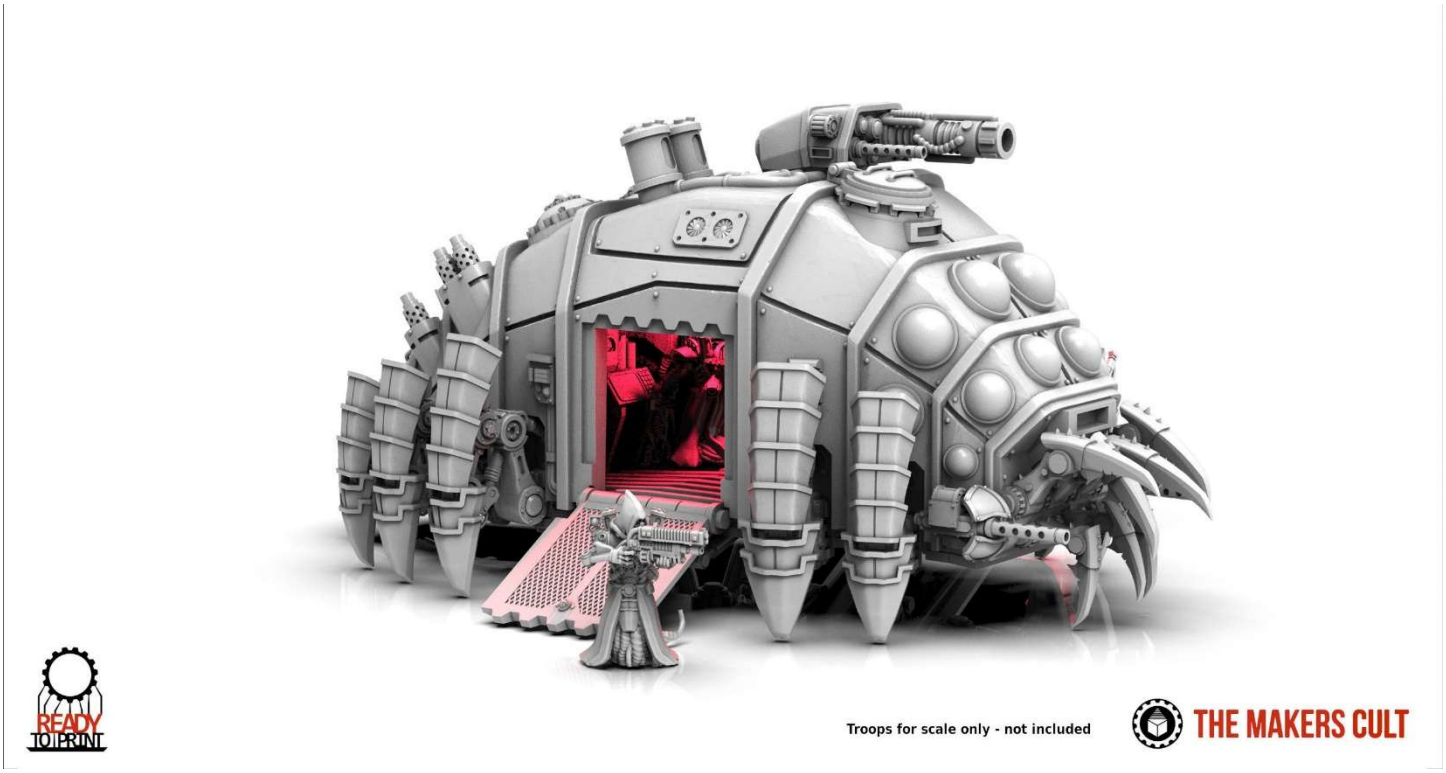
My Balsa & Glass Workshop

Dark Techno Isopodius Transport/Tank 3D Print/Assembly Description

30 August 2025

As was stated in the 3D Modeling & Printing Webpage Introduction, one of the drivers behind my getting a 3D printer was to "***make toys for our grandchildren***." My wife Carolyn set off to find some 3D models that we could work on together to build some gifts for the 2025 Christmas. The plan was that she finds the 3D models, I print them out, she does the detailed painting, and then I assembly the finished models. Simple right? Well, we will see.

