

# FESTOOL

## ***Vecturo Multi-Purpose Oscillating Tool***



**OS 400 EQ**

## ***Supplemental User's Manual***



**WARNING** To reduce the risk of serious injury, read and understand all safety precautions and instructions in this manual before using this tool.

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## Limited Warranty<sup>1</sup>

### 30 Day Money Back Guarantee

Buy with confidence. If you are not completely satisfied, return your tool<sup>2</sup> to the selling dealer within 30 days and you will receive a refund of either your purchase price or the lowest retail price at which the same item has been offered since your date of purchase. Freight charges are not refundable.

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### Service All-Inclusive® Warranty

Festool USA warrants that all new Festool power tools<sup>3</sup> purchased from authorized dealers in the U.S. and Canada will be free from defects in materials and workmanship for a term of three years from the date of original retail purchase.

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### Conditions of Service All-Inclusive Warranty

This warranty applies for three years from the date of original retail purchase. Proof of purchase is required. This warranty is void if the tool is not used, operated, repaired and maintained in accordance with the tool's instruction manual.

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### Excluded from this warranty's coverage are:

- ▶ Accessories and/or attachments, including, but not limited to, saw blades, drill bits, router bits, sanding discs and apparel
- ▶ Tools purchased from outside of the U.S. or Canada
- ▶ Repairs or replacements not performed by an authorized Festool Service Center, outside of routine maintenance as set forth in the instruction manual
- ▶ Parts or components not supplied by Festool or that have been modified
- ▶ Damage caused by misuse, abuse, accident, impact, abnormal wear and tear, improper storage and/or exposure to the elements, or neglect
- ▶ Damage caused by anything other than defects in materials and workmanship
- ▶ Normal adjustments and recommended maintenance as set forth in the tool's instruction manual
- ▶ Damage from the operation of the tool at a voltage or frequency different from the tool's rating, including the use of transformers

1 The following is an exemplar Festool limited warranty. The actual warranty that comes with your power tool is controlling.

2 Tool must be returned in complete and whole condition as supplied to include Systainer, cutter, blade, power cord, etc.

3 For purposes of this warranty, power tools are defined as any Festool branded product that bears a serial number (S.Nr. or M.Nr.).

4 To determine if your application is excluded from the warranty under this condition, please contact the Festool Service Center at 800.554.8741

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## Repairs

If your Festool power tool requires repair, whether it be warranty or non-warranty, you must contact our Service

- ▶ Damage resulting from the use of any non-Festool accessories or attachments
- ▶ Tools used in high volume industrial applications<sup>4</sup>

Should any failure covered by this Limited Warranty occur, the purchaser must contact Festool through our website, [www.festoolusa.com/SAI](http://www.festoolusa.com/SAI), or call 888.337.8600 for authorization and shipping information. For purchases made in Canada, contact our website, [www.festoolcanada.com/SAI](http://www.festoolcanada.com/SAI) or call 613.363.0169. Festool, in its sole discretion, may elect to repair, replace or refund the purchase price of any tool covered by this Limited Warranty that is found to be defective, at no cost to the purchaser. Warranty returns will be processed by Festool according to normal work flow and availability of replacement parts and components. Festool will issue a prepaid shipping label for return of the tool to the Festool Service Center and will also return the repaired tool freight prepaid, if the repair or replacement is covered under this Limited Warranty.

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### Warrantor:

Festool USA  
Festool Canada

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Lebanon, IN 46052

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[festoolcanada.com/SAI](http://festoolcanada.com/SAI)

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## Liability Statement

This product has been built to the high standards of Festool. Please do not attempt to operate or repair this equipment without adequate training. Any use, operation, or repair in contravention of this document is at your own risk. By acceptance of this system you hereby assume all liability consequent to your

use or misuse of this equipment. Festool assumes no liability for incidental, special, or consequential damage of any kind. Equipment specifications, applications, and options are subject to change at the sole discretion of Festool without notice.

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## About This Manual

### Save These Instructions

It is important for you to read and understand this manual. The information it contains relates to protecting YOUR SAFETY and PREVENTING PROBLEMS. The symbols below are used to help you recognize this information.



**WARNING!** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION!** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.



**NOTICE:** Indicates a potential situation which, if not avoided, can result in property damage or damage to the tool.



**Note:** Indicates information, notes, or tips for improving your success using the tool.

### Tool Symbols

V	Volts
W	Watts
Hz	Hertz
~	Alternating Current (AC)
n <sub>o</sub>	No-load Speed
□	Class II Double Insulated

# General Power Tool Safety Warnings



**WARNING! Read all safety warnings and instructions.** Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injury.

**Save all warnings and instructions for future reference.**

## Work Area Safety

- ▶ Keep your work area clean and well lit. Cluttered or dark work 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 children and bystanders away while operating a power tool. Distractions can cause you to lose control.

## Electrical Safety

- ▶ Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- ▶ Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or 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 for carrying, pulling, or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- ▶ When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord for outdoor use reduces the risk of electric shock.
- ▶ If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply. Use of a GFCI reduces the risk of electric shock.
- ▶ Never use an extension cord that is damaged, including cuts, exposed wires, or bent/missing prongs. Damaged extension cords increase the risk of fire or electric shock.
- ▶ 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 cord to overheat.

