lumberYour 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 those dust masks that are specially designed to filter out microscopic particles.

DOUBLE INSULATION

1. To ensure safer operation of this tool, Freud has adopted a double insulation design. "Double Insulation" means that two physically separated insulation systems have been used to insulate the electrically conductive materials connected to the power supply from the outer frame handled by the operator.

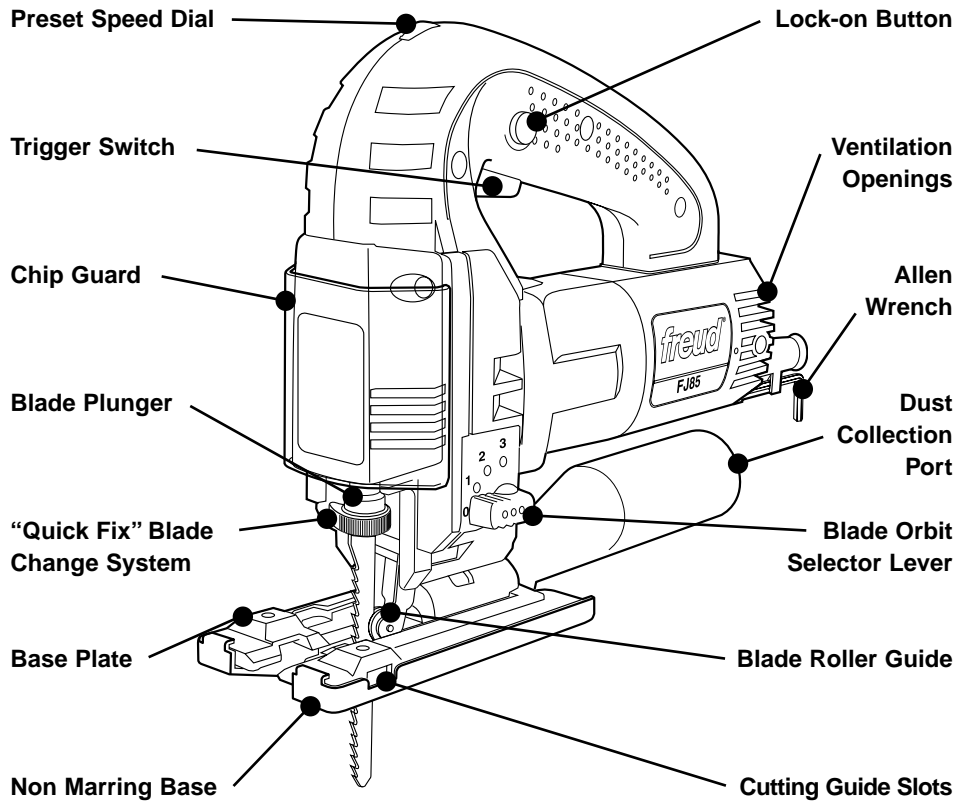
To keep the double insulation system effective, follow these precautions:

- Be careful not to pierce the motor housing as this could damage the efficiency of the double insulation system.
- Only Freud Authorized Service Centers should disassemble or assemble this power tool, and only genuine Freud replacement parts should be installed. Contact Freud at 1-800-334-4107 to find a Freud authorized service center near you.



DESCRIPTION & SPECIFICATIONS

FUNCTIONAL DESCRIPTION






SPECIFICATIONS




Power Source	Single-Phase, 120V, AC 60Hz
Amps	6
Watts	650
Speed	500-3000 Strokes/Minute
Stroke	Length 1 Inch
Max Bevel Cut	45°
Wood Cutting Capacity	2 3/8 Inches
Steel Cutting Capacity	1/4 Inch
Nonferrous Metal Cutting Capacity	3/4 Inch
Weight	5.4 lbs

SYMBOLS

Some of the following symbols may be used on your tool. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

Symbol	Name	Designation/Explanation
V	Volts	Voltage (potential)
A	Amperes	Current
Hz	Hertz	Frequency (cycles per second)
W	Watt	Power
n_o	No load speed	Rotational speed, at no load
.../min	Revolutions or reciprocation per minute	Revolutions, strokes, surface speed, orbits, etc. per minute
	Class II construction	Designates double insulated construction tools
	Alternating current	Type or a characteristic of current
	Safety Alert	Precautions that involve your safety

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and the explanations with them, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measurements.