Using this strategy, Carolyn first found an interesting 3D model for our Grandson August (Gus). As shown in the images below, for our first project we would work together to build the **Dark Techno Isopodius Transport/Tank.** This was found on the cgtrader.com website. (https://www.cgtrader.com/3d-print-models/miniatures/sci-fi/dark-techno-isopodius-transport-and-tank/)



Source of Images: cgtrader https://www.cgtrader.com/

You can't have a tank and not some troops to go along with it, so while in "The Makers Cult" modelers section I looked to see what I could find in the way of some troops to go along with the tank. I was finally able to find some grenadier models suitable for a soon to be 10 year old from "RedMakers" on cgtrader.com. (https://www.cgtrader.com/3d-print-models/miniatures/sci-fi/death-squad-grenadiers-of-the-imperial-force/">cgtrader.com) The squad of grenadiers consists of 10 unique positions: 1 commander, 1 radio operator, and 8 grenadiers. The radio operator and grenadiers have 5 types of weapons.

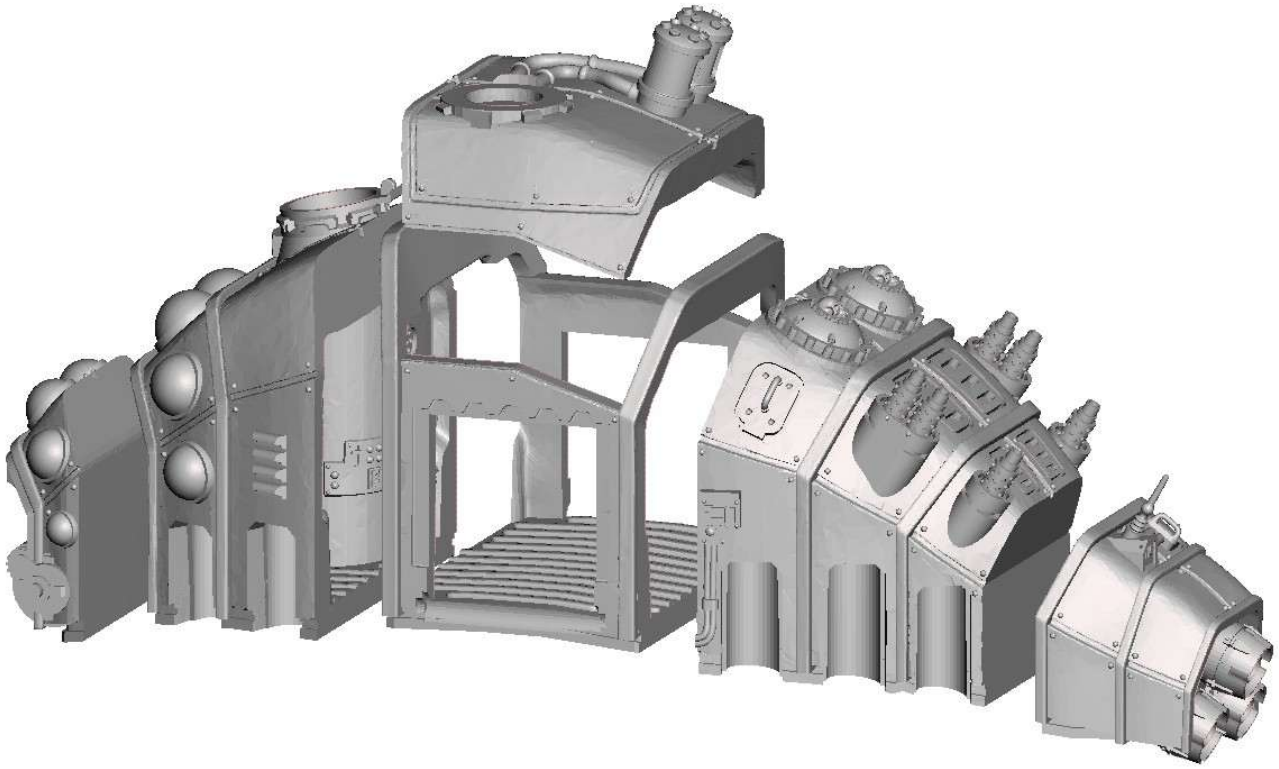
REDMAKERS

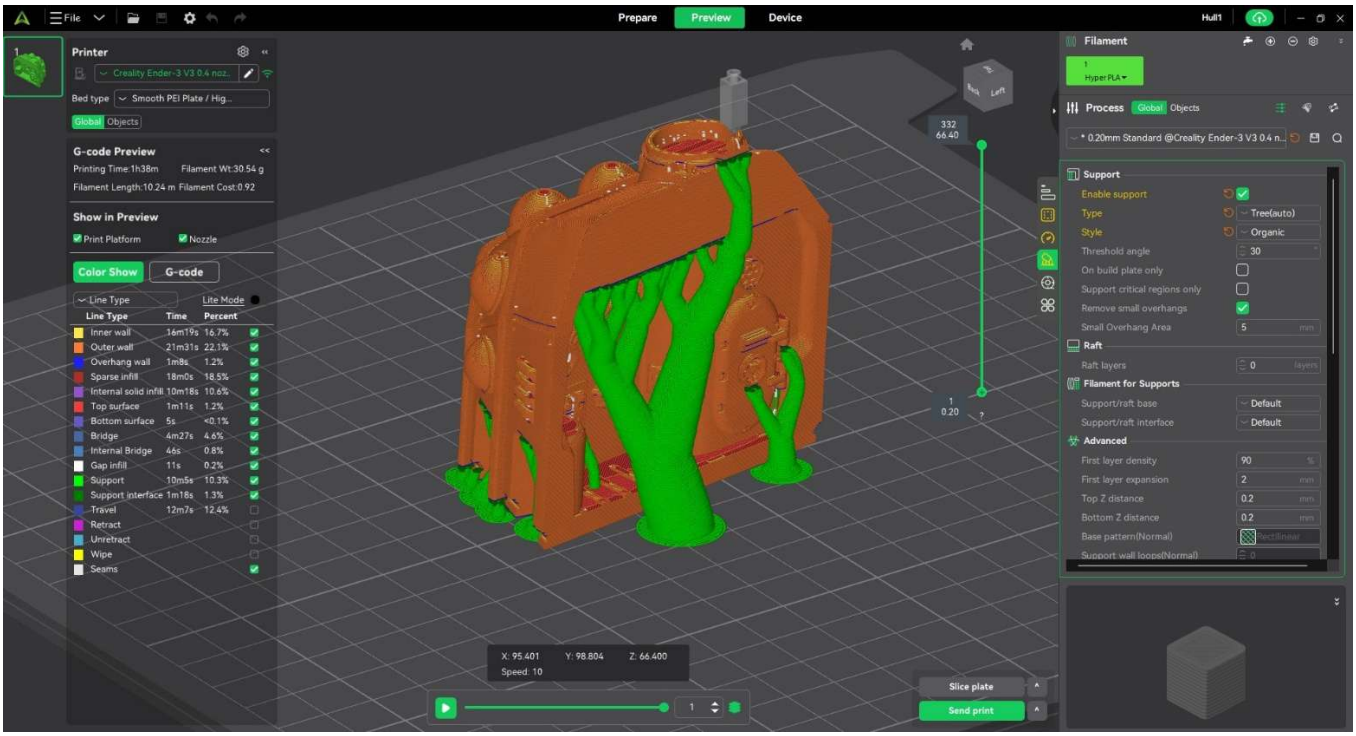
Source of Images: cgtrader https://www.cgtrader.com/

