Title	Trident_1-9_complementary_3dPartsBuild_doco (Proposed future filename)
File name	Voron_1.9_3dprinting_guide.pdf (You put . In a filename?)
Date	2021-12-16 (Unofficial version number)
Copy-rite	None. Free domain. Be free. Fly my pretties. FLY!
Warranty	None. Use at own risk. For entertainment purposes only.
Authors	Stephen George, Claudermilk (Major proof read and error checking)

Introduction

Use this guide to print the parts as you need them, possibly the night before.

Latest version?

I tend to rush the first draft out. To get the latest V. Goto URL below and check the date.
https://github.com/LesserSpottedAustralianSquirel/voron_trident_pics/blob/main/Voron_1.9_trident_3dprinting_guide.pdf

Print parameters (More details on page 4 of official Trident manual)
Material ABS, Infill gyroid, Infill 40% Layer_height 0.2mm, Wall_count 4, Top/bottom layers 5, Nossle/Nozzle 0.4mm

My prints: (for Prusa mini): Brim yes 5mm, Ironing yes, first layer 10 mm/s, infill grid
NB: Many of the Voron parts “mate” together. I found that a light sand papering helped allow these parts to mate. Another idea: enable “ironing” in your slicer. (update :“oh yeah”).
NB: I used a Prusa mini (bed flinger) to print parts & had to use a plumbers deburring tool (from hardware shop) & sometimes a craft knife, to remove the elephants foot like effect and brim.

The Rules

The first time a picture of a part is shown in the official instructions it’s added to the list. After that it’s ignored as you should have already printed it.

The Machine the parts are for

Building Formbot kit, 250 x 250, Direct feed, Dragon High Flow, 3 hole cable chain.

Keeping track

The Printed ▢ tick box, under the picture, allows you to print out this pdf and tick off the parts as they come off the printer. Anyone know how to make them PDF tick able? So we don’t have to print doco out, but can just tick and save the electronic PDF to keep track?

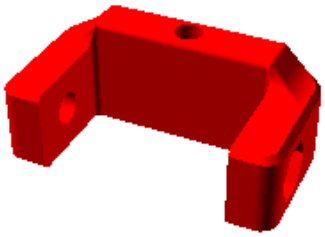
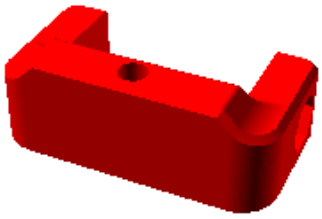
Future Improvements to this doc

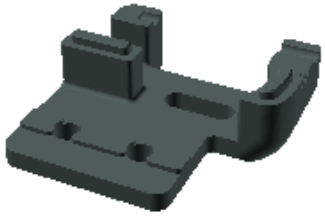
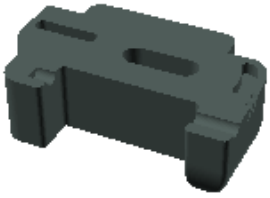
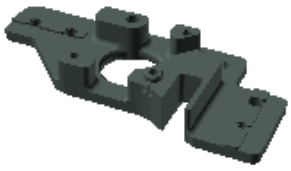
3) Add time of print using a Prusa mini as a guide.
4) Add AA (anti-aliasing) to images using gimp and scripts

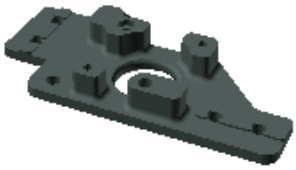
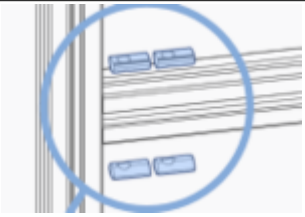
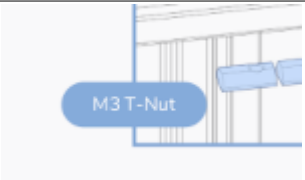
Thanks for all the great ideas. Even if I have not had time (yet) to implement them all. They are much appreciated. Please visit old.reddit.com/r/VORONDesign

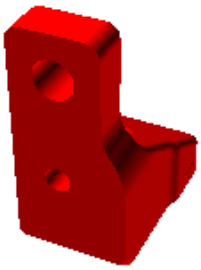
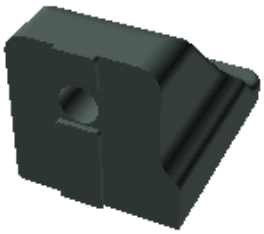
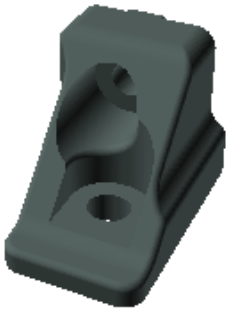
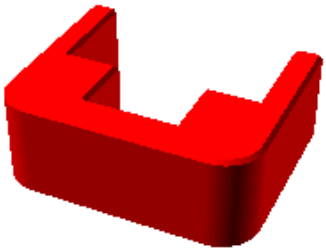
Notes

