

# SUPPLEMENTAL SERVICE MANUAL

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## 1. Adjusting the Lever Position

Lever Distance: There are 3 positions that place the lever closest to furthest from the grip. Turn the chrome wheel on the top of the lever joint clockwise to adjust. Each click will change the lever to grip distance.

Lever Length: Adjustable by loosening the screw on the backside and sliding the lever in or out.

Free Play: There is a screw on the backside of the lever where it contacts the master cylinder plunger that is used to adjust the free play.

## 2. Air Box Removal

### NOTES:

1. Nitrous safeties, solenoids and secondary plumbing are self-contained in the air box along with the Wideband Sensor Controller (WEGO IID), Twin Scan II, IAT Sensor, PowerVent, Grage Door Opener and Show LED Controller.
2. All wiring exiting the air box excepting the battery connections have quick disconnects.
3. Do not remove the stacks from the air box when removing the air box itself. The air box will lift off once the connections are undone with the secondary plumbing and stacks intact.
4. Ensure all bottle valves are closed and activate the purge switch on the left side of the bike, with ignition on, to release any pressure in the lines before disconnecting the NO2 main supply line.
5. Prepare for removal of the air box per the instructions in the factory service manual including the removal of the Maxi Fuse before proceeding.
6. Refer to drawing 03-011, Air Box Layout, and/or Connector Location Table for locations of connectors and components.

### Plumbing Disconnect

1. Ensure all bottle valves are closed and activate the purge switch on the left side of the bike, with ignition on, to release any pressure in the lines before disconnecting the NO2 main supply line.
2. Disconnect the main supply line at the nitrous filter fitting at the front of the air box. Tape off the end of the disconnected line so that it does not contact the battery posts or the finished surfaces of the bike.
3. Disconnect the purge line at the purge solenoid fitting at the left front of the air box. Tape off the end of the disconnected line so that it does not contact the battery posts or the finished surfaces of the bike.

### Air Box Front Disconnects

1. Disconnect the black ground wire from the battery negative post to the air box and tape off end of wire.
2. Disconnect the black ground wire from the battery positive post to the air box and tape off end of wire.
3. Disconnect Garage Door Opener connector H9.
4. Disconnect NO2 Control connectors NC1 & NC2.

## Air Box Right Side Disconnect

Disconnect NO2 Control connectors NC3 & NC4.

## Air Box Rear Disconnect

1. Disconnect NO2 Control connector NC3.
2. Disconnect Twin Scan Control connectors T5 and mini-USB.
3. Disconnect Show LED Controller connector L1.
4. Disconnect Wideband Sensor Controller connector T8.

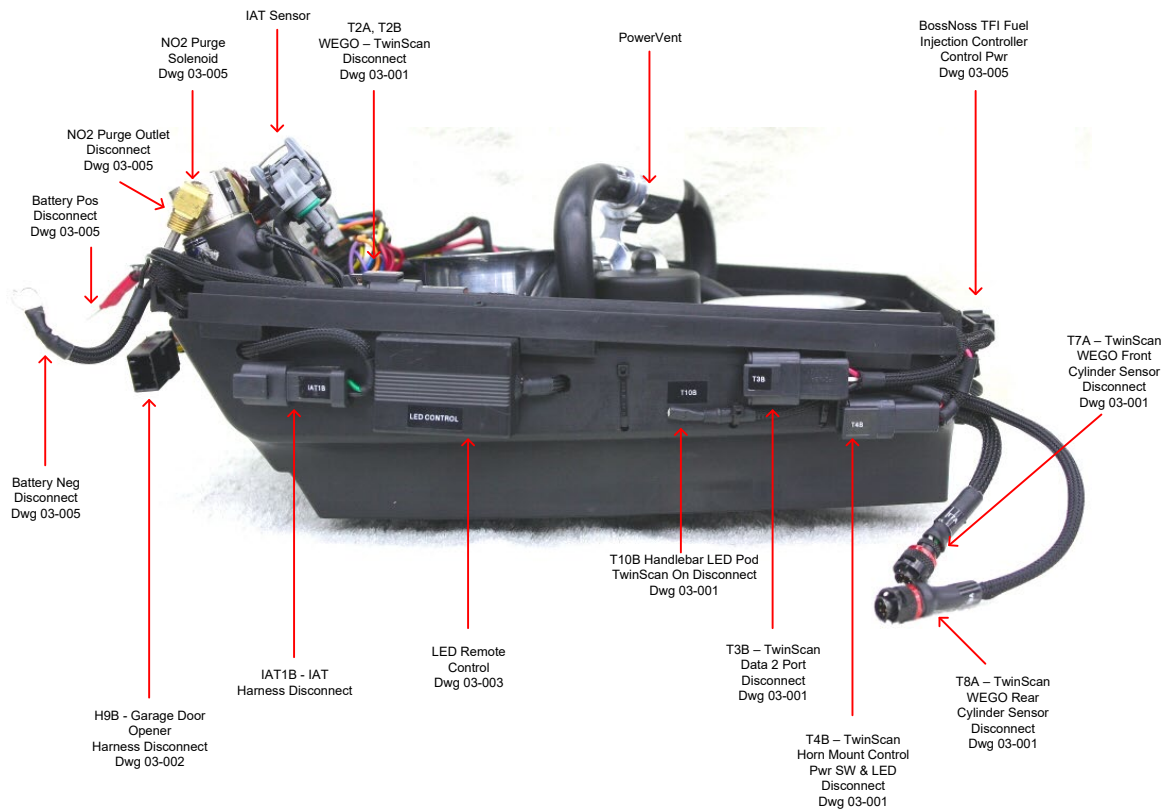
## Air Box Left Side Disconnects

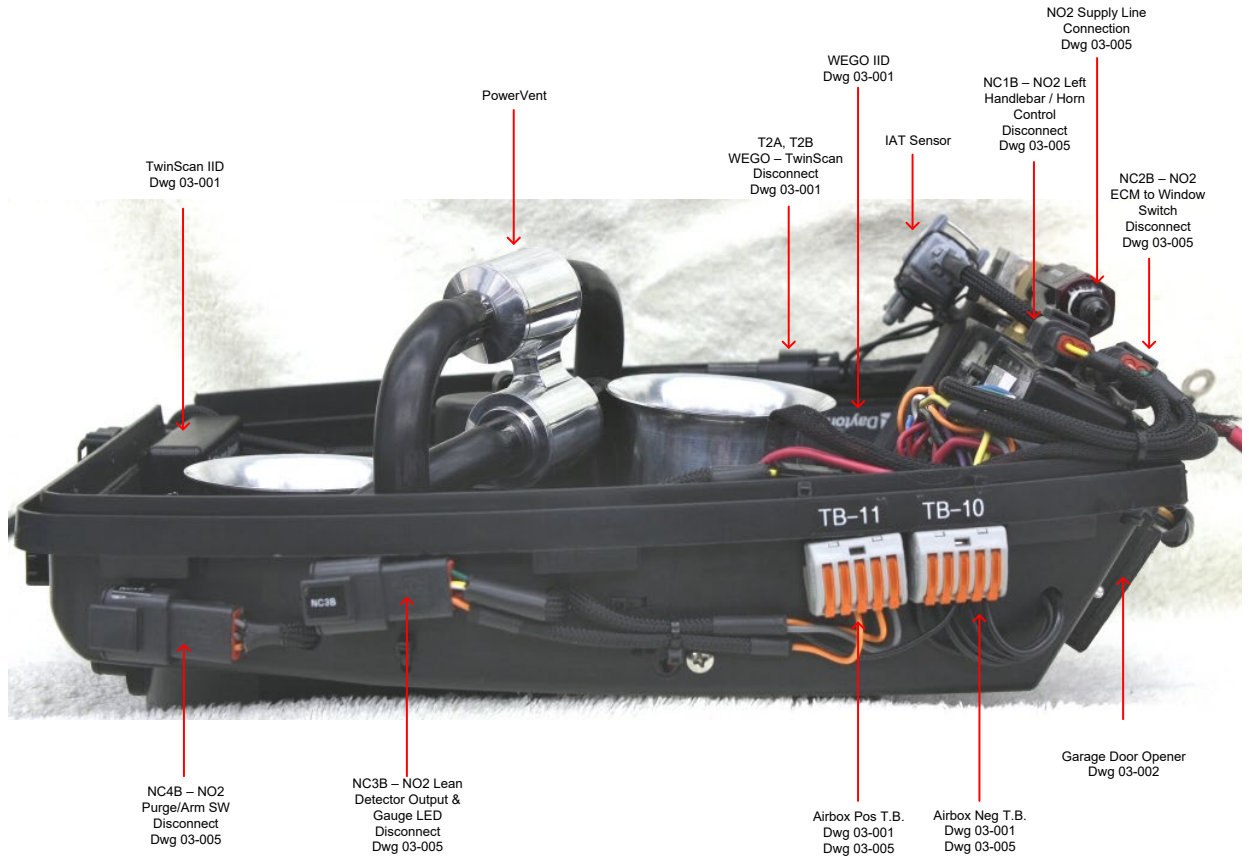
1. Disconnect Wideband Sensor Controller connector T7.
2. Disconnect Twin Scan Control connectors T3, T4 and T10.
3. Disconnect IAT Sensor connector IAT1.

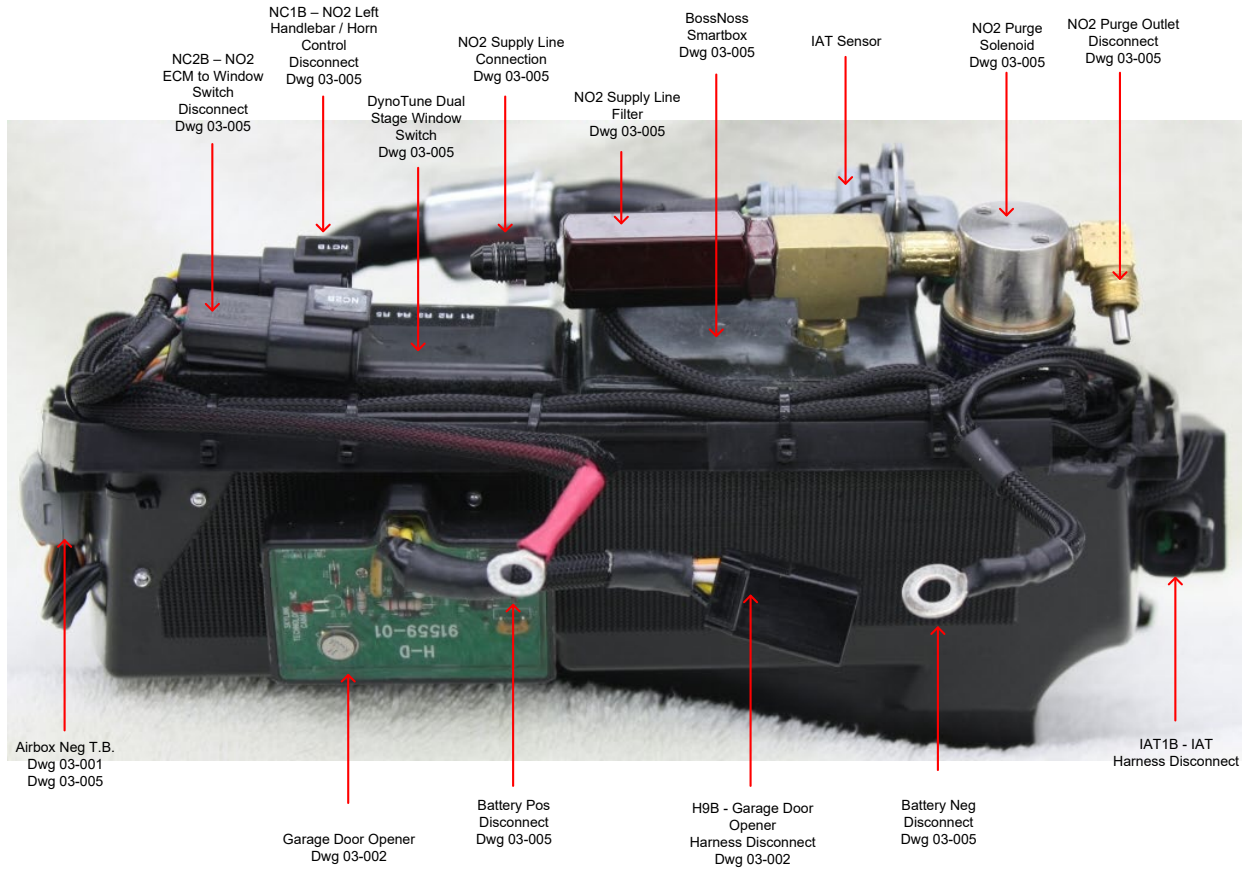
Remove Air Box per instructions in the factory service manual but do not remove the stacks from the air box when removing the air box itself.

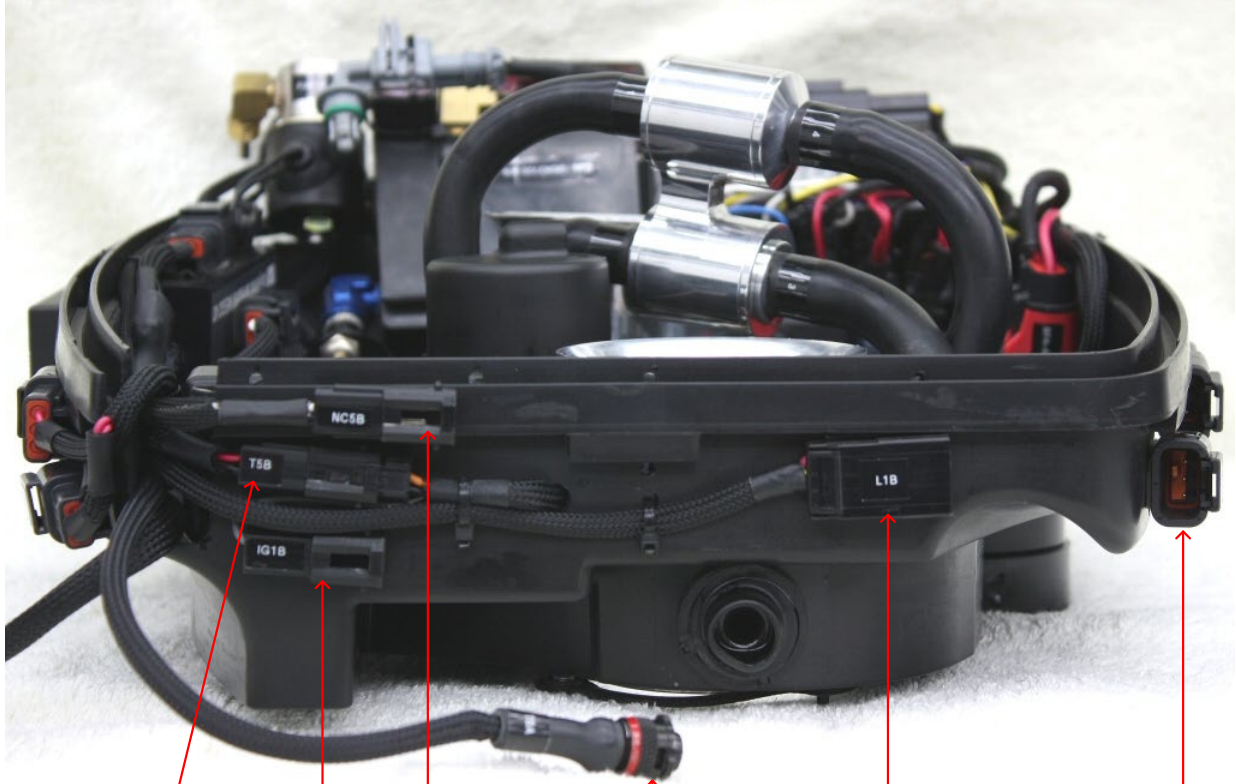
## Air Box Installation

Reverse the procedure for removal of Air Box.









T5B – WEGO  
+12V Control Pwr  
Disconnect  
Dwg 03-001

IG1B – Airbox  
+12V ACCY Pwr  
T.B. Input  
Disconnect  
Dwg 03-001

NC5B - BossNoss TFI  
Fuel Injection Controller  
Control Pwr  
Dwg 03-005

T8A – TwinScan  
WEGO Rear  
Cylinder Sensor  
Disconnect  
Dwg 03-001

L1B  
LED Remote  
Control Disconnect  
Dwg 03-003

NC4B – NO2  
Purge/Arm SW  
Disconnect  
Dwg 03-005

### **3. Air Suspension Basic Operation**

1. Air Pressure Gauge - shows the PSI in the air shock lines. Adjust air spring pressure as desired. Excess pressure will result in a firmer ride, too little pressure will allow the suspension to bottom out. The maximum air pressure is 100 PSI.
2. To increase air pressure and consequently ride height and clearance flip the control switch on the gauge mount up.
3. To decrease air pressure and consequently ride height and clearance flip the control switch on the gauge mount down.
4. The system is functional without the ignition switch on excepting the low air pressure alarm indication.
5. You must have a minimum of 50 PSI before operating the center/display stand.

