Field Service Bulletin

Date: August 23, 2018

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Contents

Bulletin Overview

Notice Date

August 23, 2018

Name of Product

Artemis

Service Required

Installation of frame ground wire and hardware. This installation manual is intended to be followed in sequential order.

Contact Information

SeeMeCNC may be contacted for a free service kit. Please email us at sales@seemecnc.com or call 765-884-4100. We require your order number or copy of purchase receipt.

Technical questions are to be submitted using a **Support Ticket** through our website www.seemecnc.com by selecting the **support tab** and **'Submit A Support Ticket'**.

Our mailing address:
SeeMeCNC
601 Sroufe St., STE 200
Ligonier, IN 46767

Summary

Under warranty, SeeMeCNC is shipping these grounding wire kits to all Artemis owners. The Artemis is a metal frame 3D printer and must have additional electrical connections installed to ensure the proper grounding of the metal frame and metal enclosure. Follow our installation procedure in this service bulletin to properly install parts. This guide also provides the proper method of testing to ensure parts were installed properly.

Safety

<table>
<tr><td colspan="2" align="center">**WARNING**</td></tr>
<tr><td colspan="2">Personal property damage, serious injury, or death can result from not following instructions or warnings in the manual or misuse of the machine.</td></tr>
<tr><td colspan="2">Adult supervision required. Children under 18 years of age require supervision.</td></tr>
<tr><td>
⚠ DANGER
Shock Hazard.
Disonnect power before servicing.
Improper use will result in serious injury or death.</td><td>The machine power supply is connected to AC voltage and can be hazardous. Disconnect power before servicing this machine.</td></tr>
<tr><td colspan="2">Use genuine parts manufactured or designated by SeeMeCNC®</td></tr>
<tr><td colspan="2">**CAUTION:** Safety glasses required. Wear proper eye protection.</td></tr>
</table>

Required Tools and Parts

Tools Required

Tools required to properly install and test the installation of this Service Bulletin.

- Volt-Ohm Meter
- 5/32 inch or 4mm Hex Key Wrench
- 7/16 inch or 11mm Wrench
- No. 2 Phillips Screwdriver
- No. 2 Flat Head Screwdriver
- A pocket knife
- Safety Glasses

Parts Required

These parts are supplied by SeeMeCNC® at no cost under warranty.

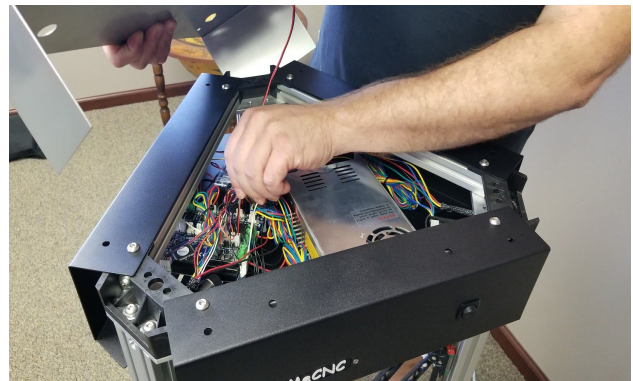|	84970 Grounding Kit for Artemis Bill Of Materials			
Qty	Part No.	Description		Image
4	30515	Spike Grounding Washer		
2	84971	Grounding Lug		
1	84958	300mm Green Grounding Wire		
2	30312	¼-20 x 2 inch long Button Head Cap Screw		
2	30419	¼-20 x ½ inch long Button Head Cap Screw		
2	30512	¼ inch Flat Washers		
4	30513	¼ inch Split Lock Washers		
4	30314	M4 x 5mm Long Phillips Pan Head Screw		

Installation Procedure

1. Installation Preparation

❏ Turn Off and Disconnect power from the printer
❏ Check contents received for these improvements
❏ Before beginning, read the safety information included in this bulletin

2. Removing the Top Cover

❏ Use a thin, flat, object to carefully pop the push rivets out of the silver cover.
❏ Note that in later steps of this guide, one of the plastic rivets will be replaced with screw. There will be one left over plastic push-in rivet.
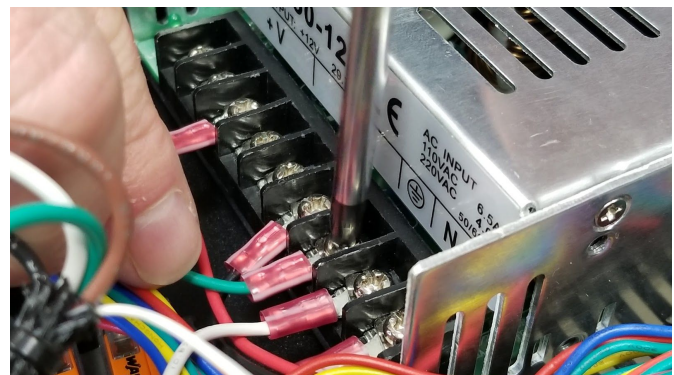