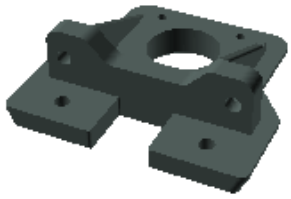
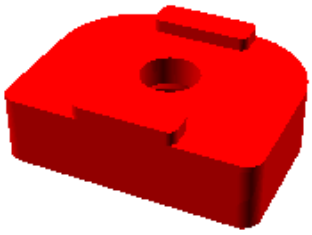
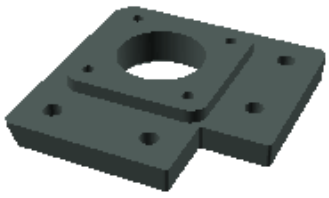
This is fan base documentation. The official document take precedence in any conflict of information or technical detail.

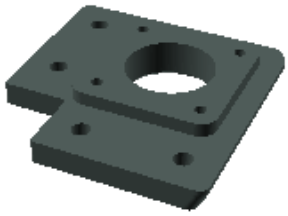
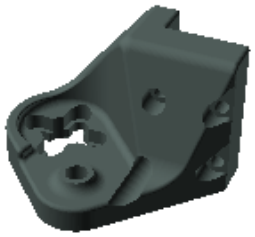
Picture	Details	Comment
 Printed? ☐	**Directory** STLs/Gantry/AB_Drive_Units **Filename** a_drive_frame_upper **Page Number** 26	And so it begins
 Printed? ☐	**Directory** STLs/Gantry/ Front_Idlers **Filename** [a]_tensioner_left **Page number** 27	NB Page 27 “Look for asterix next to the part. It indicates that this is an accent part.” Except * is not a good character in a file name, so they changed it to Files starting with [a]
 Printed? ☐	**Directory** STLs/Gantry/ Front_Idlers **Filename** [a]_tensioner_right **Page number** 27	Joke alert Don’t print part rm * If you have no idea what I am talking about please ignore this note

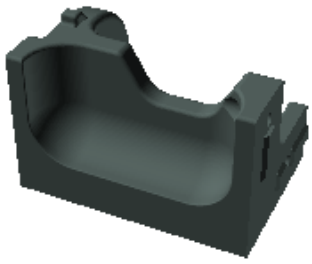
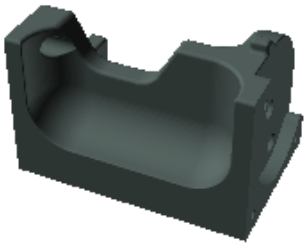
 Printed? ☐	**Directory** STLs/Gantry/ Front_Idlers **Filename** front_idler_a_x2 **Page number** 28	x2
 Printed? ☐	**Directory** STLs/Gantry/ Front_Idlers **Filename** front_idler_b_x2 **Page number** 28	x2
 Printed? ☐	**Directory** STLs/Gantry/AB_Drive_Units **Filename** a_drive_frame_lower **Page number** 34	
 Printed? ☐	**Directory** STLs/Tools **Filename** AB_pulley_jig **Page number** 35	Tool

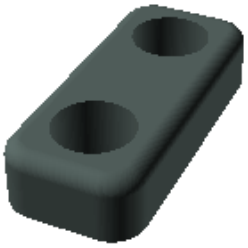
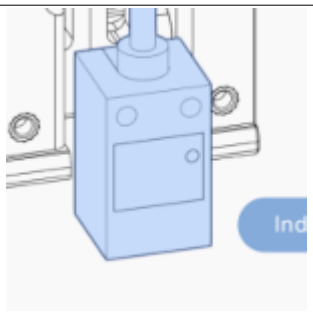
 Printed? ☐	**Directory** STLs/Gantry/AB_Drive_Units **Filename** b_drive_frame_lower **Page number** 37	
 Printed? ☐	**Directory** STLs/Gantry/AB_Drive_Units **Filename** b_drive_frame_upper **Page number** 38	
	T-Nuts M5 AKA “Roll in” T nuts **Page number** 44	They don’t have to go into the end. They can be “rolled in”. No need to disassemble frame.
	Warning Lone M3 on page. Pretending to be M5 **Page number** 44	Beware Of of the lone lone M3 T-nut. Which I read as an M5 and had to get it back out.