### Extension Cord Ratings

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

## Personal Safety

- ▶ Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use a power 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.
- ▶ Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- ▶ Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source, picking up, or carrying the tool. Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.
- ▶ Remove adjusting key or wrench before turning the power 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. This enables better control of the tool in unexpected situations.
- ▶ Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
- ▶ If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.
- ▶ Always wear safety glasses complying with ANSI Z87.1. Ordinary glasses are not proper protection.

## Power Tool Use and Care

- ▶ Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer 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 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 of starting the tool accidentally.
- ▶ Store idle tools out of reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.
- ▶ Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- ▶ Keep cutting tools sharp and clean. Properly maintained tools with sharp cutting edges are less likely to bind and are easier to control.
- ▶ Use the power tool, accessories, and tool bits etc. in accordance with these instructions, taking into account the working

conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

- To reduce the risk of serious injury, never alter or misuse the power tool.

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## Service

- Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that

the safety of the power tool is maintained.

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## Specific Safety Rules for Multi-Tools

- Know the material you are cutting or abrading and take precautions accordingly. Some materials contain chemicals, elements, or fibers which may be toxic or harmful when cut, abraded, or heated. Take caution to prevent dust or vapor inhalation and skin contact.
- Do not use in wet environments. Ingestion of water into the motor may result in electrocution hazard.
- Hold the tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with an energized wire will make exposed metal parts of the tool energized and shock the operator.
- To reduce the risk of fire, explosion, or electric shock, always

check the work area for hidden gas pipes, electrical wires or water pipes when making blind or plunge cuts.

- Keep hands away from cutting area. Do not reach under the material being cut. The proximity of the blade to your hand is hidden from your sight.
- Vibratory cutting blades get extremely hot during use. Take care to prevent burns when handling or changing blades.
- Do not use dull or damaged blades. A bent blade can break easily or cause kickback.
- Use thick cushioned gloves and limit the exposure time by taking frequent rest periods. Vibration caused by the tool may be harmful to the hands and arms.

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## Respiratory Exposure Safety Warnings

Substantial or repeated inhalation of dust and other airborne contaminants, in particular those with a smaller particle size, may cause respiratory or other illnesses. Various dusts created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals or substances known (to the State of California and others) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals/substances are: lead from lead-based paints; crystalline silica from bricks, cement, and other masonry products; arsenic and chromium from chemically-treated lumber; and some wood

dusts, especially from hardwoods, but also from some softwoods such as Western Red Cedar.

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 use a properly functioning dust extraction system. When the inhalation of dust cannot be substantially controlled, i.e., kept at or near the ambient (background) level, the operator and any bystanders should wear a respirator approved by NIOSH for the type of dust encountered.

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## Multi-Tool Overview

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### Intended Use

The Vecturo multi-tool is designed for cutting wood, plastic, glass fiber reinforced plastic, plasterboard, and light metals. With the appropriate blade, it may also be used for scraping or slicing paint, grout, sealant, adhesives, and other surface materials.

The Vecturo is not suitable for removing windows from passenger cars, trucks and buses, renovating concrete joints, or for sanding.

The tool should not be altered or used for any other purpose, other than as specified in these operating instructions. Using the tool in contravention to this manual will void your warranty and may lead to injury. The user shall be responsible and liable for damages and accidents resulting from misuse or abuse of this tool.

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## Technical Specifications

Power Consumption	400 W
Oscillation Rate	10000-18500 spm
Oscillation Angle	±2.0° (4.0°)
Weight	1.6 kg / 3.5 lbs

*These specifications are subject to change without notice.*

Functional Description



Item	Name or Description	Ref. Page(s)
A	Fast-Fix Lever	7
B	Power Switch	10
C	Speed Control Dial	10
D	Plug-It Power Port	10
E	Plug-It Power Cord	10
F	Blade Mandrel	7

Item	Name or Description	Ref. Page(s)
G	Blade (Cutting Tool)	7, 12
H	Accessory Adapter	8
I	Depth Stop Guide	8
J	Depth Stop Shoe	8
K	Depth Stop Pivot	8
L	Plunge Base	9

# Setup

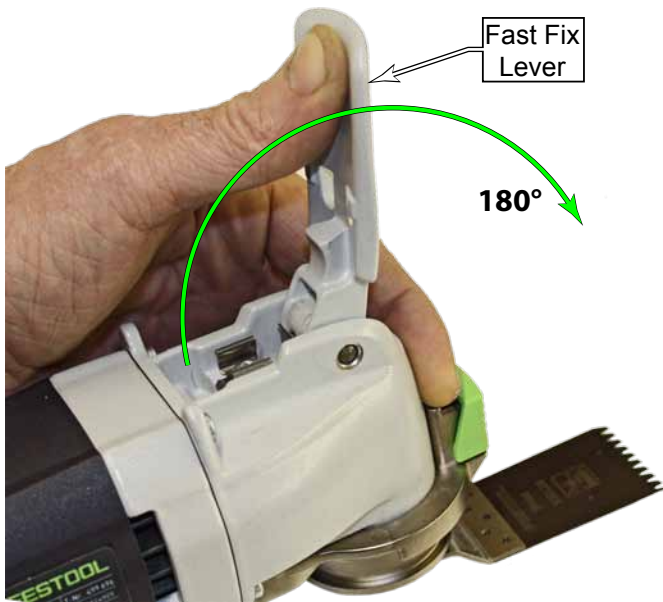
## Changing Blades

There is a large variety of cutting and scraper blades available for the Vecturo (see "[Cutting Blade Selection](#)" on page 12 for blade choices). Blades should be changed for different tasks or when they become dull. The Fast Fix system allows blades to be changed without tools.