❏ Partially lift the top cover then carefully unplug the two pin case fan power connector from the duet board. Keep note of the location it was plugged in for reinstallation later.
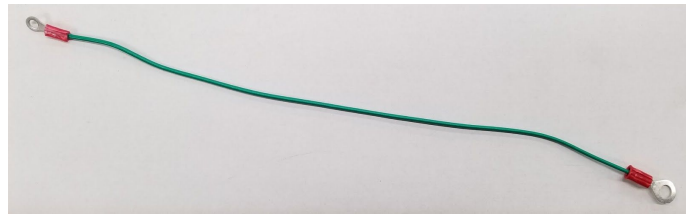

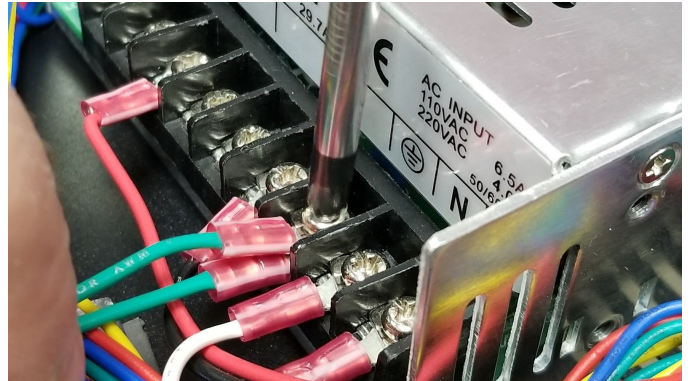## 3. Installing the Green Ground Wire

❏ **WARNING:** Ensure the A/C power cord is disconnected from the printer.
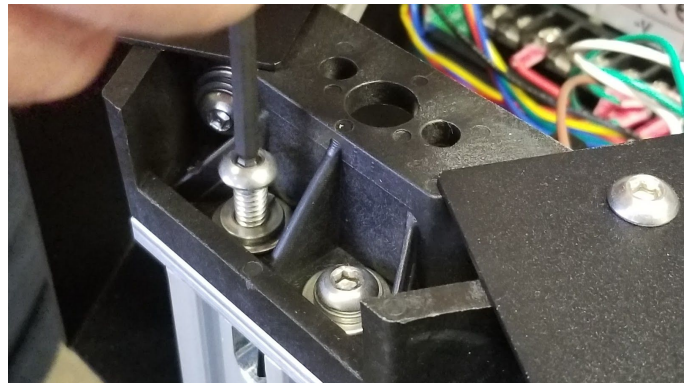❏ Remove the existing green ground wire and screw using a No. 2 Phillips screw-driver.
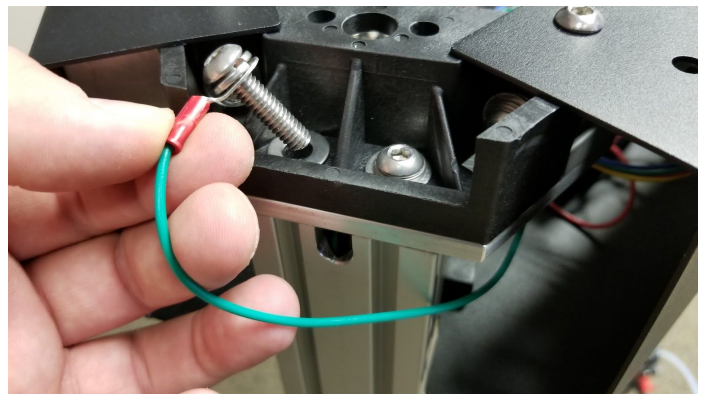
❏ Locate Part No. 84958 300mm Long Green Grounding Wire