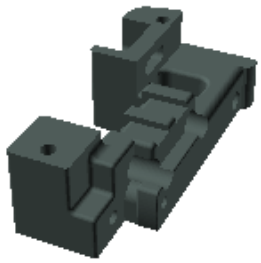
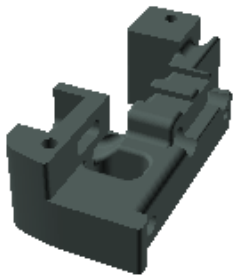
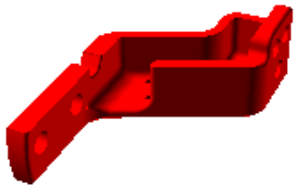
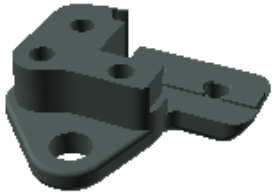
 Printed? ☐	**Directory** STLs/Gantry/AB_Drive_Units **Filename** [a]_y_endstop_bumper **Page number** 50	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_rear_extrusionbracket_left **Page number** 53	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_rear_extrusionbracket_right **Page number** 55	
 Printed? ☐	**Directory** STLs/Tools **Filename** MGN9_rail_guide_x2 **Page number** 58	x2

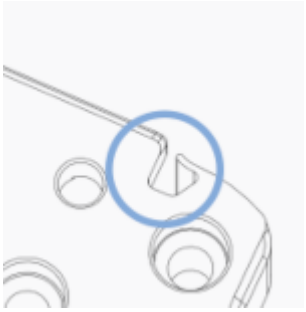
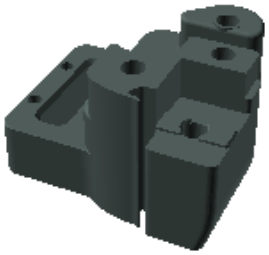
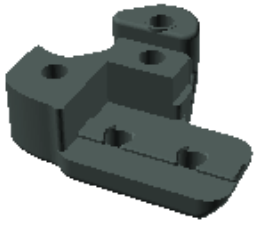
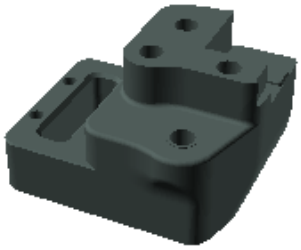
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_carriage_rear_3hole **Page number** 64	Check directory for 2 hole version if required on cable chain
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_stepper_rear **Page number** 65	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** [a]_z_rail_stop_x3 **Page number** 68	x3
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_stepper_left **Page number** 69	

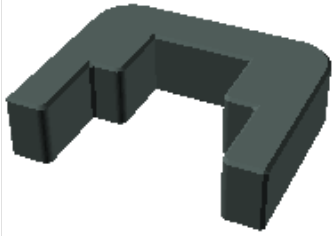
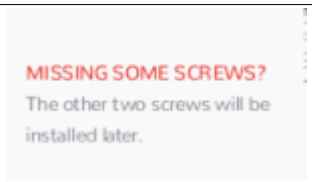
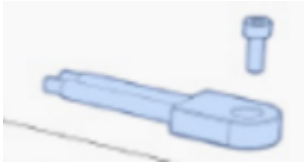
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_stepper_right **Page number** 73	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_carriage_left **Page number** 77	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** [a]_z_carriage_left **Page number** 77	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** [a]_z_carriage_right **Page number** 79	

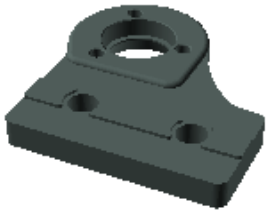
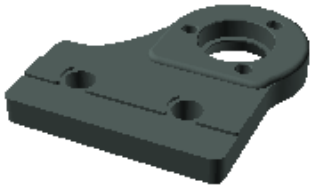
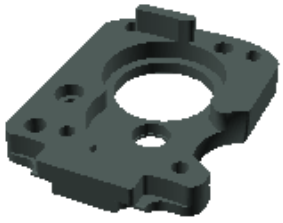
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_carriage_right **Page number** 79	
 Printed? ☐	**Directory** STLs/Skirt **Filename** corner_a_x2 **Page number** 90	x2
 Printed? ☐	**Directory** STLs/Skirt **Filename** corner_b_x2 **Page number** 90	x2
 Printed? ☐	**Directory** STLs/Skirt **Filename** [a]_corner_baseplate_a_x2 **Page number** 90	x2

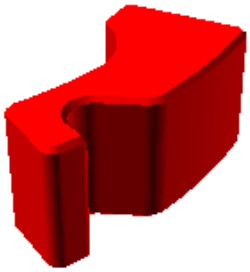
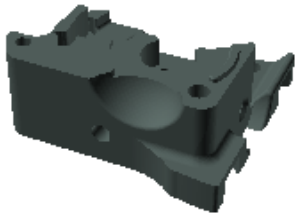
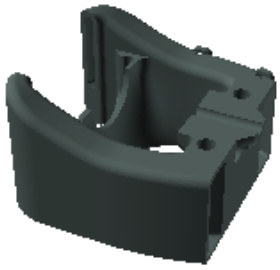
 Printed? ☐	**Directory** STLs/Skirt **Filename** [a]_corner_baseplate_b_x2 **Page number** 90	x2
	Page 99 has been ignored for the purposes of this doco . It is an overview or copy of the pic on 98. Also it has way too many parts on it. Normal service to resume	Page ignored
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage **Filename** probe_retainer_bracket **Page number** 100	Note: There are two similar shapes. The one displayed and the 9mm one. probe_retainer_bracket_9mm.st But which one? See below
	**Which probe_retainer_bracket?** This all depends on your probe see page 111 After putting my X carriage together on page 110, my probe was flush with the X carriage. I decided to go with the standard probe_retainer_bracket. It seem to work fine.	My probe from the formbot kit was a Omron TL-Q5MMC2-Z It was flush with the X carriage when it was assembled