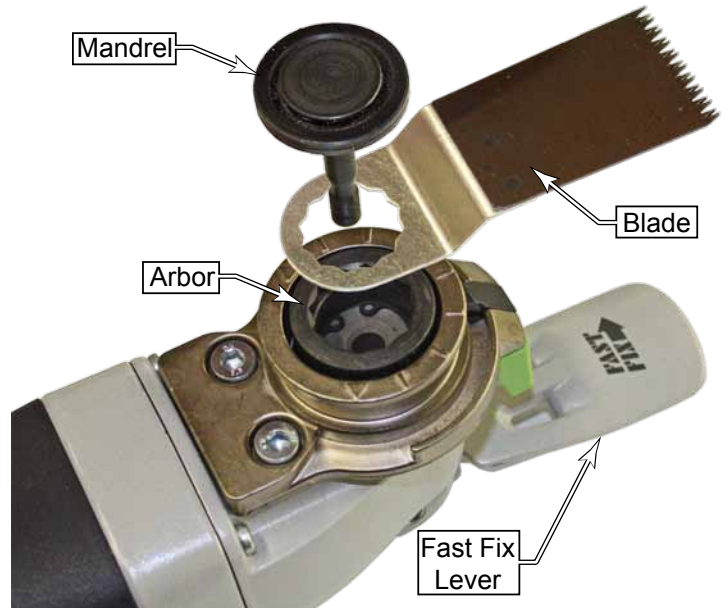


**CAUTION!** Take care when changing blades and consider wearing gloves when handling the blades.

- ▶ Unplug the tool to prevent accidental startup.
  - ▶ The cutting blade can become very hot during use, and can cause burns.
  - ▶ The cutting edges are sharp and pose a significant risk for injury.
1. Unplug the Vecturo from power.
  2. Raise the Fast Fix lever and rotate it a full 180° to release the blade mandrel. (The lever is compressing very strong springs and requires a fair amount of force to fully rotate it.)



3. Lift the blade and mandrel out of the arbor.



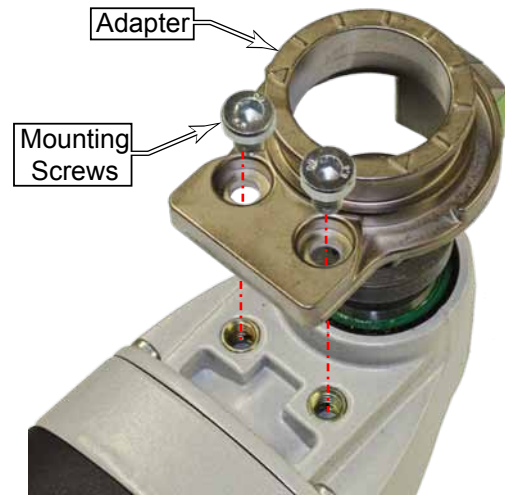
4. Inert the mandrel through the new blade.
5. The blade may be positioned at any angle in 30 degree increments. Rotate the blade to the desired position and insert the blade and mandrel into the arbor.
6. While making sure the mandrel is fully seated in the arbor, close the Fast Fix lever.
7. Check to make sure the blade is firmly held and cannot be wiggled.



## Installing the Accessory Adapter

The accessory adapter is necessary for mounting the various optional stops and base(s) to the Vecturo machine. Once installed, the adapter shouldn't need to be removed unless future accessories require it. (The adapter comes pre-installed with the Vecturo kit.)

1. Remove the blade as described on [page 7](#).
2. Place the adapter over the arbor and install the two mounting screws using a 4mm hex key.