Symbols	Meaning
	DANGER: Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.
	WARNING: Indicates an imminently hazardous situation, which, if not avoided, could result in death or serious injury.
	CAUTION: Indicates an imminently hazardous situation, which, if not avoided, may result in minor or moderate injury. It may be used to alert against unsafe practices that may cause property damage.

ASSEMBLY & OPERATION

PRIOR TO OPERATION

1. Check Power Supply

Ensure that the power source to be utilized conforms to the power source requirements specified on the tool nameplate. Ensure the receptacle being used accepts the plug tightly. If a faulty receptacle is used, it may cause overheating, resulting in a serious hazard.

2. Check Work Area

Confirm that the work site is placed under appropriate conditions conforming to precautions prescribed in the safety section of this manual.

3. Before Plugging in the Tool

Ensure that the power tool switch is in the OFF position to prevent the tool from accidental start up which could cause serious injury.

4. Blade Installation

- a) Unplug tool
- b) Slide the chip guard up to allow access to the Quick Fix knob. – Fig 1
- c) Turn the “Quick Fix” knob until it stops. – Fig 2
- d) Insert the blade up to the stop and make sure the smooth side of the blade is resting against the blade roller guide. – Fig 2
- e) Release the “Quick Fix” knob. - Fig. 3
- f) Check that the blade is securely fixed by pulling downward.
- g) Slide the chip guard down until it stops. – Fig 4

Fig. 1

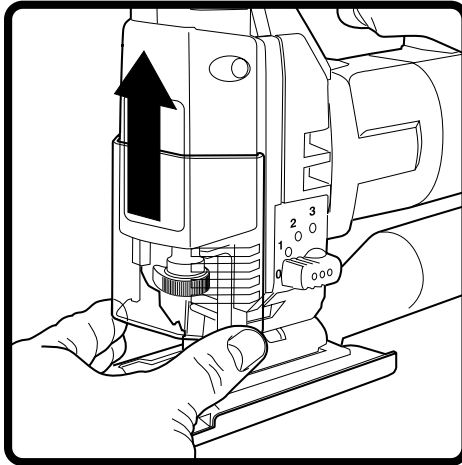
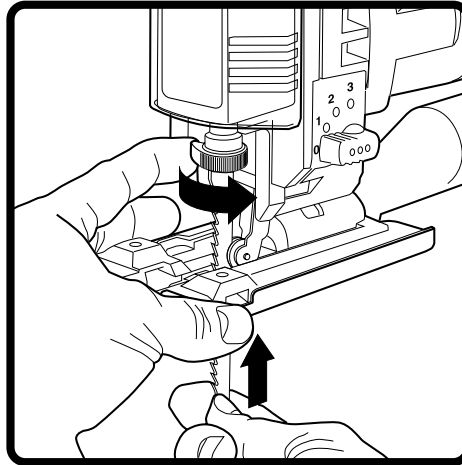


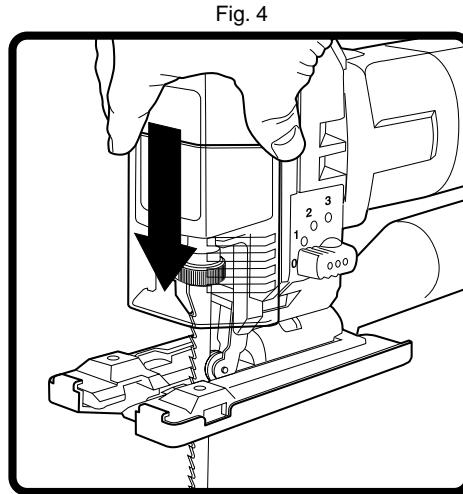
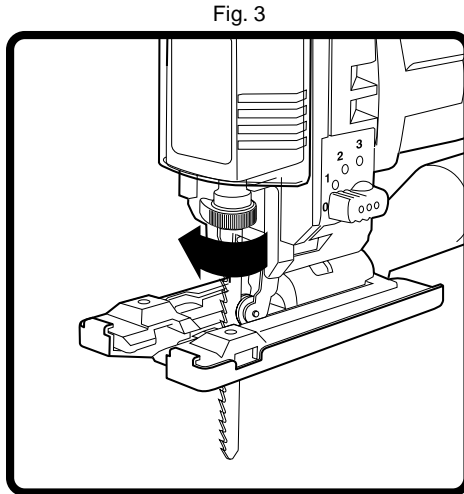
Fig. 2



5. Adjusting the Blade Speed

a) Variable Speed Trigger Switch

This tool is equipped with a variable speed trigger switch. The tool can be turned on or off by squeezing or releasing the trigger. The speed can be adjusted from the minimum to the maximum speed selected on the preset adjusting dial by the pressure you put on the trigger.