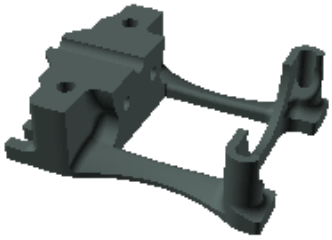
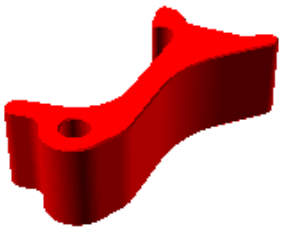
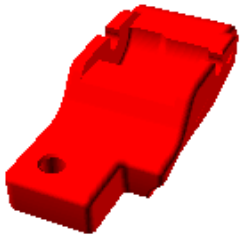
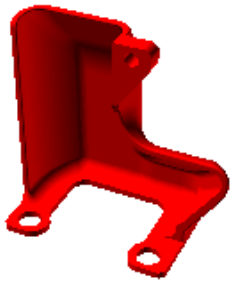
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage **Filename** x_carriage_frame_left **Page number** 100	I had to gently sand the top of this part so it would mate properly
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage **Filename** x_carriage_frame_right **Page number** 100	I had to gently sand the top of this part so it would mate properly
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/XY_Joints **Filename** [a]_xy_joint_cable_bridge_ 3hole **Page number** 100	Note: Check directory for 2 hole version if required for cable chain Mine's a 3 hole
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/XY_Joints **Filename** xy_joint_right_upper_MGN12 **Page number** 101	NB if you are using a brim to prevent ABS warping you may have to remove it round the crevice outlined below

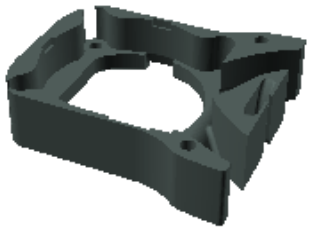
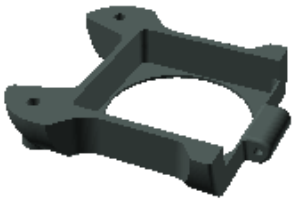
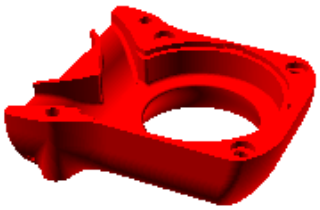
	Notes Crevice outlined in blue on Right XY Joint. May need to be “cleaned out” with a craft knife if you have printed with a brim.	
 Printed? ▢	**Directory** STLs/Gantry/ X_Axis/XY_Joints **Filename** xy_joint_right_lower_MGN12 **Page number** 102	
 Printed? ▢	**Directory** STLs/Gantry/ X_Axis/XY_Joints **Filename** xy_joint_left_upper_MGN12 **Page number** 105	
 Printed? ▢	**Directory** STLs/Gantry/ X_Axis/XY_Joints **Filename** xy_joint_left_lower_MGN12 **Page number** 106	

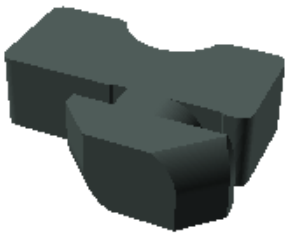
 Printed? ☐	**Directory** STLs/Tools **Filename** MGN12_rail_guide_x2 **Page number** 113	x2
	Page 116 Missing screws. To be installed later. Which page would they be installed later?	Will update when I know the answer. But for now I personally will be adding them. Because I am a rebel. (Without a 3d printer)
	Non printable part. Thermal fuse **Page number** 129	Please skip. Non printable part.
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** nozzle_probe **Page number** 130	

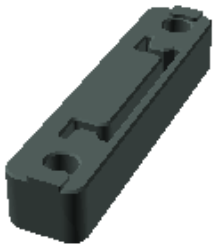
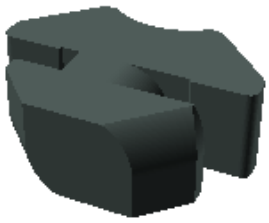
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_bed_left **Page number** 134	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_bed_rear **Page number** 136	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_bed_right **Page number** 138	
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/Direct Feed **Filename** extruder_motor_plate **Page number** 146	

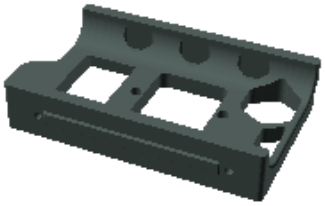
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/ Direct Feed **Filename** chain_anchor_3hole **Page number** 146	Check directory for 2 hole version if required
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/ Direct Feed **Filename** [a]_latch_shuttle **Page number** 146	
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/ Direct Feed **Filename** extruder_body **Page number** 147	
 Printed? ☐	**Directory** STLs/Gantry/X_Axis/X_Carriage/ Toolheads/Dragon **Filename** printhead_front_dragon **Page number** 148	DRAGON mount DO YOU HAVE A DRAGON hot end?

