Eastwood®

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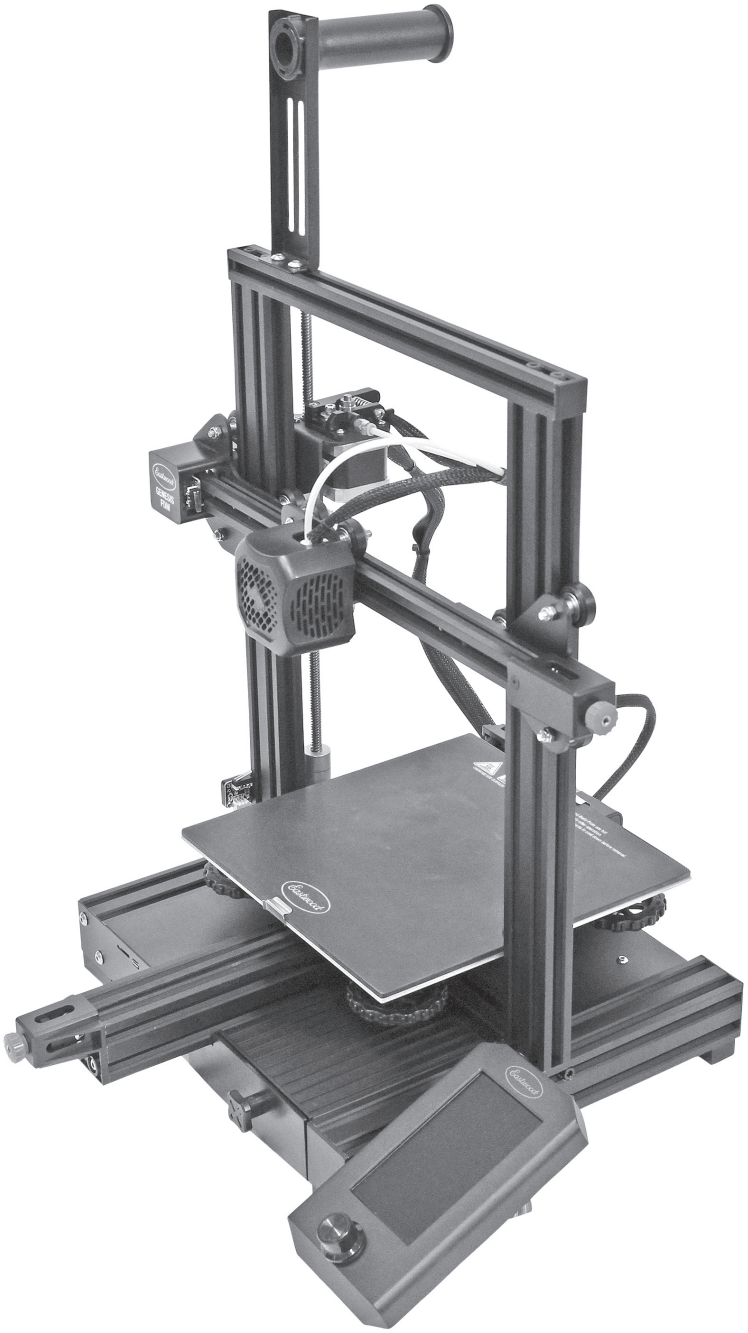
Item #60381

GENESIS FDM 3D PRINTER

ASSEMBLY AND OPERATING INSTRUCTIONS



The **EASTWOOD GENESIS FDM 3D PRINTER** was designed to be the perfect option for 3D printing beginners searching for a robust yet affordable unit. Features such as the aluminum extrusion gantry, quick heating hot end, heated build plate, Bowden drive extruder, and carborundum coated glass build surface make it easy to create high quality prints quickly and efficiently. A convenient 4.3" [110 mm] color LCD screen is easy to use and adjust. The printer has a generous 738 cu. in. [12094 cc] print volume area capable of supporting parts 8.66" x 8.66" x 9.84" [220 x 220 x 250mm] and building them in common filaments such as PLA and PETG.

READ AND UNDERSTAND ALL INSTRUCTIONS AND PRECAUTIONS BEFORE PROCEEDING.

This unit can produce high heat which can cause severe burns.

STATEMENT OF LIMITED WARRANTY

The Eastwood Company (hereinafter "Eastwood") warrants to the end user (purchaser) of all new Eastwood-branded tools and chemicals (collectively called the "products") that each will be free of defects in workmanship and material. This warranty is void if the equipment has been subjected to improper installation, improper care or abnormal operations.

WARRANTY PERIOD:

All warranty periods begin on the date of purchase from Eastwood. Warranty Periods are listed below, along with the products covered during those warranty periods:

3-Year Warranty on Material, Workmanship, and Defects:

- Eastwood MIG 135 Welder
- Eastwood TIG 200 DC
- Eastwood MIG 175 Welder
- Eastwood TIG 200 AC/DC
- Eastwood MIG 250 Welder
- Eastwood MP140i Welder
- Eastwood TIG 200 Digital
- Eastwood MP200i Welder
- Eastwood Versa-Cut 20
- Eastwood Elite MP250i Welder
- Eastwood Versa-Cut 40
- Eastwood 90A Flux Core Welder
- Eastwood Versa-Cut 60
- Eastwood ARC 80 Stick Welder
- Eastwood Rotisserie
- Eastwood Contour SCT®
- Concours Pro HVLP Paint Gun

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 3-year warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty. All other components are covered by the warranty and will be repaired or replaced at the discretion of Eastwood.

2-Year Warranty on Material, Workmanship and Defects:

- Eastwood Air QST-30/60 Scroll Compressor
- Eastwood 80 Gal. 7.5 HP Compressor
- Eastwood 80 Gal. 5 HP Compressor
- Eastwood 60 Gal. 4.7 HP Compressor
- Eastwood 60 Gal. 3.7 HP Compressor
- Eastwood Panoramic Welding Helmet
- Eastwood 30 Gal. 1.9 HP Compressor
- Eastwood XL View Welding Helmet
- Eastwood Lg View Welding Helmet
- Eastwood Auto Darkening Helmet
- Concours 2 HVLP Paint Gun

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 2-year warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty.

1-Year Warranty on Material, Workmanship and Defects:

- Eastwood Tools Not Included Above
- Fairmount Tools

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 1-year warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty.

90-Day Warranty on Material, Workmanship and Defects:

- Eastwood Paints & Chemicals
- Rockwood Tools

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 90-day warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty.

Lifetime Warranty on Material, Workmanship and Defects:

- Selected Eastwood Hand Tools carry a Limited Lifetime Warranty

Items not covered under this warranty: Abuse, neglect, and lack of maintenance is not covered under this warranty.

CONDITIONS TO OBTAIN WARRANTY COVERAGE:

- Proof of purchase must be provided for all warranty claims
- Purchaser must first contact Eastwood at 1-800-343-9353 for an RMA Number before Eastwood will accept any warranty returns. Final determination of warranty on welding and cutting equipment will be made by Eastwood.

WARRANTY REPAIR: If Eastwood confirms the existence of a defect covered under this warranty plan, Eastwood will determine whether repair or replacement is the most suitable option to rectify the defect. At Eastwood's request, the purchaser must return, to Eastwood, any products claimed defective under Eastwood's warranty.

FREIGHT COSTS: The purchaser is responsible for shipment to and from Eastwood.

WARRANTY LIMITATIONS:

EASTWOOD WILL NOT ACCEPT RESPONSIBILITY OR LIABILITY FOR REPAIRS UNLESS MADE BY EASTWOOD. EASTWOOD'S LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE COST OF CORRECTING THE DEFECT OF THE EASTWOOD PRODUCT. EASTWOOD WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (SUCH AS LOSS OF BUSINESS, ETC.) CAUSED BY THE DEFECT OR THE TIME INVOLVED TO CORRECT THE DEFECT. THIS WRITTEN WARRANTY IS THE ONLY EXPRESS WARRANTY PROVIDED BY EASTWOOD WITH RESPECT TO ITS PRODUCTS. WARRANTIES IMPLIED BY LAW SUCH AS THE WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY FOR THE EQUIPMENT INVOLVED. THIS WARRANTY GIVES THE PURCHASER SPECIFIC LEGAL RIGHTS. THE PURCHASER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

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LEARN HOW TO SET UP AND USE YOUR 3D PRINTER
with FREE Instructional Videos Available at **eastwood.com** – keyword search “3D Printer”

SPECIFICATIONS

Power Requirements:	100-120VAC, 50/60Hz, 1 Ph, 4.0A 200-240VAC, 50/60Hz, 1 Ph, 2.1A
Print Volume:	8.66”[220mm] X-Axis 8.66” [220mm] Y-Axis 9.84” [250mm] Z-Axis 738 cu in [12.1 Liters]
Extruder Temperature:	0°C - 240°C
Extruder:	Bowden Drive PTFE Tube Hot End 0.4mm Brass Nozzle
Print Bed Construction:	Glass, Carborundum top coating
Print Bed Temperature:	0°C - 110°C
Print Bed Levelling:	Manual
Controls:	LCD Display, 480 x 272 Pixel Resolution
Storage Input:	Micro SD Card
Filament Diameter:	1.75mm
Additional Features:	Resume printing after power loss
Assembled Dimensions:	18.70” x 18.50” x 24.41” [475mm x 470mm x 620mm]
Display Screen Size:	4.3” [110mm]

INCLUDES

COMPONENTS; FIG A

- **(1)** Eastwood Genesis FDM 3D Printer Base Assembly
  (Power Adapter, Control Boards, Build Plate, Y-Axis, Hot End, Wiring Harness) **[A]**
- **(1)** Z-Axis Stepper Motor Assembly **[B]**
- **(1)** Z-Axis Threaded Rod **[C]**
- **(1)** Extruder/X-Axis Stepper Motor Assembly **[D]**
- **(1)** Z-Axis Roller **[E]**
- **(1)** Z-Axis Left Upright **[F]**
- **(1)** Z-Axis Right Upright **[G]**
- **(1)** X-Axis Beam **[H]**
- **(1)** Z-Axis Upright Brace **[J]**
- **(1)** Filament Holder Upright **[K]**
- **(1)** Filament Spool Rod w/ Nut **[M]**
- **(1)** 4.5ft (1.4m) Power Cord **[N]**
- **(1)** Control Panel Assembly
  (Control Panel, Bracket w/ Screws and T-Nuts) **[P]**

COMPONENTS; FIG B

- **(1)** Putty Knife **[Q]**
- **(1)** Straight Cutters **[R]**
- **(1)** Extruder Manual Drive Wheel **[S]**
- **(1)** Nozzle Clearing Rod **[T]**
- **(1)** X-Axis Belt Tensioner **[U]**
- **(1)** X-Axis Belt **[V]**
- **(1)** Spare Nozzle **[W]**
- **(2)** PTFE Tube Fitting **[X]**
- **(2)** Tube Fitting Lock Clip **[Y]**
- **(5)** M5x45 Hex Cap Screw w/ retained Lock Washer **[Z]**
- **(5)** M5x25 Hex Cap Screw w/ retained Lock Washer **[AA]**
- **(5)** M4x16 Button Cap Screw w/ retained Lock Washer **[BB]**
- **(2)** M4x18 Flat Head Screw **[CC]**
- **(1)** M4x14 Flat Head Screw **[DD]**
- **(2)** M5x8 Button Cap Screw **[EE]**
- **(2)** M5 T-Nut **[FF]**
- **(5)** Zip Ties **[GG]**
- **(1)** Micro SD to USB Adapter with 8GB Micro SD Card **[HH]**
- **(1)** Z-Axis Limit Switch with Hardware Installed **[JJ]**
- **(2)** Extrusion End Cap **[KK]**
- **(1)** 200g PLA Filament **[MM]**
- **(1)** Flat Blade Screwdriver **[NN]**
- **(1)** 6mm Flat Wrench **[PP]**
- **(1)** 10mm/8mm Double Ended Flat Wrench **[QQ]**
- **(1 each)** 1.5mm, 2mm, 2.5mm, 3mm, 4mm Hex Key **[RR]**