❏ Install the end of the green grounding wire having the smaller ring terminal as shown. Using the same screw removed from the power supply, secure both green wires to the power supply using no.2 phillips and tighten securely.
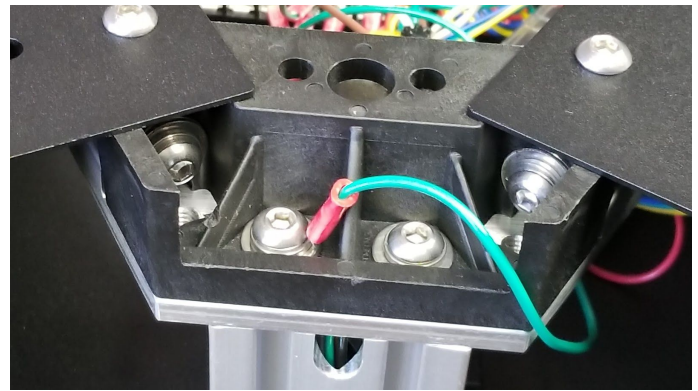❏ Note the marking indicating electrical ground ($\perp$) on the power supply shown

❏ Using a 5/32 inch or 4mm hex key wrench, remove one existing button head cap screw shown.

❏ Route the other end of the Part No. 84958 Green Grounding Wire through the rear of the printer as shown in the picture.
❏ This step uses the same hardware removed from the tower. The bolt, split lock washer, and flat washer.
❏ The flat washer remains on the plastic corner block. Then the ring terminal and split lock washer are placed on the bolt as shown.

❏ Be sure the wire is routed as shown so it is not pinched by the cover later. Tighten securely using a 5/32 inch or 4mm hex key wrench.
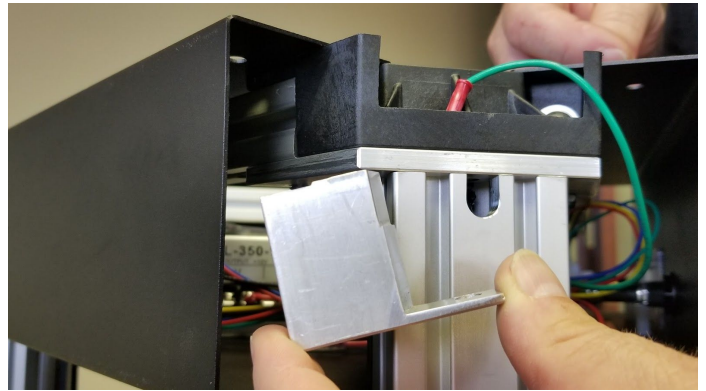
4. Install Top Ground Lug

❏ Using a 5/32 hex key wrench and 7/16 open-end wrench, remove the bolt shown. This is on the same tower (Z) as shown when installing the green ground wire in the previous step
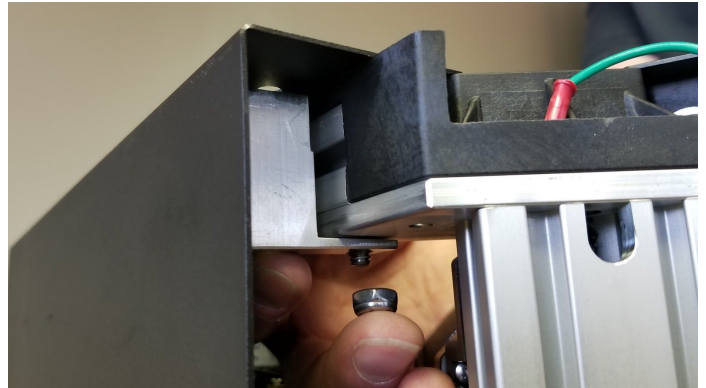
❏ This photo shows the shorter, old bolt on the right and the provided, new longer bolt on the left.
❏ Locate the new, provided ¼-20 x 2" long Button Head Cap Screw.
❏ Locate the Spike Washer provided
❏ Install a ¼ split lock washer on the 2 inch screw, then spike washer as shown, so the sharp points cut into the paint of the metal case when tightened.
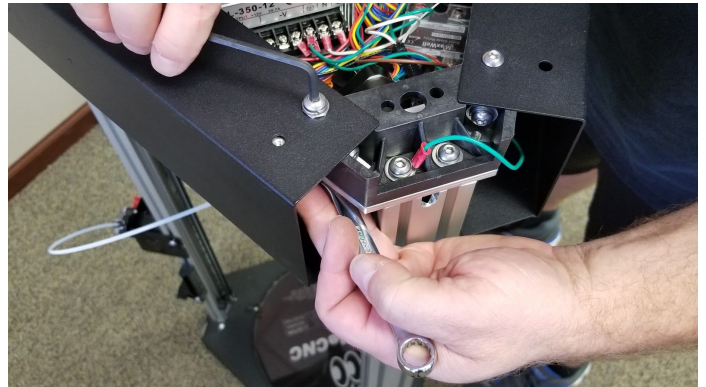
❏ Locate one of the two provided Part No. 84971 Ground Lug

❏ The existing ¼-20 nut is used to secure the ground lug in position.