#### Measures

Extended: 13.0 inch

Compressed: 10.0 inch

Travel: 3.0 inch

#### Dampening Adjusters

Clockwise is stiffer, counterclockwise is softer.

#### To Adjust Air Pressure Alarm Set Point

NOTE: The bike can be ridden with no air pressure in the rear shocks, but cornering clearance is greatly affected. The alarm set point should be at a level you choose to notify you that cornering clearance will be affected so that you can ride accordingly.

1. The low air pressure alarm LED's on the left handlebar and the air gauge mount are only active when the ignition is switched on. Switch the ignition on or set to the ignition switch to the auxiliary position before adjusting the alarm set point.
2. Remove the left side frame cover and pull the pressure sensor forward off the Velcro to expose the scale and adjusting screw at the end of the sensor.
3. Sit on the bike and adjust the air pressure using the control switch on the air gauge mount until the clearance you want is achieved.
4. Using a 3mm hex wrench, turn the adjustment screw clockwise to increase set point or counterclockwise to decrease set point. Set the adjustment so that the LED alarm indicators on the left handlebar and the air gauge mount just go off.
5. Test the adjustment by releasing air pressure using the control switch with the ignition on. The alarm LED's should come on as soon as you fall below your desired air pressure set point.

## Air Pressure Sensor Specifications

### Operation

- Description:  
The pressure switch monitors air pressure and provides an electrical output when the pressure drops below or exceeds an adjustable preset pressure.
- Adjustment:
  - Remove screw from top of switch.
  - Using a 1/8" (3mm) hex wrench, turn the adjustment screw clockwise to increase set point or counterclockwise to decrease set point.
  - Replace screw.

**Flying Lead**

Using a 1/8" (3mm) hex wrench, turn the adjustment screw clockwise to increase set point or counterclockwise to decrease set point. One complete revolution of the adjusting screw covers the complete adjustment range.

**DIN Connector**

Using a 1/8" (3mm) hex wrench, turn the adjustment screw clockwise to increase set point or counterclockwise to decrease set point. One complete revolution of the adjusting screw covers the complete adjustment range.

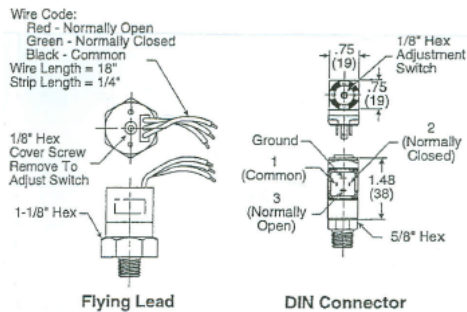
### Application Limits

These products are intended for use in general purpose compressed air systems only.

| Operating Inlet Pressure | kPa        | PSIG     | bar        |
|--------------------------|------------|----------|------------|
| All Styles Pressure Max. | 2067       | 300      | 20         |
| Adjustment Range         | kPa        | PSIG     | bar        |
| Flying Lead Pressure     | 172 / 689  | 25 / 100 | 1.7 / 6.8  |
| DIN Connector Pressure   | 207 / 1034 | 30 / 150 | 2.1 / 10.3 |

(All shipped preset at 90 PSIG - 6.2 bar)

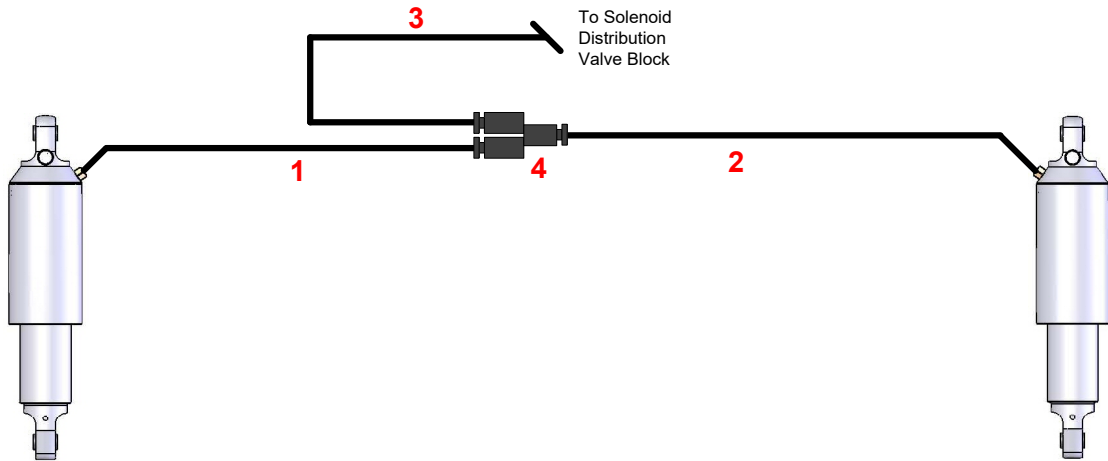
**Ambient Temperature Range** -40°C to 80°C (-40°F to 180°F)



## Removing the Right or Left Shock

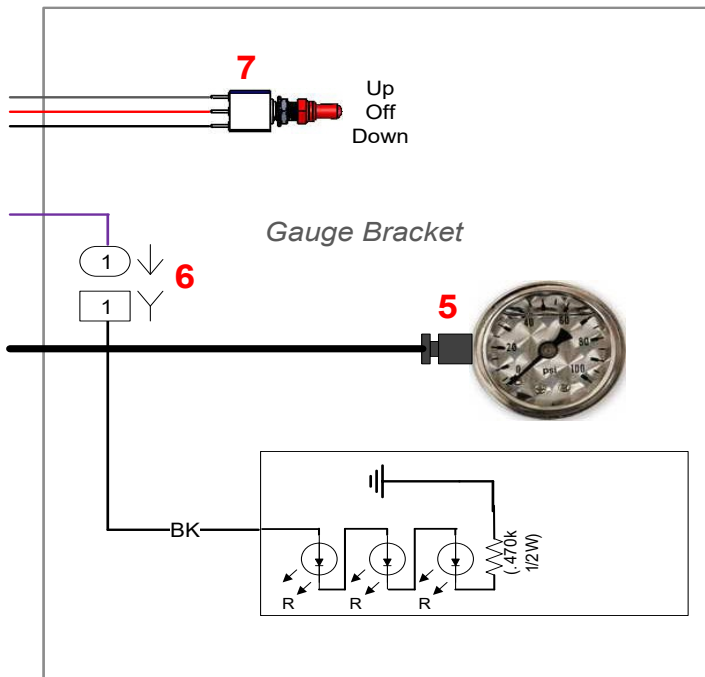
**NOTE:** It is not necessary to remove the NO2 shock mounted bottles or their mounting hardware to remove either shock. Ensure all bottle valves are closed and activate the purge switch on the left side of the bike, with ignition on, to release any pressure in the lines before disconnecting NO2 lines.

- Disconnect NO2 lines from the bottles at the bottle fitting on the shock to be removed per service notes on Dwg 03-005.
- Place scissor lift at front underside of bike with lift positioned 10mm forward of the front face of the oil pan. Lift the bike to 145mm from the top of the lift rubber to ground.
- Release all air pressure using the switch on the air pressure gauge mount. Disconnect shock airlines (1) and (2) at the Y push quick connector (3) under the seat and pull the line out through the frame opening leaving it connected at the shock body.
- With the above noted positioning of the lift and with 42 psi in rear tire there should be no pressure on the upper or lower shock mount bolts. Remove bolts, lower first.
- Reverse the procedure to Reinstall the shock.



**Removing the Air Pressure Gauge and Gauge Mount**

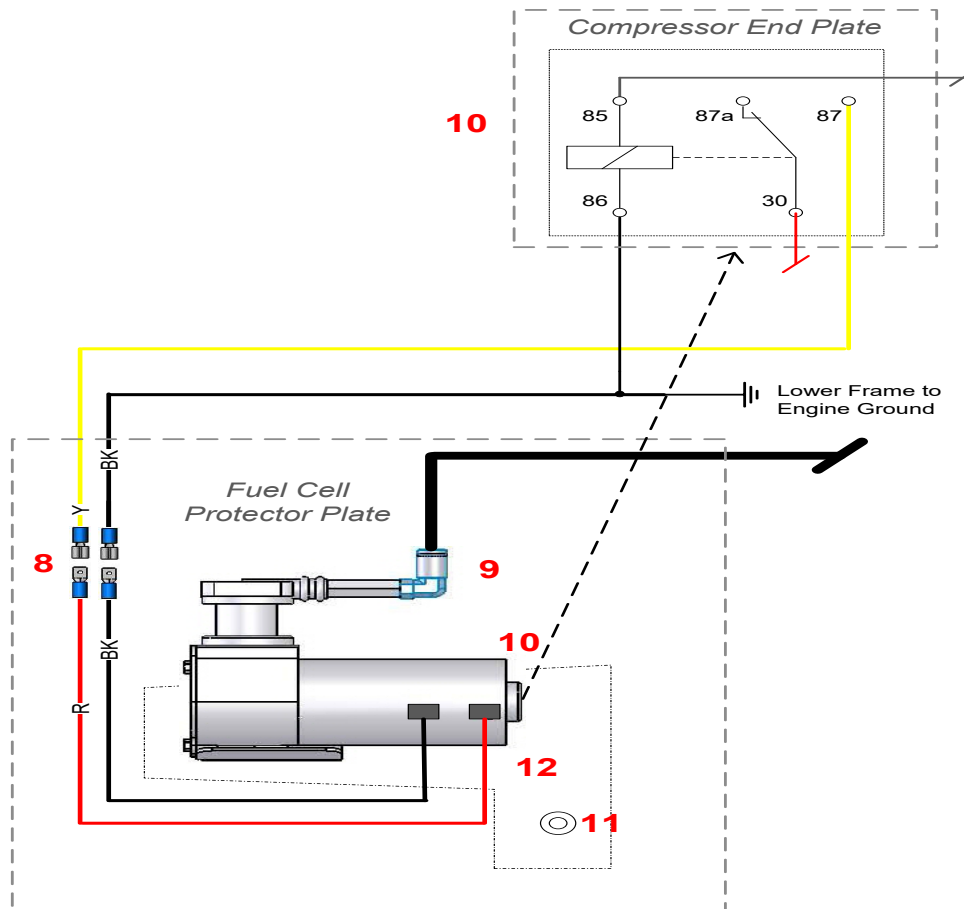
1. Release all air pressure using the switch on the air pressure Gauge Mount.
2. Disconnect pressure gauge line at gauge push quick connector (5).
3. Disconnect small single pin connector (6) located behind the air pressure control switch (7) on the Gauge Mount.
4. Remove the top locknut on the air pressure control switch (7) and pull the switch down out of the Gauge Mount.
5. Remove the two Cam cover bolts on the top side of the gauge mount that connect the gauge mount to the rear cylinder and remove the gauge and mount together.
6. Reverse the procedure to install the Pressure Gauge and Gauge Mount.



## Removing or Replacing the Air Compressor

NOTE: Bike should be on a lift so that maximum clearance is achieved to manoeuvre the compressor out.

1. Remove either the Maxi Fuse or the air system fuse BF2 located in the main fuse box.
2. Disconnect the compressor power input at the two single pin connectors (8) at the compressor input.
3. Release all air pressure using the switch on the air pressure gauge mount.
4. Disconnect main air line at compressor output push quick connector (9).
5. Unplug the relay connector (10) from the relay mounted on the left side of the compressor housing and push aside.
6. Remove the compressor mounting plate retaining screw (11) on the left side. The screw holds the plate to the fuel cell protector plate at the lower left side of the bike just behind the relay.
7. Slide the bracket (12) complete with the compressor to the left to release the mounting plate from the forward keyways and drop the compressor and plate out the bottom to remove.
8. Reverse the procedure to install the compressor.

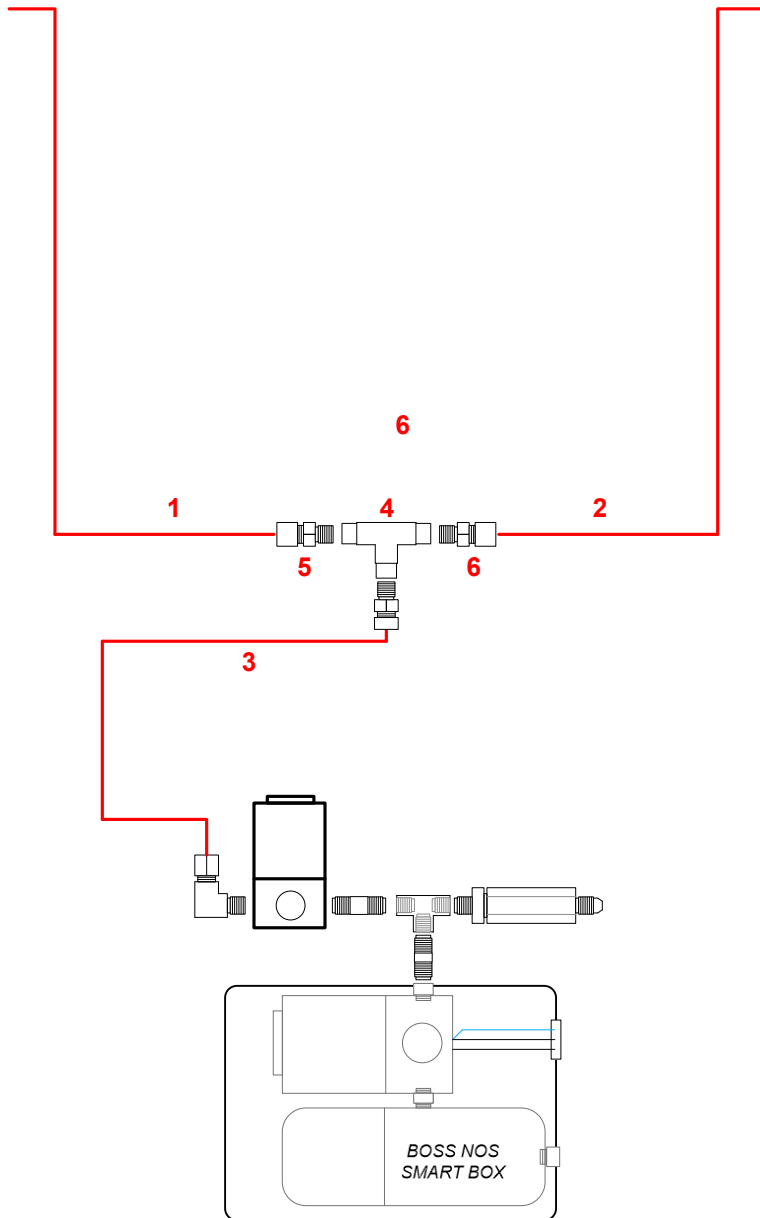




#### 4. Battery Removal

1. Remove purge line tee (4), with main purge line (3) connected, by loosening compression fittings (5) and (6).
2. Let the ends of the purge lines (1) and (2) drop below the battery box.
3. Slide the battery out over top of purge lines (1) and (2).
4. Reverse the procedure after reinstalling the battery.

Note: The battery has a solid top and left side plate that is attached to the bike. The components that are mounted above the battery and to the left of the battery are not attached to the battery itself, they are attached to the top and side plate. It is not necessary to remove any of the components to remove the battery.



## 5. Center Display Stand

The center display stand is for display purposes only and should not be used to service the motorcycle. Use a proper lift for servicing purposes.

To place the motorcycle on the Center Display Stand:

1. With the motorcycle on the side stand or supported in the vertical position, using the switch on the air pressure gauge to increase the ride height to the maximum (100 PSI).
2. Standing on the left side of the motorcycle place the motorcycle in the upright position.
3. While balancing the motorcycle in the vertical position use your right foot to swing the center stand down past the pivot point.
4. Use the switch on the air pressure gauge to decrease the ride height until the motorcycle's weight is firmly on the center stand.

To remove the motorcycle from the Center Display Stand:

1. Support the motorcycle while standing on the left side and use the switch on the air pressure gauge to increase the ride height to the maximum (100 PSI).
2. While balancing the motorcycle in the vertical position use your right foot to swing the center stand up past the pivot point.
3. Use the switch on the air pressure gauge to increase or decrease the ride height to the riding position. The red LED's on the gauge mount and left handlebar will be off once the correct ride height is reached.
- 4.

## 6. Engine Coolant Temperature (ECT) Override Switch Module

### Description:

The purpose of this switch module is to provide the rider the ability to override the motor's ECT sensor and force the ECU to see a temperature high enough to defeat the low rev limit on a cooler motor. In addition, a second switch position is provided that will force the ECU to see a temperature high enough to turn on the cooling fans. A final switch position allows the ECT and ECU to work normally.