More pressure on the trigger results in faster blade speed. Less pressure on the trigger results in slower blade speed.

b) Preset Speed Adjusting Dial

This feature allows you to preset the maximum speed by rotating the dial on the top handle of the saw to a higher or lower setting. The tool will never operate at a speed higher than the maximum speed setting selected on the speed dial. – See Fig 5

c) Electronic Cruise Control

This tool is equipped with an electronic module with tachometric feedback which guarantees constant blade speed under load. This feature allows the saw to cut at a consistent rate of speed and maintain a consistent finish quality even if the load on the tool increases or decreases.

d) Lock-On Button

This button is located on the side of the saw's handle above the trigger and allows you to continuously operate the saw, at the speed set with the preset Speed Dial, without holding the trigger. To lock the trigger "ON", squeeze the trigger, depress the button, and then release the trigger – Fig. 6. To unlock the trigger, squeeze the trigger and release it without depressing the lock-on button – Fig. 7

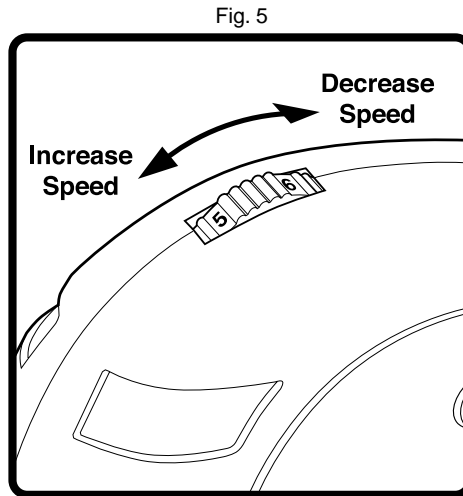


Fig. 6

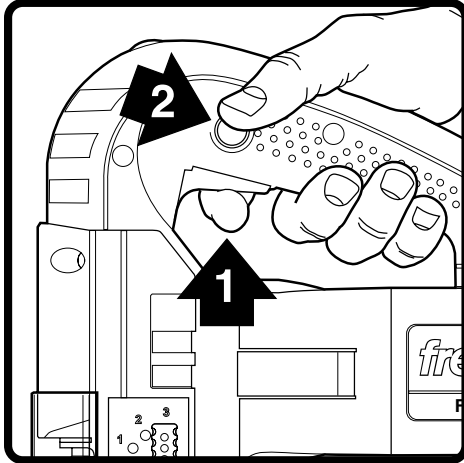
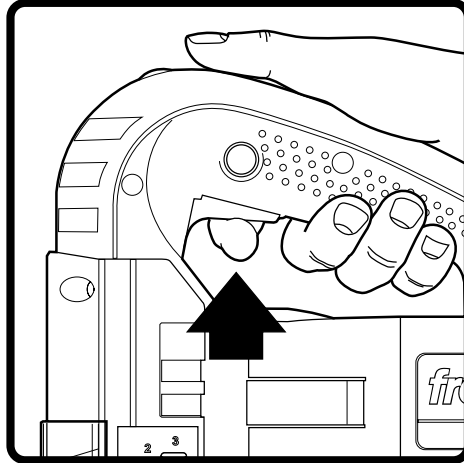


Fig. 7



Important: Be sure that the switch and Lock-On button are not engaged before plugging in tool.

6. Adjusting the Orbital Action

- a) This tool is equipped with orbital action, which moves the blade from front to back as well as up and down. This feature allows you to maximize the cutting efficiency in the material being cut – Fig 8 & 9.