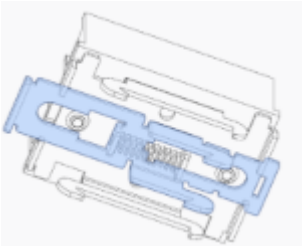
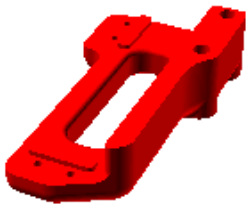
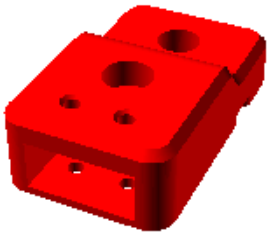
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/Toolheads/ Dragon **Filename** printhead_rear_dragon **Page number** 149	DRAGON mount DO YOU HAVE A DRAGON hot end?
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/Direct Feed **Filename** [a]_latch **Page number** 161	
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/Direct Feed **Filename** [a]_guidler **Page number** 161	
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage/Direct Feed **Filename** [a]_connector_cover **Page number** 163	

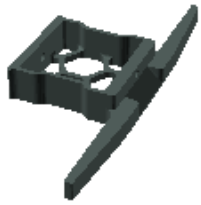
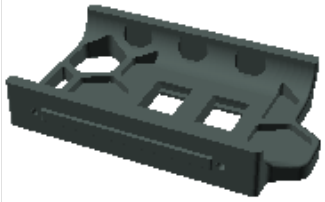
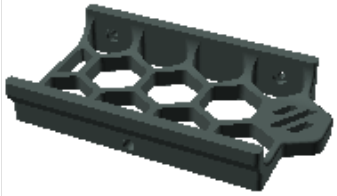
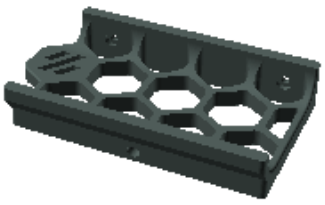
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage **Filename** blower_housing_rear **Page number** 166	
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage **Filename** hotend_fan_mount **Page number** 166	
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/X_Carriage **Filename** [a]_blower_housing_front **Page number** 167	
 Printed? ☐	**Directory** STLs/Z_Assembly **Filename** z_cable_chain_mount_3hole **Page number** 173	Check directory for 2 hole version if required

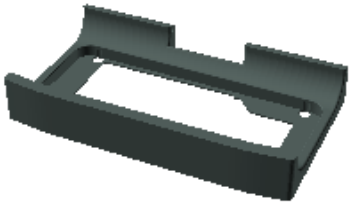
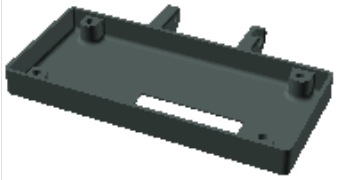
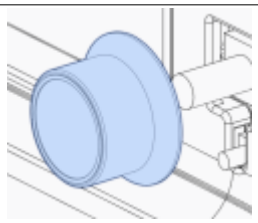
 Printed? ☐	**Directory** STLs/Panels **Filename** wire_corner_left **Page number** 175	
 Printed? ☐	**Directory** STLs/Panels **Filename** wire_corner_right **Page number** 176	
 Printed? ☐	**Directory** STLs/Panels **Filename** deck_support_4mm_x8 **Page number** 178	X 8 NB there are two variants 4mm and 3mm deck_support_**3mm**_x8
 Printed? ☐	**Directory** **STLs/ElectronicsBay** **Filename** DIN_center_support_x2 **Page number** 181	x2

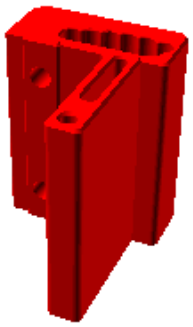
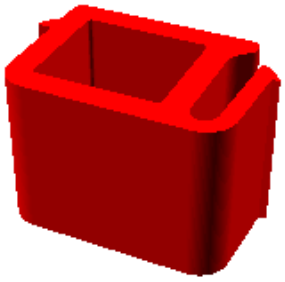
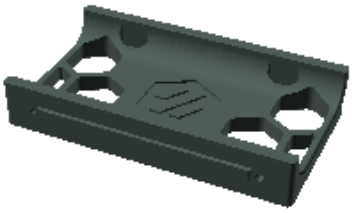
 Printed? ☐	**Directory** **STLs/ElectronicsBay** **Filename** DIN_frame_mount_x4 **Page number** 181	x4
 Printed? ☐	**Directory** STLs/ElectronicsBay **Filename** cable_frame_anchor_x6 **Page number** 185	X6
 Printed? ☐	**Directory** STLs/ElectronicsBay **Filename** pcb_din_clip_v2_x5 **Page number** 189	x5
 Printed? ☐	**Directory** STLs/ElectronicsBay **Filename** raspberrypi_bracket **Page number** 189	