### Installation:

1. Simply locate the Black/White and Pink/Yellow wires at any accessible point
2. Between the ECT and the ECU.
3. Splice the Black wire of the Switch Module to the Black/White wire on the Motorcycle wire harness. (Do not cut the Black/White wire).
4. Cut the Pink/Yellow wire.
5. Connect the Yellow wire of the Switch Module to the cut end of the Pink/Yellow
6. Wire that goes to the ECU.
7. Connect the Violet wire from the Switch Module to the cut end of the
8. Pink/Yellow wire that goes to the ECT sensor.
9. Using a 1/4" hole, mount the switch in a suitable location.

### Operation:

There are 3 switch positions available, each with a different mode of operation.

With the switch in the middle position, the ECT and ECU operate normally. When

the switch lever is in the position towards the notch in the threaded shaft, the ECU is sent a signal that will represent approximately 223F (106C) which is high enough to turn on the cooling fans. When the switch lever is in the position away from the notch on the threaded, the ECU is sent a signal that will represent approximately 189F (87C) which is high enough to defeat the low temperature rev limit.

## **7. Fork Boots - Front Lighting**

### Removing / Installing the Front Fork Protector Fork Boots

1. Remove the two fork protector plates per procedure in service note 2.
2. Remove the front wheel following the procedure in the service manual with the following exceptions.

### Removing the Front Fender

1. Unplug connector FW2 located on left underside of front fender behind the fork leg. (See drawing on sheet one)
2. Remove fender mounting bolts, two bolts per side.
3. Slide the fender under the hard brake line back towards the rear of the bike and set aside.
4. Reverse the procedure to install the front fender.

### Removing the Front Brake Calliper

1. Remove the two bolts that bolt the calliper to the left fork leg.
2. Slide the calliper off the rotor by pulling the calliper down. There is no need to remove the hard brake line/wiring tube, the line has enough slack on the top side for the calliper to be removed from the rotor and set to the side of the wheel. (See Drawing 03-008)
3. Reverse the procedure to install the front brake calliper.

### Removing the Front Wheel

1. Unscrew the left and right-side LED front axle covers from the fork boots. Pull the wire leads out of the fork boot until the axle covers rest on the ground.
2. Insert a pin/punch into the right-side axle through the hole in the right fork boot underside.
3. Remove the axle nut from the left side being careful not to pinch the axle cover wires.
4. Remove the left side axle washer under the nut. The washer is notched to allow it to pass over the axle bolt cover wires.
5. Disconnect connector FW7 and place the left side axle cover aside. Tuck the connector back into the fork boot out of the way of the axle. (See drawing on sheet one)
6. Disconnect connector FW8 and place the right-side axle cover aside. Tuck the connector back into the fork boot out of the way of the axle. (See drawing on sheet one)

7. Loosen the axle pinch bolts through the two holes in the right fork boot underside
8. Remove the axle and the wheel being careful not to damage the wheel spacers. The spacers will come out and/or install easier from the back side. Back the wheel out of the fork tubes until the spacers are free.
9. Reverse procedure to install the front wheel after reading the installation tips in service note 4.

#### Removing the Fork Boots

1. Loosen the two bolts that clamp the fork boot to the fork and remove the fork boots.
2. See service note 4 for installation procedure.

#### **Installation Tips:**

#### Fork Boot Install Tips

1. Attach the axle pinch bolt bottom clamp to the fork tube and hand tighten the pinch bolts leaving enough room for the axle to slide through.
2. Slide the fork boots on the forks and hand tighten but do not torque the fork boot clamp bolts.
3. Ensure the wires for the axle bolt covers are routed along the lower front edge of the fork boot so that they are not pinched between the fork and the fork boot.
4. Ensure the wires for the right-side axle bolt covers do not obstruct the three holes in the bottom of the fork boot.
5. You may have to slightly rotate the boot during wheel installation to line up the opening in the back side of the boot with the wheel spacers.
6. After the axle is installed screw the axle bolt covers into the fork boot to ensure the fork boot is properly aligned. If misaligned the axle bolt cover will not screw on. Align the fork boots with the axle bolt cover temporarily screwed in and final torque the fork boot clamp bolts.

#### Front Wheel Install Tips

1. There is a left and a right-side wheel spacer that are not interchangeable. The spacers are marked left and right on the back side of each spacer.
2. Insert the wheel spacers from the rear of the wheel.
3. Ensure that the fork boot clamp bolts are only hand tight before installing the wheel. Rotate the fork boots towards the rear of the bike when inserting the spacers if the spacers are difficult to get in.
4. The left side axle nut washer is notched to allow it to pass over the axle bolt cover wires.

#### Brake Calliper Install Tips

1. When positioning the caliper over the rotor start with the bottom (lower) set of pads and slide the caliper forward and up.

#### Front Fender Install Tips

1. Squeeze the fender inward when sliding it between the fork fender mounts.

2. Connect connector FW2 located on left underside of front fender behind the fork leg before installing the fender mount bolts.

## 8. Fork Protectors Front Lighting

### NOTES:

1. There are no modifications done to the front forks for the fork protectors. The protectors can be removed at any time to revert back to the stock set up.
2. Use thread locker on the screws securing the protectors to the fork boots. Apply heat if required to break the thread lock when removing the fork protector.
3. The fork protector and axle bolt cover can be used with or without the run turn LED's being operational, however, the front axle LED's cannot be operated separately or without the protector LED's. The protector LED's can be operated without the front axle bolt cover LED's.
4. The front axle bolt cover LED's can be disabled by disconnecting connector FW7 and/or FW8 behind the fork protector leaving the fork protector LED's operational.
5. A failed or damaged LED strip in either the fork protector or the axle bolt cover will not affect the remaining functional strip.

### Removing and/or Repairing a Failed Front Fork Protector Plate LED

1. Remove the protector plate following the procedure in service note 2.
2. Insert a small flat bladed screwdriver (from the top side only) inside and to the side of the narrow cover that covers the LED pod.
3. Carefully pry the cover off exposing the LED pod. Repair or replace the LED pod with a spare unit.
4. Use silicon adhesive remover to remove all the silicon adhesive from the cover.
5. After installing the repaired or replaced LED pod fill the cover with silicon adhesive and place the cover over the led pod with the bottom of the cover lining up with the mark on the backside of the protector plate. Allow to set for 24 hours, clean off any excess silicon and reinstall the protector plate per service note 2.

### Removing and/or Repairing a Failed Front Axle Bolt Cover LED

1. The axle bolt cover LED pods cannot be repaired. The pod is encased in epoxy. Either replace the failed unit with the spare axle bolt LED cover or make a new LED pod using the components shown on sheets 1 and 2.
2. Use heat and/or epoxy dissolvent to remove the LED pod from the axle bolt cover.
3. Spacing for LED's is 8mm center to center.

### Removing / Installing the Front Fork Protector Plates

1. Remove the two screws that secure the protector to the fork boot. Use mild heat to break the thread lock if necessary. The protectors will stay in place on the fork legs after the screws are removed due to the rubber backing pads.

2. Rotate the protector off the fork leg by twisting it so that the backside is facing you.
3. Unplug the lower connector FW5, FW6. (See drawing on sheet one.)
4. Unplug the upper connector FW3, FW4. (See drawing on sheet one.)
5. Reverse the procedure to install the protector.

#### Disabling the Front Fork Protector Plate Run/Turn LED's

1. Remove the left side cover.
2. Disconnect connectors H5-1A and H6-1A .
3. Disabling fork protector LED's will not affect normal run turn signals.

#### Permanently Removing the Front Fork Protectors

1. Remove the fork protector plates per the above procedure.
2. Disable the fork protector LED's per the above procedure.
3. Remove the fork protector boots per service note 3.
4. Remove the FW3 and FW4 connector harnesses from the front fender by disconnecting the harness behind the front wheel fender bolt covers that house the front wheel show LED pods (see Drawing 03-003). The covers open by removing the screw from the inside. The wheel show LED's will continue to operate normally with the fork protectors removed.
5. Remove the rubber pads from the fork tubes.
6. Replace the LED axle bolt covers with the stock axle bolt covers.

## **9. Fuel Injectors**

### Stock Setup

Injector control signals are sent from the ECM directly to the Front and Rear injectors.

### Speed Shifter

The injector signal from the V-Rod ECM is routed through the speed shifter ECM to the Front and Rear Injectors. The injector signal is momentarily interrupted by the speed shifter during shifts to offload the transmission when the speed shifter is powered on and the up or down shift button is pressed to shift gears.

### Nitrous Fuel Injector Control

The injector signal from the V-Rod ECM is routed through the speed shifter ECM and then through the Nitrous Fuel Injection Control to the Front and Rear Injectors. The NO2 controller will override the V-Rod ECM injector signal to add additional fuel anytime the NO2 fire button is pressed, otherwise the injector signal from the ECM is passed through. The Speed Shifter ECM will still interrupt the injector signal when needed.

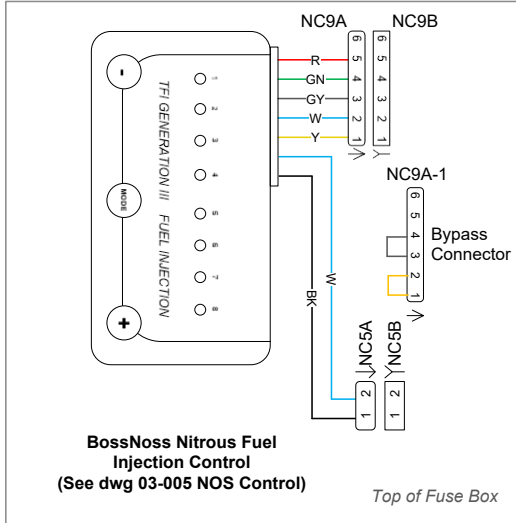
### Injector Signal Path

V-Rod ECM >> Speed Shifter ECM >> NO2 Fuel Injector Control >> Front/Rear Injectors

### To Bypass the Nitrous Fuel Injection Control

1. Locate the on-board bypass connector NC9A-1 at the front bottom of the fuse box.

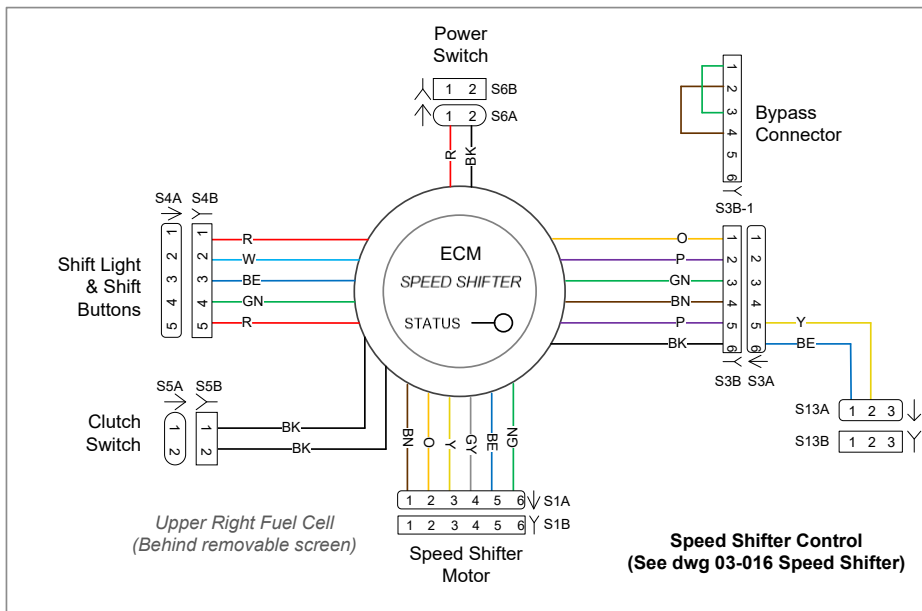
2. Unplug connector NC9A from NC9B disconnecting the controller from the injector loop.
3. Plug the bypass connector NC9A-1 into NC9B. The injector loop is now functional without the controller. The bypass connector passes the injector signal through to the injectors so that you do not have to remove the controller injector harness.



**To Bypass the Speed Shifter Injection Control**

1. Locate the onboard bypass connector S3B-1 behind the right-side upper screen panel where the speed shifter ECM is also located.
2. Unplug connector S3B from S3A disconnecting the speed shifter controller from the injector loop.
3. Plug the bypass connector S3B-1 into S3A. The injector loop is now functional without the controller. The bypass connector passes the injector signal through to the injectors so that you do not have to remove the speed shift controller injector harness.

Note: Do not operate the Speed Shifter in this bypass mode.



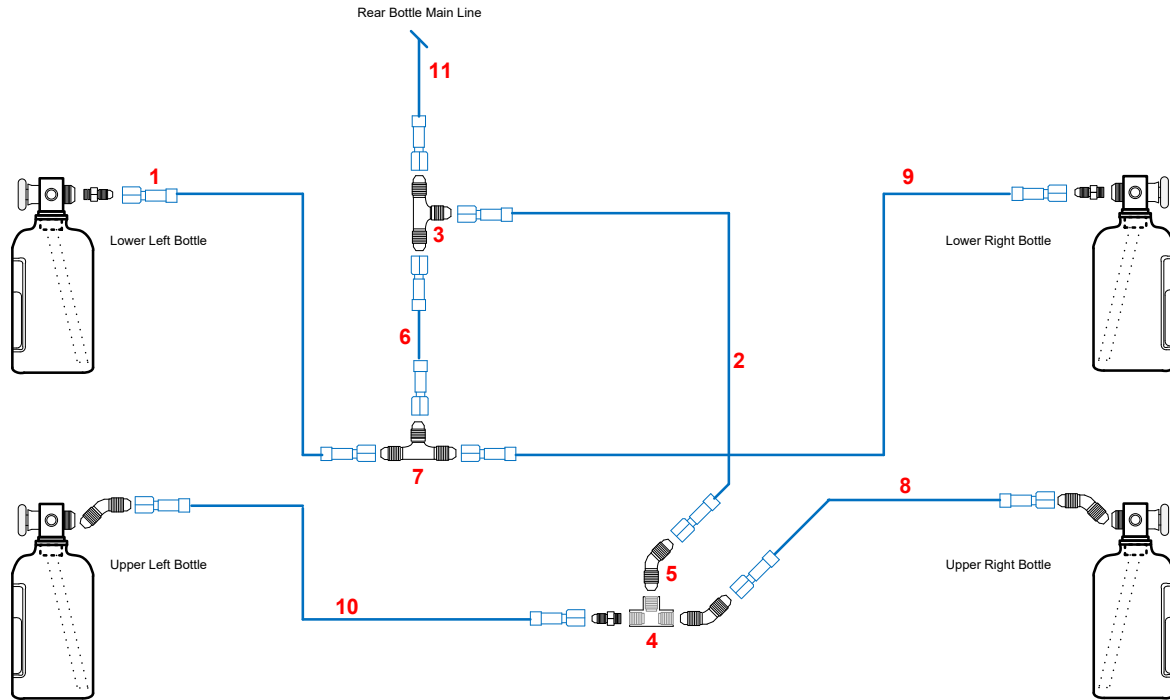
## Bypass Notes

The bypass connectors are used to assist in troubleshooting by temporarily removing the component from the injector control loop or to return the injector control to the stock configuration for testing. If you intend to permanently remove either the NO2 fuel controller or the speed shifter then it is recommended that you return the injector control wiring harness back to stock configuration.

### **10. Fuel Module Assembly / Lock Ring Removal**

NOTE: Ensure all bottle valves are closed and activate the purge switch on the left side of the bike, with ignition on, to release any pressure in the lines before disconnecting NO2 lines.

1. Disconnect line (10) at upper left bottle fitting.
2. Disconnect line (2) from rear bottle main line tee (3) only at rear upper bottle tee (4), 45-degree fitting (5). Do not remove line (2) from main line tee (3), instead push line out of the way.
3. Cut the cable tie securing line (6) to the fuel vent line.
4. Cut the cable tie securing the upper bottle tee (4) to the right-side lower bottle line (9).
5. Push the upper bottle tee towards the right side of the bike as far as it will go.
6. Disconnect right side lower bottle line (9) from the lower bottle tee (7) and push the line back out of the way towards the rear of the bike.
7. Disconnect and remove line (6) connecting the rear bottle main line tee (3) to the rear lower bottle tee (7).
8. Cut the cable tie securing the lower bottle tee (7) to the frame.
9. Push the lower bottle tee (7) back and toward the left of the bike with the left lower bottle line (1) still connected until the tee is out of the way.
10. Remove fuel module assembly per service manual instructions.
11. Reverse the procedure to reinstall after servicing the fuel module assembly.