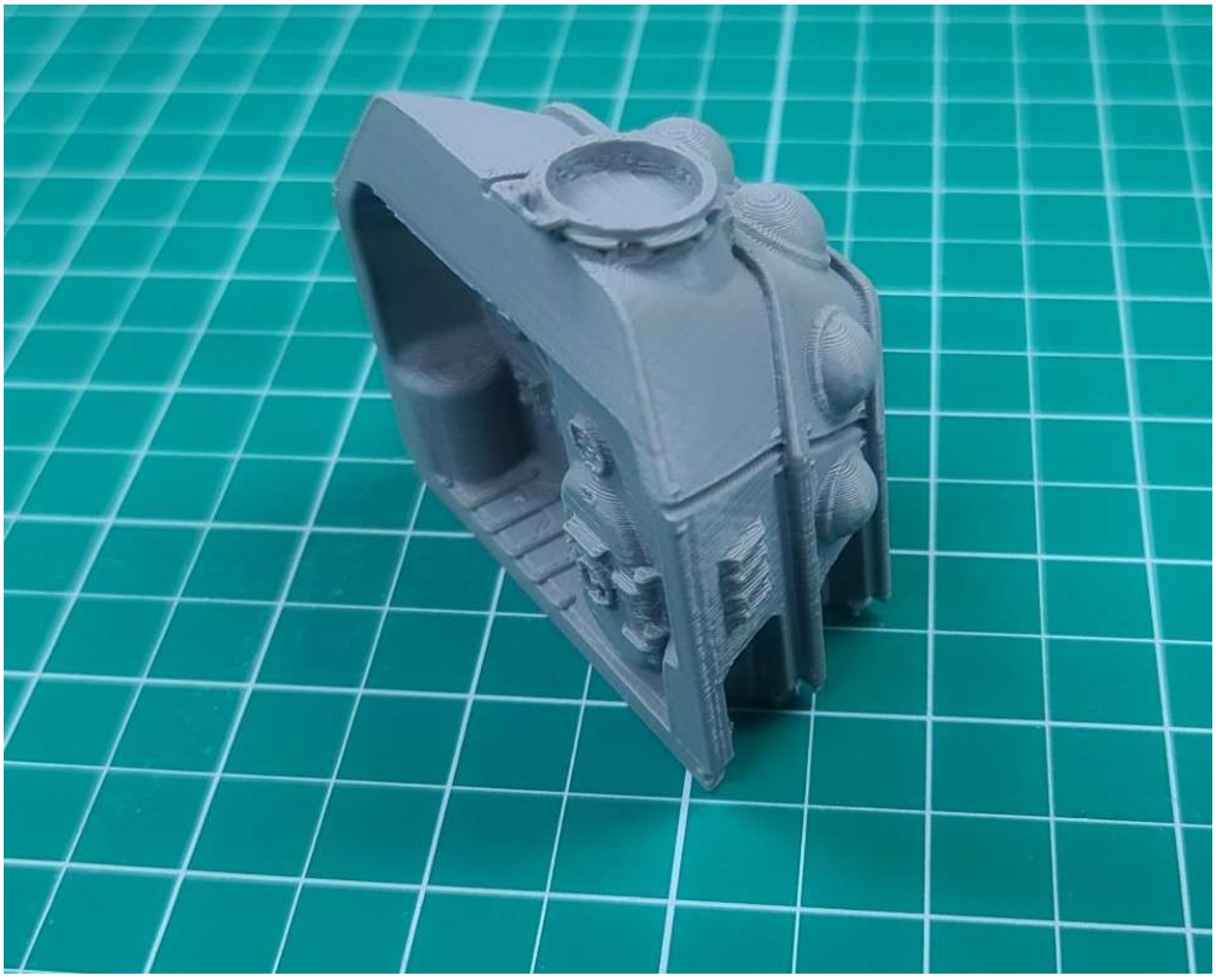
My first task was to see what kind of detail I could get on the tank using a standard 0.4mm nozzle and some Creality Gray Hyper-PLA in my Ender-3 V3, and to get a better idea as to what the final size

would be for the tank, and one of the troops called the ***"Watch Master."*** The website stated the overall footprint of assembled tank model is about 90x160mm, and the troops are scaled for 28mm tabletop.