FIG. A

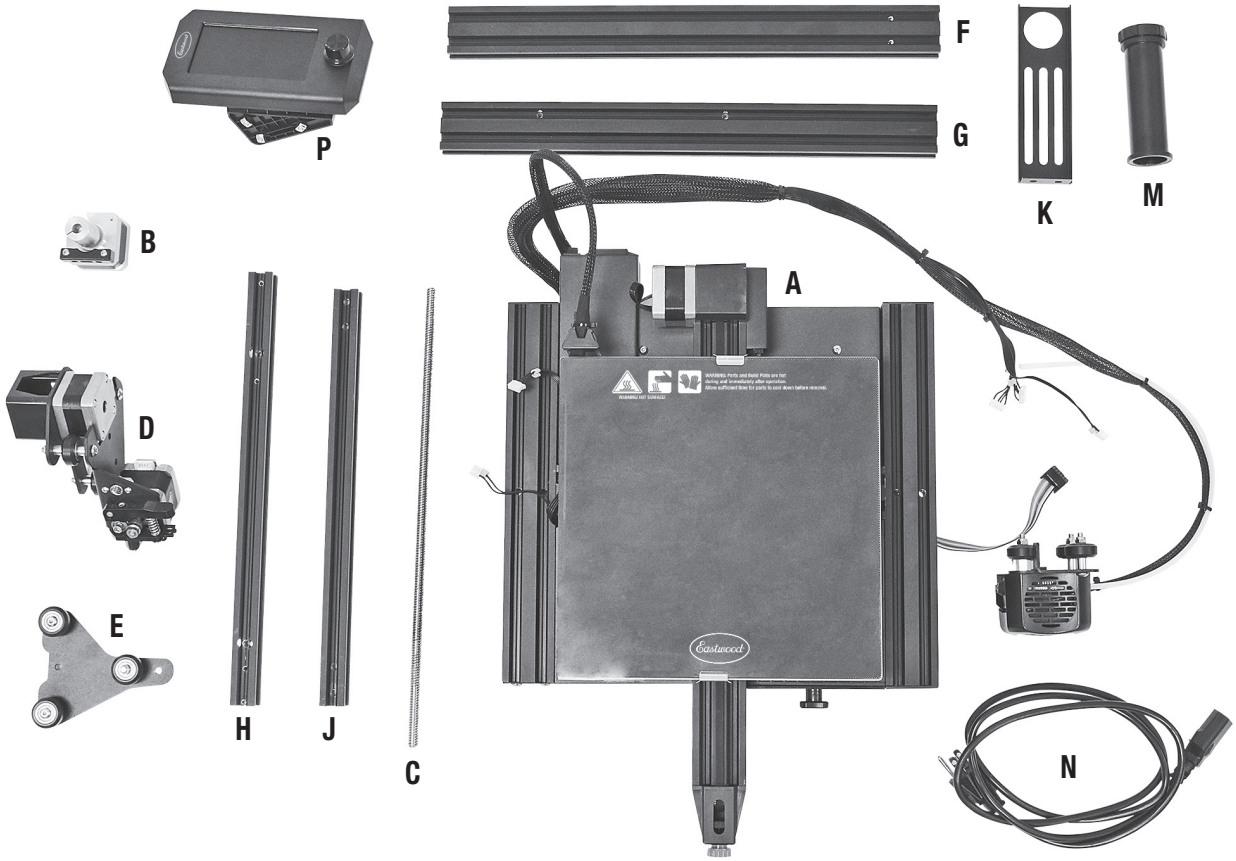
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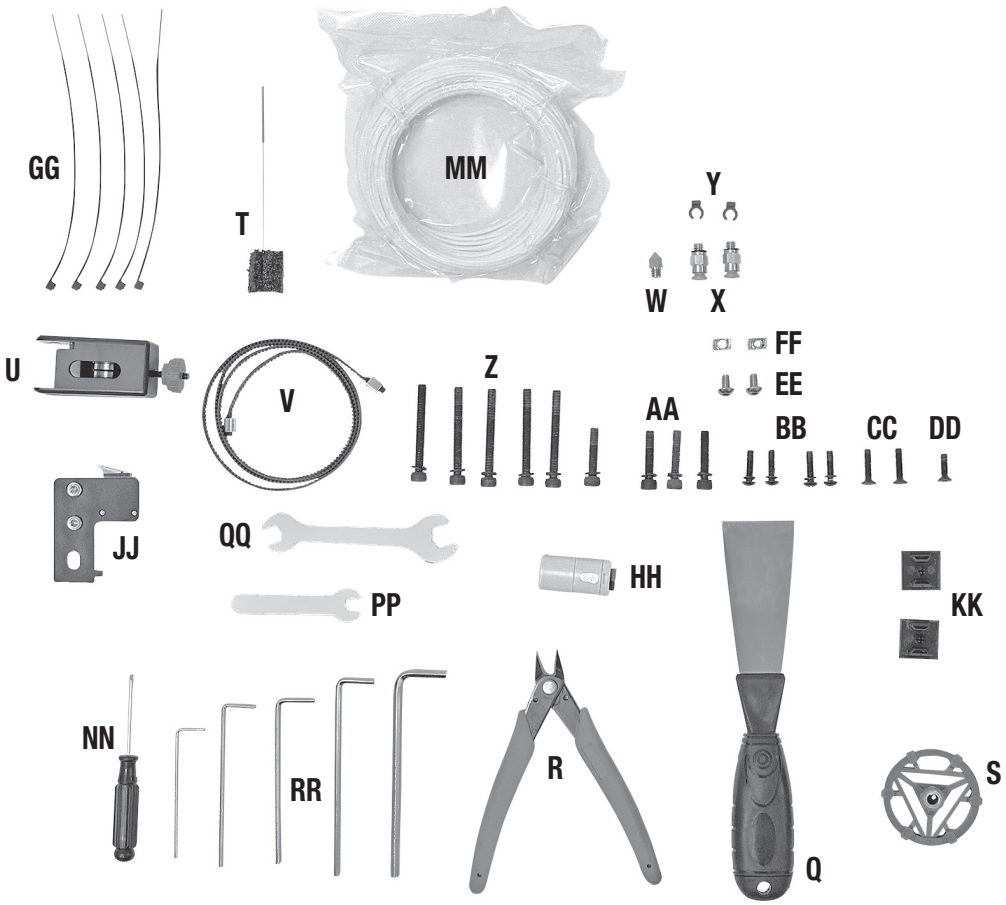
FIG. B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SAFETY INFORMATION

The following explanations are displayed in this manual, on the labeling, and on all other information provided with this product:

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

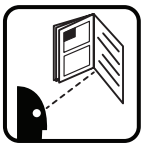
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

⚠ NOTICE

NOTICE is used to address practices not related to personal injury.



⚠ READ INSTRUCTIONS

- Thoroughly read and understand these product instructions before using the Eastwood Genesis FDM 3D Printer.
- Keep these product instructions for future reference.

⚠ WARNING BURN HAZARD!

- Contact with the Eastwood Genesis FDM 3D Printer Nozzle, Bed or attachments can cause serious burns.
- This printer generates high heat in the Extruder, Nozzle and Bed area which can exceed 465°F [240°C]. Use extreme caution when adjusting and printing. Never touch Extruder, Nozzle, Bed and finished printed parts when switch is on. Allow sufficient time for cooling before touching finished printed parts. Wear protective heat-resistant gloves when using this equipment.

⚠ WARNING RESPIRATORY HAZARD!

- Melted plastic printer filament can release hazardous or toxic substances. Breathing these fumes can cause serious respiratory health conditions. Use in a well-ventilated area and always use NIOSH approved respiratory protection while using this Eastwood Genesis FDM 3D Printer.

⚠ CAUTION EYE INJURY HAZARD!

- Hot plastic may be ejected printing process. Eye protection should be worn at all times when operating this tool. Use ANSI approved safety glasses. Everyday eyeglasses are NOT safety glasses.

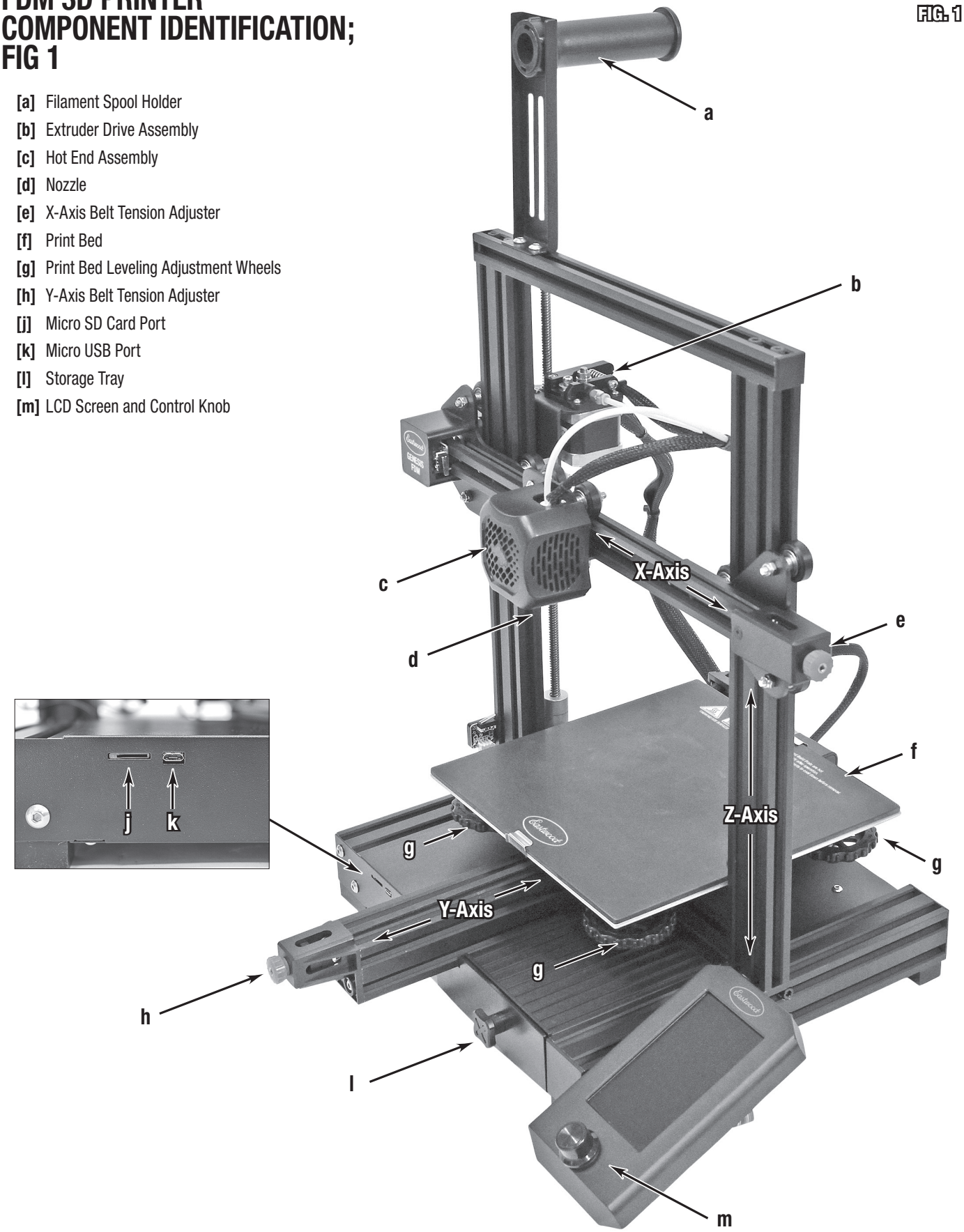
⚠ CAUTION INJURY HAZARD!

- **DO NOT** use finished printed objects to support the weight of a person or valuable property as serious injury or property damage may occur. Finished objects are for hobby use only. **DO NOT** use objects produced by this printer to replace professionally designed and manufactured, stress bearing parts in any device or vehicle.

EASTWOOD GENESIS FDM 3D PRINTER COMPONENT IDENTIFICATION; FIG 1

FIG. 1

[a] Filament Spool Holder
[b] Extruder Drive Assembly
[c] Hot End Assembly
[d] Nozzle
[e] X-Axis Belt Tension Adjuster
[f] Print Bed
[g] Print Bed Leveling Adjustment Wheels
[h] Y-Axis Belt Tension Adjuster
[j] Micro SD Card Port
[k] Micro USB Port
[l] Storage Tray
[m] LCD Screen and Control Knob



3D PRINTING GLOSSARY OF TERMS

TERM	DEFINITION
Hot End	The hot end is the component group on the printer that generates heat to melt the filament for extrusion through the nozzle. This term encompasses components such as the nozzle, heat sink, cooling fans, heat break, heater cartridge, and thermistor. The Eastwood Genesis FDM 3D printer has a hot end with a PTFE tube heat break because it has excellent function below 240°C. The term "all metal hot end" is often referenced for printing higher temperature materials, which means the filament only comes into contact with metals in its path through the hot end.
Stepper Motor	This is a type of motor commonly used on CNC machines. It has discrete phase positions, known as steps, that translate into accurate and fully controlled movement. All axes on the Eastwood Genesis FDM 3D printer are controlled by a stepper motor.
CNC	An acronym for computer numerical control, this means that a machine is primarily controlled by a computer. 3D printers fall into this category.
CAM	Computer-aided machining, a software that takes a drawing file and turns it into a path that can be post processed into a G-code file for CNC machine usage is referred to as CAM software. For 3D printing a Slicer is a type of CAM software.
G-code	The programming code language that CNC machines understand. Typically, movement commands start with a "G", hence the name G-code. Miscellaneous commands start with "M".
Nozzle	The nozzle is the functional component that is heated so the filament can be forced through it. The nozzles are commonly brass or another metal and have a nominal orifice in the end for the filament to be pushed through. The Eastwood Genesis FDM 3D Printer nozzle has a standard 0.4mm orifice.
Post Processor	The post processor takes a path created in a computer-aided machining software and converts it into the G-code file machine language. Slicers do this all-in-one operation.
Slicer	This is a type of CAM software specifically created for 3D printing. Slicers take a 3D object file, commonly an STL, and "slice" it into many layers. It will automatically create a path for the nozzle to apply filament in and can post process that path into G-code so it can be saved and run by the machine. Ultimaker Cura is the most popular slicer software and the one that Eastwood recommends.
Extruder	The component group that forces the filament through the feed tube and extrudes it out the hot nozzle is called the extruder. Extruders usually consist of a stepper motor, tubes/guides for the filament, a gear to bite into the filament, and a roller with spring tensioning system to drive the filament into the gear. The Eastwood Genesis FDM 3D printer has what is called a Bowden drive extruder, meaning the motor for extrusion is not integrated into the hot end. It is instead pushed through the guide tube into the hot end. Direct drive extruder systems have the motor and tensioning system mounted to the hot end.
FDM	Acronym for fused deposition modeling, also known as fused filament fabrication (FFF). Currently the most popular and affordable type of 3D printer. The FDM process uses heat in the nozzle to melt filament and pressure to extrude it out the nozzle bonding it to the print bed, and then itself as it builds up.
PLA	Filament type, abbreviation for polylactic acid. PLA is popular in 3D printing due to ease of printing and low odor. Excellent filament for beginners or making prototype parts. Not a good filament for withstanding temperatures greater than approximately 120°F for sustained periods of time. Fairly stiff and high strength.
Filament	In 3D printing the filament is the plastic type that is being used to build the part. Filament types include PLA, PETG, ABS, among many others. They come in different sizes, weights, and colors coiled on a plastic spool. The filament spool size used with most 3D printers is of 1kg net weight in an informally standardized size. The Eastwood Genesis FDM 3D printer requires the most common 1.75mm filament.
PETG	Acronym for polyethylene terephthalate glycol-modified, another common filament type. Similar to PLA in regard to ease of printing but withstands slightly higher temperatures. Much more flexible than PLA and offers some chemical resistance.
Print Bed	The print bed, also known as build surface, print surface, build sheet, among others, is the surface to which the filament is printed on top of. Almost all 3D printers today have a heated print bed, and there are many different surface types which have varying costs, surface finishes, and adhesion levels. The print bed on the Eastwood Genesis FDM 3D printer is glass with a carborundum top coating. This is a light adhesion surface and provides a smooth surface for the bottom of the print. The glass sheet can also be flipped if the preference is to print on uncoated glass.