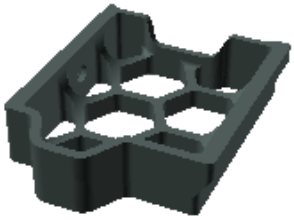
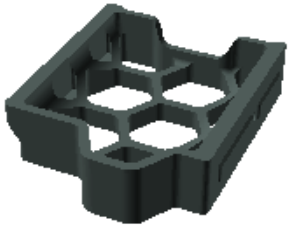
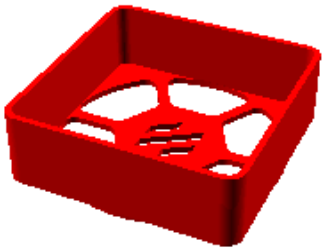
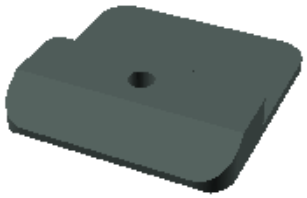
 Printed? ☐	**Directory** STLs/ElectronicsBay **Filename** rs25_psu_bracket **Page number** 191	
 Printed? ☐	**Directory** STLs/ElectronicsBay/ Controller_Mounts **Filename** Octopus_bracket_2pc **Page number** 193	Note: do you have a Octopus? Other mounts in this directory include Duet, GTR,SKR,Spider etc
 Printed? ☐	**Directory** STLs/Skirt **Filename** power_inlet_filtered **Page number** 195	
 Printed? ☐	**Directory** STLs/ElectronicsBay **Filename** PSU_stabilizer_50mm **Page number** 198	

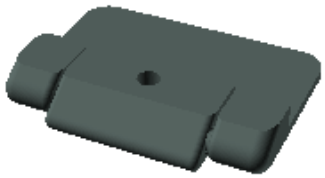
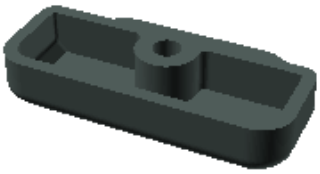
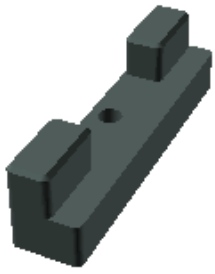
	Not a printed part. Skip **Page number** 199	Not printed part. Skip
 Printed? ☐	**Directory** STLs/Gantry/ X_Axis/XY_Joints **Filename** [a]_endstop_pod_microswitch **Page number** 203	
 Printed? ☐	**Directory** STLs/Gantry/ AB_Drive_Units **Filename** [a]_y_endstop_housing **Page number** Page not found	Warning We could not find this part in the official manual but it's in the STLs. Additionally, the Y endstop is held within the [a]_endstop_pod_microswitch part
 Printed? ☐	**Directory** STLs/Gantry/ AB_Drive_Units **Filename** [a]_wire_cover **Page number** 225	

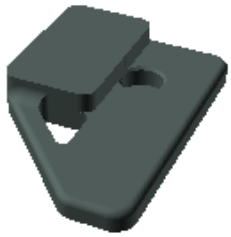
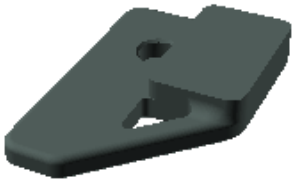
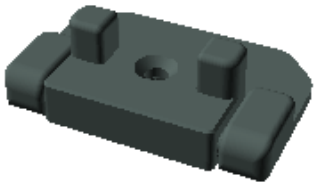
 Printed? ☐	**Directory** STLs/Skirt **Filename** side_fan_support_x2 **Page number** 233	x2
 Printed? ☐	**Directory** STLs/Skirt **Filename** keystone_panel **Page number** 233	
 Printed? ☐	**Directory** STLs/Skirt/250 **Filename** front_skirt_a_250 **Page number** 233	WARNING 250mm x 250mm do you have this bed size?
 Printed? ☐	**Directory** STLs/Skirt/250 **Filename** front_skirt_b_250 **Page number** 233	WARNING 250mm x 250mm do you have this bed size?