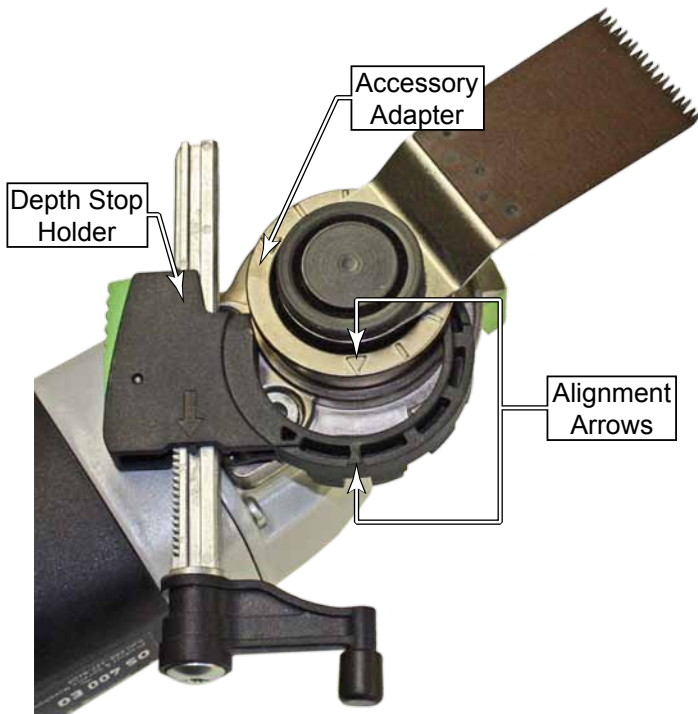


## Installing the Depth Stops

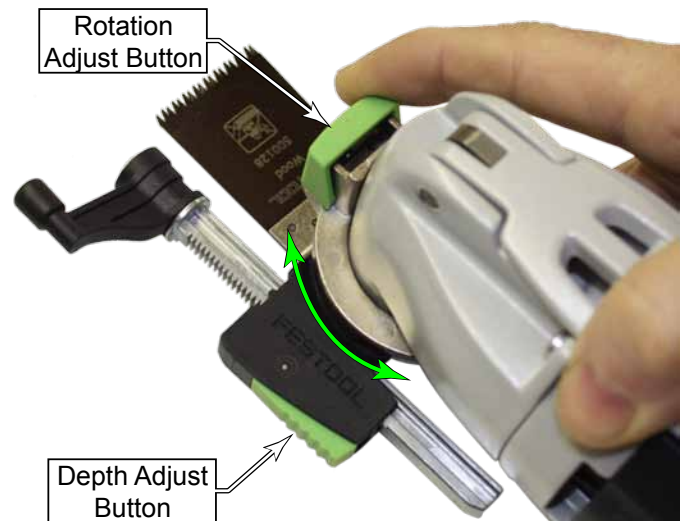
The Vecturo may be equipped with an optional depth stop attachment that includes two stops: a pivot stop and a sliding shoe.

The sliding shoe is typically used for linear sawing operations with a round blade. The pivot stop is typically used for plunging operations, and can be rotated to various distances from the blade. The stops are used to control the depth of cut of the blade into the workpiece.

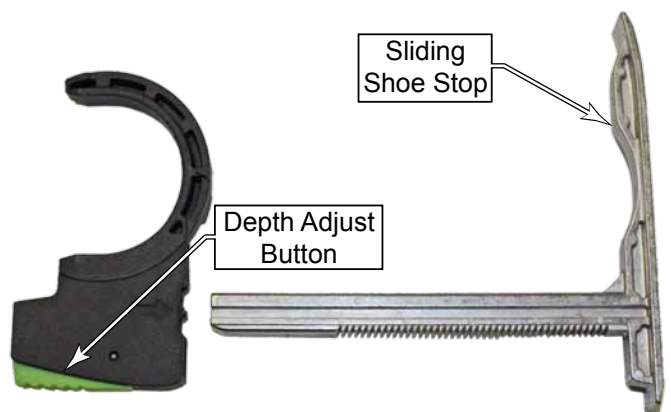
1. Slide the depth stop holder over the accessory adapter by lining up the arrows and sliding it toward the center.



2. Press in on the rotation adjust button and rotate the depth stop to the desired position. The depth stop can match any of the blade angles.



3. To switch between the pivot stop and sliding shoe stop, press in on the depth adjust button and slide the previous stop out and the new stop in. The stops fit in only one direction.
4. To set the depth of the stop, press in on the depth adjust button and slide the stop in or out as needed.



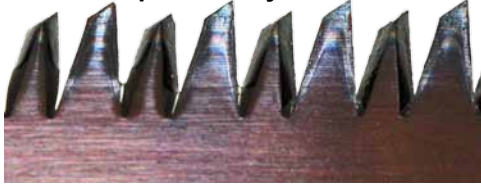
## Installing the Plunge Base

The plunge base provides a guided cut perpendicular to the workpiece surface for a more accurate and finer cut than is obtainable freehand. The shoe of the plunge base contains a strong magnet to help guide the blade by holding it near the edge of the base.

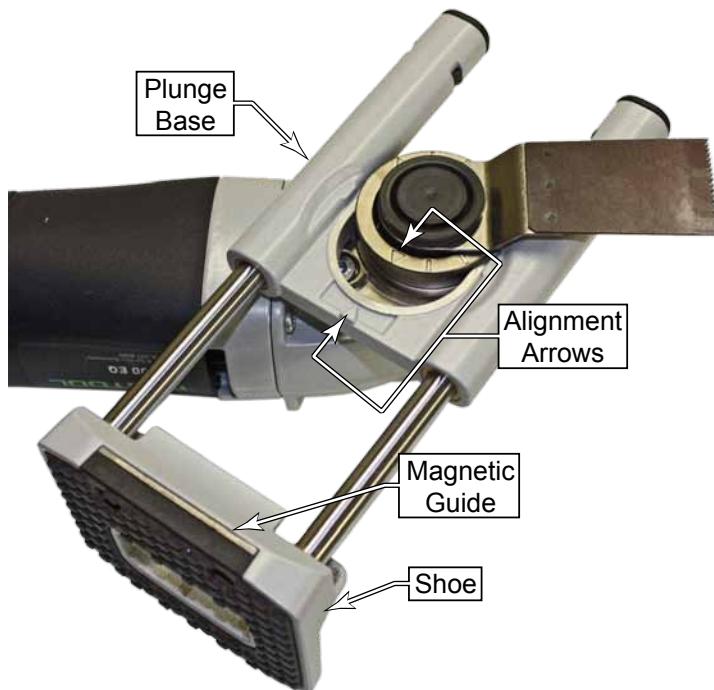


**NOTE:** It is not recommended to make confined plunges with blades having Japan-style teeth, as the teeth may be prone to breaking, and the narrow kerf can tend to bind. They can be used, but the blade life may be shorter than desired.