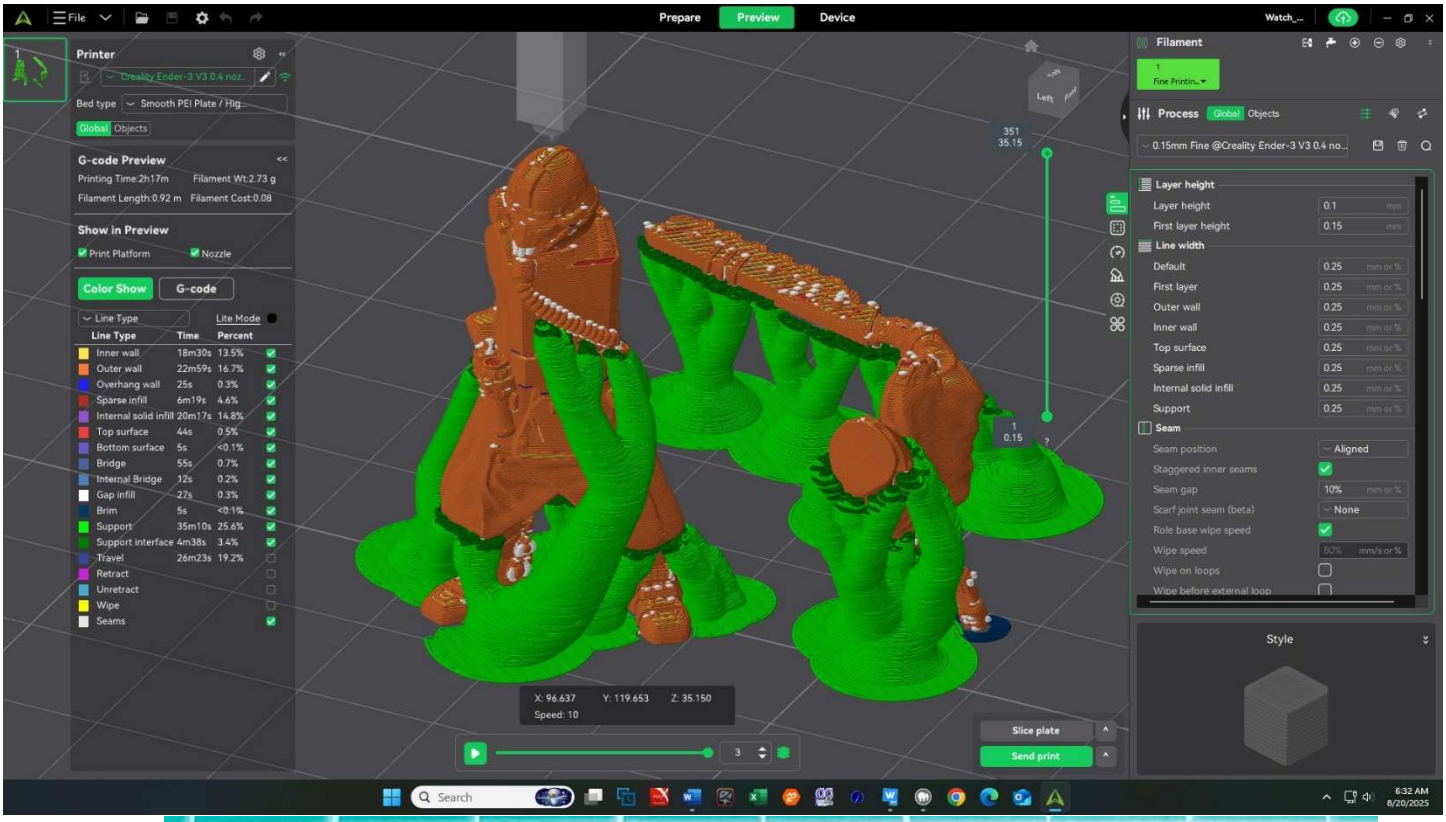
I took one of the tank hull parts (out of six total seen in left image below) that had lots of surface features on both the outside and inside and ran it through Creality Print to see what I could get. After making some adjustments to the slicer settings (print speeds and supports) to get a nice output, and the resulting G-code indicated the print job would take 1hr 38m (middle image below). The final 3D print results can be seen in the bottom image below.




File
Prepare
Preview
Device
Hull1
Printer
Creality Ender-3 V3 0.4 noz...
Bed type
Smooth PEI Plate / Hig...
Global
Objects
G-code Preview
Printing Time:1h38m
Filament Wt:30.54 g
Filament Length:10.24 m
Filament Cost:0.92
Show in Preview
Print Platform
Nozzle
Color Show
G-code
Line Type
Lite Mode
Line Type
Time
Percent
Inner wall 16m19s 16.7%
Outer wall 21m31s 22.1%
Overhang wall 1m8s 1.2%
Sparse infill 18m0s 18.5%
Internal solid infill 10m18s 10.6%
Top surface 1m11s 1.2%
Bottom surface 5s <0.1%
Bridge 4m27s 4.6%
Internal Bridge 46s 0.8%
Gap infill 11s 0.2%
Support 10m5s 10.3%
Support interface 1m18s 1.3%
Travel 12m7s 12.4%
Retract
Unretract
Wipe
Seams
Filament
Hyper PLA
Process
Global
Objects
* 0.20mm Standard @Creality Ender-3 V3 0.4 n...
Support
Enable support
Type
Tree(auto)
Style
Organic
Threshold angle
30
On build plate only
Support critical regions only
Remove small overhangs
Small Overhang Area
5
mm
Raft
Raft layers
0
layers
Filament for Supports
Support/raft base
Default
Support/raft interface
Default
Advanced
First layer density
90
%
First layer expansion
2
mm
Top Z distance
0.2
mm
Bottom Z distance
0.2
mm
Base pattern(Normal)
Rectilinear
Support wall loops(Normal)
0
X: 95.401
Y: 98.804
Z: 66.400
Speed: 10
Slice plate
Send print