EASTWOOD GENESIS FDM 3D PRINTER SETUP

The Eastwood Genesis FDM 3D Printer requires some basic component assembly before operation. Unbox and layout all components, then begin assembly instructions.

ASSEMBLY

- First verify that all components are present as listed previously under INCLUDES.
- Start with the Eastwood Genesis FDM 3D Printer Base Assembly **[A]** and check the pre-installed sets of four screws on the bottom, right, and left (hidden from view) sides **(FIG 2)** of the aluminum extrusion base for tightness. Loose screws can result in layer shift during prints.

> **⚠ NOTICE**
>
> **The threads in the aluminum extrusion are far weaker than the steel screws and will strip if over tightened. Only hand snug all fasteners with the hex keys [RR].**

- Adjust the Y-Axis eccentric tensioning nuts under the print bed **(FIG 3)** with the 10mm/8mm Double Ended Flat Wrench **[QQ]**. Adjust the tension on each just tight enough so there is no looseness felt on the bed mount. Pushing the bed should require light pressure and be smooth.
- Now ready the Z-Axis Left Upright **[F]**, Z-Axis Right Upright **[G]** and four M5x45 Hex Cap Screws **[Z]**. Flip the Base Assembly up on its side for easy access to the bottom **(FIG 4a)**. Insert the screws through the bottom and thread them into the aluminum extrusions of the Z-Axis Left and Right Uprights until they are fully fastened, but can slide for adjustment later. The stepper motor mounting holes on the Left Upright must be oriented as shown in **(FIG 4b)** with the holes near the base of the machine. The orientation of the Right Upright is not critical because the mount holes are unused.
- Slide the Extruder/X-Axis Stepper Motor Assembly **[D]** over the Left Upright and the Z-Axis Roller **[E]** over the Right Upright **(FIG 5)**. As with the Y-Axis tensioning nut adjustment described above, adjust the eccentric tensioning nut on each tight enough so there is no slop felt, but they still traverse smoothly. Remove each from the Uprights and proceed to the following Extruder Assembly.

FIG. 2

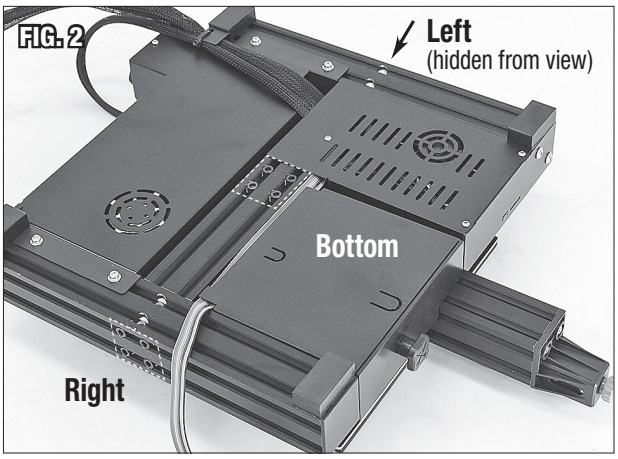


FIG. 3

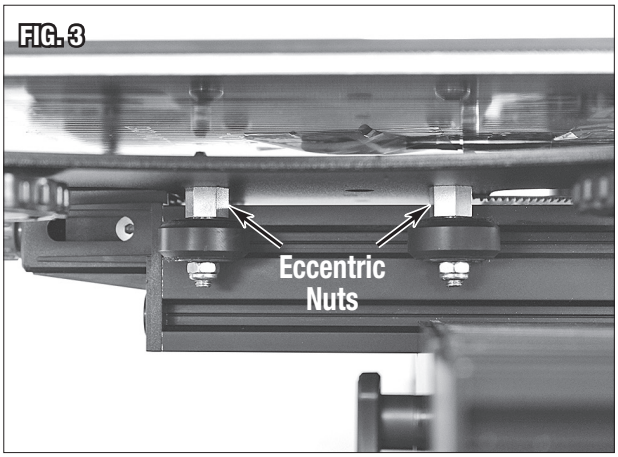


FIG. 4a

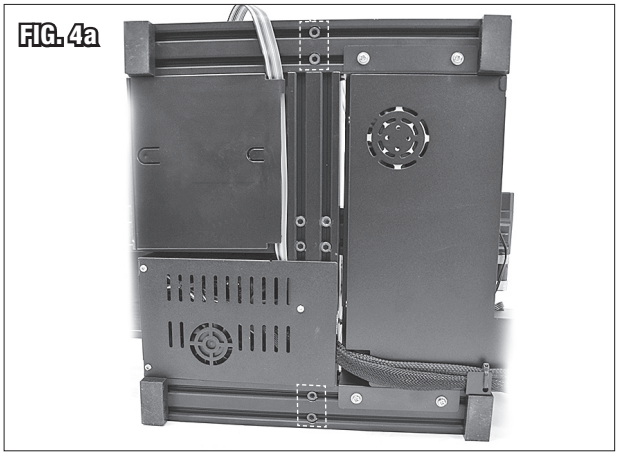


FIG. 4b

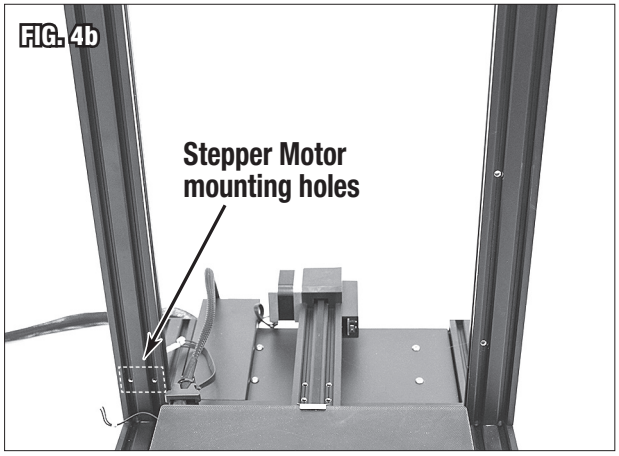
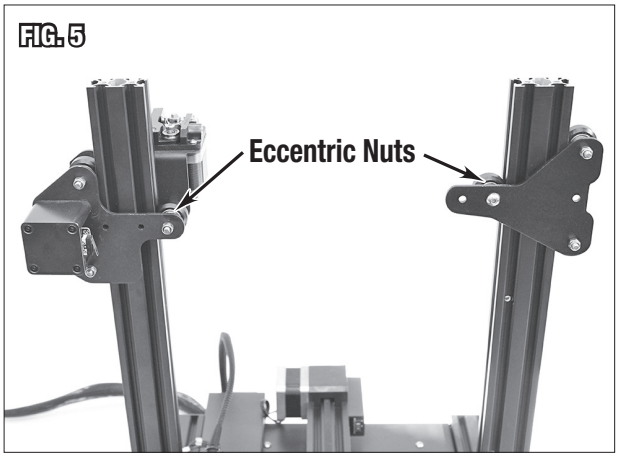


FIG. 5



- Start assembly of the X-Axis and Extruder Assembly with the X-Axis Beam **[H]**, Extruder/X-Axis Stepper Motor Assembly **[D]**, and two M4x16 Button Cap Screws **[BB]**. Place the X-Axis Beam with the counterbored side capturing the roller wheel nut on the Extruder/X-Axis Stepper Motor Assembly plate **(FIG 6)**, and thread in the screws from the rear, through the plate, and into the aluminum extrusion. While tightening, make the edge of the plate flush and parallel with the top of the aluminum extrusion **(FIG 7)**.
- Install the X-Axis Belt **[V]** in the channel and loop it around the stepper motor drive gear to the bottom side. Pull it halfway down the bottom side **(FIG 8)**.
- Roll the hot end assembly onto the X-Axis Beam with the hot end towards the front side **(FIG 9)**. Adjust the eccentric tensioning nut **(FIG 10)** just tight enough so there is no slop felt, but it still traverses smoothly.
- Install the left end of the belt in the left slot on the bottom of the hot end assembly **(FIG 10)**.
- Place the Z-Axis Roller **[E]** with the counterbored side of the X-Axis Beam capturing the button cap screw on the Extruder/X-Axis Stepper Motor Assembly plate **(FIG 6)**, and thread one M4x16 Button Cap Screw **[BB]** from the rear, through the inner most hole, and into the aluminum extrusion **(FIG 11)**.

FIG. 6

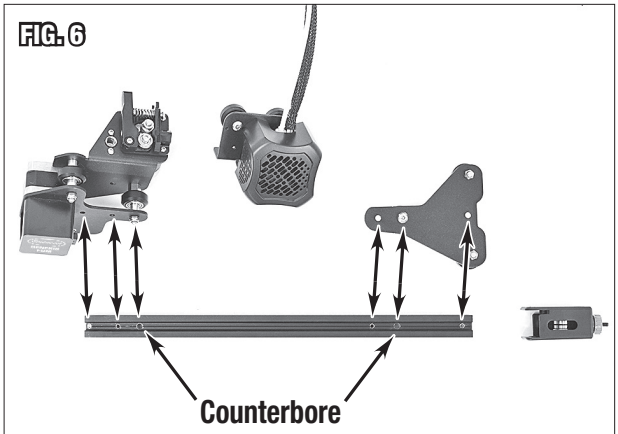


FIG. 7

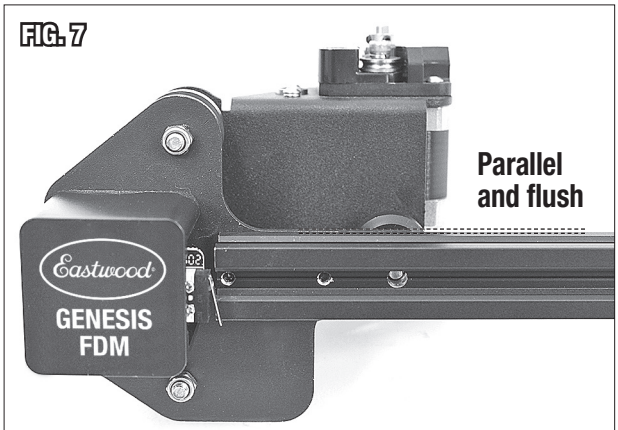


FIG. 8

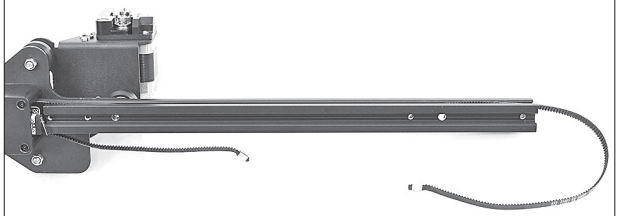


FIG. 9

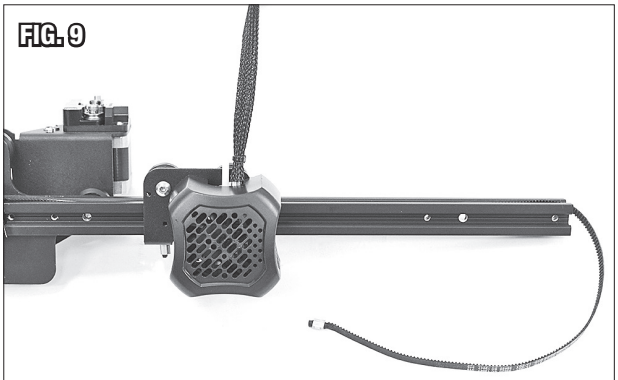


FIG. 10

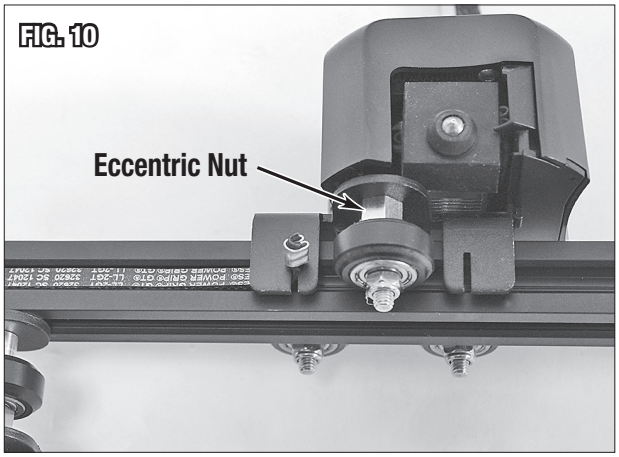
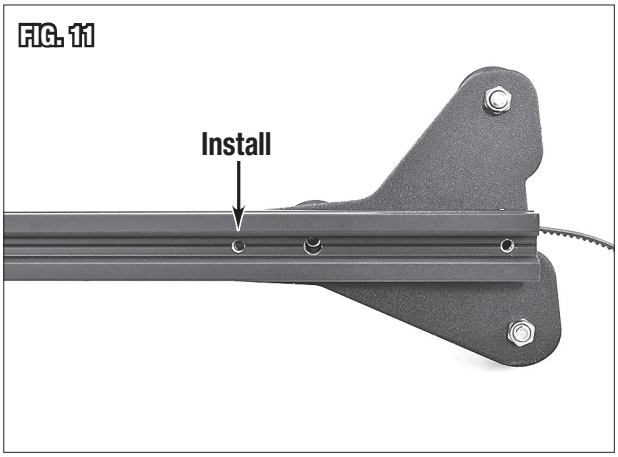