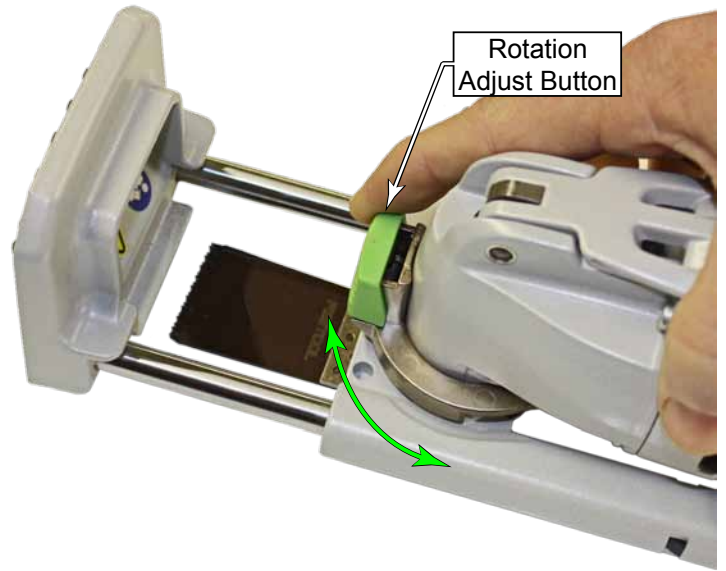
Japanese-Style Teeth



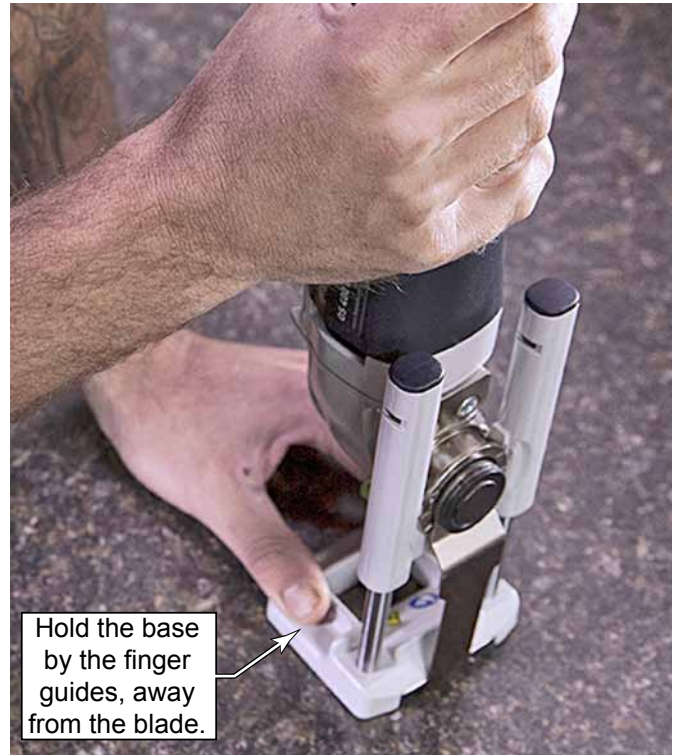
1. Slide the plunge base over the accessory adapter by lining up the arrows and sliding it toward the center.



2. Press in on the rotation adjust button and rotate the plunge base to the desired position. The plunge base can match any of the blade angles.



For best results, steady the base with one hand during plunging, but make sure to keep your fingers away from the blade area.



## Connecting the Plug-It Power Cord

The Vecturo comes equipped with a removable Plug-It power cord. The cord can be removed for easier storage of the tool.

To install the power cord, insert the cord into the inlet (port) on the tool with the key and keyway aligned, and twist the locking ring ¼-turn until it clicks. Reverse the procedure to remove the cord.



**NOTICE:** Make sure to fully tighten the plug-it cord a full quarter-turn until it clicks. If the plug is not fully locked, the socket and cord can overheat and be damaged.



**NOTE:** The 18 gauge plug-it cord is interchangeable with other tools that use the same size cord, but it cannot be used with larger tools, such as routers and saws. The plug has an extra key to prevent it from being used on a larger tool that would otherwise damage the cord. Larger cords may be used with smaller tools, but not the reverse.

## Setting the Speed Control

The Vecturo is variable speed controlled from 10,000 to 18,500 oscillations per minute. Different speeds are used for different tasks, but the optimal speed is somewhat subject and not rigidly defined. A lower speed results in less heat, and is therefore preferred, but a higher speed results in greater control and cleaner cuts. Generally speaking softer materials may be cut with lower speeds. A good rule of thumb is to use the lowest speed that performs the desired task with good control.

The speed may be set with the motor running or not running. The higher the number on the speed control dial, the higher the speed.