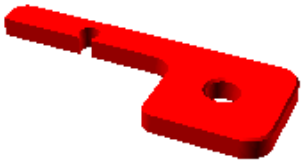
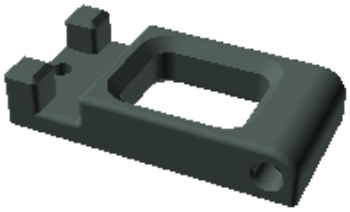
 Printed? ☐	**Directory** STLs/Skirt **Filename** [a]_mini12864_case_ front_insert **Page number** 234	
 Printed? ☐	**Directory** STLs/Skirt **Filename** mini12864_case_front **Page number** 234	
 Printed? ☐	**Directory** STLs/Skirt **Filename** mini12864_case_rear **Page number** 235	
	**Warning: Joke detected** Can’t find the round thing, You make my heart sing, Wild thing. You make everything groovie. ABS mainly. **Page number** 235	Not stl part Please skip.

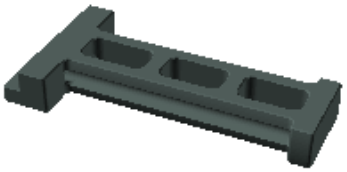
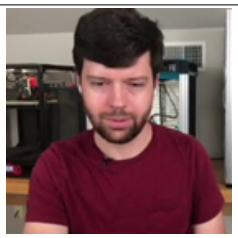
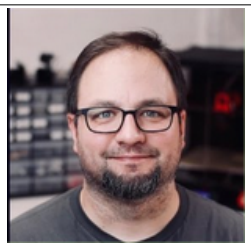
 Printed? ☐	**Directory** STLs/Skirt **Filename** [a]_mini12864_case_hinge **Page number** 236	
 Printed? ☐	**Directory** STLs/Skirt **Filename** [a]_keystone_blank_insert_x2 **Page number** 237	x2
 Printed? ☐	**Directory** STLs/Skirt **Filename** [a]_skirt_logo_x2 **Page number** 237	X2
 Printed? ☐	**Directory** STLs/Skirt **Filename** rear_center_skirt_250 **Page number** 241	WARNING 250mm x 250mm do you have this bed size?

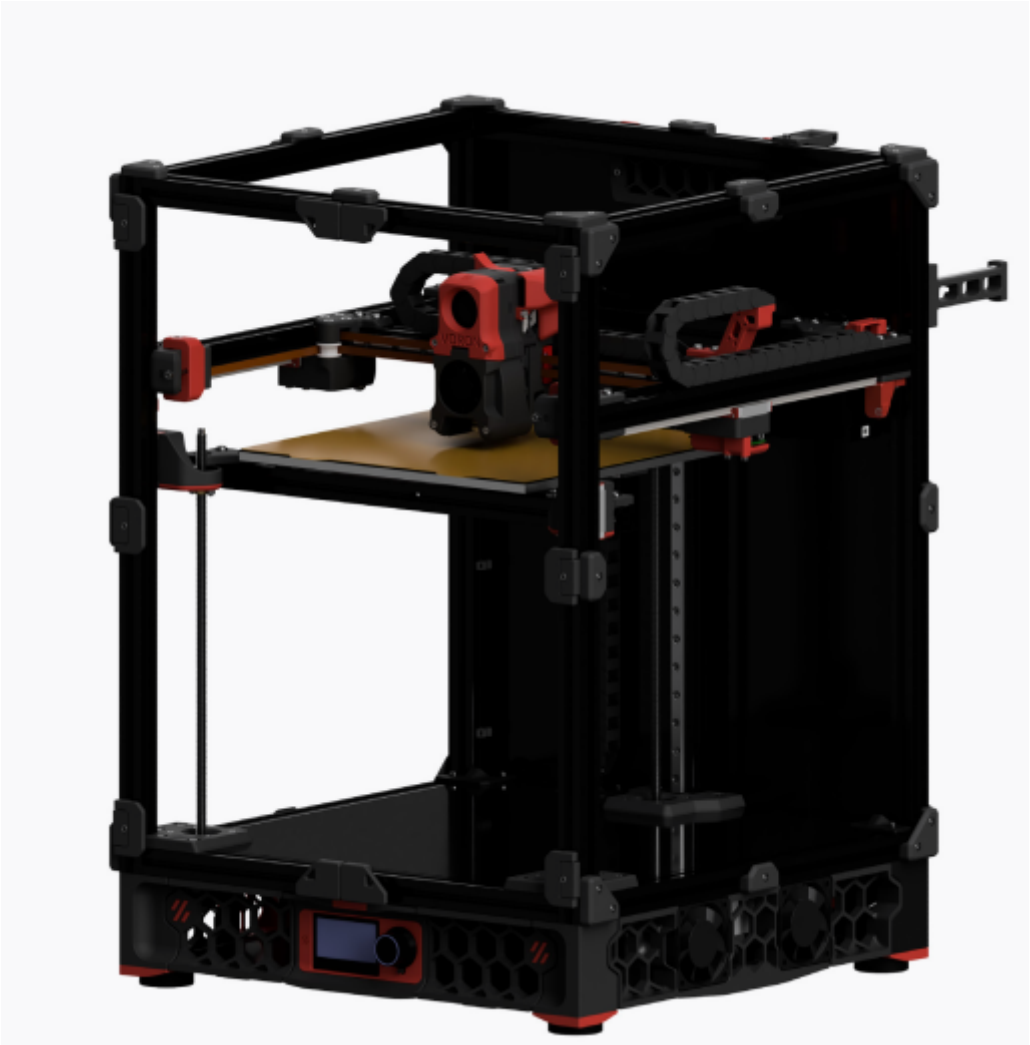
 Printed? ☐	**Directory** STLs/Skirt/250 **Filename** side_skirt_a_250_x2 **Page number** 242	WARNING 250mm x 250mm do you have this bed size? x2
 Printed? ☐	**Directory** STLs/Skirt/250 **Filename** side_skirt_b_250_x2 **Page number** 242	WARNING 250mm x 250mm do you have this bed size? x2
 Printed? ☐	**Directory** STLs/Skirt **Filename** [a]_60mm_fan_blank_ insert_x2 **Page number** 244	x2
 Printed? ☐	**Directory** STLs/Panels **Filename** bottom_panel_clip_x4 **Page number** 250	x4