FIG. 11



- Remove the adjustment wheel from the X-Axis Belt Tensioner **[U]**, and make sure to reassemble in the same orientation it came apart **(FIG 12)**. Loop the belt around the wheel of the tensioner and install the end of the belt in the other slot on the bottom of the hot end assembly **(FIG 13)**.
- Install the tensioner cover over the wheel and thread the adjustment wheel on to hold everything in place **(FIG 14)**.
- Now the thread another M4x16 Button Cap Screw **[BB]** from the rear into the remaining hole, through the plate, into the aluminum extrusion. While tightening make the edge of the plate flush and parallel with the top of the aluminum extrusion **(FIG 15)**.
- Install the M4x14 Flat Head Screw **[DD]** into the front side of the tensioner cover. Tighten the tension adjustment wheel until the belt has a slight tension **(FIG 15)**. Verify the pre-installed Y-Axis belt tension is similar.

⚠ NOTICE

The tensioner cover is plastic and will crack if over tightened. Only hand snug all fasteners with the hex keys [RR].

⚠ NOTICE

DO NOT over tighten the belt, it will stretch out prematurely. Tightness is not critical. The belt only needs be tight enough to not skip a tooth when traversing rapidly.

FIG. 12

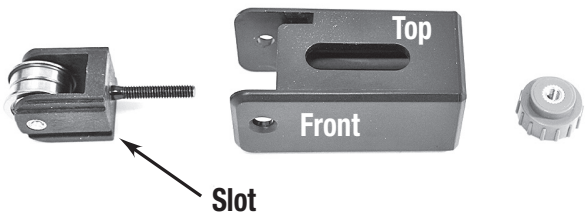


FIG. 13

FIG. 14

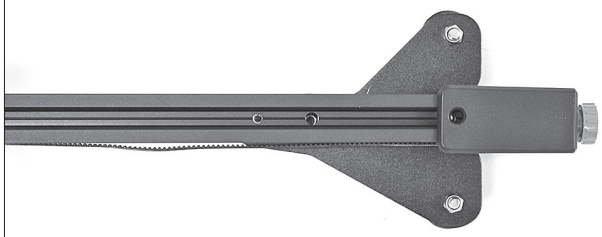
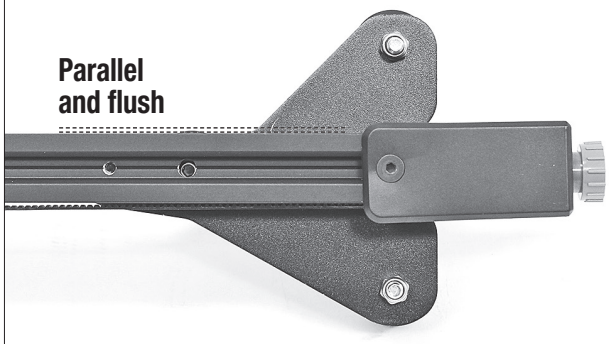


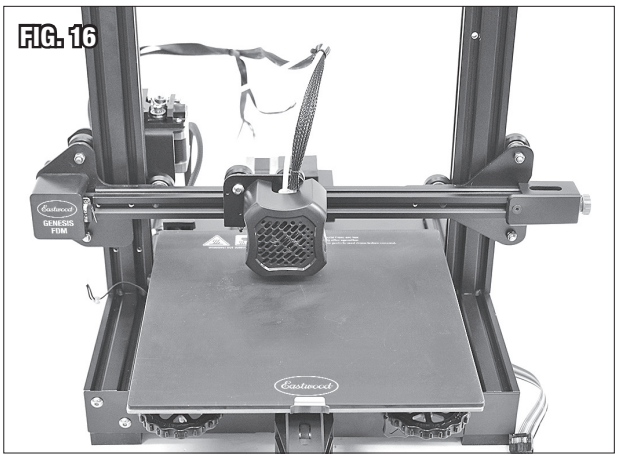
FIG. 15

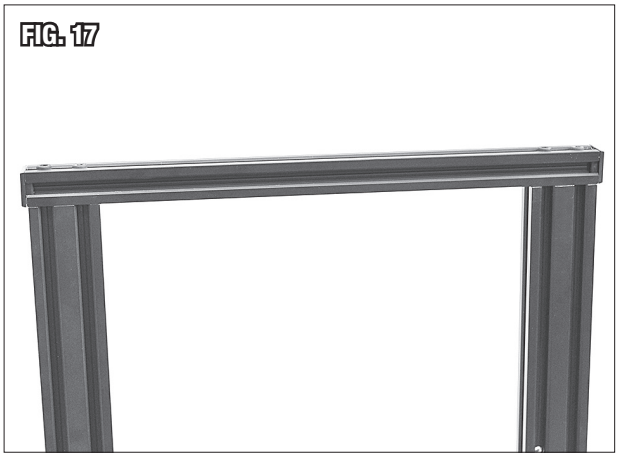


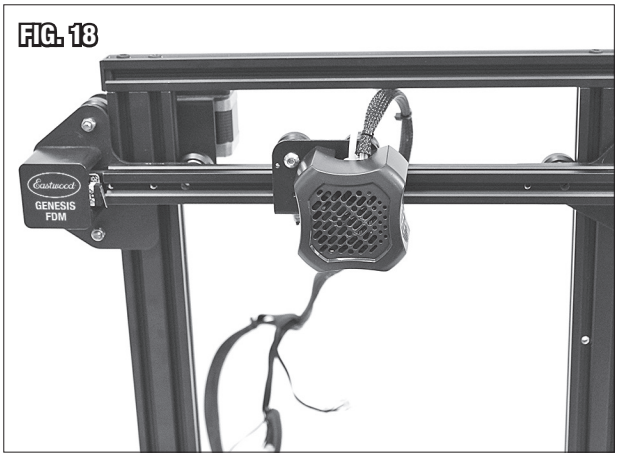
- The X-Axis and Extruder Assembly can now be rolled onto the Uprights. Gently lower it down to the print bed. Do not allow it drop. **(FIG 16)**.
- Install the Z-Axis Upright Brace **[J]** using four M5x25 Hex Cap Screws **[AA]**. Leave the screws loose enough so it can still slide. Place the two Extrusion End Cap **[KK]** over the sharp exposed aluminum ends **(FIG 17)**.
- With the X-Axis gantry resting on the bed, tighten down the two screws for each upright so they are snug.

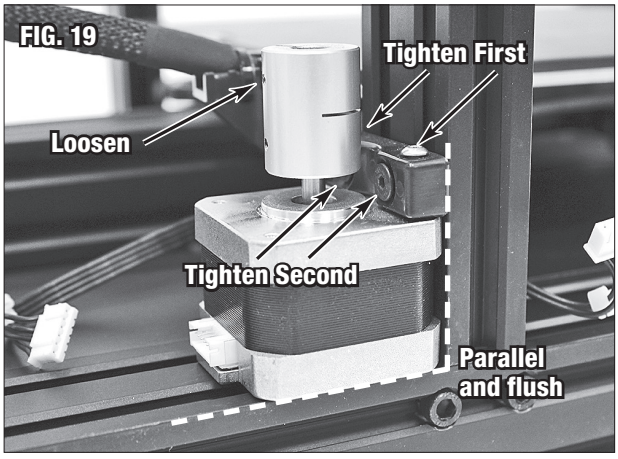
> **⚠ NOTICE**
>
> **The threads in the aluminum extrusion are far weaker than the steel screws and will strip if over tightened. Only hand snug all fasteners with the hex keys [RR].**

- Next, lift the X-Axis gantry up to the top of its range **(FIG 18)** and tighten the four screws for the Z-Axis Upright Brace. The X-Axis gantry should move up and down perfectly smooth now.
- Install the Z-Axis Stepper Motor Assembly **[B]** to the rear of the Left Upright with the two M4x18 Flat Head Screws **[CC]**. Leave the screws slightly loose. Loosen the preinstalled screws, and check that the top collar screw is loose **(FIG 19)**.









- Thread the Z-Axis Threaded Rod **[C]** into the brass bushing from the top **(FIG 20)** of the Z-Axis Stepper Motor Assembly down fully until it is bottomed out in the collar. Hold the motor flush on bottom and to the upright. Now tighten the M4 screws **[CC]** that go into the aluminum extrusion, then the pre-installed screws that go into the motor **(FIG 19)**.

TECH TIP: Look for gaps between the extrusions and the motor, then gently try to spin the threaded rod back out of the collar. It should be effortless to spin when aligned, but if binding is occurring, loosen up the motor mounting screws again and utilize thin shims to achieve perfect alignment. For reference: the pictured unit required an approximately 0.035" thick shim **(FIG 21)**.

- Once aligned, snug the collar so the rod rotates with the motor. The threaded rod should be completely parallel with the upright throughout the range of motion.
- The 6-Pin Extruder Motor connector tagged E, 6-Pin X-Axis Motor connector tagged X, and 3-Pin X-Axis limit switch tagged X can all be connected **(FIG 22)**.
- Install the PTFE Tube Fitting **[X]** to the extruder. Insert the PTFE tube and use the Tube Fitting Lock Clip **[Y]** to retain it **(FIG 23)**.
- Install the Filament Holder Upright **[K]** with the two M5x8 Button Cap Screws **[EE]** and M5 T-Nuts **[FF]**. Install the Filament Spool Rod **[M]** with the preinstalled nut **(FIG 24)**.