## Power Switch

The power switch is self-latching, and will stay on until you switch it off. Slide the switch forward to turn the tool on, and slide the switch back to turn the tool off. Note that the tool has a soft-start motor, so there is a slight delay from turning it on to when the motor begins to run.

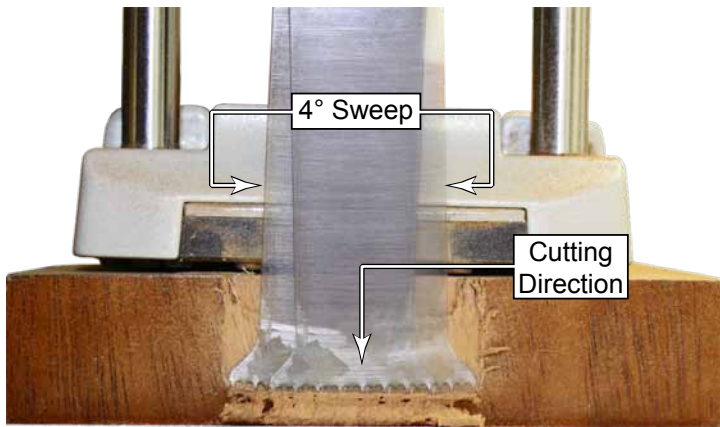


# Operation

## Cutting Blade Principles

Even though a multi-tool is fairly unique in its cutting operation from other saw types, at the blade teeth it still resembles a short-stroke reciprocating saw. The blade oscillates through a 4° sweep at high speed. The cut is radial, but the short 4° stroke has the effectiveness of a linear stroke.

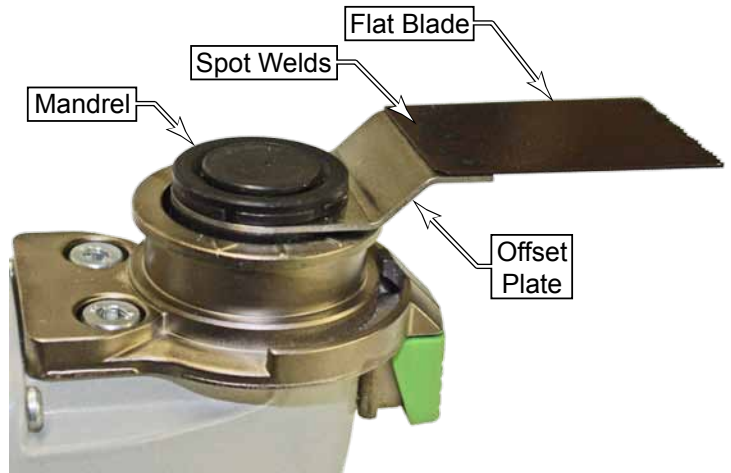
As with a typical reciprocating saw, the cutting direction is forward of the teeth, which represents a plunging cut in the direction of the blade. Because the blade cannot cut laterally on the non-toothed edges, making a wider cut requires successive partial plunge cuts or tilting the blade in the lateral direction.



For linear cutting operations, the best method is to use a semicircular blade. The blade can cut anywhere around the circumference, including the forward edge for making a linear cut.



One of the primary operations of a multi-tool is flush trimming one workpiece relative to the surface of another. This is why most blades have an offset in the main body, and the blade itself is spot-welded to the offset plate. This provides a flat, smooth reference surface on the blade for controlling the cut.



For making a flush-trim cut, rest the tool/blade on the reference surface for guidance. In the example below, a scrap of flooring is used to control the height of the cut for trimming casing and moulding so that the finished flooring can be installed under the mouldings.



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## Cutting Blade Selection

A wide variety of cutting blades are available for the Vecturo. Each blade has optimal performance for a variety of applications.

### Wood-Cutting, Japanese-Style Blades

The wood cutting blades have a Japanese-style tooth grind. This is an internal grind without a set to the teeth. This results in crisp cuts and minimum kerf thickness. However, the features that give the Japanese-style teeth its high performance aren't without cost. Because there isn't a set to the teeth, the blade can be more prone to binding on deeper cuts. The rapid cutting afforded by the longer teeth, can also result in more frequent tooth loss. For these reasons, the Japanese-style blades should not be used for making confined plunge cuts using the plunge base.



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### Universal Wood/Composite Blades

These blades have a moderate hook angle to the grind and an alternating tooth set. This provides for good cutting speed and clean kerf for cutting woods and composites without binding. (The bimetal teeth are hard enough to cut through periodic nails, but not intended for cutting metal.)



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### Metal Cutting Blades

The metal cutting blades have a higher tooth count, sharper hook angle, and a wave tooth set. They are used for cutting harder materials from hard plastics to light ferrous metals, such as nails.



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## Cutting Speed Selection

There are various factors that determine which cutting speed is ideal for the application. However, due to the nature of the cutting tool, the optimal speed is more subjective than other tools. Here are some pointers:

- ▶ The short sweep (4°) and high vibratory speed results in significant heat buildup at the blade. To keep the heat to a minimum, a good rule of thumb is to use the lowest speed that still provides the desired cutting results.
- ▶ Conversely, in many cases, greater control of the cutting blade is achieved with higher speeds. If the tool jumps or is jittery, especially at the beginning of a cut, try increasing the speed. As the cut gets deeper, you may want to reduce the speed to reduce the heat.