 Printed? ☐	**Directory** STLs/Panels **Filename** bottom_panel_hinge_x2 **Page number** 250	x2
 Printed? ☐	**Directory** STLs/Panels **Filename** corner_panel_clip_4mm_x8 **Page number** 254	Warning 4mm or 6mm part? x8
 Printed? ☐	**Directory** STLs/Panels **Filename** midspan_panel_clip_4mm_x7 **Page number** 254	Warning 4mm or 6mm part? x7
 Printed? ☐	**Directory** STLs/Panels/ Front_Doors **Filename** latch_x2 **Page number** 263	x2

 Printed? ▢	**Directory** STLs/Panels/ Front_Doors **Filename** handle_a_x2 **Page number** 263	x2
 Printed? ▢	**Directory** STLs/Panels/ Front_Doors **Filename** handle_b_x2 **Page number** 263	x2
 Printed? ▢	**Directory** STLs/Panels/ Front_Doors **Filename** door_hinge_x6 **Page number** 265	x6
 Printed? ▢	**Directory** STLs/Exhaust_Filter **Filename** exhaust_filter_housing **Page number** 268	

 Printed? ☐	**Directory** STLs/Exhaust_Filter **Filename** [a]_filter_access_cover **Page number** 270	
 Printed? ☐	**Directory** STLs/Exhaust_Filter **Filename** [a]_exhaust_filter_mount_x2 **Page number** 272	x2
 Printed? ☐	**Directory** STLs/Exhaust_Filter **Filename** exhaust_filter_grill **Page number** 272	
 Printed? ☐	**Directory** STLs/Exhaust_Filter **Filename** bowen_retainer **Page number** 275	

 Printed? ☐	**Directory** STLs/Exhaust_Filter **Filename** spool_holder **Page number** 276	
 Printed? ☐	Steve (Team member and person who “drove the bus home on Trident project”) **Page number** 280	Man in the red shirt. Well reddish. It’s in that spectrum
 Printed? ☐	Eddie (Team member) **Page number** 280	This is not a red shirt.
 Printed? ☐	Dunar (Team member) **Page number** 280	Support structure may be required for the beard.
 Printed? ☐	Maks Zolin AKA [a]_Russiancatfood Glorious and fearless leader **Page number** 281	May require multiple materials to print.



Done!

I have one question for you.

Did you print the tool on page 58 in the accent colour?

▢ Yes, because it’s cool

▢ No, Mr George, Because I am on to you

Place ✓ above

Note: I spent far too much time on this doco. I can only imagine the hard work that the Voron team has put into actually making the printer itself. So from a personal point of view I would like to say thanks to the official team here.

Credits list

I suddenly realised that a lot of people had commented and given great suggestions to improve this doco and I had not given them their due credit. If I missed you, then opps. My bad. In my defence I fully expected this project to be ignored, So without further ado here is the list.

Credit	Condensed Request	Response
mapsedge	Bigger font please. I am getting older and the text is hard to read	I may have over compensated. Done as requested.
Claudermilk	Here are some things I would change	I think you have written more than me. Done as requested.
Appropriate_Rice3348	4mm nossil? That's a big nozzle. Should mounds" be "mounts"?	Updated to 0.4mm nossle. Updated spelling.
imawsm_	anti-aliasing	Added to things to do
jpgadbois	I initially thought this was a guide to setting up printing parameters on a Trident rather than how to print parts for a Trident	Good point. Will update file name in git when (and If) I do the upcoming 1.10 Super trident.
mvrckcompany	What about removing the background from each of the part pictures? Add in some shadows to make it pop.	Background gone. Unfortunately adding shadow is beyond my limited knowledge
Leang	Color the accent parts differently in the thumbnails for easy visual difference.	Done as requested
imoftendisgruntled	I also think the manual could use a page at the front of every section that has a "For this section you will need:" header followed by pictures and filenames of the STLs along with the hardware bits from the BOM.	Good point. However I am simply following the official manual. But good point.
Castorreddit	Best way of doing this is not on reddit, but on github.	Thanks and done.

And Cut.