## 11. Gear Indicator

### Removal of Indicator:

1. Unplug the indicator by removing the upper left front side cover and disconnecting connector G1A/B
2. The indicator mounting bracket is attached to the instrument cluster housing on the underside of the housing using the original housing mount hardware. Remove the bracket and indicator if permanently removing the indicator, otherwise the indicator display can be removed from the bracket by removing the 2 screws on the backside.
3. To remove the wiring harness, remove the instrument housing following the service notes in drawing 03-002 (Handlebar Controls) and pull the harness through the opening in between the riser and the top triple tree.

### Programming Switch

It is only necessary to program the indicator once on initial setup. However, if you want to change the initial settings you will need to use the programming switch. The switch mount is designed to mount on the left side handlebar between the handlebar control switches and the riser should you need to repeat the teaching procedure.

1. Remove the left side cover by pulling it outward. Disconnect the show LED connector and set the cover aside.
2. Unplug connector G2A from G2B and plug into the switch connector G2C.
3. Plug switch connector G3A into connector G3B.

4. If you are going to use the teaching function, secure the switch to the Left side Handlebar between the handlebar control switches and the riser and replace the left side cover.
5. When programming is complete, remove the switch and restore connections.

Note: The following table is a quick programming guide. See the full programming sheet for complete instructions.

| <b>Entering Setup/Test Mode</b>   |  |  |   |
|---|--|--|---|
| <b>Setup Switch</b>   | 1. Disconnect G2A & G2B.   | 2. Connect switch pin G2C to G2A.  | 3. Connect switch pin G3A to G3B.   |
| <b>Initial Test</b>   | Switch ignition on and the display will start flashing.  | Press the push button after the display starts flashing –the complete display will illuminate while holding the push button. |   |
| <b>Setup Mode</b><br>To enter setup mode and/or to start the gear teach you have to activate the setup menu as follows. | Switch power on, the display will flash two times. Press the button twice during the flashing cycle. | The setup menu is build serially. Every menu has to be opened, starting from menu 1 and ending at menu 5.                    | Exit setup at any stage by switching the power supply off. All adjustments will be saved. |
| <b>Menu 1 – Ignition Impulse</b><br>(set to B=0.5)  | A=0.25, B=0.5, C=0.75, D=1.5   | 3 LED on left side will flash.   | Short push for next character. Long to save & next menu.                                  |
| Adjustments   |  |  |   |
| <b>Menu 2 – Threshold A, Max RPM</b><br>(set to 8900)   | 3 LED on top side will flash.  | 10k – (0-2)<br>1k – (0-9)<br>100 – (0-9)   | Short push for next character. Long to save & next menu.                                  |
| Adjustments   |  |  |   |
| <b>Menu 3 – Engine Speed Filter</b><br>(factory setting is filter B)  | 3 LED on right side will flash.  | Activate & set speed ring to Max RPM. Change value & exit. Stable ring = correct value.                                      | Short push for next character. Long to save & next menu.                                  |
| <b>Menu 4 – Threshold B, Shift Light Point</b><br>(Rev Limit = 8900)<br>(Safe Limit = 8750)<br>(Shift Point = 8500)     | 3 LED on bottom side will flash.   | 10k – (0-2)<br>1k – (0-9)<br>100 – (0-9)   | Short push for next character. Long to save & next menu.                                  |
| Adjustments   |  |  |   |
| <b>Menu 5 – Engine Speed Ring</b>   | All Outside LED on will flash.   | D=Max RPM<br>A=Shift Light Point<br>R=Gear Teach   | Short push to change mode. Long to save & exit menu.                                      |
| Adjustments   |  |  |   |
| <b>Menu 5 – Gear Teach</b><br>During gear teach do not brake or clutch. RPM under 3000.                                 | Select R and exit setup. Display flashes '1'   | Engage 1 <sup>st</sup> gear. Flashing '1' to steady '1' after 3 sec. Gear teach for next 4 sec.                              | After 4 sec, next gear is displayed. Change gear while flashing.                          |
| <b>Notes:</b>   | During gear teach do not brake or clutch. Keep RPM under 3000.                                       | Engage gear & release clutch during flashing display.  | Press button until start sequence appears after teaching last gear.                       |
| Adjustments   |  |  |   |

## 12. Handlebar Adjustments

### To Adjust Handlebar Control Position:

Adjustment range is limited to the size of the openings for the internal wiring in each handlebar. The openings are oval in shape to allow for rotation of the controls within a limited range. If adjustment beyond the range is required, then you must adjust the handlebar position in the riser.

### To Adjust Handlebar Clip-on Position:

The left and right handlebars are internally wired. The wiring runs through the center of a hardened stainless 12-point bolt that joins the clip-on to the riser. You must use the special 12-point notched socket to remove or install the bolt. The socket is notched for the handlebar wiring.

### Left Side Handlebar Adjustment:

Note: Remove the air box cover before proceeding:

1. Remove the left side pro-guard wind deflector from the end of the handlebar. Unscrew the mount bolt only far enough to pull the rubber expansion nut out of the end of the bar.
2. It is not necessary to Remove the left side grip.
3. Remove the 2 screws from the speed shift pushbuttons clamp and disconnect the wires from the backside of the pushbuttons.
4. Remove the 2 screws on the handlebar control switch, then separate the control switch from the reservoir/lever section by removing the top left side bolt that bolts the two pieces together.
5. Rotate the reservoir/lever section and rest it on the air box. The switch housing does not need to be disconnected from the wiring harness to adjust the bars.
6. Pull the wiring harness for the speed shift and the LED indicator pod out of the end of the handlebar to expose the connections.
7. Disconnect the wiring to the LED pod and remove the LED pod from the handlebar.
8. Feed the wiring harness into the small hole towards the top of the socket from the inside out.
9. Pull the handlebar switch wires tight where they exit the handlebar so that they are grouped together and position the notch in the socket so that as you push the socket in towards the riser bolt the switch wires will ride in the notch.
10. Carefully slide the socket in the handlebar while gently pulling the slack in the wiring out of the hole in the topside of the socket.
11. Once the socket is seated on the bolt with the notch over the switch wires and the remaining control wires exiting out the socket hole, loosen or tighten the bolt to adjust the position.

### Right Side Handlebar Adjustment:

Note: Remove the air box cover before proceeding

1. Remove the right-side pro-guard wind deflector from the end of the handlebar. Note, it is a left-hand thread and screws into the end of the internal throttle.
2. Remove the right-side grip.
3. Remove the 2 screws from the NO2 pushbutton clamp and disconnect the wires from the backside of the pushbuttons.
4. Remove the 2 screws on the handlebar control switch, then separate the control switch from the reservoir/lever section by removing the top left side bolt that bolts the two pieces together.
5. Rotate the reservoir/lever section and rest it on the air box. The switch housing does not need to be disconnected from the wiring harness to adjust the bars.
6. Remove the internal throttle following the procedure in service note 1 of drawing 03-015 "Throttle Control".
7. Remove the throttle cable from the handlebar only. Do not remove the entire cable from the riser. The cable exits through a hole on the underside of the bar immediately next to the riser.
8. Pull the wiring harness for the NO2 pushbutton and the LED indicator pod out of the end of the handlebar to expose the connections.
9. Disconnect the wiring to the LED pod and remove the LED pod from the handlebar.
10. Feed the wiring harness into the small hole towards the top of the socket from the inside out.
11. Pull the handlebar switch wires tight where they exit the handlebar so that they are grouped together and position the notch in the socket so that as you push the socket in towards the riser bolt the switch wires will ride in the notch.
12. Carefully slide the socket in the handlebar while gently pulling the slack in the wiring out of the hole in the topside of the socket.
13. Once the socket is seated on the bolt with the notch over the switch wires and the remaining control wires exiting out the socket hole, loosen or tighten the bolt to adjust the position.

### **13. Handlebar Assembly Removal**

The handlebars can be removed as a complete assembly with the brake and clutch master cylinders, and all controls, in place using the quick disconnects, or without the brake and clutch master cylinders without using the quick disconnects.

1. Remove the left and right upper front frame side covers. Be careful to disconnect the show LED's from the covers and the ignition RFID on the backside of the right cover. See service notes in 03-003 "Show LED's" and/or 03-022 "keyless Ignition" for further information.
2. Remove the air box cover.
3. Remove the Maxi Fuse.
4. On the left side behind the side cover disconnect connectors G1, H1, H3, H5-2, H6-2, H15, H16, S9, S10 and the instrument cluster harness connector H17.
5. Remove the throttle cable from the throttle body using the adjuster just ahead of the linkage to provide enough slack in the cable to remove it from the Throttle

body. Pull the disconnected end forward so that it exits in front of the steering neck. It is not necessary to cut the cable ties securing the cable to the handlebar/instrument cluster wiring harness.

Note: Perform steps 6a and 7a below if you are not using the hydraulic quick disconnects. Perform steps 6b and 7b if using the hydraulic quick disconnects.

- 6a. On the right and left handlebar Remove the 2 screws on the handlebar control switch, then separate the control switch from the reservoir/ lever section by removing the top left side bolt that bolts the two pieces together.
- 7a. On the left and right handlebar rotate the reservoir/lever section and rest each of them on the open-air box. The switch housing does not need to be disconnected from the wiring harness.
- 6b. Access the brake line hydraulic quick disconnect on the top of the battery and twist to separate.
- 7b. Access the clutch line hydraulic quick disconnect from the front right side of the motorcycle. Cut the cable tie that secures the line to the underside of the battery box and twist to separate. Pull the clutch line through the left side cover opening with the connector half connected.
8. Remove the 2 riser bolts from the underside of the top tree. Be careful not to allow the handlebar assembly drop or scratch the top tree.
9. Remove the handlebar assembly as a complete assembly with the instrument cluster housing, gear indicator, shift light, turn signals and control switches and indicators attached.

#### **14. Horn Control Panel Removal**

1. Remove the bolt through the factory horn mount frame tab. There is no nut on the rear of the tab, the bolt screws into the rubber mounted control panel.
2. Remove the horn assembly complete with the control panel.
3. Disconnect the show LED connector at the back of the horn.
4. Disconnect the control panel connectors for both the speed shift and the Twin Scan. Both will be disabled with the control switch panel removed.

#### **15. Instrument Cluster – Changing Indicator Color**

5. Remove the instrument cluster from the housing and remove the top glass.
6. Remove the needles.
7. Remove the black nickel faceplate. The faceplate is not glued down.
8. Remove the tinted film from the rear of the faceplate and replace it with desired color tint. There are 3 colored tint sheets to choose from - Red, White or Blue.

#### **16. Instrument Cluster Removal**

1. Remove the left and right screws that bolt the instrument housing to the riser. The screws pass through the separate riser wiring harness cover. Tilt the housing forward and unplug the connector.
2. Note the order of the cable harnesses and lines from left to right as the cover is designed to fit over the cables and lines only when the order is maintained.

## 17. Internal Throttle

### Cable Adjuster

To adjust the idle speed - use the in-line throttle cable adjuster immediately forward of the throttle body linkage. Lengthening the adjuster increases idle speed.

There are no adjustments on the internal throttle itself.

### Removing the internal throttle assembly or throttle cable

1. Remove the right-side pro-guard wind deflector from the end of the handlebar. Note, it is a left-hand thread and screws into the end of the internal throttle sleeve.
2. Remove the left grip by removing the 2 screws on the underside of the grip. Do not remove the 3rd inside screw as it is a plug only.
3. Remove the 2 screws from the NO2 pushbutton clamp, disconnect the wires from the backside of the pushbuttons and remove the clamp. The pushbutton clamp covers the set screws that secure the throttle assembly to the handlebar.
4. Remove the large outer retaining ring (snap ring) on the end of the throttle assembly.
5. Remove the 2 bearings from the sides of the throttle assembly and slide the outer spiral sleeve off the assembly.
6. Remove the 2 set screws that secure the throttle assembly to the handlebar.
7. Remove the throttle cable from the throttle body linkage. If you are only removing the throttle housing with the intent of reinstalling, then prop open the butterflies to provide enough slack in the cable to remove the internal throttle assembly.
8. Pull the throttle assembly out of the handlebar with the cable and the cable seat washer attached.
9. To disconnect the throttle cable from the assembly, pull the center spring back and loosen the set screw that clamps the cable end into the assembly.

### Installing the Throttle Assembly - Reverse the Above Procedure But Note the Following:

1. The assembly needs to be orientated so that the foil is at the top when it is secured on to the handlebar.
2. The inside bottom grip set screw must catch the notch in the bottom of the throttle assembly. Secure this screw first then the outside bottom set screw.
3. Use thread lock on all screws including the pro-guard mounting screw.
4. Lubricate the cable and the throttle assembly tubes before installing.
5. Test for smooth throttle action from fully closed to fully open once assembly is complete.

## 18. Keyless Ignition

### Removing the Upper Right Front Side Cover

1. Remove the side cover screw and pull the cover forward and up until the cover is off the tabs.
2. Disconnect the show LED connector.

3. Pull the RFID out of the inside corner of the cover. The RFID is held in place with Velcro.
4. Remove the cover.

#### Accessing the Rear Spark Plug:

1. Pull the ignition assembly (relay, connector and fuse) up and to the left. The entire assembly is attached to the rear coil with Velcro.

#### Bypass / Service Connectors

The original factory ignition harness that was attached to the stock ignition switch has been re-routed around the top of the fuel cell to the left side of the fuel cell without alteration. The ignition connector IG4-A&B can be accessed through the removable left side upper rear frame cover.

#### Emergency Bypass (if the RFID device were to fail or you lose the key fob)

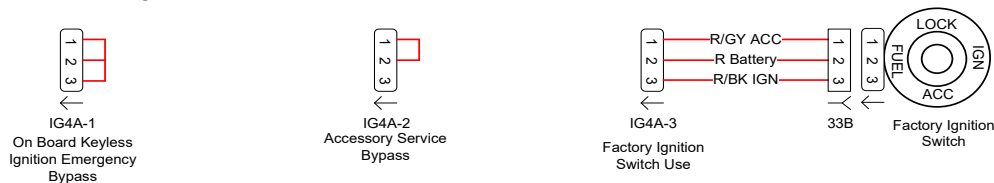
1. Locate the onboard bypass connector IG4A-1 (*Top Left of Fuel Cell*).
2. Unplug IG4A from the factory ignition wiring harness connector IG4B and plug the bypass connector IG4A-1 into IG4B. The ignition will be enabled immediately when the bypass connector is plugged in. You will need to remove the bypass connector to turn off the ignition.

#### Stock Ignition Switch

Is equipped with a mating connector to the ignition harness connector IG4B. The RFID does not have a separate accessory position. You can use the factory ignition switch in place of the RFID to perform service procedures that require an accessory position such as setting alarm codes by unplugging the RFID Ignition connector and plugging in the stock ignition switch connector. Unplug IG4A & IG4B and Plug IG4A-2 into IG4B

#### Accessory Connector

Can be used to operate in accessory mode for servicing by unplugging the RFID from the ignition harness and plugging in the accessory connector. Unplug IG4A & IG4B and Plug IG4A-2 into IG4B.



## 19. Nitrous (NO2) SYSTEM

### Component Descriptions

(Refer to Drawing 03-005 NOS Control)

(Refer to Separate Dynotune Air Fuel Lean Switch and Dynotune 2 Stage TPS RPM Window Switch manuals for programming and operating instructions!)

(Refer to Boss Noss installation and operating instructions)

1. *Fuel injection controller* - The fuel injection controller (in the upper left corner of the Dwg) is only operational when the NO2 solenoid (Boss Noss Smart Box) is

activated and spraying Nitrous. It is tuned to add additional fuel to compensate for the additional air provided by the Nitrous gas.

2. *Purge solenoid* - The purge solenoid (in the lower left corner of the Dwg) is activated manually through the control switch and purge relay. The purge is used to clear the lines of any trapped air and discharges NO<sub>2</sub> through a separate line to the outside of the bike. Used mostly for special effects.
3. *Arm / Purge toggle switch* – Switch is mounted in the NO<sub>2</sub> Pressure Gauge Mount Bracket next to the status indicator LED. It is a center off switch with a momentary (Purge) and a stationary (ARM) contact. The switch can be used to activate the Purge Solenoid anytime the bike ignition is on through momentary contact. It is also used to ‘Arm’ the NO<sub>2</sub> system so that when all safety conditions have been satisfied the NO<sub>2</sub> can be activated using the left handlebar mounted momentary contact horn switch or the right handlebar NO<sub>2</sub> switch (top or bottom switch).
4. *Arm relay 1* – its purpose is to switch the handlebar N/O momentary contact pushbutton from the factory horn activation to triggering the NO<sub>2</sub> (once all safety windows are satisfied). The relay switches from horn duty to NO<sub>2</sub> trigger duty only when the arm switch is set to the arm position.

The Ultra miniature switch stationary contact controls the relay coil instead of switching the horn current.

5. *Arm relay 2* – its contact closes when the relay coil is picked up by the final safety output signal from the lean detector. The +12V lean detector output is not capable of handling the NO<sub>2</sub> solenoid current directly.