For the Watch Master (top image below) I also used a standard 0.4mm nozzle and some Creality Gray Hyper-PLA in my Ender-3 V3. I placed all three parts for the Watch Master into Creality Print, and since this was going to be a very small model, I made several slicer setting changes (layer heights and thicknesses, print speeds and accelerations, and supports) to get a detailed output, and the resulting G-code indicated this print job would take 2hr 17m (middle image below). The final Watch Master 3D print results can be seen in the bottom image below.


File
Prepare
Preview
Device
Printer
Creality Ender-3 V3 0.4 noz...
Bed type
Smooth PEI Plate / Hig...
Global
Objects
G-code Preview
Printing Time:2h17m
Filament Wt:2.73 g
Filament Length:0.92 m
Filament Cost:0.08
Show in Preview
Print Platform
Nozzle
Color Show
G-code
Line Type
Lite Mode
Line Type Time Percent
Inner wall 18m30s 13.5%
Outer wall 22m59s 16.7%
Overhang wall 25s 0.3%
Sparse infill 6m19s 4.6%
Internal solid infill 20m17s 14.8%
Top surface 44s 0.5%
Bottom surface 5s <0.1%
Bridge 55s 0.7%
Internal Bridge 12s 0.2%
Gap infill 27s 0.3%
Brim 5s <0.1%
Support 35m10s 25.6%
Support interface 4m38s 3.4%
Travel 26m23s 19.2%
Retract
Unretract
Wipe
Seams
X: 96.637
Y: 119.653
Z: 35.150
Speed: 10
Slice plate
Send print
Filament
Process
Global
Objects
0.15mm Fine @Creality Ender-3 V3 0.4 no...
Layer height
Layer height 0.1
First layer height 0.15
Line width
Default 0.25
First layer 0.25
Outer wall 0.25
Inner wall 0.25
Top surface 0.25
Sparse infill 0.25
Internal solid infill 0.25
Support 0.25
Seam
Seam position Aligned
Staggered inner seams
Seam gap 10%
Scarf joint seam (beta) None
Role base wipe speed
Wipe speed 80%
Wipe on loops
Wipe before external loop
Style
Search
6:32 AM
8/20/2025

Based on some discussions with my wife, we both agreed that the Watch Master was way too small to try and detail, and the print quality was not up to what we wanted. To address the first issue, we agreed to **scale up all the STL files by 150%.** To obtain the print quality we wanted, I decided to switch to a 0.2mm nozzle, and setup the nozzle and slicer print profiles (for some unknown reason Creality ***does NOT provide*** any preset profiles for the 0.2mm nozzle except for their K2 Plus printer) to really reduce the layer height (0.08mm) and width (0.22mm) to give nice smooth and detailed surfaces to all the troops. You can view all of the Creality Print slicer settings for the 0.2 mm nozzle in my "3D Modeling & Printing Information" PDF file, which can be downloaded using the link on my webpage. One drawback to this approach is that the resulting G-code indicated a print job just for the Watch Master body will now take 4h 25m, and his two arms with weapons 2h 21m. Oh well, what else does an old, retired fart have to do anyway. The results of this new approach can be seen in the next two images below. I think these will work out just fine. Now to get some more troops printed out, and then all the parts for the tank.

After ***many hours*** of 3D printing, all 36 parts for the Dark Techno Isopodius Transport/Tank were complete. I elected to use the long barrel cannon turret which goes on the top of the middle section cover, and the missile launcher for the top of the second forward section. In the next image below, you can see the fine detail obtained on all the parts by using a *fine (0.15mm)* layer thickness with a standard 0.4mm nozzle and some Creality Gray Hyper-PLA in my Ender-3 V3. Now it's over to Carolyn for the detailed painting.