Standard Build Procedure

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CONTENTS

Version history

Version	Issue date	Notes & changes
1	28-09-20	Initial Release

1. PCU MECHANICAL BUILD

1.1. ATTACH ARDUINO UNO AND 2x MOTOR BOARD PCBs

Attach Arduino Uno to the PCU Tray using 4x No.4 x 6.5mm Pozi Self-Tapping Screws and 2x Motor Board PCBs (VC1 & VC2) using 4x No.2 x 3/16mm Pozi Self-Tapping Screws.
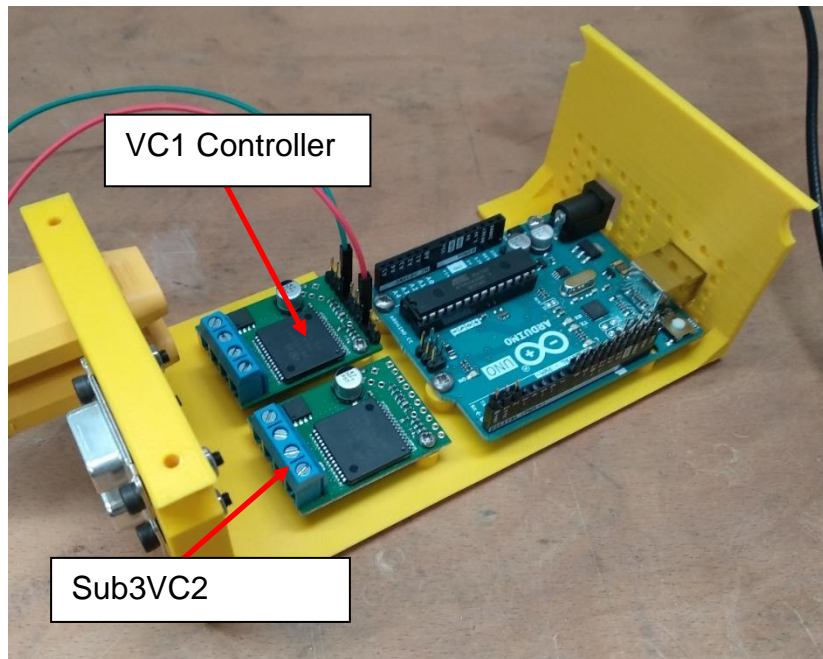
1.2. ATTACH POWER SOCKETS & D-SUBS