With both Arm Relays energized, relay 1 from the arm switch, relay 2 from the final safety signal, the NO<sub>2</sub> Relay is now in a ready state waiting for the +12V fire signal from the horn button.

6. *No<sub>2</sub> relay* – Provides the 20A rated contact to switch the NO<sub>2</sub> solenoid on/off directly from the battery. With this relay the only load on the Horn/NO<sub>2</sub> pushbutton control circuit are the relay coils.
7. *Purge relay* - Provides the 20A rated contact to switch the Purge solenoid on/off directly from the battery using the Ultra miniature switch momentary contact. With this relay the only load on the miniature switch contact is the relay coil.
8. *Dual stage window switch* – Is powered directly from the Ultra miniature switch stationary arm contact. The +12V output signal to the lean detector is only present if:
  - 1) The bike is not in 1<sup>st</sup> gear and,
  - 2) The engine RPM is within a preset high/low window and,
  - 3) The throttle position is at full throttle.

The output signal will be interrupted if the RPM during the Nitrous operation reaches the high limit which is set at a value below the engine RPM limiter.

9. *Lean shut-down switch* – Enables the NO<sub>2</sub> if the air fuel ratio (AFR) is below a preset level or disables the NO<sub>2</sub> flow if the AFR is higher than a preset level (too lean). It monitors the AFR of the front & rear cylinders by reading the wideband sensor output average. It is powered via ignition +12V so that it acts as a gauge when the NO<sub>2</sub> is not spraying.

10. *NO2 Auto switch* – When set to the Auto position and if the Arm / Purge toggle switch is set to the arm position, when all safety conditions have been satisfied the NO2 will be automatically fired without having to press the NO2 fire button.

### Operating States

#### 1. Ignition Switch OFF

- a) Arm Switch disabled (no input power to switch common)
- b) All components powered off and disabled.
- c) Battery power at open contacts of solenoid relays.

#### 2. Ignition Switch ON

- a) Ignition +12V to common of Arm Switch, arm switch and purge function enabled.
- b) Ignition +12V to Lean Detector, detector powered up

#### Arm Switch - Off

- a) Window Switch deactivated and disabled by sensor inputs unless engine is running and within window settings.
- b) AFR sensing active
- c) Horn switch is enabled for horn operation only.
- d) All other components de-energized.
- e) Battery power at open contacts of solenoid relays

#### Arm Switch – Purge

- a) Purge Relay energized
- b) Purge Solenoid triggered via purge relay contacts

#### Arm Switch – Arm

- a) Window Switch is powered up.
- b) Arm Relay 1 energized and horn pushbutton is switched to NO2 mode.
- c) Arm Relay 2 disabled by low lean detector permissive output unless engine is running within window switch parameters or:
- d) Arm Relay 2 is energized if engine is running within window switch parameters, and no lean condition exists, through the lean detector permissive contact. Horn button set to trigger NO2 discharge.
- e) NO2 Relay is energized when the horn button is depressed if;
  - Transmission is in 2<sup>nd</sup> or higher gear as set in the window switch and,
  - The engine is running within the high/low RPM window switch setting and,
  - The throttle position is within the window switch setting and,
  - No lean condition is detected by the lean detector.The Boss Noss NO2 solenoid is powered by the battery through the contacts of the NO2 relay.

3. Nitrous Flow Shutdown: The following conditions will de-energize Arm Relay 2 which in turn de-energizes the NO2 Relay disconnecting the Boss Noss solenoid from the battery:
  - d) A lean condition as set and detected by the lean detector. (Permissive contact opens)
  - e) High RPM as set and detected by the window switch. (Channel 1 trigger signal to lean detector is disabled)
  - f) Throttle position roll back as set and detected by the window switch. (Channel 1 trigger signal to lean detector is disabled)

- g) Horn button is released.
- h) +12V ACC fuse blown or loss of control voltage
- i) +12V NO2 Solenoid battery power fuse blown.

### Status LED Indicator Functions

*(Refer to Drawing 03-005 NOS Control and Drawing 03-025 Controls & Indicators)*

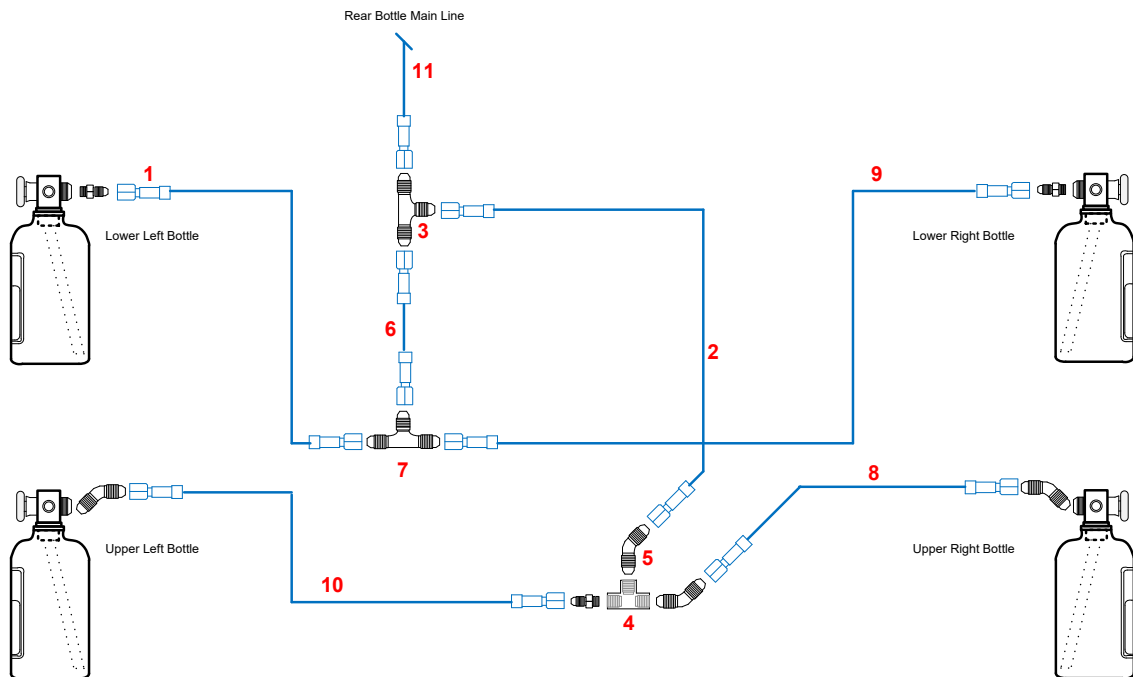
1. The NO2 system is deactivated when the Arm switch is in the off position.
2. The status Red LED on the gauge mount and the left handlebar will flash RED for 5 seconds when the ignition is switched on to indicate that the lean detector is powered up. (a built-in function of the lean detector).  
  
The “Lean Detector” monitors for a lean condition regardless of the “Arm Switch” position. If a lean condition is detected anytime the engine is running (while on NO2 or not) the status LED’s will illuminate steady Red for 20 seconds, then auto reset. (a built-in function of the lean detector).
3. When the Arm Switch is set to the Arm position the Blue LED indicator on the gauge mount and the left handlebar will illuminate steady BLUE to indicate the system is active. The LED’s will remain BLUE until the switch is set back to the off position or the system status changes:
  - a) A lean condition occurs in which case the red LED will illuminate RED per item 2 above and return to BLUE (per above) or GREEN (per item b below),
  - b) The system safety permits the NO2 to be triggered via the horn button or left handlebar NO2 buttons (trigger ready state), in which case the Green LED illuminates steady GREEN on the gauge mount and the left handlebar to indicate to the rider it is safe to push the horn/NO2 button.
4. When the Arm Switch is held in the momentary Purge position the Yellow LED on the gauge mount only will illuminate YELLOW.
5. When the Auto ON/OFF switch is set to the ON position the Yellow LED next to the auto switch and the LED on the left handlebar will illuminate YELLOW.

### Removing the N02 Rear Bottle Plumbing

NOTE: Ensure all bottle valves are closed and activate the purge switch on the left side of the bike, with ignition on, to release any pressure in the lines before disconnecting NO2 lines.

1. Disconnect lines (1), (8), (9) and (10) at bottle fittings.
2. Disconnect line (2) from rear bottle main line tee (3) at rear upper bottle tee (4), 45-degree fitting (5). Do not remove line (2) from main line tee (3), instead push line out of the way.
3. Cut the cable tie securing the upper bottle tee (4) to the right-side lower bottle line (9).
4. Remove upper bottle tee (4) with lines (8) and (10) attached by pulling tee forward then pulling line 10 up and out followed by pulling line 8 up and out.
5. Disconnect fuel lines and connector from the fuel cell flange.
6. Cut the cable tie securing line (6) to the fuel vent line.

7. Disconnect and remove line (6) connecting the rear bottle main line tee (3) to the rear lower bottle tee (7).
8. Disconnect and remove line (2) from rear bottle main line tee (3).
9. Cut the cable tie securing the lower bottle tee (7) to the frame.
10. Remove lower bottle tee (7) with lines (1) and (9) attached by pulling the lower bottle tee out and toward the right of the bike with the lower bottle lines (1) and (9) still connected until line (1) is free and then line (9) is free.
11. Disconnect rear bottle main line (11) at front header, (center rear fitting), located on top of the front cylinder cam cover and pull the line, with tee 3 still connected, through the engine compartment, under the fuse box and out over the fuel cell. Cap the empty port on the front header if the front bottles are to remain.
12. Connect the fuel lines and connector at the fuel cell flange.
13. Reverse the procedure to install the rear bottle plumbing.



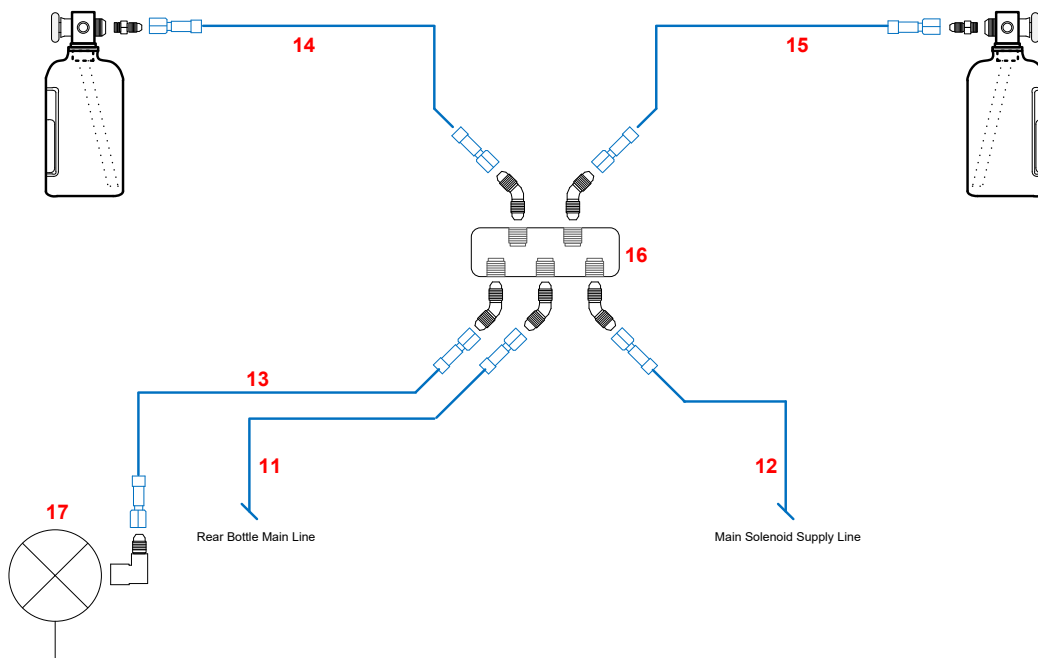
## Removing the N02 Front Bottle and/or Main Supply line Plumbing

NOTE: Ensure all bottle valves are closed and activate the purge switch on the left side of the bike, with ignition on, to release any pressure in the lines before disconnecting NO2 lines.

1. Remove Air Box per service note 3.
2. Disconnect lines (14) and (15) at bottle fittings.
3. Remove the cable strap bolt securing the main line front header (16) to the front cam cover.
4. Disconnect rear bottle main line (11) at front header.
5. Disconnect pressure gauge line (13) at front header. Disconnect line at gauge and remove if desired, line will not interfere with engine service.
6. Reverse the procedure to install the front bottle / main line plumbing.

## Removing the Nitrous Pressure Gauge and Gauge Mount

1. Disconnect pressure gauge line (13) at gauge (17).
2. Remove horn by removing the bolt securing both the horn and the horn mount / control switch pod to the frame. The horn is attached to the control switch pod. Angle the horn to the side or remove it by disconnecting the Horn, LED, TwinScan & Speed Shift connectors.
3. Disconnect connector NC6 connecting the gauge mount to the nitrous controls.
4. Remove the two bolts on the top underside of the gauge mount that connect the gauge mount to the rear cylinder support bracket tab to remove the gauge and mount together.
5. Reverse the procedure to install the Pressure Gauge and Gauge Mount.



## 20. Speed-Shift

Note: The speed shift has been calibrated to allow either traditional manual shifting using the foot controls or the speed-shift push button controls on the left handlebar if the speed shift power switch is turned on. Any changes to the speed shift motor mounting location, or adjustments to the speed shift motor shaft and/or adjustments to the shift linkage will require recalibration.

### Removing the Speed-shift ECM

1. Remove the right side rear frame cover. The cover can be removed by inserting a pick or a hook into any of the corners and pulling forward.
2. Unplug connector S1A/B, S3A/B, S4A/B, S5A/B and S6A/B located behind the frame cover.
3. The ECM is attached to the fuel cell, where the stock ignition switch was located, using Velcro. Pull the ECM forward and out of the frame opening.

### Removing the Speed-shift Motor

1. Unbolt the rear motor mount bolt that secures the speed shift motor to the frame. Do not remove the frame mounting bracket.
2. Remove the lower left rear frame cover. The cover can be removed by inserting a pick or a hook into any of the corners and pulling forward. The cover is notched around the motor frame mounting bracket and the wiring harness.
3. Unplug connector S2A/B and pull the wiring harness out of the frame recess.
4. Unbolt the front linkage bolt that joins the speed shift shaft to the gear change/shift linkage point.
5. Remove the speed shift motor.

Note: The speed shift motor mount is secured to the frame at an angle and location that the speed shift is calibrated for. If removing and reinstalling the bracket line up the mounting marks on the frame and the bracket to ensure alignment is maintained when reinstalling.

### Removing the Speed-shift Shift Light

1. Unplug the Shift light by removing the upper left front side cover and disconnecting connector S10A/B
2. The Shift light mounting bracket is attached to the instrument cluster housing on the underside of the housing using the original housing mount hardware. Remove the bracket and indicator if permanently removing the Shift light, otherwise the indicator display can be removed from the bracket by unscrewing the backside from the LED front side.
3. To remove the wiring harness, remove the instrument housing following the service notes in drawing 03-002 (Handlebar Controls) and pull the harness through the opening in between the riser and the top triple tree.

### Removing the Speed-shift Pushbuttons

1. Unplug the pushbuttons by removing the upper left front side cover and disconnecting connector S9A/B.

2. Remove the 2 screws on the backside clamp.
3. Remove the wires from the backside pushbutton switch terminals. The pushbuttons are marked up and down inside the housing to assist with proper orientation when reinstalling the switch.
4. Note: Ensure that when reconnecting the wiring the up and down wires are placed on the correct screw terminals as marked and the switch housing is orientated correctly, or you may reverse the up and down pushbutton functions.

#### Removing the Horn / Control Panel

1. Remove the bolt through the factory horn mount frame tab. There is no nut on the rear of the tab, the bolt screws into the rubber mounted control panel which is attached to the horn mount bracket.
2. Remove the horn assembly complete with the control panel.
3. Disconnect the show LED connector L4A/B at the back of the horn.
4. Disconnect the speed-shift control panel connector S12A/B.
5. Disconnect the twinscan plus control panel connector T4A/B.
6. Both the speed shift and the Twinscan Plus will be disabled with the control switch panel removed.