Fig. 8

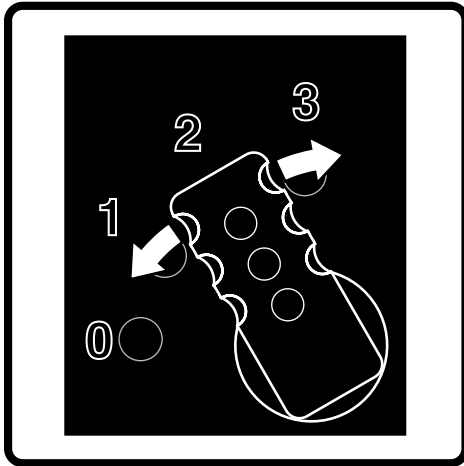
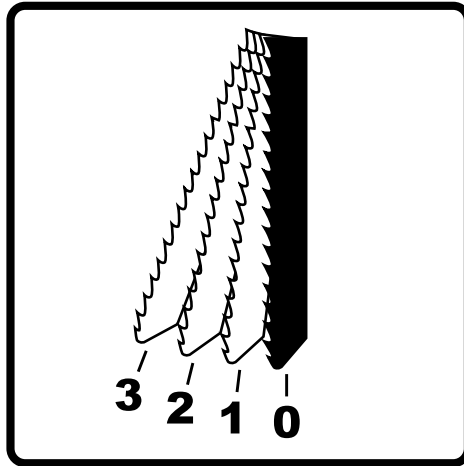


Fig. 9



- b) Use the following chart to help determine the appropriate orbital setting for your application. This chart is intended as a guideline only and test cuts in scrap material should be made first to determine the appropriate setting.

Setting 0	Good for metals, plastics, and best quality finish in wood and wood products such as plywood, chip board, etc. Also good for scroll work.
Setting 1	Better quality cut in wood and wood products where speed of cut is more important than quality of cut.
Setting 2	Good quality with faster cut speed in wood and wood products.
Setting 3	Fastest speed with coarse cuts in wood and wood products where speed is more important than quality of cut.

7. Base Plate Angle Adjustment

The base plate may be tilted to produce angle cuts up to 45° - Fig. 10.

To adjust the base plate, unplug the tool then loosen the screw on the bottom of the saw with the included allen key – Fig. 11.

Position the base as far forward as possible to provide for maximum blade inclination – Fig. 12.

Position the base at the desired cutting angle and tighten the screw in the bottom of the saw – Fig. 13 & 14.

Note: The base should be placed as far forward as possible to allow for unlimited saw blade inclination.