❏ Align the threaded hole of the new Ground Lug with the hole of the top enclosure as shown. Tighten the lug in position so the spike washer is secure and cuts through the paint of the enclosure providing electrical ground connection.

5. Replace Power Supply Mounting Screws

The first photo below shows possible **incorrect** screw on right and **correct** screw on the left. The longer screw can damage your power supply and some printers between November and March may have had the incorrect screw installed. Discard longer screw. Check all four screws one at a time even if you remove a correct length screw.

❏ Locate the four provided Part No. 4 M4 x 5mm L Pan Head Screws for mounting the power supply properly. These have been provided with this grounding kit. The screws are located underneath the power supply between the ventilation slots as shown in the photo. Remove one screw at a time.

❏ Replace one screw at a time. There are no washers used under the head of the provided M4 x 5mm Long pan head screws. Tighten until snug carefully as the power supply housing is aluminum and can strip easily.

❏ Bottom view of Top Enclosure showing the four M4 x 5mm long pan head screws installed. They are the four screws between the identical ventilation slots.

6. Reinstall Top Cover

❏ Plug the two pin case fan power connector into the same position it was removed from in Step 2.

❏ Locate the new ½ inch long button head cap screw, new split lock washer, and spike grounding washer.

❏ Using a 5/32 inch or 4mm hex key wrench, tighten the button head cap screw securely so the Spike Ground Washer penetrates the paint of the cover.

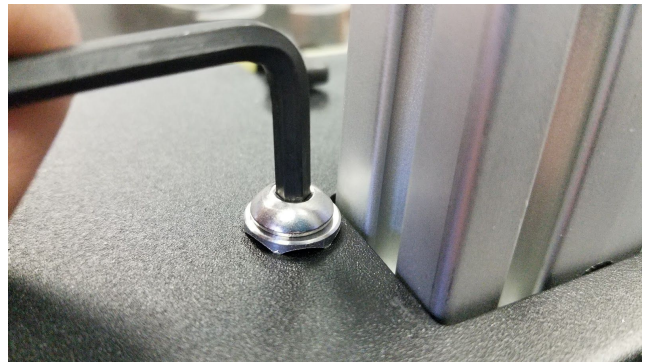❏ Reinstall all plastic push-in rivets to secure the top cover in place.

7. Install Bottom Base Cover Spike Washer

❏ On the lower enclosures assembly, remove the existing button head cap screw located near the power entry as shown in the photo.

❏ Locate provided Part No. 30515 Spike Washer and install on same Button Head Screw removed with spikes facing down so they penetrate through the paint of the lower base cover.
❏ Tighten securely so spikes of the provided washer cut through the paint.
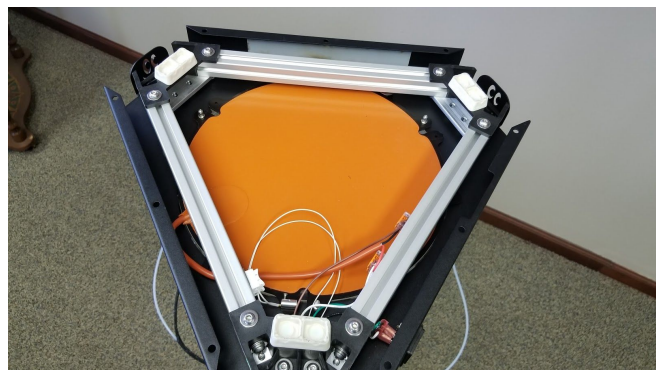
8. Install Bottom Base Ground Lug

❏ Caution: You may want to remove your glass build plate before turning the printer upside down.
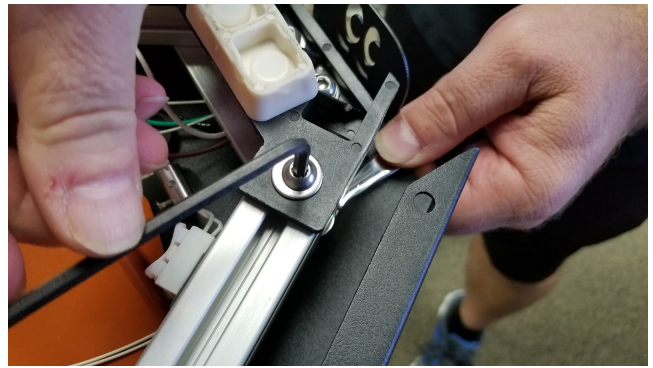❏ Place the printer upside down and remove the silver Bottom Base Cover.

