

# Aurora Limited Edition Mid-Drive

## Electrical Wiring Overview

Unofficial, Not Evelo Approved or Validated

version – 02 August 3, 2020

Based on yr-2019 Initial 200 unit build observations

Dapu 750W Motor

C800 Display

Hall Effect Throttle

Dapu 48JK18AGN Controller

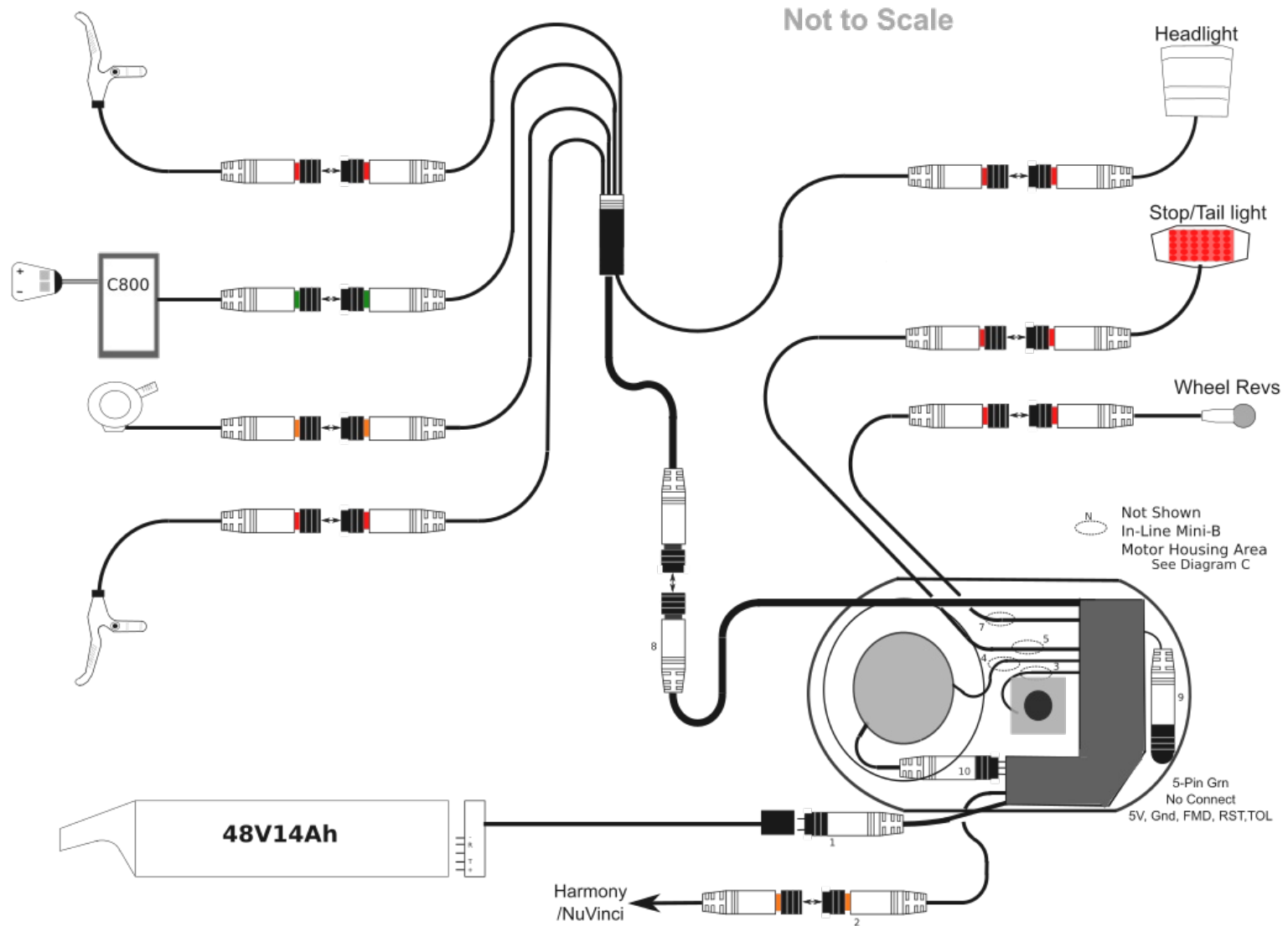
'HIGO" / "YLS" / "Julet" style Mini-B series connectors