Fig. 10

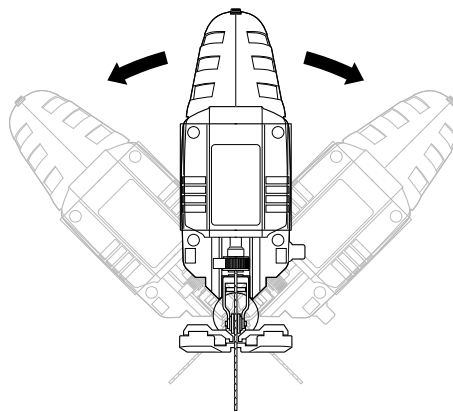


Fig. 11

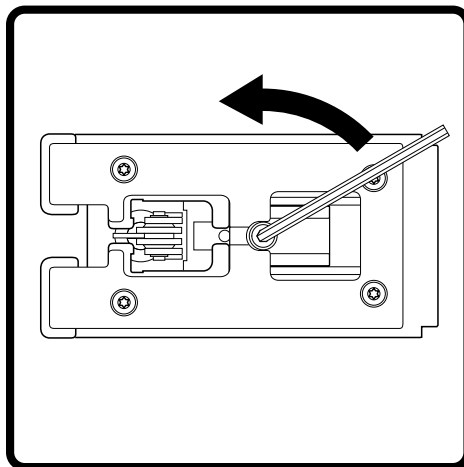
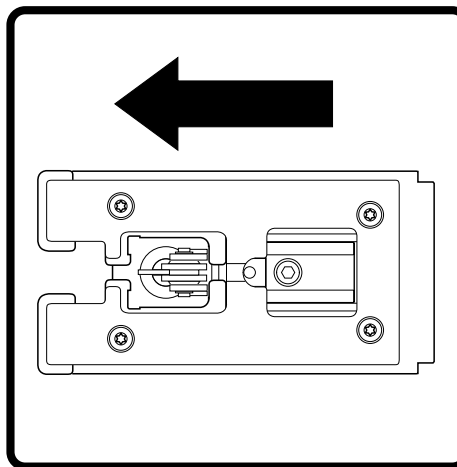
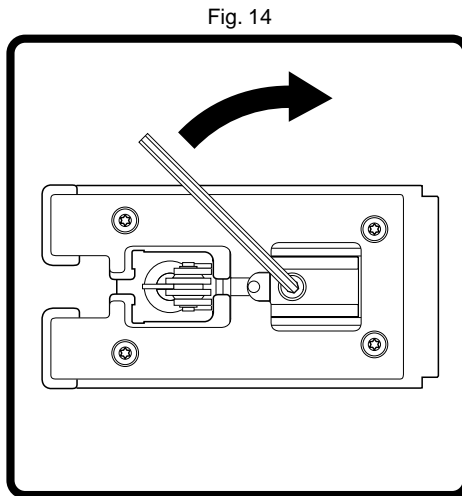
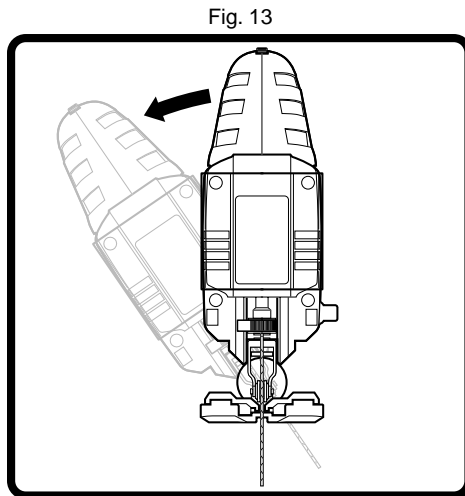


Fig. 12

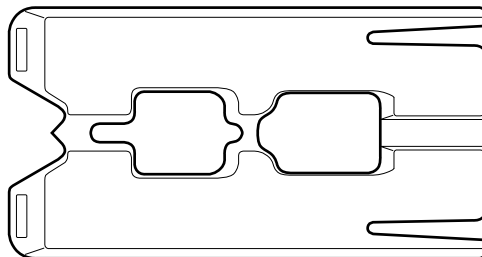




8. Non-Marring Base

This tool comes equipped with a removable non-marring base on the base plate to help protect your delicate work pieces from scratches. - Fig. 15

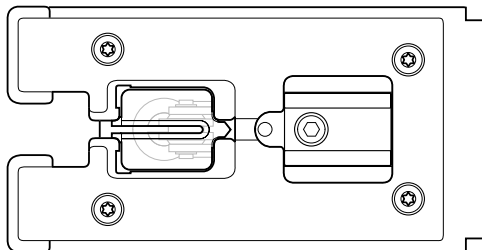
Fig. 15



9. Anti-Splinter Insert

To minimize splintering of the top surface of the material being cut, unplug the tool, place the anti-splinter insert in the space in the base plate and push it in completely – Fig 16.

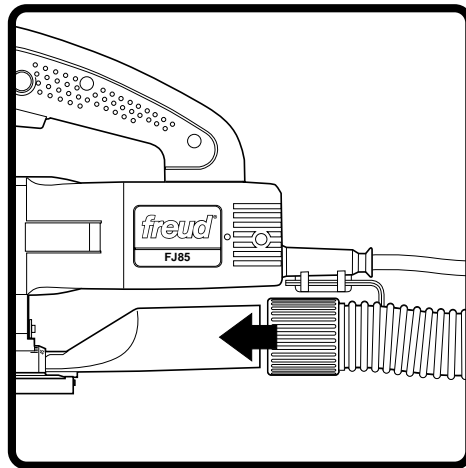
Fig. 16



10. Dust Extraction

This tool comes complete with a dust collection port. To use the dust collector simply attach a vacuum cleaner (sold separately) to the end of the dust collector – Fig. 17

Fig. 17

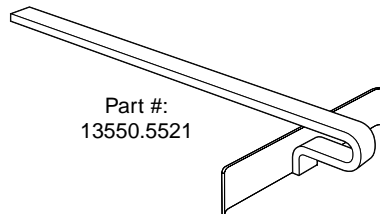


CUTTING

CAUTION: While operating the saw, be certain the base plate maintains constant contact with the surface of the material you are cutting. If the base plate becomes separated from the material during operation, it may cause the blade to break or the saw to kick back potentially resulting in injury.