FIG. 20

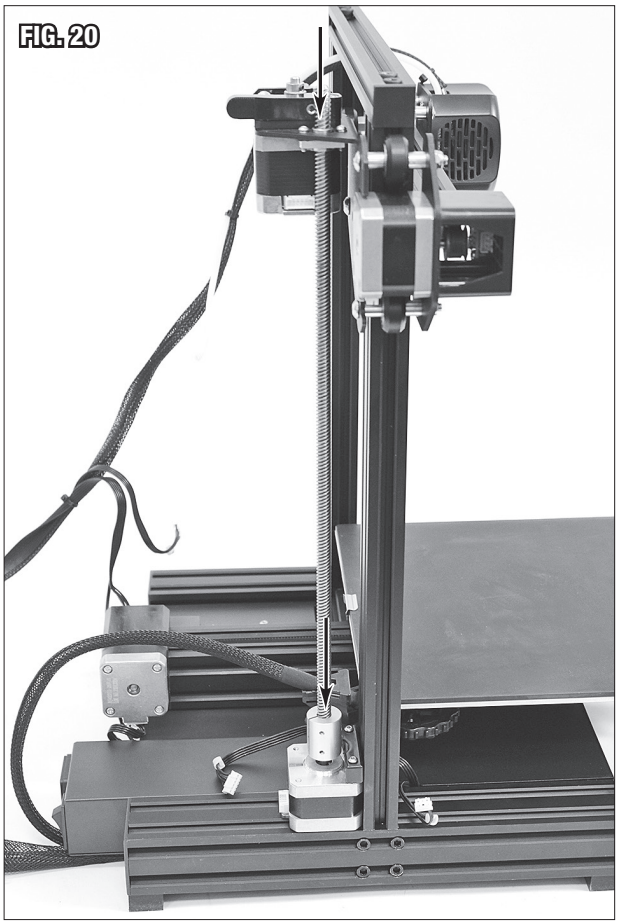


FIG. 21

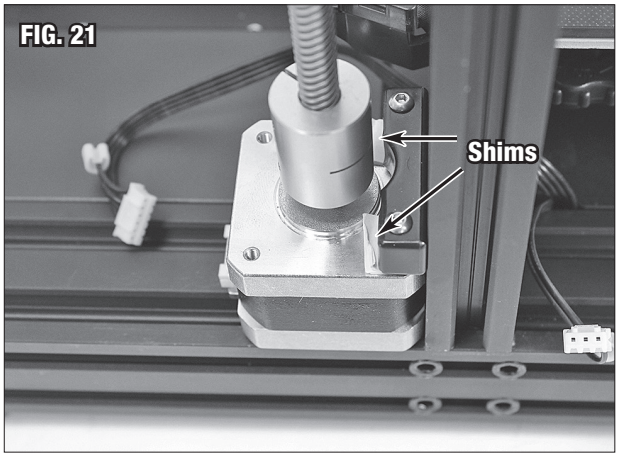


FIG. 22

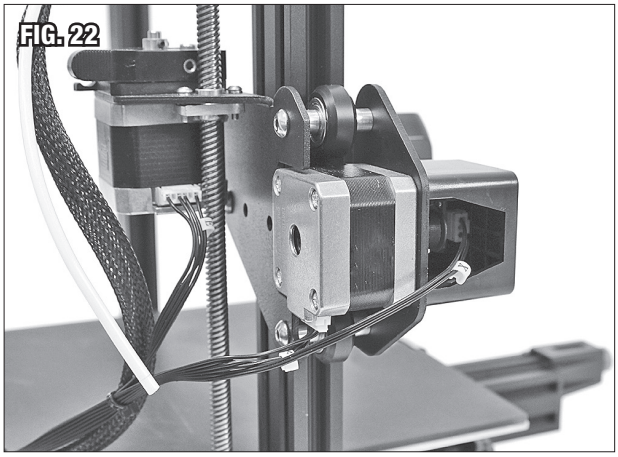


FIG. 23

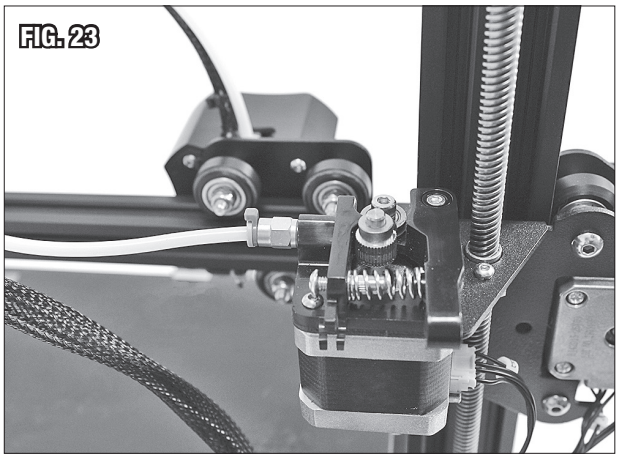


FIG. 24

- Install the Z-Axis Limit Switch **[JJ]** to the left upright using the preinstalled T-nuts and screws. The switch should be towards the front side of the printer. Plug in the 3-pin connector, from the base assembly, tagged Z **(FIG 25)**. Also plug in the 6-pin connector for the Z-Axis stepper motor, from the base assembly, tagged Z.
- Unmount the Control Panel **[P]** from the mount by sliding it upward **(FIG 26)** and use the preinstalled hardware to install the mount on the right-side aluminum extrusion base. Reinstall the screen and plug in the ribbon cable **(FIG 27)**.
- Utilize Zip Ties **[GG]** to secure wiring and ensure it won't be caught up in a print, on the machine, or on surroundings **(FIG 28)**.

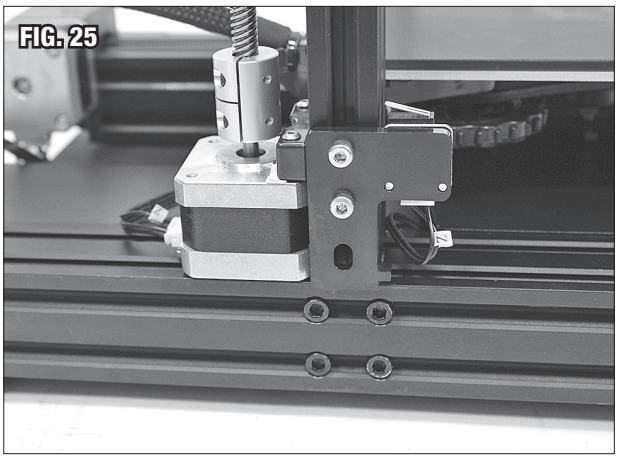


FIG. 25


FIG. 26


FIG. 27

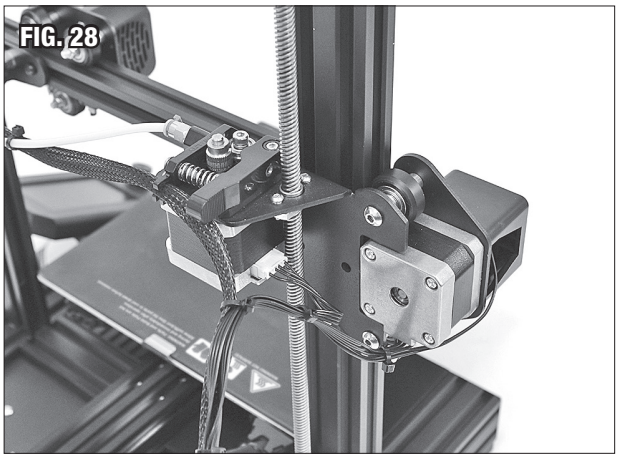


FIG. 28

PLACEMENT

- Locate the Eastwood Genesis FDM 3D printer in a secure area away from children, pets, and adverse environmental factors.
- Place on a surface that is sturdy and will not rock or sway.
- Strong airflow in the direct vicinity of the printer can have an adverse effect on printing performance. Place away from fans or air conditioning vents.
- Provide adequate space around the unit to allow the gantry to traverse unimpeded.
- 3D printing filament material creates toxic fumes and odor as the plastic is extruded out of the nozzle. 3D printing in an unventilated area can pose an inhalation risk. It is recommended to utilize the printer in a large space away from the regular living space, such as a garage or shop.
- The printer may suffer performance problems in excessive ambient temperatures. Room temperature is ideal however, if required, printing can be done in 50° - 100°F [10° – 37.8°C] environments.

POWERING ON

- The Eastwood Genesis FDM 3D Printer requires NEMA 5-15R receptacle on a 100-120VAC household circuit with at least a 10A breaker.
- Verify the power supply is in 100-120VAC mode for North American household circuits **(FIG 29)**. If the printer is being used in a location, such as Europe, where 200-240VAC power is standard the switch can be flipped the other way.
- Plug the connector on the power cord **[N]** into the rear of the machine, then plug the other end into a suitable receptacle.
- Move the rocker switch on the rear of the machine to the "UP" position to power up. The screen will display a brief loading sequence before showing the main screen **(FIG 30)**.

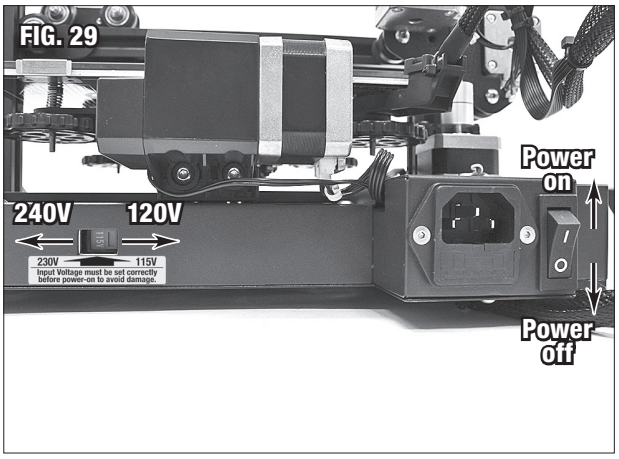
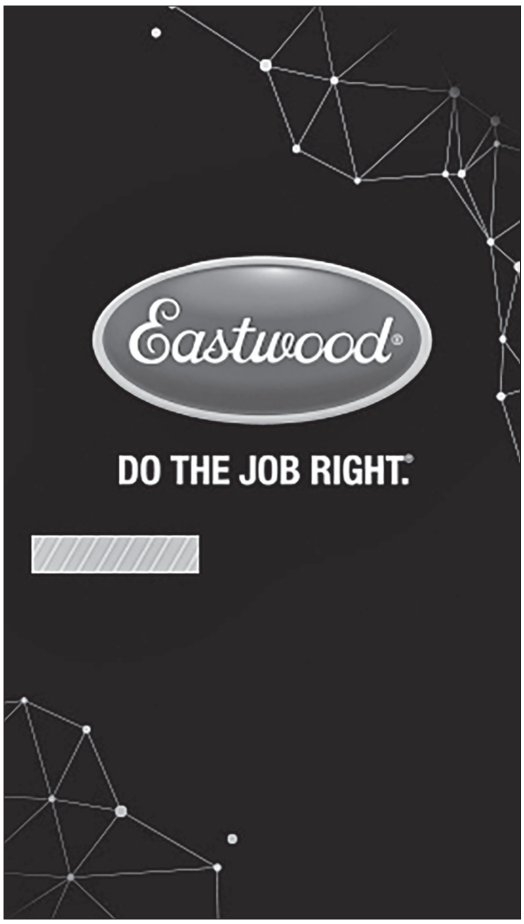


FIG. 30



OPERATION OF THE EASTWOOD GENESIS FDM 3D PRINTER

The Eastwood Genesis FDM 3D Printer is completely operated from the side mounted LCD display, controlled by the knob below the screen. Rotating the knob clockwise and counterclockwise will scroll through the menus and adjust settings. Pressing the control knob will select the highlighted option.

The following steps describe the interface, and how to accomplish certain tasks before explaining printing preparations. The printer is configured by the factory with baseline settings. The most common settings a beginner may adjust are nozzle temperature, bed temperature, and preheat profile settings.

MAIN SCREEN MENUS (FIG 31)

PRINT (FIG 32)

The print option allows immediate access to the storage device for selection of a print file.

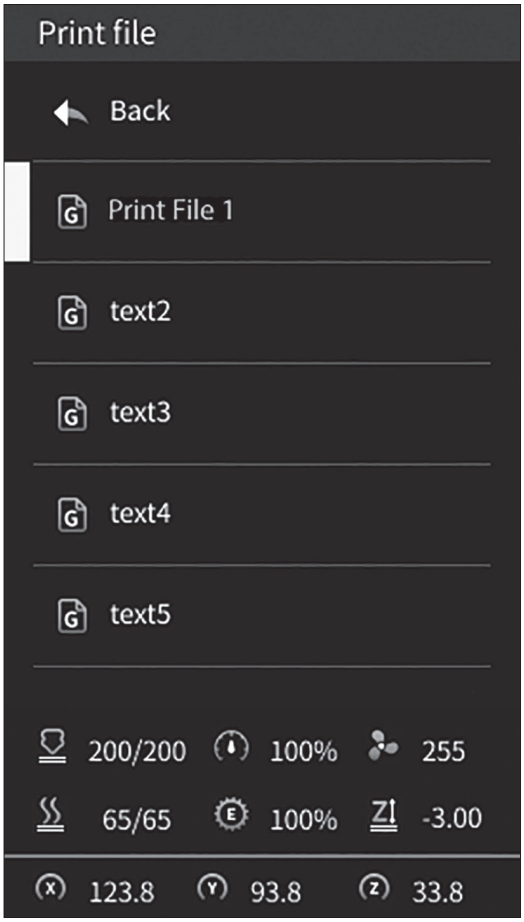
The included Micro SD card has preloaded G-Code files for a quick start to verify function of the printer.

Once a print file is selected the printer will switch to print in progress mode, this screen is covered in Print in Progress Screen Options.

At the bottom of the screen the nozzle temperature actual/set point, bed temperature actual/set point, movement speed, extruder speed, fan speed, Z offset, and X/Y/Z coordinate location of the nozzle will always be displayed. Note that the X/Y/Z coordinates will flash zero until the axes have been zeroed with auto home.

FIG. 31

FIG. 32



PREPARE (FIG 33a)

The prepare screen is useful for axis control, typically for levelling, and preheat/ cooldown modes.

- **Move:** The Move function allows the user to control the position, in millimeters, of the machine's axes.
  To avoid exceeding machine limits, the machine will automatically run the Auto Home procedure if it has not been zeroed. See **FIG 33b** for the following:
  - **Move X:** Control the X-Axis position.
  - **Move Y:** Control the Y-Axis position.
  - **Move Z:** Control the Z-Axis position.
  - **Extruder:** Control how far filament is extruded. For this to function the nozzle must be set to an adequate temperature to extrude filament (greater than 180°C)
- **Disable Steppers:** Turns off all stepper motors. Select this before trying to manually move any stepper motors to avoid possible damage.
- **Auto Home:** Auto zeros all three axes by contacting the limit switches.
- **Set Home Offsets:** This command can be used to define the zero point as somewhere other than when it hits the limit switches.
- **Preheat Profile 1:** Sets the nozzle and bed temperatures to user defined temperature set points. Useful for preparing to print to avoid waiting for the printer to fully warm up when starting a print.

The following two menu items are not shown in **FIG 33a**.
Scroll down the menu to reveal them.

- **Preheat Profile 2:** Second set point profile, useful for another material with slightly different temperature needs.
- **Cooldown:** Turns all temperature set points to zero (off) so the machine will cool itself.