One note about multi-tool blades is that by their nature and the heat generated, they can become dull very quickly. So it is always a good idea to have spare blades on hand.

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### Linear Cutting Circular Blades

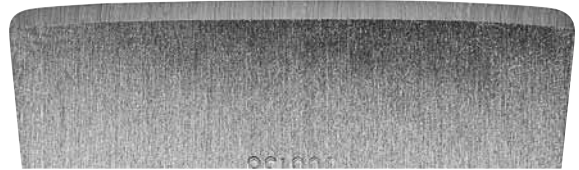
The circular blades are ideal for making linear cuts because they always present forward cutting teeth in all directions. The triangular ground teeth permit cutting equally in either feed direction. The teeth have no side-set for a clean cut, but this doesn't pose a significant binding problem unless the cut is significantly deep.



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### Scraper Blades

The smooth scraper blade has a knife edge for cutting or scraping softer materials such as soft adhesives or films.



The serrated scraper blade can cut more aggressively with either hard or soft adhesives and films. Additionally, the radially curved blade permits linear cutting as well as plunging.



- ▶ Softer materials can generally be cut with lower speeds, but if the material tends to grab the blade, consider a higher speed or even a finer-toothed blade.
- ▶ Typically, harder materials are best cut with a higher speed, but the trade off is higher heat build up.
- ▶ Friable materials, such as drywall, can be cut with any speed. So the deciding factor on speed is achieving the best control.
- ▶ All other things being equal, lower speeds may be used with the plunge base versus a freehand cut.

# Maintenance and Adjustment



**WARNING!** 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 (see your dealer for information on locating a service center).



**WARNING!** To reduce the risk of electrocution or other personal injury, always unplug the tool from the power supply outlet before performing any maintenance or repair work on the tool.



**NOTICE:** 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.



**NOTICE:** 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.

## Routine Maintenance

Aside from keeping the tool clean and in operating condition, the Vecturo does not require any specific routine maintenance.

- ▶ Periodically inspect the arbor bore to ensure there is no dust or debris buildup.
- ▶ Inspect the mandrel's serrated shaft for damage or blunting of the serrations. These are what hold the mandrel firmly in the tool.

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

- ▶ As a general rule, keep the tool clean of all dust and debris. Even soft-wood dust can be abrasive over time.
- ▶ Examine all moving parts for dust and debris.

## Troubleshooting

Symptom	Possible Causes
Motor does not start	<ul style="list-style-type: none"><li>▶ Check that the cord is properly plugged into an outlet.</li><li>▶ Make sure the Plug-it connector is properly inserted and fully tightened.</li><li>▶ Make sure the outlet has power. Check the circuit breaker or try another outlet.</li><li>▶ 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.</li><li>▶ Inspect the power cord (including extension cords) for damage or missing prongs.</li><li>▶ The motor brushes may have worn and need replacement.</li></ul>
Tool runs sporadically or loses power	<ul style="list-style-type: none"><li>▶ Make sure the Plug-it cord is properly tightened. Inspect the plug and tool power inlet for signs of overheating. If signs of overheating are present, discontinue use and have the tool serviced. If the Plug-it cord shows signs of overheating, do not use the cord for other tools, as it can damage the inlet of the other tool.</li></ul>
Blades are loose	<ul style="list-style-type: none"><li>▶ Verify that the blade was properly installed. Open the Fast-Fix lever, press in on the mandrel, and then re-close the Fast-Fix lever.</li><li>▶ Make sure the arbor bore is clean and does not contain impacted dust and debris.</li><li>▶ Inspect the blade and mandrel to make sure the 12-point splines are not deformed.</li><li>▶ The arbor clutch disks may be worn and need service. Contact the Festool service center for repair.</li></ul>
Blades dull or missing teeth	<ul style="list-style-type: none"><li>▶ It is normal for oscillating blades to wear quickly due to their nature and the amount of heat generated. Deep or binding cuts generate more heat. When using wide blades, take care not to tilt the tool and cause binding in the cut.</li><li>▶ If a tooth catches the workpiece just as the oscillation is reversing, the tooth can easily break off. If it occurs frequently, try using a finer-toothed blade.</li><li>▶ Japanese-style blades are especially prone to breaking teeth, because the teeth are long, thin, have no side-set, and very aggressive in their cutting. To reduce the frequency of breaking teeth, take less aggressive cuts and avoid confined plunging, such as with the plunge base.</li></ul>

## Motor Brush Replacement

Motor brushes provide electricity to the spinning motor armature, and will wear over time. The copper strips on the armature that the brushes connect to is called the *commutator*, and these connect to the windings in the armature. Because these electrical connections are constantly connected and disconnected as the motor turns, it is perfectly normal for there to be sparks at the brushes during normal use. The brushes are designed to disconnect power to the motor when they have worn beyond their usable life. If your Vecturo stops working, it is likely that the brushes have worn and need replacement. Contact Festool for replacement brushes.