Attach 2x Power Sockets (RS180-5378) to the PCU Tray as shown below. Use hot melt glue on the rear of the connectors to secure. Attach 3x Female D-Subs (RS 446-737) using 6x M3x16 SCHS and 6x M3 Plain Nuts.
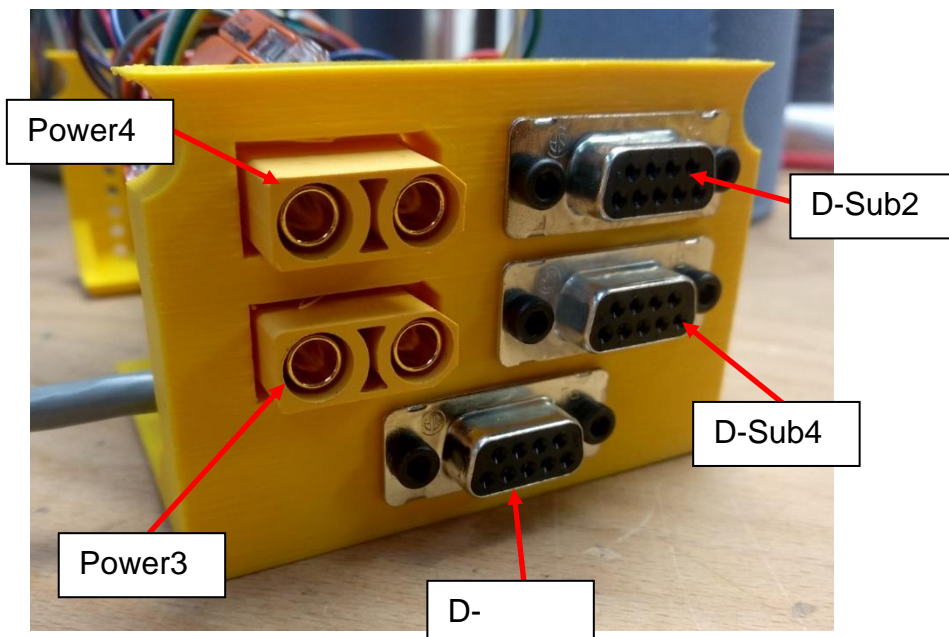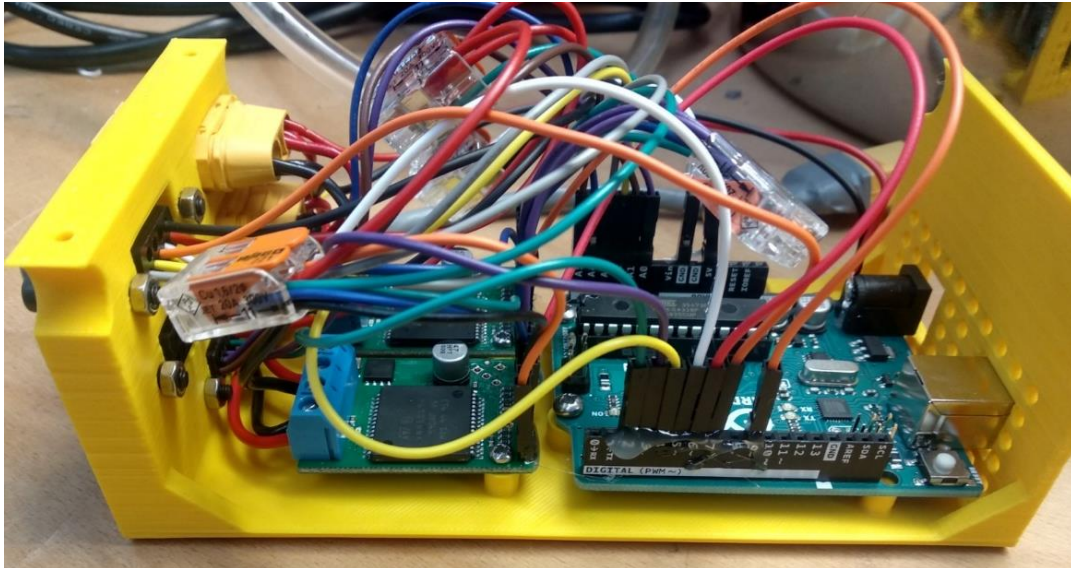
2. PCU ELECTRICAL BUILD

Wire the PCU by referencing the tables and wiring diagram below.

ID	Part #	Direction	Pins	Signal Name	Interface With	Signal Name	Arduino
Power2	Power Socket 180-5378	Output	1	OUT A	BVA1 **Power1** 180-5382	OUT A	
			2	OUT B		OUT B	
Power3	Power Socket 180-5378	Output	1	OUT A	BVA2 **Power3a**180-5382	OUT A	
			2	OUT B		OUT B	
Power3a link cable	Power Plug 180-5382 **Power3**	Output	1	12V DC	Power Plug 180-5382 **Power1**	12V DC	
			2	GND		GND	
Power4	Power Socket 180-5378	Input	1	12V DC	BCA **Power5**180-5382	12V DC	12V DC
			2	GND		GND	GND

ID	Part #	Direction	Pins	Signal Name	Interface With	Signal Name	Arduino
D-Sub3	PCU 446-737	Output	1	VDD	BVA-P1-PCB **D-Sub1** 795-2210 BVA1	VDD	5V (5)
		Input	2	LSW1 (TDC)		LSW1	D2 (17)
		Input	3	LSW2 (BDC)		LSW2	D3 (18)
		Input	4	Temp1		Temp1	AI0 (9)
		Input	5	Temp2		Temp2	AI1 (10)
		Output	6	GND		GND	GND (7)
D-Sub2	PCU 446-737	Output	1	VDD	BVA-P1-PCB **D-Sub1** 795-2210 BVA2 with **L1**	VDD	5V (5)
		Input	2	LSW1 (TDC)		LSW1	D5 (20)
		Input	3	LSW2 (BDC)		LSW2	D7 (21)
		Input	4	Temp1		Temp1	AI2 (11)
		Input	5	Temp2		Temp2	AI3 (12)
		Output	6	GND		GND	GND (7)
D-Sub4	PCU 446-737	Output	1	Enable/Disable	BCA **D-Sub5** 446-692	Enable/Disable	D4 (19)
		Input	2	POT1		POT1	A4 (13)
		Input	3	POT2		POT2	A5 (14)

Figure 1 - Wiring Diagram for VNH5019 Motor Driver Carrier 12A

Photos of PCU Wiring:

3. ATTACH LABELS

Attach labels to the front of the PCU tray as per the image below.