#### Programming

Note: The following table is a quick programming guide. See the full programming sheet for complete instructions.

| <b>Entering Speed Shift Tuner Mode</b>  |   |  |  |
|---|---|--|--|
| <b>Tuner Mode</b>   | 1. Press & hold both buttons.   | 2. Start engine, release buttons.  | 3. Verify solid orange LED for 3 seconds.                      |
| <b>2 Stage Launch Only Tuner Mode</b>   | <b>Continuing from auto shift:</b><br>Press & hold both buttons for 3 sec, LED will flash orange for 3 sec. | <b>Bypassing auto shift:</b> Enter tuner mode, wait for led flash count (red or green) for auto shift, then press & hold both buttons for 3 sec, LED will flash orange for 3 sec |  |
| <b>Shift Light/Auto Shift Adjustment</b>  |   |  |  |
| <b>Shift Light/Auto Shift</b><br>Up button – 100 RPM increase per click to max 15 flashes (1500 RPM).<br>Down button - 100 RPM decrease per click to max 15 flashes (1500 RPM). | <u>Default Setting:</u><br>8700 RPM<br><u>Max RPM:</u> 10200<br><u>Min RPM:</u> 7200                        | 1 Green Flash per 100 RPM above default.<br>1 Red Flash per 100 RPM below default.   | Turn off engine to save settings or proceed to 2 stage launch. |
|   | <i>Green/Red Flashes</i>  | <i>Calc RPM</i>  | <i>Tested Date</i>   |
| Adjustments   | 2 Red Flashes   | 8500   | Sept 05-2010   |
|   |   |  |  |
|   |   |  |  |
| <b>2 Stage Launch</b><br>Up button – 100 RPM increase per click to max 10 flashes (1000 RPM).<br>Down button - 100 RPM decrease per click to max 10 flashes (1000 RPM).         | <u>Default Setting:</u><br>5250 RPM<br><u>Max RPM:</u> 6250<br><u>Min RPM:</u> 4250                         | 1 Green Flash per 100 RPM above default.<br>1 Red Flash per 100 RPM below default.   | Turn off engine to save settings                               |
|   | <i>Green/Red Flashes</i>  | <i>Calc RPM</i>  | <i>Tested Date</i>   |
| Adjustments   | Orange (Default)  | 5250   | Sept 05-2010   |
|   |   |  |  |
|   |   |  |  |

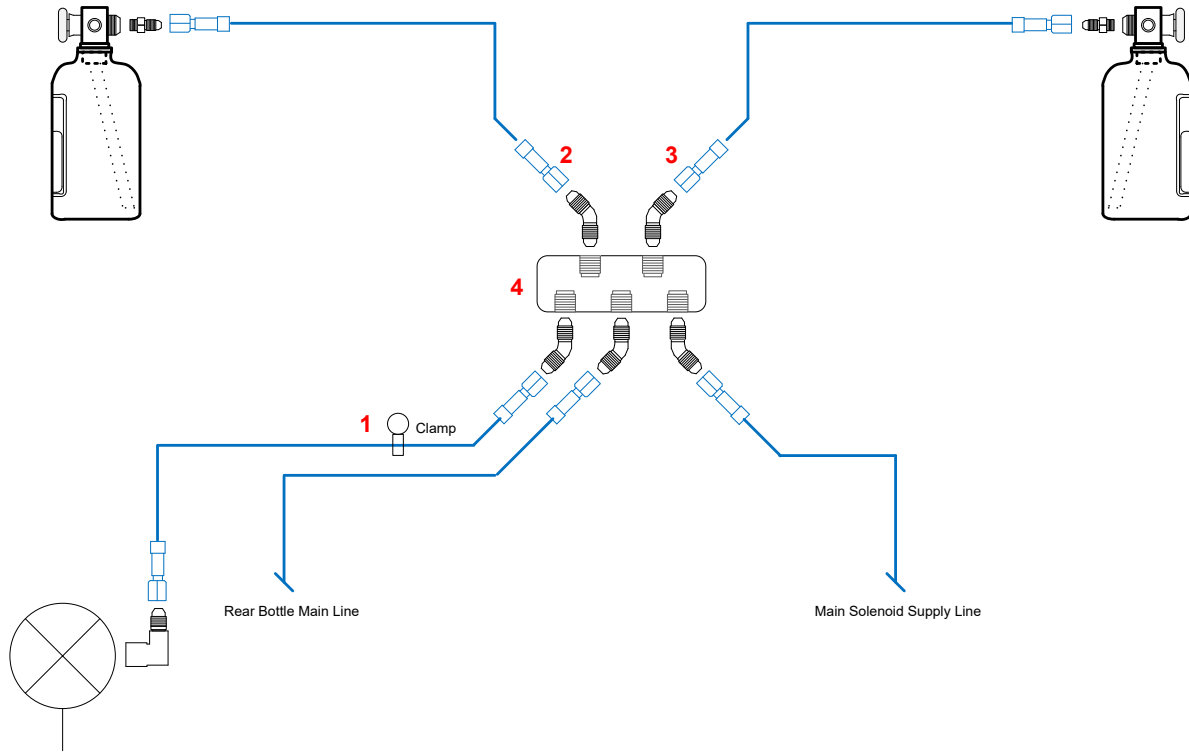
## 21. Spark Plugs

### Front Spark Plug / Coil Access

**NOTE: Ensure all bottle valves are closed and activate the purge switch on the left side of the bike, with ignition on, to release any pressure in the lines before disconnecting NO2 lines.**

1. Remove Air Box per service note 3.
2. Remove the battery.

3. Remove the cable strap bolt (1) securing the main line front header (4) to the front cam cover
4. Pull the front header (4) towards the rear of the motorcycle to access the front-line connections (2 & 3).
5. Loosen the connections with a 7/16 wrench and then undo by hand.
6. Pull the front header (4) out of the way so that it is not obstructing access to the front coil and/or spark plug.
7. Reverse the procedure to reinstall the front header and lines. Always start the connectors by hand before tightening with a wrench.



### Rear Spark Plug / Coil Access

1. Pull the keyless ignition assembly (relay, connector and fuse) up and to the left. The entire assembly is attached to the rear coil with Velcro.

## **22. Twin Scan**

The Twin Scan, WEGO IID and the Wideband Sensors are removable but permanently mounted on the bike.

### Power On Switch / Indication:

The Twin Scan power on switch is located in the rear position in the control switch panel that is part of the horn mount on the left side of the bike. The switch can be used to enable or disable the data record of the Twin Scan without losing the data. The switch will light the red LED inside the switch itself and the yellow LED on the right-side handlebar LED pod when the switch is on enabling the data record.

### Data Port:

The Twin Scan power/data cable is plugged into the secondary data port on the top of the fuel cell. The Twin Scan can be disconnected so that the same port can be used with the race tuner.

### USB Port:

To communicate / download data from the Twin Scan using a computer use the USB connection point on the top of the fuel cell.

### Program Settings:

Twin Scan: See the set up and calibration in the separate Twin Scan user manual

WEGO IID Calibration: See the set up and calibration in the separate WEGO IID user manual

### Twin Scan II Diagnostics

The Twin Scan II connects to the four terminal Deutsch style data link connector on the H-D® wiring harness and requires a laptop PC for user interface and data display. You can read and clear diagnostic trouble codes from the ECM, TSM/TSSM, speedometer, and tach (on models with IM data bus). You can view real time engine data on an instrument panel type display.

The Twin Scan II also features stand-alone data logging (no laptop PC attached). Twin Scan II is especially useful for diagnosing hard to find intermittent trouble codes. The motorcycle can be operated while the unit is installed. Under normal conditions (no trouble code), the unit can be set up to store data for the last hour of operation. If a trouble code is set, the unit automatically stops logging data 30 minutes after the code is set. You can download the data any time after. You can examine in detail what happened before and after the code was set. You have a range of capabilities for analyzing and printing out logged data that is displayed in a chart recorder format.

### To Connect the Twin Scan II Diagnostic Tool:

1. Install the TSII Ver 7.1 software on your laptop or PC.
2. The Twin Scan power/data cable is plugged into the secondary data port on the top of the fuel cell. (The Twin Scan can be disconnected so that the same port can be used with the race tuner).
3. To communicate or download data from the Twin Scan using a computer use the USB connection point on the top of the fuel cell.
4. Launch the Twin Scan software. The software will ask which comm port to use. In the comm port selection window select auto scan. The ignition does not need to be turned on for communication. You can test communications between the Twin Scan II and the laptop PC by using the Read Firmware ID command on the Help menu (a connection to the motorcycle is not required for this test).
5. Once communication has been established between the laptop or PC and the onboard Twin Scan, turn the motorcycle ignition ON.

6. Turn the Twin Scan power ON using the rear switch on the horn mount control panel. The red LED in the switch and the yellow LED on the left handlebar LED pod will illuminate when the switch is turned on.
  7. You can now use the Twin Scan diagnostics tools.
- For detailed instructions on using the Twin Scan diagnostics or the data logging and tuning refer to the Twin San 2 Instructions.

## **23. Wideband Sensor Removal**

### Rear Sensor:

1. Disconnect connector T8 located at the rear of the main fuse panel.
2. Cut the cable ties that secure the sensor wiring harness.
3. Pull the sensor wire harness complete with connector end down through the frame opening.
4. Use the O2 sensor install/removal socket to remove the sensor. The socket is notched so that it will fit over the harness.

### Front Sensor:

1. Disconnect connector T9 located inside of the left frame front down tube next to the radiator.
2. Cut the cable ties that secure the sensor wiring harness.
3. Use an open-ended short wrench to remove the sensor.

## **24. Wheels & Brakes**

### Removing / Installing the Front Brake Caliper

1. Remove the two fork protector plates per procedure in service note 2 of drawing 03-024.
2. The solid brake line and the front wheel wiring conduit that is attached to the brake line will not clear the fender. The caliper can be removed with the line attached if the fender is removed first. Remove the front Fender.

### Removing the Front Fender

1. Unplug connector FW2 located on left underside of front fender behind the fork leg. (See drawing on sheet one)
2. Remove fender mounting bolts, two bolts per side.
3. Slide the fender under the hard brake line back towards the rear of the bike and set aside.
4. Reverse the procedure to install the front fender.

### Removing the Front Brake Caliper

1. Remove the two bolts that bolt the calliper to the left fork leg.
2. Slide the calliper off the rotor by pulling the calliper down. There is no need to remove the hard brake line/wiring tube, the line has enough slack on the top side for the calliper to be removed from the rotor and set to the side of the wheel. (See Drawing 03-008)
3. Reverse the procedure to install the front brake calliper.

### Removing the Front Wheel (not required to service the front brake caliper)

Note: Remove the front fender and brake calipers per item 2.1 and 2.2 above before proceeding.

- a. Unscrew the left and right-side LED front axle covers from the fork boots. Pull the wire leads out of the fork boot until the axle covers rest on the ground.
- b. Insert a pin/punch into the right-side axle through the hole in the right fork boot underside.
- c. Remove the axle nut from the left side being careful not to pinch the axle cover wires.
- d. Remove the left side axle washer under the nut. The washer is notched to allow it to pass over the axle bolt cover wires.
- e. Disconnect connector FW7 and place the left side axle cover aside. Tuck the connector back into the fork boot out of the way of the axle. (See drawing on sheet one)
- f. Disconnect connector FW8 and place the right-side axle cover aside. Tuck the connector back into the fork boot out of the way of the axle. (See drawing on sheet one)
- g. Loosen the axle pinch bolts through the two holes in the right fork boot underside
- h. Remove the axle and the wheel being careful not to damage the wheel spacers. The spacers will come out and/or install easier from the back side. Back the wheel out of the fork tubes until the spacers are free.
- i. Reverse procedure to install the front wheel after reading the installation tips below.

### Removing the Rear Brake Caliper

The rear caliper mount is bolted to the rear wheel hub and cannot be removed without removing the rear wheel. Remove the rear wheel to access the caliper.

### Removing the Rear Wheel

The rear wheel is removed by removing the left side of the 3-piece swing arm. It is not necessary to bleed the rear brake for wheel removal.

- a. Disconnect the rear shock NO2 bottle fittings at the bottles so that the shock body will pivot freely with the bottles attached. See service notes in drawing 03-005 for further information.
- b. Raise the rear wheel following the procedure outlined in service note 2 (To remove right or left shock) in drawing 03-004. Remove only the lower shock mount bolt. Pivot the shock upwards and secure in position using a bungee cord or tie strap to the right shock upper mount.
- c. Remove the swing arm rear axle covers from both the left and right sides. Disconnect the cover LED indicators at the connector behind the cover.
- d. Remove the swing arm pivot bolt covers from both the left and right sides. Use a popsicle stick or plastic screwdriver to work the cover loose starting at the rear (pointed end) of the cover.
- e. Remove the front sprocket cover. Disconnect the cover show LED connector L5 located at the bottom of the cover.
- f. Disconnect the left side swing arm lighting connector RL8, located immediately below the front pivot of the swing arm, and cut the cable ties securing the swing arm wiring harness to the left side mid peg bracket.
- g. Remove the belt guard by first removing the 2 front mount screws that secure the guard to the swing arm then remove the left side passenger peg and slide the guard out. The bolt that secures the passenger peg is best accessed from the opposite (right) side of the bike using a drive extension.

- h. Remove the 4 bolts from the inside center of the left swing arm that attach the left side swing arm to the cross member.
- i. Cut the cable ties that secure the rear brake hydraulic quick disconnect to the mounting bracket on the lower inside edge of the left sing arm.
- j. Remove the swing arm pivot bolt nut but do not remove the pivot bolt, it can stay installed supporting the rear of the engine.
- k. Loosen the rear axle adjusters and remove the rear axle bolt. The wheel will be pulled slightly forward by the tension on the belt once the adjusters are loosened.
- l. Pull the left side swing arm piece out towards you. The swing arm is keyed to fit the cross member. Separate the rear brake hydraulic quick disconnect by twisting the two pieces. There will be no fluid loss or air introduced into the brake line.
- m. Remove the rear drive belt.
- n. Remove the rear wheel from the left side with the brake line / quick disconnect attached.

#### Removing the Caliper from Rear Wheel

- a. Remove the hub cover by removing the set screw and twisting the cover either left or right. If the cover sticks, there is a notch on the underside between the cover and the hub where an angled pick can be inserted to assist.
- b. Remove the rear pulley followed by the caliper mount with the caliper attached. It will be necessary to drain the fluid out of the caliper if you are disassembling the caliper itself.

#### Installing the Rear Caliper / Rear Wheel

Reverse the above noted procedure for removal with the following note: Thread 2 new cable ties through the rear brake quick disconnect mounting bracket on the inside of the swing arm before re-installing the swing arm.

## 25. Tables - Locations

### Connector Locations

| DESIGNATION | DESCRIPTION  | TYPE  | LOCATION                  | DRAWING |
|-------------|--|---|---------------------------|---------|
| AS1A        | Air Suspension Solenoid Disconnect   | 73102-96BK<br>2-Pin Tab Housing<br>73191-96                                 | Left Upper<br>Frame Cover | 03-004  |
| AS1B        | See AS1A   | 73190-96BK<br>2-Pin Receptacle<br>Housing<br>73190-96                       | Left Upper<br>Frame Cover | 03-004  |
| AS2A        | Air Suspension Pressure Sensor Disconnect                                    | Molex Micro-Fit 4 Pin<br>Plug P/N: 43020-0400<br>Socket P/N: 43030-0007     | Left Upper<br>Frame Cover | 03-004  |
| AS2B        | See AS2A   | Molex Micro-Fit 4 Pin<br>Recept P/N: 43025-0400<br>Terminal P/N: 43031-0007 | Left Upper<br>Frame Cover | 03-004  |
| BR1A        | Front Brake Hydraulic Switch   | DTM06-2S-E004<br>Duetch 2-Socket Plug,<br>Black                             | Top of Battery            | 03-008  |
| BR1B        | Front Brake Hydraulic Switch   | DTM04-2P-E004<br>Duetch 2-Pin<br>Receptacle, Black                          | Top of Battery            | 03-008  |
| BT1A        | Battery Tender to Battery disconnect for removal of charger outlet.          | 73102-96BK<br>2-Pin Tab Housing<br>73191-96                                 | Right Side<br>Cover       | 03-006  |
| BT1B        | See BT1A   | 73190-96BK<br>2-Pin Receptacle<br>Housing<br>73190-96                       | Right Side<br>Cover       | 03-006  |
| C1-1,2,3 A  | Engine Coolant Temperature Override Switch Disconnect or Bypass              | Stakon  | Left Side<br>Engine       | 03-021  |
| C1-1,2,3 B  | See C1A  | Stakon  | Left Side<br>Engine       | 03-021  |
| G1A         | Gear Indicator – disconnect to remove cluster, handlebars or gear indicator. | ASC605-06PN<br>Duetch Plug  | Left Side Cover           | 03-018  |
| G1B         | See G1A  | ASC105-06SN<br>Duetch Receptacle  | Left Side Cover           | 03-018  |