{ <https://www.higoconnector.com/higo> }

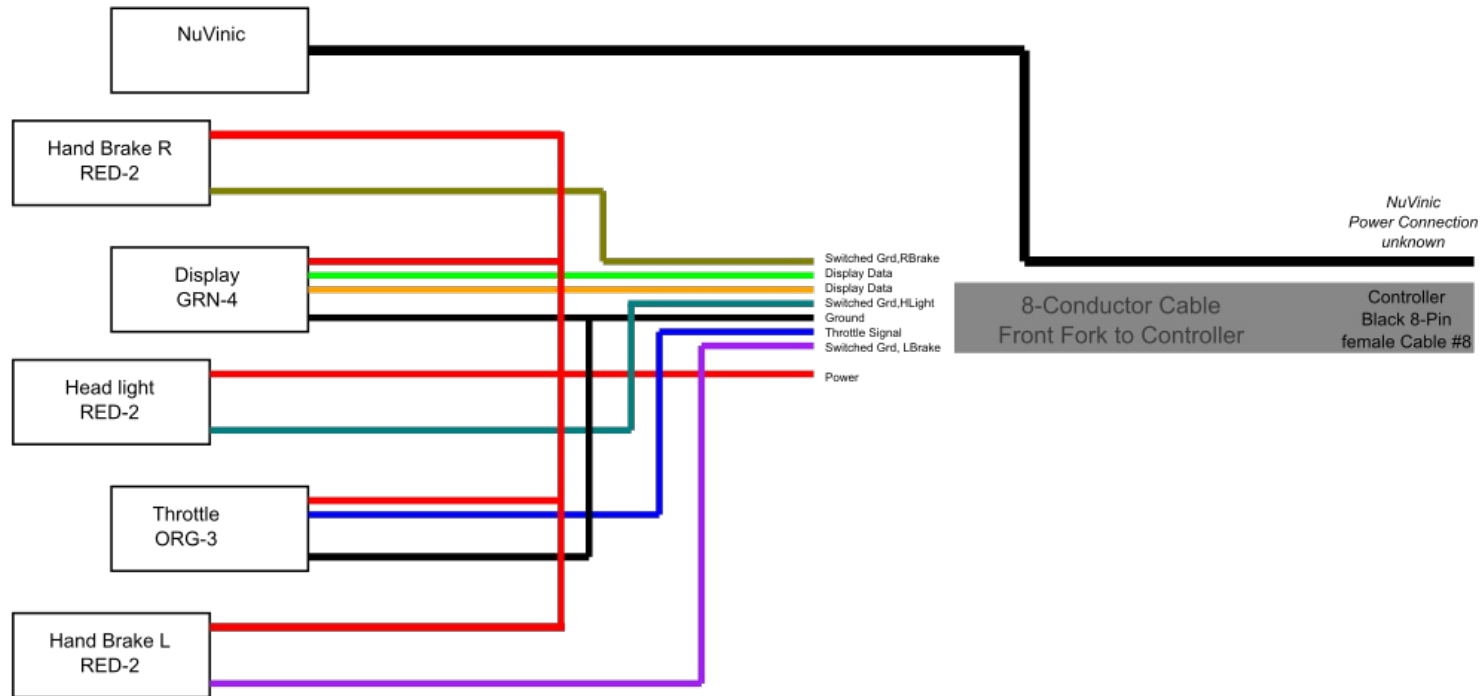
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## Wiring Overview Diagram A