FIG. 33a

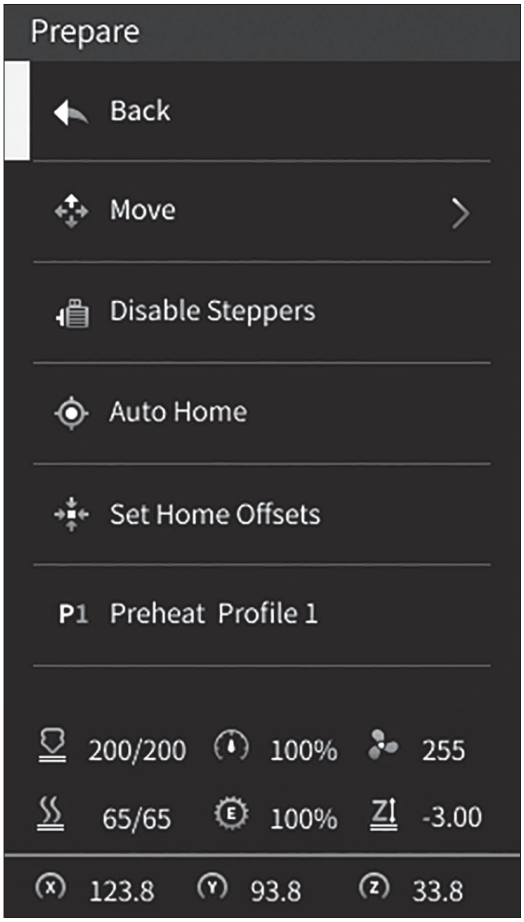
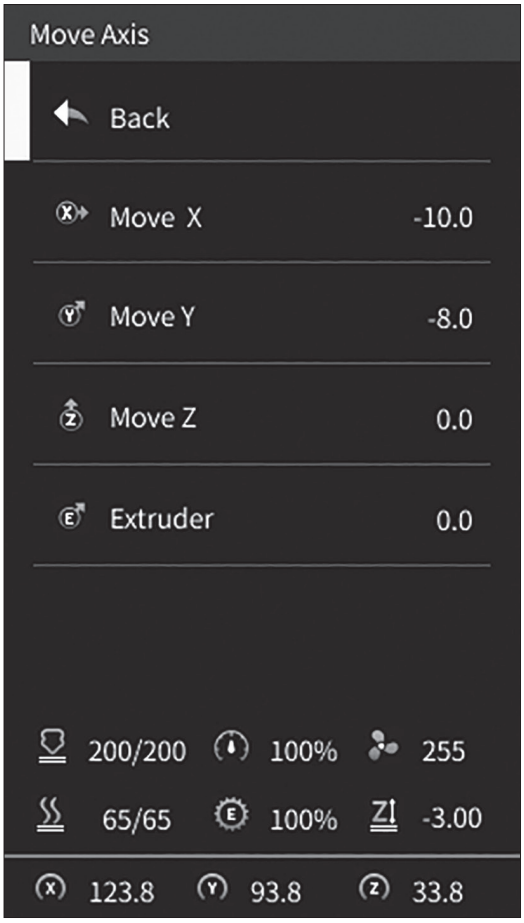


FIG. 33b



SETTINGS (FIG 34)

The control menu has options for directly controlling temperatures, cooling fan speed, preheat profile settings, motion control parameters, and firmware settings.

- **Temperature:** Manually sets the temperatures, cooling fan speed, and preheat profile settings.
  - **Nozzle Temp:** Control nozzle temperature set point in degrees Celsius.
  - **Bed Temp:** Control bed temperature set point in degrees Celsius.
  - **Fan Speed:** Control the part cooling fan speed, the relative adjustment 0 - 255 corresponds to 0 - 100% fan speed.
  - **Profile 1 Settings:** Control and save all parameters for this preheat profile.
    - **Nozzle Temp**
    - **Bed Temp**
    - **Fan Speed**
    - **Store Settings**
  - **Profile 2 Settings:** Control and save all parameters for this preheat profile.
    - **Nozzle Temp**
    - **Bed Temp**
    - **Fan Speed**
    - **Store Settings**
- **Motion:** Parameters under this menu are for maximum limits and transmission ratios.

> **⚠ NOTICE**
> **DO NOT change unless directed to by Eastwood Technical Personnel.**

- **Store Settings:** Stores the current machine settings to the installed storage device.
- **Load Settings:** Loads the machine settings stored on the installed storage device.
- **Restore Defaults:** Resets to factory defaults and wipes the stored profile on the storage device, if installed.

INFO (FIG 35)

Displays information about the printer size, firmware version, and contact details.

FIG. 34

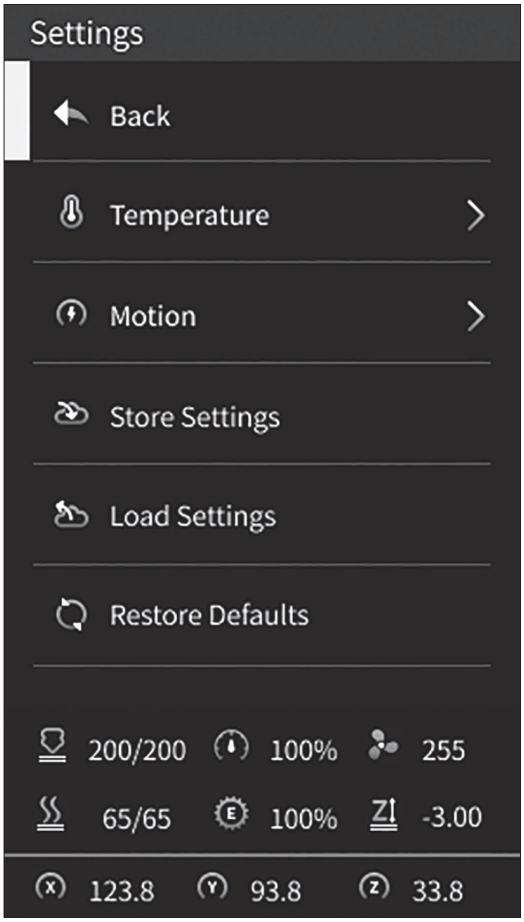
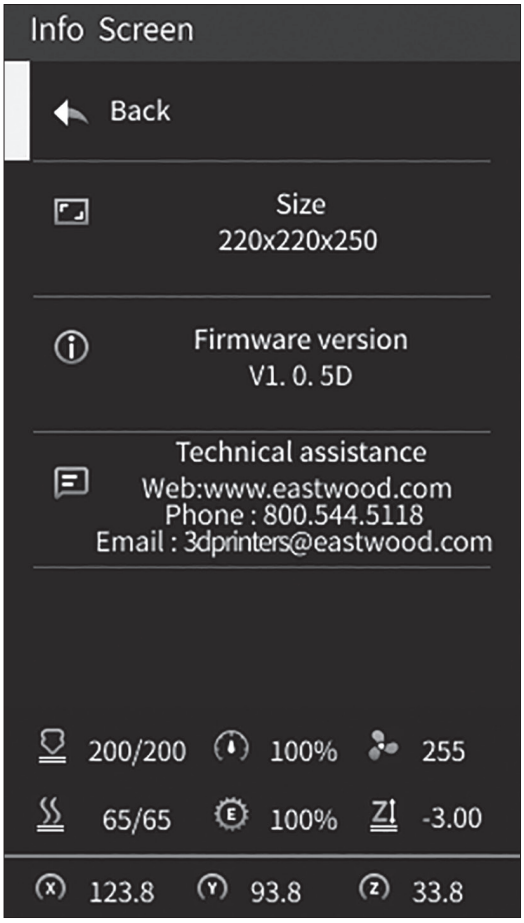


FIG. 35



PRINT IN PROGRESS SCREEN MENUS (FIG 36)

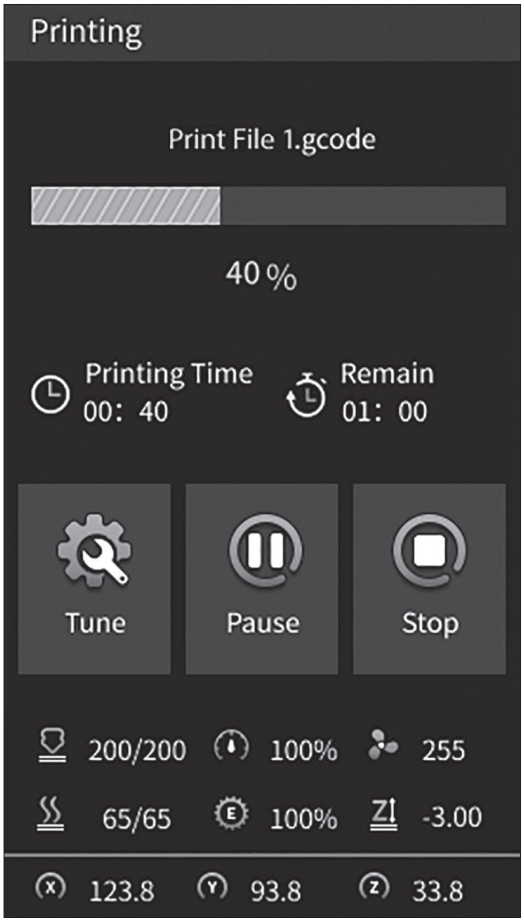
When a print is in progress the screen shows more information and options relevant to the print. Upon finishing it will show the time to it took to print and ask to confirm before returning to the main screen. Printing time elapsed and remaining time format is displayed in **(hh:mm)** format.

- **Tune**
  - **Speed:** Adjusting print speed scales the speed at which the printer is operating, on-the-fly; eg.100 is the set speed as defined by the G-code, 120 is 20% faster, 90 is 10% slower.
  - **Nozzle Temp:** Control nozzle temperature set point in degrees Celsius.
  - **Bed Temp:** Control bed temperature set point in degrees Celsius.
  - **Fan Speed:** Control the part cooling fan speed, relative adjustment 0 - 255.
  - **Probe Z-Offset:** The Z-Offset is a very useful option for the start of the first layer. It allows you to adjust the Z-Axis height above or below the Auto home height in millimeters.

For example; If the first layer is not sticking to the print bed, the Z-Offset can be adjusted to a negative value like -0.20mm, on-the-fly, to get the perfect first layer height. It can also be used to bump the height up if another surface, like tape, is added on top of the build plate for better adhesion. After the auto homing is completed, this can be adjusted, on-the-fly, to get the perfect first layer on a print.

- **Pause:** Pauses the print at the current location and turns off the heating. The print can later be resumed.
- **Stop:** Cancels the current print in progress. This option will ask for confirmation before cancelling the print.

FIG. 36



PREPARING TO PRINT

SETTING Z-AXIS LIMIT SWITCH HEIGHT

It may be necessary to fine-tune the height of the Z-Axis Limit Switch to get the nozzle to an appropriate height above the bed before levelling it.

- Start by adjusting the bed levelling screws down **(FIG 37)** in an even fashion. Note that the minimum bed height is limited by the Y-Axis stepper motor. Allow enough clearance for the bed to be pushed completely rearward without scraping anything on the stepper motor. Having the springs under greater tension makes for a more stable bed.
- Power on the printer and select **Prepare > Auto home**. This will return the printer to the zero position.
- If the nozzle collides with the bed the limit switch must be adjusted up to provide the nozzle sufficient clearance to fit a sheet of paper under it. Re-perform Auto home to verify good clearance **(FIG 37)**.
- If the nozzle is significantly higher than the print surface, adjust leveling screws. If the travel limit of the screws will be exceeded, adjust the limit switch down and re-level. Re-perform Auto home to verify good clearance.
- Once the Z-Axis Limit Switch is adequately adjusted make sure the fasteners are tight enough that it will not shift.

LEVELING THE PRINT BED

An unleveled print bed will result in a poor first layer. Before using the printer, the print bed must be levelled. Once the levelling has been complete, it does not need to be changed unless a degradation in quality of the first layer is noticed, or something has changed the level: e.g., changing a nozzle, removing the hot end, or moving the print bed.

- One of the simplest methods to get a good bed level is utilizing a clean sheet of printer paper as a feeler gauge. Auto home the printer and slide the piece of paper underneath the nozzle.
- Slide the piece of paper back and forth, feeling for resistance, as that corner of the bed is adjusted slowly upward with the leveling wheel. Once the paper starts to contact the nozzle, stop adjusting **(FIG 38)**.
- Next, in **Prepare > Move**, adjust the Z-Axis up approximately 1mm so that it will not collide with the bed clip or surface as it traverses. Adjust the X-Axis to 220mm (maximum).
- Slide the piece of paper back under the nozzle and readjust the Z-Axis back to 0mm. Now repeat the same process of adjustment at this corner.
- Once finished, adjust the Z-Axis up at least 1mm and move the Y-Axis to 220mm as well. Lower Z-Axis and repeat levelling process. Next, move to the final corner 0mm X-Axis, 220mm Y-Axis and repeat.
- Repeat the process rotating around and levelling every corner until the resistance on the paper at each corner feels equal. This can take several rotations as fine-tuning is done.
- The bed is now level and ready to print.