1. Straight Line Cutting

When cutting a straight line, use a straight edge to draw a marking gauge line and advance the saw along that line. An optional guide (part # 13550.5521) may also be used to cut accurate straight lines parallel to the edge of the material:



To insert the guide:

- Unplug the saw.
- Loosen the bolt in the footplate using the allen wrench included with the saw – Fig 18.
- Move the base fully forward and tighten the bolt in the base plate – Fig 19.
- Insert the guide by passing it through the guides in the top of the base plate and tighten the guide bolt to secure it in place – Fig. 20.

Fig. 18

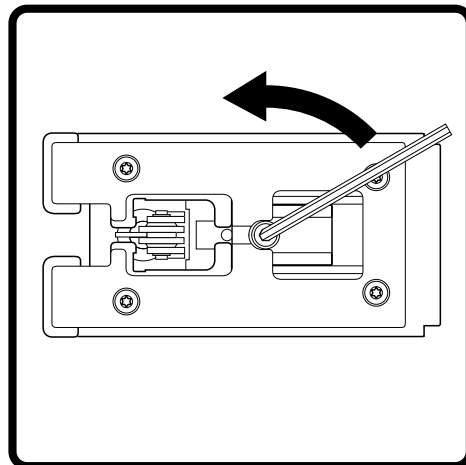


Fig. 19

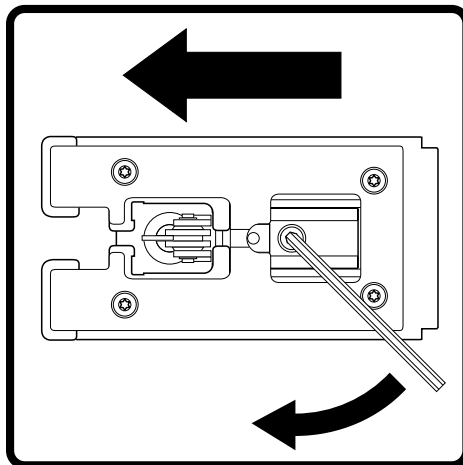
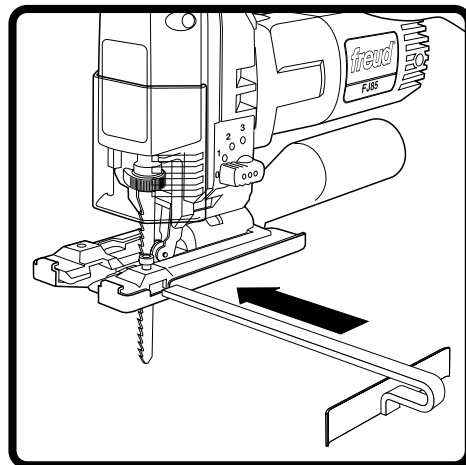


Fig. 20



2. Cutting Curved Lines

When cutting curved lines, reduce the rate of speed at which the saw is fed through the material. If the saw is fed too quickly it may cause the blade to pinch and/or break.

3. Pocket Cutting

A pocket cut is a method of making an inside cut directly into a wood board without first drilling a pilot hole. To make a pocket cut, first measure and clearly mark the material to be cut. Make sure the base plate of the saw is extended forward. Tip the saw forward until the front of the base plate rests firmly on the wood and the blade remains clear the wood at its full stroke – Fig 21. Next, turn on the saw and let it reach its maximum speed. While holding the saw firmly, slowly lower the blade into the material until the blade reaches its completed depth and the base plate is resting flat on the surface of the material – Fig 22. Keep the base plate flat against the material and begin making your cut.

Fig. 21

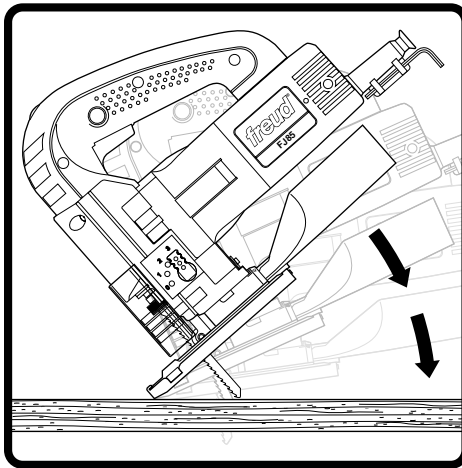
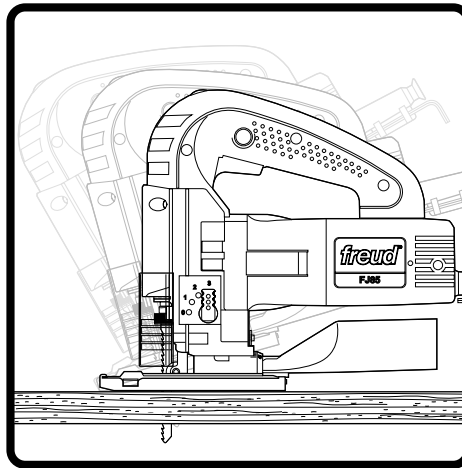