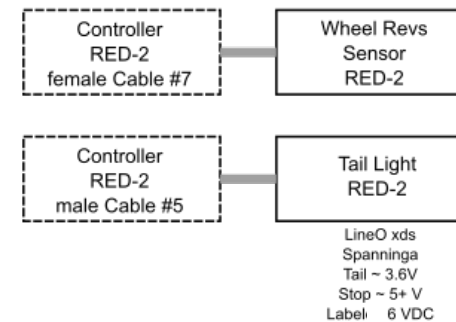


## Wiring Conductors Diagram B

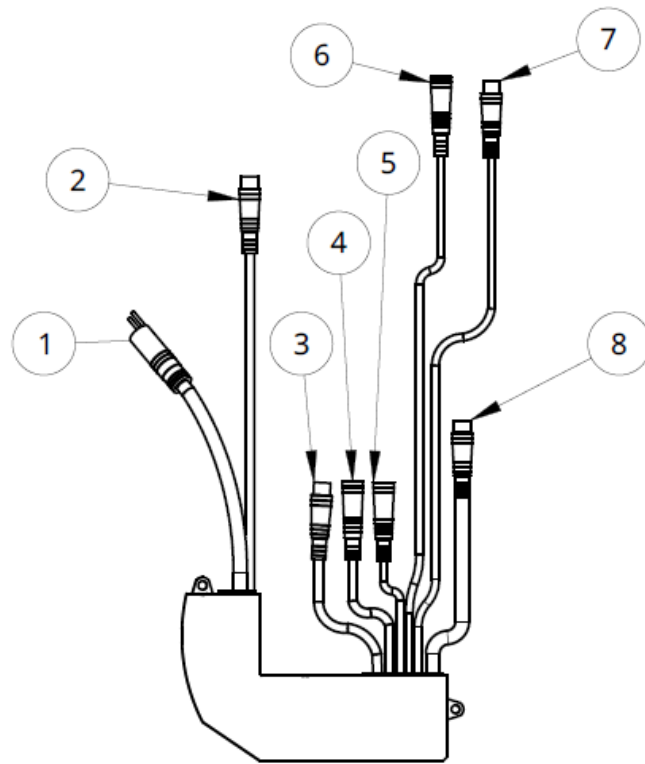


*Assumed Wiring  
uP on Controller  
Completes Circuits via  
Switched Ground*

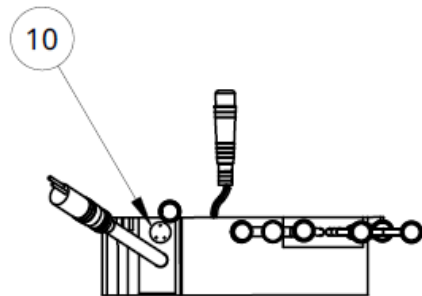
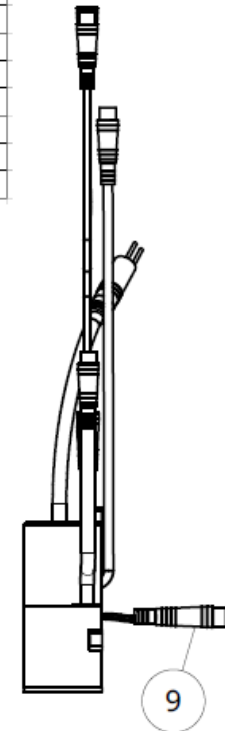
*Colors- Pins  
mini B style connectors; IP66 rated  
Color is Industry Standard for number of Pins*




## Controller Detail Diagram C

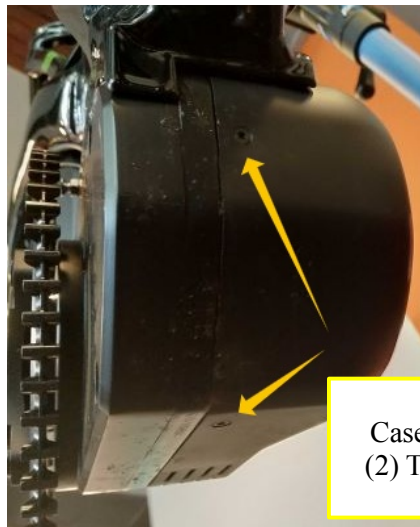


Item No.	Type	Description
1	2 Pin	Power, battery
2	3 Pin	male, Harmony/NuVinc
3	8 Pin	data, Torque Sensor
4	6 Pin	female, motor
5	2 Pin	female, rear tail light
6	3 Pin	female, no connect
7	2 Pin	male, wheel Revs Sensor
8	8 Pin	data, female, Cable to Front
9	5 Pin	no connect, capped off
10	3 Pin	power socket, motor
-	Qty = 2	Mount Screws, T15 head