| DESIGNATION      | DESCRIPTION  | TYPE   | LOCATION          | DRAWING                              |
|------------------|--|--|-------------------|--------------------------------------|
| G2A, G2B,<br>G2C | Gear Indicator Program Switch. G2A & G2B Normal. G2A & G2C for Programming.  | Stakon   | Left Side Cover   | 03-018                               |
| G3A, G3B         | Gear Indicator Program Switch.   | Stakon   | Left Side Cover   | 03-018                               |
| FW1A             | Front Fork/Wheel LED Run Turn & Show LED Disconnect for removal of front brake caliper and solid line.                     | ASC605-06PN<br>Duetch Plug   | Left Side Cover   | 03-024<br>03-003<br>03-008<br>03-002 |
| FW1B             | See FW1A   | ASC105-06SN<br>Duetch Receptacle                                     | Left Side Cover   | 03-024<br>03-003<br>03-008<br>03-002 |
| FW2A             | Front Fork/Wheel LED Run Turn & Show LED Disconnect for removal of front brake caliper and solid line and/or front fender. | ASC605-06PN<br>Duetch Plug   | Left Front Fender | 03-024<br>03-003<br>03-008<br>03-002 |
| FW2B             | See FW2A   | ASC105-06SN<br>Duetch Receptacle                                     | Left Front Fender | 03-024<br>03-003<br>03-008<br>03-002 |
| H1A              | Right Handlebar Wiring disconnect to remove handlebars.  | ASC605-06PN<br>Duetch Plug   | Left Side Cover   | 03-002                               |
| H1B              | See H1A  | ASC105-06SN<br>Duetch Receptacle                                     | Left Side Cover   | 03-002                               |
| H3A              | Left Handlebar Wiring disconnect to remove handlebars.   | ASC605-06PN<br>Duetch Plug   | Left Side Cover   | 03-002<br>03-005                     |
| H3B              | See H1A  | ASC105-06SN<br>Duetch Receptacle                                     | Left Side Cover   | 03-002<br>03-005                     |
| H4A              | Unused   |  |                   |                                      |
| H4B              | Unused   |  |                   |                                      |
| H5-1A            | Left Front Run/Turn Signal Converter output for converter or front fork turn signal removal.                               | Molex Micro-Fit 2 Pin Plug P/N: 43020-0200<br>Socket P/N: 43030-0007 | Left Side Cover   | 03-002<br>03-024                     |
| H5-1B            | See H5-1A  | Molex Micro-Fit 2 Pin Receptacle P/N: 43025-0200                     | Left Side Cover   | 03-002<br>03-024                     |

| DESIGNATION | DESCRIPTION  | TYPE   | LOCATION        | DRAWING          |
|-------------|--|--|-----------------|------------------|
|             |  | Terminal P/N: 43031-0007   |                 |                  |
| H5-2A       | Left Front Run/Turn Signal Converter output for converter or turn signal removal.            | Molex Micro-Fit 2 Pin Plug P/N: 43020-0200<br>Socket P/N: 43030-0007         | Left Side Cover | 03-002<br>03-024 |
| H5-2B       | See H5-2A  | Molex Micro-Fit 2 Pin Receptacle P/N: 43025-0200<br>Terminal P/N: 43031-0007 | Left Side Cover | 03-002<br>03-024 |
| H6-1A       | Right Front Run/Turn Signal Converter output for converter or front fork turn signal removal | Molex Micro-Fit 2 Pin Plug P/N: 43020-0200<br>Socket P/N: 43030-0007         | Left Side Cover | 03-002<br>03-024 |
| H6-1B       | H6-1A  | Molex Micro-Fit 2 Pin Receptacle P/N: 43025-0200<br>Terminal P/N: 43031-0007 | Left Side Cover | 03-002<br>03-024 |
| H6-2A       | Right Front Run/Turn Signal Converter output for converter or turn signal removal.           | Molex Micro-Fit 2 Pin Plug P/N: 43020-0200<br>Socket P/N: 43030-0007         | Left Side Cover | 03-002<br>03-024 |
| H6-2B       | See H6-2A  | Molex Micro-Fit 2 Pin Receptacle P/N: 43025-0200<br>Terminal P/N: 43031-0007 | Left Side Cover | 03-002<br>03-024 |
| H7A         | Front Run/Turn Signal Converter output converter to factory harness.                         | AMP Multilock 6 Position, Single Row Tab Housing P/N: 73106-96BK             | Left Side Cover | 03-002           |
| H7B         | See H7A  | AMP Multilock 6 Position, Single Row Receptacle Housing P/N: 73156-96BK      | Left Side Cover | 03-002           |
| H8A         | OMP Hi/Lo Headlamp Relay   | DTM06-6S-E004<br>6-Socket Duetch Plug Black                                  | Left Side Cover | 03-002           |
| H8B         | See H8A  | DTM04-6P-E004<br>6-Pin Duetch Receptacle Black                               | Left Side Cover | 03-002           |

| DESIGNATION | DESCRIPTION   | TYPE   | LOCATION               | DRAWING                    |
|-------------|---|--|------------------------|----------------------------|
| H9A         | Garage Door Opener disconnect for airbox removal                                      | AMP Multilock 4 Position Tab Housing<br>P/N: 73106-96BK        | Airbox - Front         | 03-002                     |
| H9B         | See H8A   | AMP Multilock 4 Position Receptacle Housing<br>P/N: 73154-96BK | Airbox - Front         | 03-002                     |
| H10A        | Headlight Harness Connect/Disconnect. Headlight to factory harness                    | AMP Multilock 4 Position Tab Housing<br>P/N: 73106-96BK        | Left Side Cover        | 03-002                     |
| H10B        | See H10A  | AMP Multilock 4 Position Receptacle Housing<br>P/N: 73154-96BK | Left Side Cover        | 03-002                     |
| H11A        | Keyless Ignition Output   | AMP Multilock 73102-96BK 2-Pin Tab Housing                     | Left Side Cover        | 03-002                     |
| H11B        | See H11A  | AMP Multilock 73190-96BK 2-Pin Receptacle Housing              | Left Side Cover        | 03-002                     |
| H12A        | Start/Stop Relay Connect/Disconnect   | ASC605-06PN Duetch Plug  | Left Side Cover        | 03-002                     |
| H12B        | See H12A  | ASC105-06SN Duetch Receptacle                                  | Left Side Cover        | 03-002                     |
| H13A        | Right Handlebar Control disconnect to remove controls from handlebar.                 | ASC605-06PN Duetch Plug  | Inside Right Handlebar | 03-002                     |
| H13B        | See H13A  | ASC105-06SN Duetch Receptacle                                  | Inside Right Handlebar | 03-002                     |
| H14A        | Left Handlebar Control disconnect to remove controls from handlebar.                  | ASC605-06PN Duetch Plug  | Inside Left Handlebar  | 03-002                     |
| H14B        | See H14A  | ASC105-06SN Duetch Receptacle                                  | Inside Left Handlebar  | 03-002                     |
| H15A        | Right Handlebar LED Indicator Pod & NO2 Pushbuttons. Disconnect to remove handlebars. | ASC605-06PN Duetch Plug  | Left Side Cover        | 03-001<br>03-002<br>03-005 |
| H15B        | See H15A  | ASC105-06SN Duetch Receptacle                                  | Left Side Cover        | 03-001<br>03-002           |

| DESIGNATION | DESCRIPTION   | TYPE   | LOCATION                    | DRAWING                              |
|-------------|---|--|-----------------------------|--------------------------------------|
|             |   |  |                             | 03-005                               |
| H16A        | Left Handlebar LED Indicator Pod.<br>Disconnect to remove handlebars. | ASU603-03PN-HE<br>Duetch Plug  | Left Side Cover             | 03-001<br>03-002<br>03-004<br>03-016 |
| H16B        | See H16A  | ASU103-03SN-HE<br>Duetch Receptacle  | Left Side Cover             | 03-001<br>03-002<br>03-004<br>03-016 |
| H17A        | Instrument Cluster  | DTM06-12SB Plug,<br>Black, 12 Socket   | Left Side Cover             | 03-002                               |
| H17B        | See H17A  | DTM04-12PB<br>Receptacle, Black, 12<br>Pin                                     | Left Side Cover             | 03-002                               |
| IG1A        | Airbox +12V ACCY Pwr<br>T.B.-11                                       | 73102-96BK<br>2-Pin Tab Housing<br>73191-96<br>Receptacle Contact<br>20-16 GA  | Airbox – Rear               | 03-001<br>03-005                     |
| IG1B        | See IG1A  | 73190-96BK<br>2-Pin Receptacle<br>Housing<br>73190-96<br>Tab Terminal 20-16 GA | Airbox – Rear               | 03-001<br>03-005                     |
| IG2A        | Not Used - Future   | 73102-96BK<br>2-Pin Tab Housing<br>73191-96<br>Receptacle Contact<br>20-16 GA  |                             |                                      |
| IG2B        | Ignition Start Circuit<br>Future Use                                  | 73102-96BK<br>2-Pin Tab Housing<br>73191-96<br>Receptacle Contact<br>20-16 GA  | Lower Left Main<br>Fuse Box | 03-002                               |
| IG3A        | RFID Ignition Module<br>Disconnect                                    | 73102-96BK<br>2-Pin Tab Housing<br>73191-96<br>Receptacle Contact<br>20-16 GA  | Lower Left Main<br>Fuse Box | 03-022                               |
| IG3B        | See IG3B  | 73190-96BK<br>2-Pin Receptacle<br>Housing<br>73190-96<br>Tab Terminal 20-16 GA | Lower Left Main<br>Fuse Box | 03-022                               |

| DESIGNATION | DESCRIPTION   | TYPE   | LOCATION              | DRAWING |
|-------------|---|--|-----------------------|---------|
| IG4A        | RFID Ignition Module Relay – Factory Harness Connector            | DTM06-3S-E004<br>Duetch 3-Socket Plug, Black   | Top Left of Fuel Cell | 03-022  |
| IG4B        | See IG4A  | DTM04-3P-E004<br>Duetch 3-Pin Receptacle, Black  | Top Left of Fuel Cell | 03-022  |
| IG4A-1      | On-board Keyless Ignition Emergency Bypass Connector              | DTM06-3S-E004<br>Duetch 3-Socket Plug, Black   | Top Left of Fuel Cell | 03-022  |
| IG4A-2      | Keyless Ignition ACC Service Bypass                               | DTM06-3S-E004<br>Duetch 3-Socket Plug, Black   | Top Left of Fuel Cell | 03-022  |
| IG4A-3      | Factory Ignition Switch Option                                    | DTM06-3S-E004<br>Duetch 3-Socket Plug, Black   | Top Left of Fuel Cell | 03-022  |
| L1A         | Control Pwr for LED Remote Control disconnect for airbox removal. | AMP Multilock 4 Position<br>Tab Housing<br>P/N: 73106-96BK                             | Airbox – Rear         | 03-003  |
| L1B         | See L1A   | AMP Multilock 4 Position<br>Receptacle Housing<br>P/N: 73154-96BK                      | Airbox – Rear         | 03-003  |
| L2A         | Right Side Cover LED disconnect for side cover removal.           | AMP Multilock 2 Pin<br>Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96       | Right Side Cover      | 03-003  |
| L2B         | See L2A   | AMP Multilock 2 Pin<br>Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-96 | Right Side Cover      | 03-003  |
| L3A         | Left Side Cover LED disconnect for side cover removal.            | AMP Multilock 2 Pin<br>Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96       | Left Side Cover       | 03-003  |
| L3B         | See L3A   | AMP Multilock 2 Pin<br>Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-96 | Left Side Cover       | 03-003  |
| L4A         | Horn Cover LED disconnect for horn cover removal.                 | AMP Multilock 2 Pin<br>Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96       | Horn Cover            | 03-003  |

| DESIGNATION | DESCRIPTION   | TYPE  | LOCATION             | DRAWING          |
|-------------|---|---|----------------------|------------------|
| L4B         | See L4A   | AMP Multilock 2 Pin Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-96 | Horn Cover           | 03-003           |
| L5A         | Front Sprocket Cover LED disconnect for cover removal.                          | ASU603-03PN-HE<br>Duetch Plug   | Front Sprocket Cover | 03-003           |
| L5B         | See L5A   | ASU103-03SN-HE<br>Duetch Receptacle   | Front Sprocket Cover | 03-003           |
| L6A         | Unused  |   |                      |                  |
| L6B         | Unused  |   |                      |                  |
| L7A         | Unused  |   |                      |                  |
| L7B         | Unused  |   |                      |                  |
| L8A         | Front Fender LED's disconnect for solid line removal.                           | Molex Micro-Fit 2 Pin Plug P/N: 43020-0200<br>Socket P/N: 43030-0007                | Top of Battery       | 03-003<br>03-024 |
| L8B         | See L8A   | Molex Micro-Fit 2 Pin Receptacle P/N: 43025-0400<br>Terminal P/N: 43031-0007        | Top of Battery       | 03-003<br>03-024 |
| NC1A        | Horn / Handlebar Spacer NO2 Fire Switch Circuit. Disconnect for airbox removal. | DTM06-2S-E004<br>Duetch 2-Socket Plug, Black  | Airbox - Front       | 03-002<br>03-005 |
| NC1B        | See NC1A  | DTM04-2P-E004<br>Duetch 2-Pin Receptacle, Black                                     | Airbox - Front       | 03-002<br>03-005 |
| NC2A        | Window Switch/ECM RPM Input Signal disconnect for airbox removal.               | DTM06-3S-E004<br>Duetch 3-Socket Plug, Black  | Airbox - Front       | 03-005           |
| NC2B        | See NC2A  | DTM04-3P-E004<br>Duetch 3-Pin Receptacle, Black                                     | Airbox - Front       | 03-005           |
| NC3A        | NO2 Lean Detector Output & Gauge LED Indicators disconnect for airbox removal.  | DTM06-3S-E004<br>Duetch 3-Socket Plug, Black  | Airbox – Left Side   | 03-005           |
| NC3B        | See NC3A  | DTM04-3P-E004<br>Duetch 3-Pin Receptacle, Black                                     | Airbox – Left Side   | 03-005           |

| DESIGNATION | DESCRIPTION   | TYPE  | LOCATION             | DRAWING          |
|-------------|---|---|----------------------|------------------|
| NC4A        | NO2 Purge/Arm SW disconnect for airbox removal.   | DTM06-3S-E004<br>Duetch 3-Socket Plug, Black    | Airbox – Left Side   | 03-005           |
| NC4B        | See NC4A  | DTM04-3P-E004<br>Duetch 3-Pin Receptacle, Black | Airbox – Left Side   | 03-005           |
| NC5A        | NO2 BossNoss Smartbox to Fuel Injection Controller. Disconnect for airbox or controller removal. NO2 Trigger. | 73102-96BK<br>2-Pin Tab Housing<br>73191-96     | Airbox – Rear        | 03-005           |
| NC5B        | See NC5A  | 73190-96BK<br>2-Pin Receptacle Housing 73190-96 | Airbox – Rear        | 03-005           |
| NC6A        | NO2 Gauge Bracket Control Switch & LED Indicators disconnect for removal of gauge bracket.                    | ASC605-06PN<br>Duetch Plug                      | NO2 Gauge Bracket    | 03-005           |
| NC6B        | See NC6A  | ASC105-06SN<br>Duetch Receptacle                | NO2 Gauge Bracket    | 03-005           |
| NC7A        | Purge Solenoid Disconnect   | 73102-96BK<br>2-Pin Tab Housing<br>73191-96     |                      | 03-002<br>03-005 |
| NC7B        | See NC7A  | 73190-96BK<br>2-Pin Receptacle Housing 73190-96 |                      | 03-002<br>03-005 |
| NC8A        | NO2 Lean Switch – Window Switch disconnect to remove either of the switches.                                  | Single Conductor<br>Male/Female Crimp           | Airbox               | 03-002<br>03-005 |
| NC8B        | See NC8A  | Single Conductor<br>Male/Female Crimp           | Airbox               | 03-002<br>03-005 |
| NC9A        | TFI NO2 Fuel Injector Controller - Injector Connection  | DTM06-6S-E004<br>Duetch 6-Socket Plug, Black    | In front of Fuse Box | 03-005<br>03-028 |
| NC9A-1      | TFI NO2 Fuel Injector Controller - Injector Connection Bypass Connector                                       | DTM06-6S-E004<br>Duetch 6-Socket Plug, Black    | In front of Fuse Box | 03-005<br>03-028 |
| NC9B        | See NC9A  | DTM06-6S-E004<br>Duetch 6-Socket Plug, Black    | In front of Fuse Box | 03-005<br>03-028 |