Fig. 22



4. Angular Cutting

The base plate can be tilted up to 45° to produce angle cuts. Please refer to the earlier section in this manual for instructions on making base plate angle adjustments.

5. Wood Cutting

Make certain that the material is secured firmly before you begin cutting. Never turn on the saw if the saw blade is in contact with the material. This could stall the motor or make the saw kick back and potentially result in injury. To make the cut, place the front of the base plate firmly on the material, turn on the saw and allow the blade to reach its maximum speed. Next, press the blade into the wood making certain that the base plate remains flush with and flat on the material. Let the saw cut at its own rate of speed and do not force the tool through the wood. When the cut is complete, turn off the saw and let the blade stop completely before lifting the saw from the material.



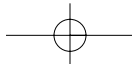
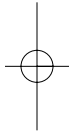
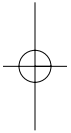
6. Metal Cutting

Be sure to use the proper blade for the metal you are cutting. Use a finer blade when cutting ferrous metals (metals with high iron content) and use a coarser blade when cutting non-ferrous metals (metals with no iron content). When cutting metal, it is also recommended to use a lubricant on the blade such as spindle oil or soapy water to keep the blade cool and extend its life. Use a high speed setting on the saw when cutting soft metals (aluminum, copper, brass, mild steel, galvanized pipe, etc.) and use a low speed setting to cut hard metals, cast iron, plastics, tile, and Formica®. When cutting thin sheet metal, it is advised to clamp wood or plywood to the bottom of the sheet metal to insure a clean cut and prevent the sheet metal from vibrating or tearing.

7. Blade Selection

Be certain to use the appropriate blade for the material you are cutting and make a test cut first in scrap material.

- Most jigsaw blades have teeth that point upwards. This tooth configuration produces a clean cut on the bottom of the material. Also, blades with upward pointing teeth help pull the saw through the material and reduce vibration.
- Some blades have downward pointing teeth known as reverse-tooth blades. These blades produce a clean cut on the top of the material and are useful in applications such as a sink cutout in a countertop that is already installed. Remember: When using a reverse tooth blade you must maintain constant downward pressure on the saw as the teeth will not help pull the saw through the material.
- Some jigsaw blades have teeth that point straight out. These blades provide a splinter free cut on both sides of the material. Downward pressure must also be consistently applied when using these blades.



MAINTENANCE

Service

It is recommended that all service on your Freud tool be performed by an Authorized Freud service center. Service by unauthorized service personnel may result in misplaced or misassembled internal components resulting in risk of tool malfunction and personal injury to the tool user.

Tool Lubrication

All power tools require care and attention. Every second change of brushes, we recommend leaving the tool with an authorized Freud service center for a general cleaning and gear lubrication.

Bearings

We recommend that at every second change of brushes, the bearings be replaced by an authorized Freud service technician. Bearings that become very noisy should be replaced at once to avoid overheating or motor failure.

Brushes

Use only brushes that are specified for your Freud power tool. The brushes should be checked for wear every 200 hours of service.

Commutators

Commutators which have been scratched or warped through wear and tear must be replaced by an authorized Freud repair technician. Never file the commutator with emery paper.

Inspect Blades

Regularly inspect your jig saw blades to insure they are sharp. Dull blades will cause the tool to operate less efficiently and may cause the motor to malfunction.

Inspect Screws

Regularly inspect all screws in your power tool and make sure they are properly tightened. Loose screws should be retightened immediately.

To locate a Freud Service Center nearest you, call: 1-800-334-4107

ACCESSORIES

Standard Accessories

- 3 Saw Blades
- Anti-Splinter Insert
- Non-Marring base plate
- Dust Collection Port

Optional Accessories

- Edge Guide - Part Number 13550.5521