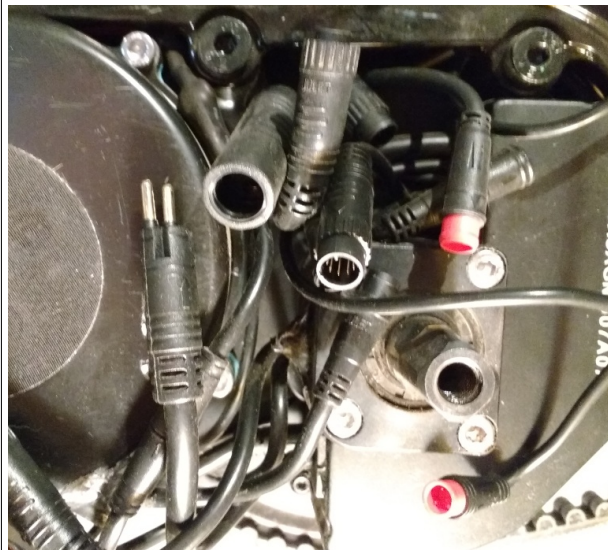
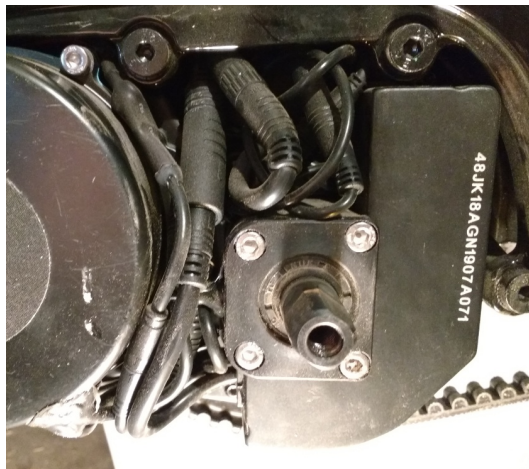


<small>UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES .XX = ±.01- .XXX = ±.001- .XXXX = ±.0001- SURFACE FINISH  DO NOT SCALE DRAWING BREAK ALL SHARP EDGES AND</small>		NAME	DATE	<b>For Reference Only</b>  <b>48JK18AGNDyywwAsss</b> <b>750W Mid-Drive</b> <b>Aurora Limited Edition</b>
	DRAWN	CRAIG B	05/07/2020	
	CHECKED			
	APPROVED			
				TITLE

## Controller Pictures

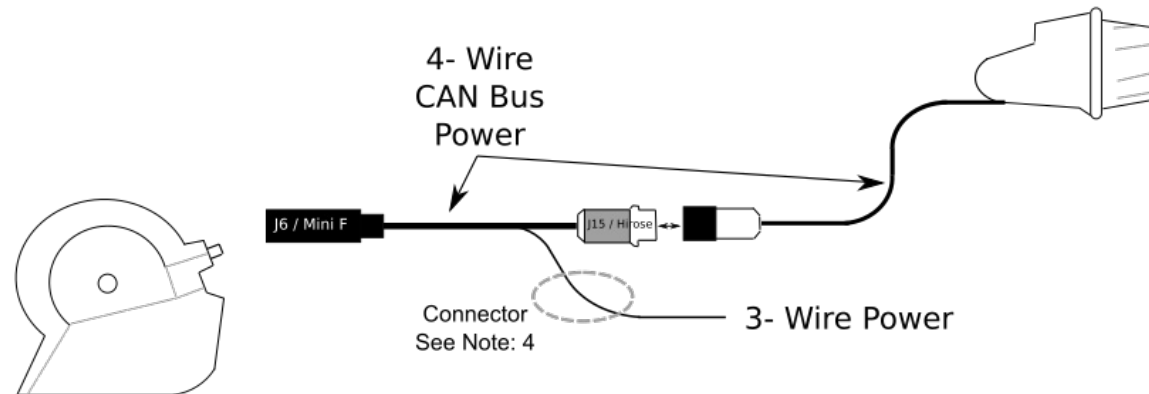


Case Removal  
(2) T10 Screws



## Wiring Enviolo Diagram D

Enviolo  
Documentation  
Not Evelo Sourced



HI Pin	Cable Pin	Color	Function
1	2	Yellow	V_BAT
2	3	Blue	GND
3	4	Red	CAN_L
4	1	Black	CAN_H