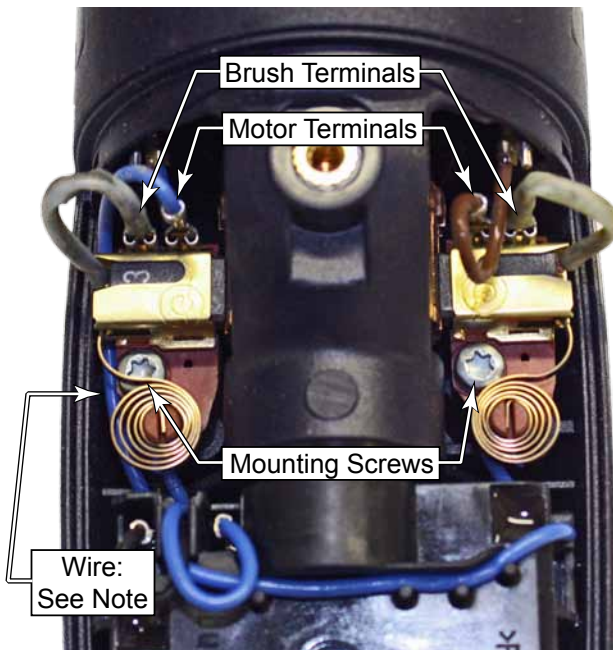


**WARNING!** To avoid the risk of electrical shock, make sure the tool is unplugged from power.

1. Unplug the tool from power.
2. Using a T15 Torx driver, remove the 3 screws that secure the brush cover to the main body. Two screws are self-tapping and 1 is a machine screw.
3. Lift the brush cover off the main body, first at the front and then the rear (plug-it port). During reinstallation, reverse this to engage the rear alignment tabs first.



4. Using a tweezer or needle nose pliers, carefully remove the motor and brush terminals from the brush holders.
5. Using a T15 Torx driver, loosen the brush holder mounting screw, and remove the brush holder with the screw together. **Note:** As you lift the left brush holder out of the motor, make note of how the blue wire is routed to the side of the mounting screw, but below the brass holder.

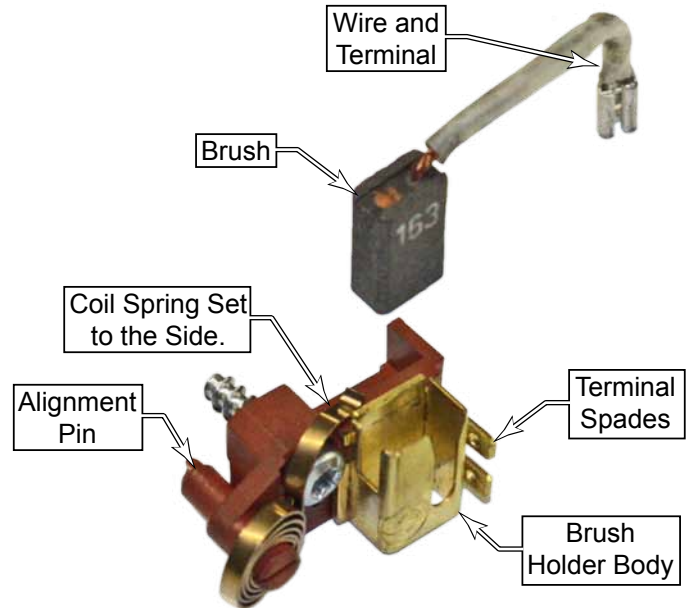


6. Lift the coil spring off the brush and rest it behind the brass brush holder body to keep it in place. Take care to not let the spring loose or uncoil.



**NOTE:** If the coil spring does come loose, it is ½ a revolution to put it back in place.

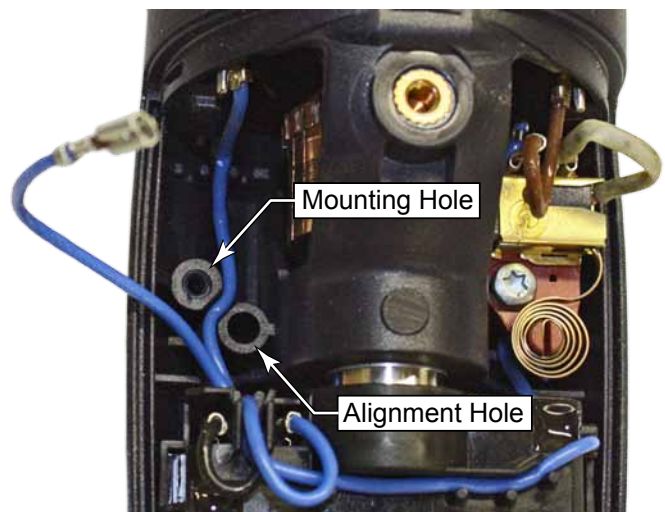
7. Slide the brush out of the brush holder and insert the new brush with the wire and terminal furthest from the coil spring.
8. Move the coil spring back to pressing against the brush. However, if you have difficulty reinstalling the brush holders with the spring engaged, you may consider leaving them loose until after the holders are in place.



9. While compressing the brush into the holder, place the holder into the motor housing, with the alignment pin in the alignment hole. (See images above and below).
10. Tighten the mounting screws and reconnect the wire terminals.



**NOTE:** The new brushes may spark more than normal until they get seated and form to the shape of the commutator. This should be expected.



## Notes

[illegible]



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