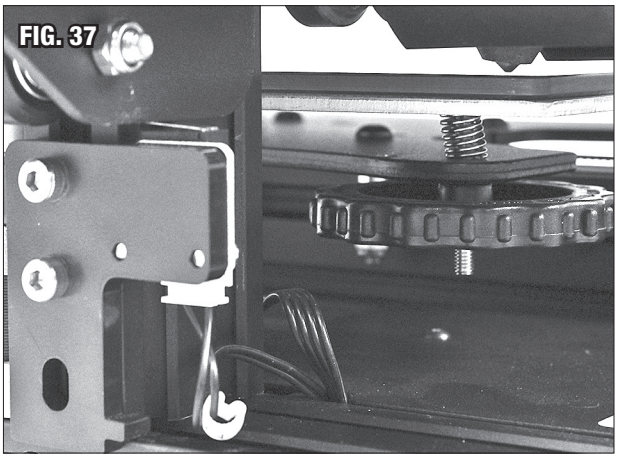


FIG. 37

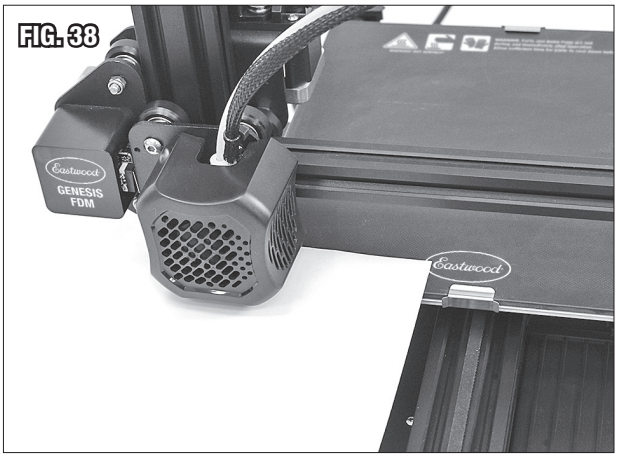


FIG. 38

LOADING FILAMENT

- Place filament spool on the holder at the top of the machine. Cut the end of the filament at an angle to assist with feeding **(FIG 39)**.
- Power on the machine and heat the extruder to a suitable temperature for printing the material being loaded.
- Hold the filament tensioner arm open and insert the filament into and through the extruder motor assembly, past the gear, and guide it through into the tube **(FIG 40)**. Alternatively, the Extruder Manual Drive Wheel **[S]** can be used to rotate the filament in with tension **(FIG 41)**.
- With the extruder up to temperature, continue holding the tension arm open and feed the filament through the tube until filament comes out of the nozzle in a steady stream and solid color.
- The filament is now loaded, and the Cooldown feature can be used to cool off the extruder.
  NOTE: It is a good practice when 3D printing to never leave the nozzle fully heated with the filament stationary for long periods of time. This can lead to heat creep and create filament jams.

UNLOADING FILAMENT

- Similar to loading filament, but in reverse. Heat up the extruder to a suitable temperature for printing.
- Once heated, depress the filament tensioner arm, and push some filament through the nozzle and, in the same stroke, rapidly pull it back out. Doing this will ensure the nozzle is as clear as possible for the next filament loading.
- Continue to pull the filament out completely and Cooldown the machine if filament is not being reloaded immediately.

ADJUSTING FILAMENT TENSION

- Tension is preset from the factory and should be ample to feed filament through in most situations, but the tension can be adjusted by tightening or loosening the spring tension screw **(FIG 42)**.

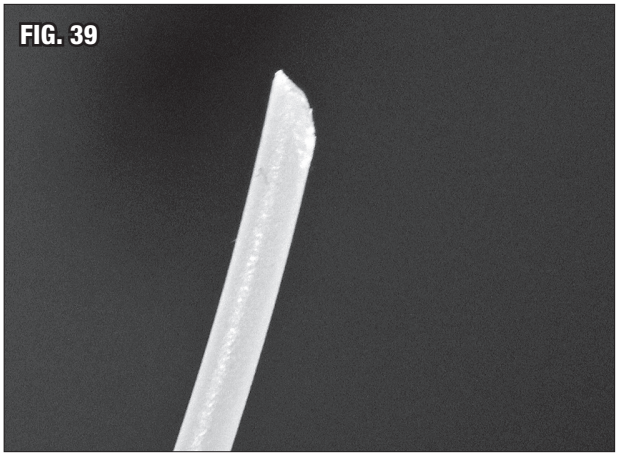


FIG. 39

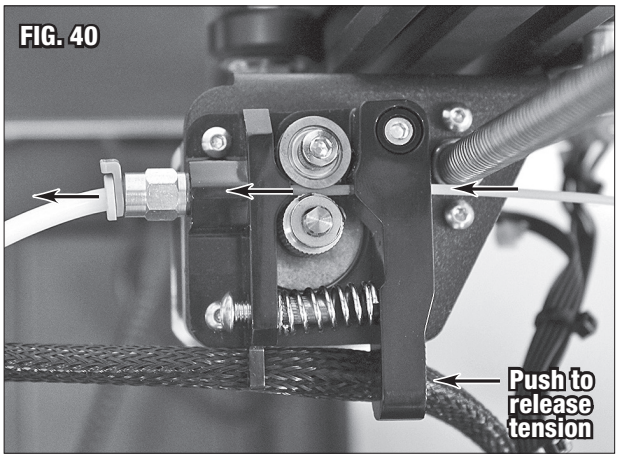


FIG. 40

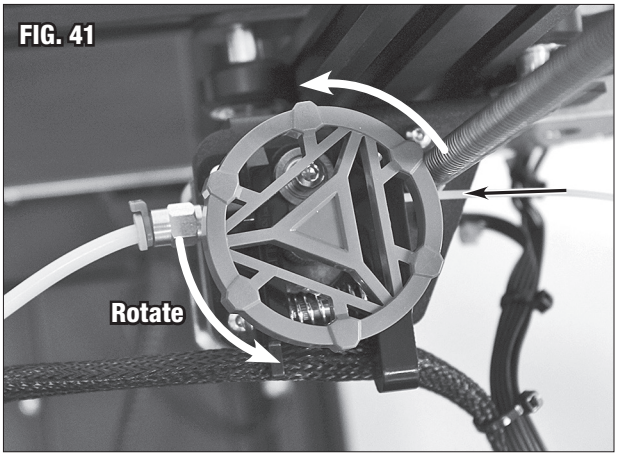


FIG. 41

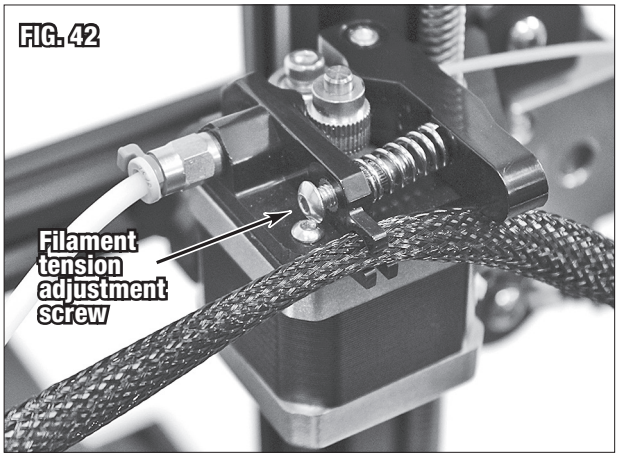


FIG. 42

USAGE OF THE EASTWOOD GENESIS FDM 3D PRINTER

SETTING UP ULTIMAKER CURA FOR USAGE WITH THE EASTWOOD GENESIS FDM 3D PRINTER

- After downloading and installing, open the Ultimaker Cura (**https://ultimaker.com/software/ultimaker-cura**). On the first startup it will go through set up information and ask to add a 3D printer. Select from the drop down for Add a non-networked printer, inside this menu find the Custom drop down and select it **(FIG 43)**.
- Choose the Custom FFF printer option, assign the printer an identifying name, and select the Next button.
- The machine settings tab will open, and the specifications of the printer can be input. See **(FIG 44)** and **(FIG 45)** for the configuration settings. The start and end G-code is shown below, it is also loaded onto the Micro SD card included with the printer for easy copying & pasting. This code should not be altered unless familiar with G-code programming.

Start G-Code

```
; Eastwood Genesis FDM 3D Printer Start G-Code
G92 E0 ; Zero extruder
G28 ; Auto home
G1 Z2 F3000 ; Move Z up 2mm
G1 X0.1 Y20 Z0.3 F5000 ; Move to test line start
G1 X0.1 Y200 Z0.3 F1500 E15 ; Draw 180mm first line up
G1 X0.4 Y200 Z0.3 F5000 ; Move right 0.3mm
G1 X0.4 Y20 Z0.3 F1500 E30 ; Return to start, finishing test line
G92 E0 ; Zero extruder
G1 Z2 F3000 ; Move Z up 2mm
G1 X5 Y15.5 Z0.5 F5000.0 ; Move away from end point
```

End G-Code

```
; Eastwood Genesis FDM 3D Printer End G-Code
G91 ; Relative positioning
G1 E-2 F2500 ; Retract filament 2mm
G1 E-2 Z0.4 F2500 ;Retract and raise Z 0.4mm
G1 X5 Y5 Z10 F3000 ; Move nozzle away and raise
G90 ; Absolute positioning
G1 X0 Y{machine_depth} ; Bring print forward
M106 S0 ; Switch fan off
M104 S0 ; Switch nozzle heater off
M140 S0 ; Switch bed heater off
M84 X Y Z E; Switch all steppers off
```

- Cura is now setup for the printer and ready to create G-code.
- Several profiles for different materials and layer heights have been preloaded to the Micro SD card and can be imported to Cura for easy setup.

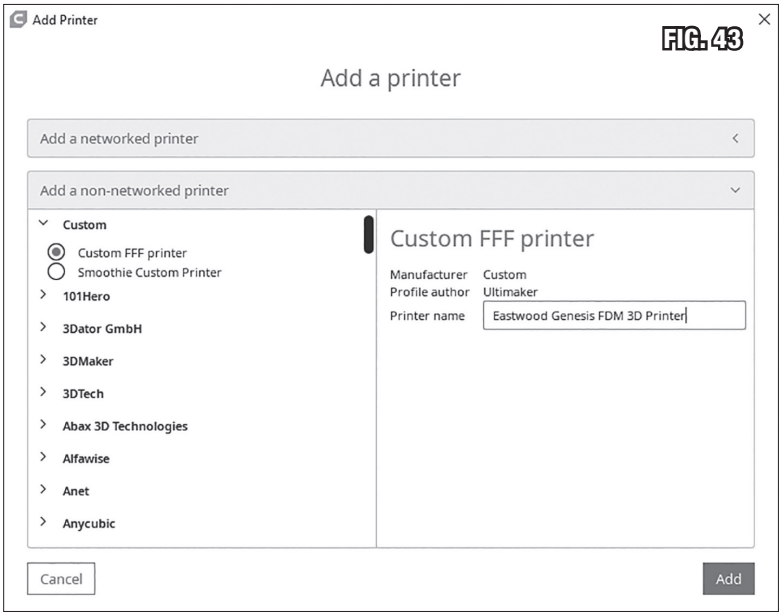


FIG. 43

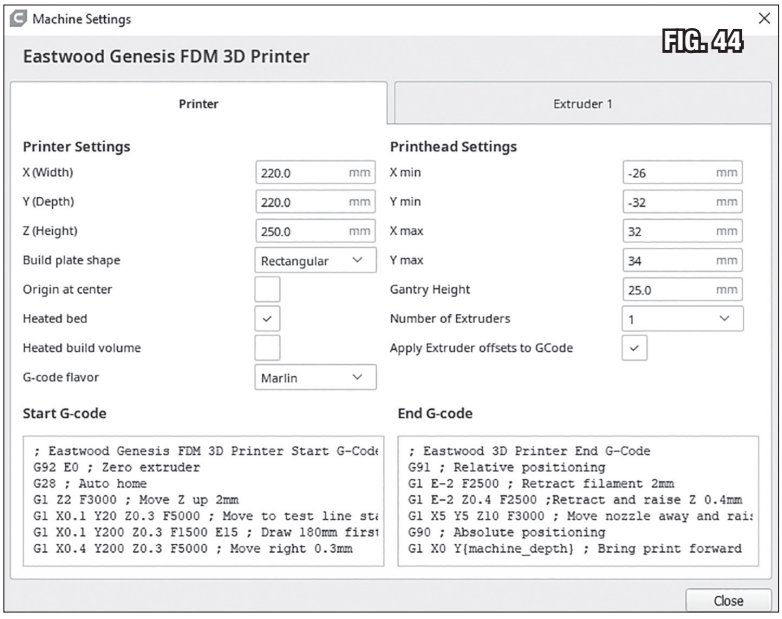


FIG. 44

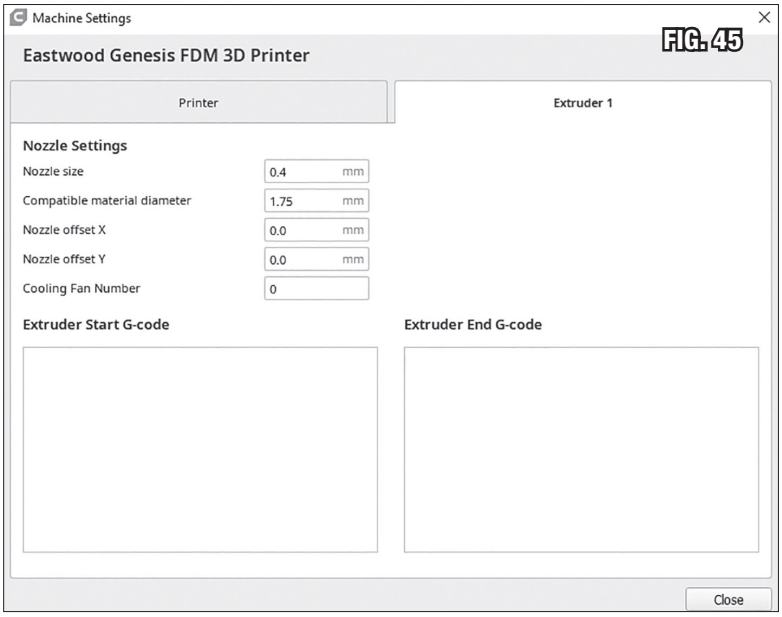


FIG. 45

CREATING A G-CODE FILE

To create a G-Code file a 3D model is required. 3D Models can be created then saved in .STL format in most popular CAD programs. *Autodesk Fusion 360* is a great affordable CAD program to create models with. 3D printing has a large online file sharing community and models can found for free or low cost on websites such as *MakerBot Thingiverse* (**www.thingiverse.com**), *Cults* (**www.cults3d.com/en**), and *Prusa Printers* (**www.prusaprinters.org**).