❏ Be careful not to scratch the paint when removing push-in rivets.
❏ Remove plastic push-in rivets using a pocket knife or similar flat tool.
❏ Remove all push-in rivets.
❏ Note that one push-in rivet will be replaced with a screw later in these instructions, so there will be one left over plastic push-in rivet from the bottom assembly.

❏ Set bottom cover aside. The photo is showing a rigid mounted bed assembly. Some models have FSR sensors. The procedure is the same.
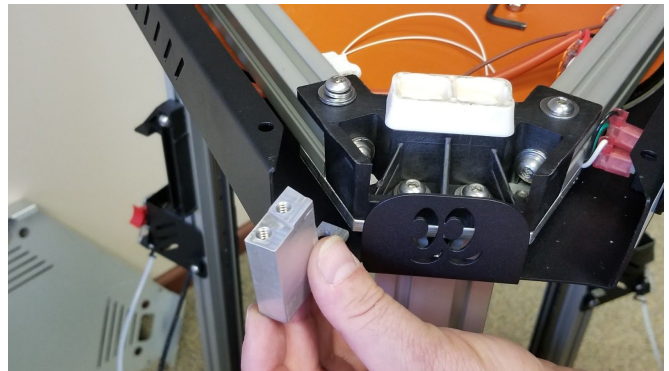
❏ Using a 5/32 inch or 4mm Hex Key Wrench, and 7/16 inch or 11mm open end wrench, remove the existing button head bolt from the location shown in the photo. This is the rear corner of the printer.

❏ This photo shows the shorter, old bolt on the right and the provided, new longer bolt on the left.
❏ Locate the new, provided ¼-20 x 2" long Button Head Cap Screw.
❏ Install a ¼ split lock washer on the 2 inch screw, then two (2) flat washers as shown.

❏ Locate the provided Part No. 84971 Ground Lug and insert into position as shown in the photos.

❏ Using a 5/32 hex key wrench and 7/16 open-end wrench, use the existing ¼-20 lock nut to tighten the Ground Lug snug in position.
❏ Align the threaded hole of the Ground Lug with the hole in the bottom enclosure as shown.
❏ Then finish tightening the lug securely in position.
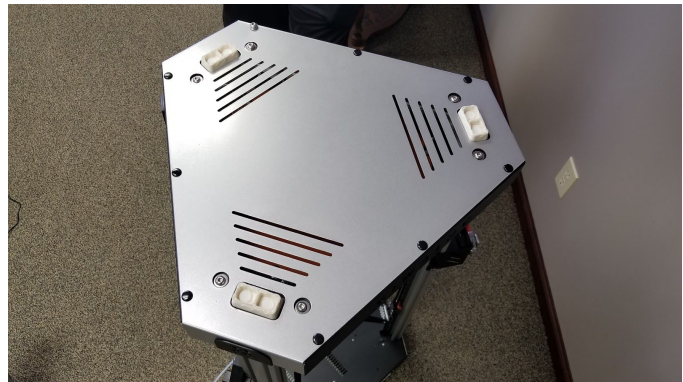
9. Reinstall Bottom Base Cover

- ❏ Fit the silver Bottom Base cover back in place on the base assembly.
- ❏ Locate the new ½ inch long button head cap screw, new split lock washer, and spike grounding washer.

- ❏ Using a 5/32 inch or 4mm hex key wrench, tighten the button head cap screw securely so the Spike Ground Washer penetrates the paint of the cover. The split locking washer will completely collapse.

- ❏ Install remaining push-in plastic rivets to secure the bottom cover.

10. Test Ground Connections

❏ Ohm meters may vary from the shown picture. It is your responsibility to understand the proper function and use of your ohm meter. These images are shown for reference.

❏ The ohm meter we used shows the setting on ohm's (Ω) and display reading "OL" meaning, the circuit is "open", there is no continuity.

❏ Verify your ohm meter (volt meter) is working properly by touching the leads and observing "000" of the display (on this ohm meter, yours may vary).

❏ The "000" reading shown here means there is a "closed circuit" or continuity between the test leads we shown touching each other.

❏ Reference the photo.
❏ Touch a test lead to the **middle terminal** of the input power connector as shown. The middle terminal is connected to the green ground wire.
❏ Touch the other test lead as shown to the Button Head Screw where the spike washer is installed.
❏ If proper ground connections have been made, the ohm meter will show continuity (closed circuit). This confirms the ground circuit is correct.