## Notes

1	C800 Display Stores odometer value, Stores password												
2	<p>Throttle Software coded for Power Assist Level 3 maximum, ignores display PAS setting SS39ET series or similar Hall Effect IC Typical voltage response:</p> <p style="text-align: center;">+5.0 Volts Input</p> <table border="1"> <caption>Typical voltage response data points (estimated from graph)</caption> <thead> <tr> <th>% Throttle</th> <th>Output Volts</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.8</td></tr> <tr><td>25</td><td>1.6</td></tr> <tr><td>50</td><td>2.4</td></tr> <tr><td>75</td><td>3.2</td></tr> <tr><td>100</td><td>4.5</td></tr> </tbody> </table>	% Throttle	Output Volts	0	0.8	25	1.6	50	2.4	75	3.2	100	4.5
% Throttle	Output Volts												
0	0.8												
25	1.6												
50	2.4												
75	3.2												
100	4.5												
3	Controller cable #6 (Diagram C) No connect. Controller cable #9 (Diagram C) No connect.												
4	Controller cable #2 (Diagram C) Harmony/NuVinci connection. Connects to voltage drop/regulator chip, ends in bullet connectors (not shown in Diagrams of this document) with adapter that ends in Blue Harmony plug. Slack hidden inside down tube.												
5	Controller cable #4 (Diagram C) Motor-hall sensor. Has in-line plug while sensor is contained within motor unit.												
6	Controller cable #3 (Diagram C) Torque Sensor. Has in-line plug while sensor is contained within motor unit.												
7	Controller is a 9-MOSFET design; industry typical 9-MOSFET will handle 25 Amps												
8	Controller microcontroller; STM32F0426T6												
9	<p>Enviolo { <i>NuVinci Optimized</i> }</p> <p>Grip Controller to Hub Interface connection is located above the Motor assembly and not visible when motor is installed. Location has not been verified.</p>												
10	<p>Enviolo { <i>NuVinci Optimized</i> }</p> <p>Unlike the manual operation units. Automatic unit hubs can not be shifted completely through the ratio range while stationary. Systems will wait for pedaling or wheel movement. So downshift before coming to a full stop.</p>												

## Appendix 1: Julet vs Higo

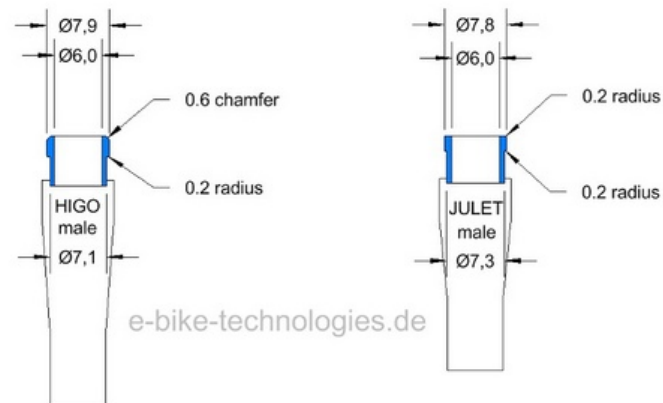


6 mm round connectors: HIGO (left side) and JULET (right side)

The **HIGO male connector** has a somewhat larger collar, with a larger chamfer in front to allow the female connector's lip to use the chamfer as a ramp when inserting the connector. It is also the reason why HIGO connectors hold on tighter and are a touch more resistant to water entry.

**TIP:** Use some **bowstring wax** to lubricate the collar, making it easier for the soft female lip to slide over it. This also allows for easier pulling apart the connectors, at the same time making it ever more water resistant.

Here a cross-sectional view of the male connectors:





### Change History

Version	Date	Change
00	5/5/2020	Original release
01	5/7/2020	Corrected Controller cable #9 description, changed motor assembly outline, updated notes, added history
02	8/3/2020	Additional cable function information added to Notes; obtained from Evelo Motor Assembly Installation Instructions