- Open through the file menu, or drag and drop, the desired .STL file to be printed. Cura has a vast selection of options that can be tweaked to refine quality, but a few of the most important settings that affect the print are layer height, infill density, nozzle and bed temperature, speed, retraction, cooling, support, and build plate adhesion. Below are some recommendations for these settings:
  - **Layer Height:** This indicates height of the layers being printed. To get the smoothest appearance possible and highest resolution use the thinnest layer height possible. 0.1mm is the minimum recommended layer height, and will have the longest print time. For a faster print with good quality 0.2mm is a good compromise. Strength is not significantly affected by this setting.
    - **Typical Range:** 0.1 - 0.2mm
  - **Infill Density:** Infill is the material laid down on the inside of the shell to fill out the space and provide strength. This has some effect on layer time as it takes longer to put more material down, but not as much as layer height. Infill is useful for adding more or less material to a part to make it stronger or weaker.
    If simply printing a prototype that will have no significant loads placed on it, 15 - 30% infill can be used to get a slightly faster print that takes less filament to make. For a part that needs strength, much higher infill, anywhere from 50 - 90%, can be used. 100% infill is completely solid and, unless this is specifically needed, there is not a large increase in strength from 90% to 100% infill.
    - **Typical Range:** 15 - 40%
    - **High Strength Range:** 40 - 90%
  - **Nozzle Temperature:** Nozzle temperature depends on what material is being printed. The factory hot end in the printer has a PTFE tube heat break. Due to this, it is hazardous, and detrimental to performance, to exceed 240°C so the temperature is limited to that in the firmware. Guidelines for PLA, PLA+, and PETG, are shown below. These are some of the most common filaments in 3D printing.
    - **PLA:** 190 - 220°C
    - **PLA+:** 210 - 230°C
    - **PETG:** 230 - 240°C
  - **Bed Temperature:** As with nozzle temperature, bed temperature depends on the filament at hand and sometimes bed conditions. Bed temperature allows for the filaments to be softer and stick to the build plate easier with little to no lifting or shifting. Guidelines for PLA, PLA+, and PETG, are shown below.
    - **PLA:** No heat, 55 - 70°C
    - **PLA+:** No heat, 55 - 70°C
    - **PETG:** 70 - 100°C
  - **Speed:** Speed is how fast the print head moves when printing out filament. Changing the speed will affect print time and quality. Printing too fast can degrade quality. PLA and PETG are commonly printed at 60 - 90mm/s.
  - **Retraction:** Retraction is how far back the extruder will pull the filament when moving from the end point of an extrusion to the start of another. The retraction pulls the filament back so there is little to no dribble of melted plastic on the print due to gravity. No retraction will result in a print that has severe stringing. Typically, about 6.5mm of retraction works well for the Eastwood printer. This is a setting that can take some fine tuning to get the perfect amount.
  - **Cooling:** This setting refers to part cooling fan control. It immediately blows air over the freshly printed filament to cool it faster. PLA prints well with the fan on 100%, but sometimes first and second layers can adhere better with little to no fan. PETG is typically printed with no fan, unless there is a significant amount of bridging being done.
  - **Support:** Supports are an option you can enable when your print has a lot of long overhangs. It will automatically determine where the print needs this help and print a support structure to make sure the print is successful. This structure can then be snapped off the final print.
  - **Build Plate Adhesion:** Build plate adhesion presents a few options to help the part stick to the build plate or allow easier removal. **Skirt** will lay a small ring of filament a short distance from the part. **Brim** is similar but will go in completely and touch the part. **Raft** builds a platform under the print for it to be built on.
- Once the desired settings are configured, click **Slice** in the bottom right corner to process the print. If the file is large and complicated it can take time to compute the path.
- When the computation is complete, the G-code can be saved to the computer or directly to a Micro SD card if inserted. The print can also be previewed with the **Preview** button. The Preview allows viewing of each layer and see how the print will complete, which can be useful to determine the feasibility of the part and spot issues ahead of time.
  NOTE: *Ultimaker Cura* is a widely used software in the 3D printing community and there are many free resources on the web to help with the software learning curve. Sites such as *All3DP* (**www.all3dp.com**) and *Simplify3D* (**www.simplify3d.com**) serve as great references to diagnose issues.

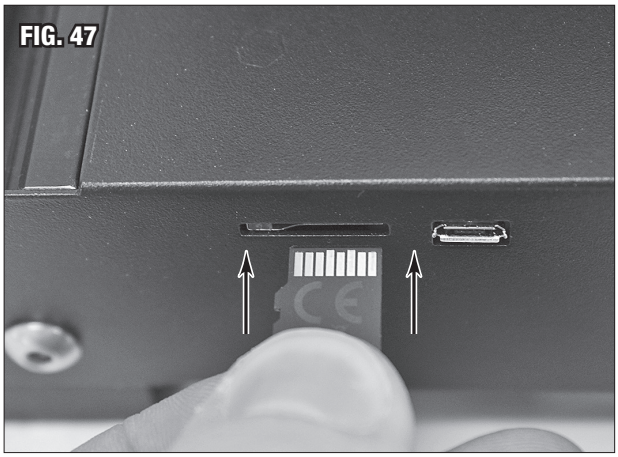
UTILIZING THE MICRO SD CARD AND USB ADAPTER

- The included Micro SD to USB Adapter with 8GB Micro SD Card **[HH]** is used to transfer G-Code files from a computer to the 3D Printer **(FIG 46)**.
- The USB adapter with the Micro SD card installed can be plugged into a computer for file transfers.
- Once files are transferred to the Micro SD card, it can be removed from the adapter and inserted into the Micro SD card port. Orient the contacts of the card upward and insert gently until a tactile click locks it in place **(FIG 47)**. To remove, press until it unlocks then pull out.
- The Micro SD card is preloaded with several files for Ultimaker Cura, G-Code test print files, and the start and end G-Code for slicers.

FIG. 46

Protective Cap | **Micro SD to USB Adapter** | **Micro SD Card**

FIG. 47



PRINTING A G-CODE FILE

- With the G-code file saved to the Micro SD card, insert it into the machine.
- From the main screen, select Print. Find the desired G-Code file by name and select it.
- The printer will now heat up and then begin the print. The first layer is where the majority of 3D print failures will occur. Verify the filament adheres to the bed correctly by following the next steps. When the extrusion begins, get your eyes at level with the top surface of the bed and observe the height of the nozzle as the print begins.
  - If the nozzle is too high there will be noticeable gap between the print surface and the nozzle head, and the filament may curl up instead of sticking. In this case, select **Tune** and adjust the **Probe Z-Offset** downward (which will be a negative number) until the nozzle is very close to the print surface. The filament should now be sticking.
  - Next, bring your eyes up and observe the bead of extruded plastic being laid down. If the nozzle is too close, the color and shape of the bead will be shaped like a V because it has been compressed too much. Slowly adjust the **Probe Z-Offset** upward until it appears flat and uniform.
  - Optimal print height with good adhesion will produce a uniform bead of filament that is stuck to the bed. Light side pressure from the putty knife should not break adhesion.
  - Do not be discouraged if it is difficult to get a good first layer. This is the most difficult part of 3D printing and can take significant time and practice to become proficient at, similar to MIG welding.
- Progress percentage time elapsed, and approximate time left are shown on the screen. After the print has completed it will show the time elapsed and ask for confirmation that the print has been completed before continuing.

REMOVING PARTS FROM THE BUILD PLATE

⚠ WARNING BURN HAZARD!
Contact with the Eastwood Genesis FDM 3D Printer Nozzle, Bed or printed parts can cause serious burns.
Allow sufficient time for cooling before touching finished printed parts.
Wear protective heat-resistant gloves when using this equipment.

- To remove parts from the build plate, care must be taken to not damage the part or the build surface.
- Allow, at minimum, 5 - 10 minutes for the part to cool. Parts with larger first layer surface area need longer because they retain more heat. Removing a part with the build plate at high temperatures can easily result in bottom damage and distortion of the print because it will remain somewhat soft until temperatures have dropped to near ambient. The closer a part is to ambient temperatures the easier it will separate.
- Utilize the included putty knife to work under the part and, if possible, lightly pry on it with your hand to assist. Parts should separate relatively easy.

⚠ NOTICE

Before attempting to utilize this guide, the setup procedures outlined in ASSEMBLY, PLACEMENT, POWERING ON, SETTING Z-AXIS LIMIT SWITCH HEIGHT, LEVELING THE PRINT BED, and LOADING FILAMENT must be completed.

LEARN HOW TO SET UP AND USE YOUR 3D PRINTER
with FREE Instructional Videos Available at **easwood.com** – keyword search "3D Printer"

QUICK GUIDE

- To get started printing a test piece, remove the Micro SD card from the USB Adapter **[HH]** and insert the Micro SD card into the Micro SD card slot located on the front-left side of the base **(FIG 47)**.
- Power on the machine and select Print. The Micro SD card is preloaded with test print files for PLA or PETG. Select the appropriate file for the filament type you loaded: **PLA Eastwood Logo.gcode** or **PETG Eastwood Logo.gcode**.
- The printer will automatically load all necessary settings from the G-Code and begin printing when the build plate and nozzle have warmed up adequately. If the filament is not adhering to the bed, refer to **PRINTING A G-CODE FILE** for some Z-Offset adjustment instruction.
- The piece being printed is an Eastwood oval logo approximately 4" by 2" in size and will take approximately one hour to complete. Upon completion, refer to **REMOVING PARTS FROM THE BUILD PLATE** for further instruction.

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Filament not Extruding Enough (under-extrusion)	Extruder temperature is too low	Make sure extruder nozzle temperature is in correct range for the filament being printed.
	Filament grinding or slipping on the drive gear	Increase the force being applied to the tensioner arm with the tension adjustment screw to eliminate the grinding.
		Resistance is causing the filament to grind; hot end could be partially jammed due to heat soak or poor nozzle condition. Allow printer to cool, then ensure nozzle and PTFE tube are in good condition. If necessary to replace contact Eastwood Technical Assistance: techelp@eastwood.com or 800.544.5118.
	Filament diameter incorrect	Use only quality filaments with a 1.75 ± 0.05mm dia. tolerance or better.
	Speed too high	We recommend to not exceed 60mm/sec for standard filaments.
	Filament spool not feeding all	Verify filament spool is feeding smoothly and not knotted or kinked.
Difficult to Level Bed Because Right Side is too Low	X-Axis is sagging due to poor alignment	Loosen the two mounting screws on the Z-Axis roller bracket and position the beam upward so that it is more level with the bed. Retighten screws.
	Inadequate roller tension	Tighten roller tension slightly utilizing the eccentric nut, but not so much tension to cause binding.
Poor First Layer. Not Adhering to Print Bed	Nozzle height too high	Slowly adjust Z-Offset down as print begins until good adhesion occurs.
	Incorrect temperatures	Increase temperature of print bed and nozzle to suite the filament being printed.
Poor First Layer. Not Laying Down Uniformly:	Nozzle height too low	Slowly adjust Z-Offset up as print begins until a uniform bead of plastic appears.

NOTES

ADDITIONAL ITEMS

CONSUMABLE ITEMS

#60395 5pc 0.4mm Nozzle Set

#60398 PTFE Tube Kit, 1m Length

FILAMENTS

#59984 Eastwood PLA+ Filament 1.75mm, 1kg Spool, Black

#59985 Eastwood PLA+ Filament 1.75mm, 1kg Spool, White

#59986 Eastwood PLA+ Filament 1.75mm, 1kg Spool, Cold White

#59987 Eastwood PLA+ Filament 1.75mm, 1kg Spool, Blue

#59988 Eastwood PLA+ Filament 1.75mm, 1kg Spool, Red

#59989 Eastwood PLA+ Filament 1.75mm, 1kg Spool, Silver

#59990 Eastwood PLA+ Filament 1.75mm, 1kg Spool, Grey

If you have any questions about the use of this product, please contact
The Eastwood Technical Assistance Service Department: 800.343.9353 >> email: tech@eastwood.com
PDF version of this manual is available at eastwood.com
The Eastwood Company 263 Shoemaker Road, Pottstown, PA 19464, USA 800.343.9353 eastwood.com