| DESIGNATION | DESCRIPTION                                  | TYPE   | LOCATION               | DRAWING |
|-------------|--|--|------------------------|---------|
| RL1A        | Rear Taillight Connector to Factory Harness. | AMP Multilock 6 Position, Single Row Tab Housing P/N: 73106-96BK                 | Rear Fender            | 03-007  |
| RL1B        | See RL1A                                     | AMP Multilock 6 Position, Single Row Receptacle Housing P/N: 73156-96BK          | Rear Fender            | 03-007  |
| RL2A        | LED License Plate Light                      | AMP Multilock 2 Pin Socket Housing P/N: 73152-96BK<br>Socket P/N: 73191-96       | Rear Fender            | 03-007  |
| RL2B        | See RL6A                                     | AMP Multilock 2 Pin Receptacle Housing P/N: 73101-96BK<br>Terminal P/N: 73190-96 | Rear Fender            | 03-007  |
| RL3A        | Load Equalizer to Factory Harness            | AMP Multilock 3 Position Tab Housing P/N: 73153-96BK                             | Rear Fender            | 03-007  |
| RL3B        | See RL3A                                     | AMP Multilock 3 Position Receptacle Housing P/N: 73102-98BK                      | Rear Fender            | 03-007  |
| RL4A        | Load Equalizer to Factory Harness            | AMP Multilock 3 Position Tab Housing P/N: 73153-96BK                             | Rear Fender            | 03-007  |
| RL4B        | See RL4A                                     | AMP Multilock 3 Position Receptacle Housing P/N: 73102-98BK                      | Rear Fender            | 03-007  |
| RL5A        | Swing Arm Run Turn Controller                | AMP Multilock 4 Position Tab Housing P/N: 73106-96BK                             | Left Upper Frame Cover | 03-007  |
| RL5B        | See RL5A                                     | AMP Multilock 4 Position Receptacle Housing P/N: 73154-96BK                      | Left Upper Frame Cover | 03-007  |
| RL6A        | Swing Arm Run Turn Controller                | Molex Micro-Fit 4 Pin Plug P/N: 43020-0400<br>Socket P/N: 43030-0007             | Rear Fender            | 03-007  |
| RL6B        | See RL6A                                     | Molex Micro-Fit 4 Pin  | Rear Fender            | 03-007  |

| DESIGNATION | DESCRIPTION  | TYPE  | LOCATION                                    | DRAWING          |
|-------------|--|---|---|------------------|
|             |  | Recept P/N: 43025-0400<br>Terminal P/N: 43031-0007                          |   |                  |
| RL7A        | Swingarm Show LED and Axle Run Turn LED Right Side disconnect for removal of Swingarm. | ASL606-05PN-HE<br>Duetch Plug   | Right Front<br>Swingarm                     | 03-007<br>03-003 |
| RL7B        | See RL7A   | ASL106-05SN-HE<br>Duetch Receptacle   | Right Front<br>Swingarm                     | 03-007<br>03-003 |
| RL8A        | Swingarm Show LED and Axle Run Turn LED Left Side disconnect for removal of Swingarm.  | ASL606-05PN-HE<br>Duetch Plug   | Left Front<br>Swingarm                      | 03-007<br>03-003 |
| RL8B        | See RL8A   | ASL106-05SN-HE<br>Duetch Receptacle   | Left Front<br>Swingarm                      | 03-007<br>03-003 |
| RL9A        | Swing Arm Run Turn Controller to Rear Axle LED's                                       | Molex Micro-Fit 4 Pin<br>Plug P/N: 43020-0400<br>Socket P/N: 43030-0007     | Left Upper<br>Frame Cover                   | 03-007           |
| RL9B        | See RL9A   | Molex Micro-Fit 4 Pin<br>Recept P/N: 43025-0400<br>Terminal P/N: 43031-0007 | Left Upper<br>Frame Cover                   | 03-007           |
| S1A         | Speed Shifter ECM to Shifter - Disconnect for ECM Removal                              | ASC605-06PN<br>Duetch Plug  | Top Right Fuel<br>Cell                      | 03-016           |
| S1B         | See S1A  | ASC105-06SN<br>Duetch Receptacle  | Top Right Fuel<br>Cell                      | 03-016           |
| S2A         | Speed Shifter ECM to Shifter - Shifter Disconnect for Shifter Removal                  | ASC605-06PN<br>Duetch Plug  | Bottom Left<br>Fuel Cell<br>Protector Plate | 03-016           |
| S2B         | See S2A  | ASC105-06SN<br>Duetch Receptacle  | Bottom Left<br>Fuel Cell<br>Protector Plate | 03-016           |
| S3A         | Speed Shifter ECM to Injectors/Front Coil - Disconnect for ECM Removal                 | ASC605-06PN<br>Duetch Plug  | Top Right Fuel<br>Cell                      | 03-016           |
| S3B         | See S3A  | ASC105-06SN<br>Duetch Receptacle  | Top Right Fuel<br>Cell                      | 03-016           |

| DESIGNATION | DESCRIPTION  | TYPE  | LOCATION                             | DRAWING          |
|-------------|--|---|--------------------------------------|------------------|
| S3B-1       | Speed Shifter ECM to Injectors Bypass Connector  | ASC105-06SN<br>Duetch Receptacle  | Top Right Fuel Cell                  | 03-016<br>03-028 |
| S4A         | Speed Shifter ECM to Handlebar Switches/Shift Light - Disconnect for ECM Removal                 | ASL606-05PN-HE<br>Duetch Plug   | Top Right Fuel Cell                  | 03-016           |
| S4B         | See S4A  | ASL106-05SN-HE<br>Duetch Receptacle   | Top Right Fuel Cell                  | 03-016           |
| S5A         | Speed Shifter ECM to Clutch Switch - Disconnect for ECM Removal                                  | AMP Multilock 2 Pin Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96       | Top Right Fuel Cell                  | 03-016           |
| S5B         | See S5A  | AMP Multilock 2 Pin Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-96 | Top Right Fuel Cell                  | 03-016           |
| S6A         | Speed Shifter ECM Control Pwr Switch and Ground - Disconnect for ECM Removal                     | AMP Multilock 2 Pin Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96       | Top Right Fuel Cell                  | 03-016           |
| S6B         | See S6A  | AMP Multilock 2 Pin Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-96 | Top Right Fuel Cell                  | 03-016           |
| S7A         | Speed Shifter ECM Injector Output – Speed Shifter Bypass: Plug into S8B for stock configuration. | ASU603-03PN-HE<br>Duetch Plug   | Engine – Left Side Between Cylinders | 03-016<br>03-005 |
| S7B         | Speed Shifter ECM Injector Output – Speed Shifter Bypass: Unplug for stock configuration.        | ASU103-03SN-HE<br>Duetch Receptacle   | Engine – Left Side Between Cylinders | 03-016<br>03-005 |
| S8A         | Speed Shifter ECM Injector Input – Speed Shifter Bypass: Unplug for stock configuration.         | ASU603-03PN-HE<br>Duetch Plug   | Engine – Left Side Between Cylinders | 03-016<br>03-005 |
| S8B         | Speed Shifter ECM Injector Input – Speed Shifter Bypass: Plug into S7A for stock configuration.  | ASU103-03SN-HE<br>Duetch Receptacle   | Engine – Left Side Between Cylinders | 03-016<br>03-005 |

| DESIGNATION | DESCRIPTION   | TYPE   | LOCATION                                    | DRAWING                    |
|-------------|---|--|---|----------------------------|
| S9A         | Speed Shifter<br>Handlebar Switch<br>Disconnect   | ASU603-03PN-HE<br>Duetch Plug  | Left Side Cover                             | 03-016<br>03-002           |
| S9B         | See S9A   | ASU103-03SN-HE<br>Duetch Receptacle  | Left Side Cover                             | 03-016<br>03-002           |
| S10A        | Speed Shifter Shift Light<br>Disconnect   | ASU603-03PN-HE<br>Duetch Plug  | Left Side Cover                             | 03-016<br>03-002           |
| S10B        | See S10A  | ASU103-03SN-HE<br>Duetch Receptacle  | Left Side Cover                             | 03-016<br>03-002           |
| S11A        | Speed Shifter ECM to<br>Clutch Switch –<br>Disconnect for Clutch<br>Switch Removal        | AMP Multilock 2 Pin<br>Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96           | Bottom Left<br>Fuel Cell<br>Protector Plate | 03-016<br>03-009           |
| S11B        | See S11A  | AMP Multilock 2 Pin<br>Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-<br>96 | Bottom Left<br>Fuel Cell<br>Protector Plate | 03-016<br>03-009           |
| S12A        | Speed Shifter ECM<br>Control Pwr Switch -<br>Disconnect for Horn<br>Removal               | AMP Multilock 2 Pin<br>Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96           | Horn<br>Mount/Control<br>Bracket            | 03-016                     |
| S12B        | See S12A  | AMP Multilock 2 Pin<br>Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-<br>96 | Horn<br>Mount/Control<br>Bracket            | 03-016                     |
| S13A        | Speed Shift – Front Coil<br>Disconnect for Speed<br>Shift Wiring Harness<br>removal.      | ASU603-03PN-HE<br>Duetch Plug  | Engine – Left<br>Side Between<br>Cylinders  | 03-016                     |
| S13B        | See S13A  | ASU103-03SN-HE<br>Duetch Receptacle  | Engine – Left<br>Side Between<br>Cylinders  | 03-016                     |
| S14A        | Speed Shifter & Safety<br>Interlock Hydraulic<br>Clutch Switch -<br>Disconnect for Switch | AMP Multilock 2 Pin<br>Socket Housing<br>P/N: 73152-96BK<br>Socket P/N: 73191-96           | Bottom Left<br>Fuel Cell<br>Protector Plate | 03-016<br>03-009<br>03-020 |
| S14B        | See S12A  | AMP Multilock 2 Pin<br>Receptacle Housing<br>P/N: 73101-96BK<br>Terminal P/N: 73190-<br>96 | Bottom Left<br>Fuel Cell<br>Protector Plate | 03-016<br>03-009<br>03-020 |
| T1A         | N02 Cylinder Selector<br>Switch (CSS)<br>Disconnect. Connects /                           | DTM06-2S-E004<br>Duetch 2-Socket Plug,<br>Black  | Airbox                                      | 03-001<br>03-005           |

| DESIGNATION | DESCRIPTION   | TYPE   | LOCATION              | DRAWING          |
|-------------|---|--|-----------------------|------------------|
|             | disconnects the AFR piggyback sensing from the Wego IID output to the NO2 lean detector via the CSS.            |  |                       |                  |
| T1B         | See T1A   | DTM04-2P-E004<br>Duetch 2-Pin<br>Receptacle, Black                             | Airbox                | 03-001<br>03-005 |
| T2A         | WEGO IID to Twinscan II+ Connect/Disconnect   | DTM06-2S-E004<br>Duetch 2-Socket Plug,<br>Black                                | Airbox                | 03-001           |
| T2B         | See T2A   | DTM04-2P-E004<br>Duetch 2-Pin<br>Receptacle, Black                             | Airbox                | 03-001           |
| T3A         | TwinScan II+ Data & Control Pwr to Data 2 Connector for Airbox removal.   | DTM06-3S-E004<br>Duetch 3-Socket Plug,<br>Black                                | Airbox – Left<br>Side | 03-001           |
| T3B         | See T3A   | DTM04-3P-E004<br>Duetch 3-Pin<br>Receptacle, Black                             | Airbox – Left<br>Side | 03-001           |
| T4A         | Horn Mount Data Record On/Off Switch and LED indicator connect/disconnect for horn mount and/or airbox removal. | DTM06-2S-E004<br>Duetch 2-Socket Plug,<br>Black                                | Airbox – Left<br>Side | 03-001           |
| T4B         | See T4A   | DTM04-2P-E004<br>Duetch 2-Pin<br>Receptacle, Black                             | Airbox – Left<br>Side | 03-001           |
| T5A         | WEGO IID Control Pwr disconnect for WEGO removal.   | 73102-96BK<br>2-Pin Tab Housing<br>73191-96<br>Receptacle Contact<br>20-16 GA  | Airbox – Rear         | 03-001           |
| T5B         | See T5A   | 73190-96BK<br>2-Pin Receptacle<br>Housing<br>73190-96<br>Tab Terminal 20-16 GA | Airbox – Rear         | 03-001           |
| T6A         | Data 2 Connect/Disconnect between factory data port and TwinScan II.  | DT06-4S Plug<br>Assembly<br>Deutsch DT Series 4-<br>Socket Plug                | Top of Fuel Cell      | 03-001           |
| T6B         | See T6A   | DT04-4P Receptacle<br>Assembly   | Top of Fuel Cell      | 03-001           |

| DESIGNATION | DESCRIPTION   | TYPE                               | LOCATION                  | DRAWING          |
|-------------|---|------------------------------------|---------------------------|------------------|
|             |   | Deutsch DT Series 4-Pin Receptacle |                           |                  |
| T7A         | WEGO IID to Front Exhaust Header Wideband Sensor disconnect for exhaust header or airbox removal. | ASL606-05PN-HE Duetch Plug         | Airbox – Rear             | 03-001           |
| T7B         | See T7A   | ASL106-05SN-HE Duetch Receptacle   | Airbox – Rear             | 03-001           |
| T8A         | WEGO IID to Rear Exhaust Header Wideband Sensor disconnect for airbox removal.                    | ASL606-05PN-HE Duetch Plug         | Airbox – Rear             | 03-001           |
| T8B         | See T8A   | ASL106-05SN-HE Duetch Receptacle   | Airbox – Rear             | 03-001           |
| T9A         | WEGO IID to Front Exhaust Header Wideband Sensor disconnect for exhaust header removal.           | ASL606-05PN-HE Duetch Plug         | Radiator – Back Left Side | 03-001           |
| T9B         | See T9A   | ASL106-05SN-HE Duetch Receptacle   | Radiator – Back Left Side | 03-001           |
| T10A        | Handlebar LED Pod – TwinScan On. Disconnect to remove airbox.                                     | Single Conductor Male/Female Crimp | Airbox – Left Side        | 03-001<br>03-002 |
| T10B        | See T10A  | Single Conductor Male/Female Crimp | Airbox – Left Side        | 03-001<br>03-002 |

| <b>DESIGNATION</b> | <b>DESCRIPTION</b>                            | <b>TYPE</b>                                       | <b>LOCATION</b>                   | <b>DRAWING</b> |
|--------------------|---|---|-----------------------------------|----------------|
| TB1                | Show LED - Main Positive Terminal Block       | Wago Lever Nut Compact 5-Conductor Terminal Block | Under Fuse Block - Right          | 03-003         |
| TB2                | Show LED - Main Negative Terminal Block       | Wago Lever Nut Compact 5-Conductor Terminal Block | Under Fuse Block - Left           | 03-003         |
| TB3                | Show LED – Bottom End Positive Terminal Block | Wago Lever Nut Compact 5                          | Fuel Cell Protector Plate - Right | 03-003         |
| TB4                | Show LED – Bottom End Negative Terminal Block | Wago Lever Nut Compact 5                          | Fuel Cell Protector Plate - Left  | 03-003         |
| TB5                | Show LED – Front End Positive Terminal Block  | Wago Lever Nut Compact 5                          | Top of Battery                    | 03-003         |
| TB6                | Show LED – Front End Negative Terminal Block  | Wago Lever Nut Compact 5                          | Top of Battery                    | 03-003         |
| TB7                | -   |   |                                   |                |
| TB8                | -   |   |                                   |                |
| TB9                | -   |   |                                   |                |
| TB10               | Airbox Negative Terminal Block                | Wago Lever Nut Compact 5                          | Airbox – Right Side               | 03-003         |
| TB11               | Airbox Positive (ACCY) Terminal Block         | Wago Lever Nut Compact 5                          | Airbox – Right Side               | 03-003         |
| TB12               | Rear Aux Lighting Terminal Block              | Modified Wago Lever Nut Compact 5                 | Under Rear Taillight              | 03-007         |

### Terminal Block Locations

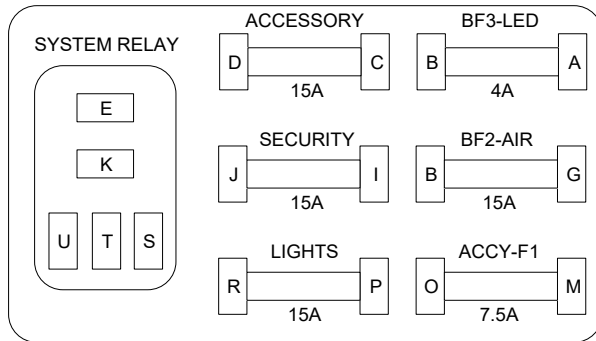
| DESIGNATION | DESCRIPTION                                   | TYPE  | LOCATION                          | DRAWING |
|-------------|---|---|-----------------------------------|---------|
| TB1         | Show LED - Main Positive Terminal Block       | Wago Lever Nut Compact 5-Conductor Terminal Block | Under Fuse Block - Right          | 03-003  |
| TB2         | Show LED - Main Negative Terminal Block       | Wago Lever Nut Compact 5-Conductor Terminal Block | Under Fuse Block - Left           | 03-003  |
| TB3         | Show LED – Bottom End Positive Terminal Block | Wago Lever Nut Compact 5                          | Fuel Cell Protector Plate - Right | 03-003  |
| TB4         | Show LED – Bottom End Negative Terminal Block | Wago Lever Nut Compact 5                          | Fuel Cell Protector Plate - Left  | 03-003  |
| TB5         | Show LED – Front End Positive Terminal Block  | Wago Lever Nut Compact 5                          | Top of Battery                    | 03-003  |
| TB6         | Show LED – Front End Negative Terminal Block  | Wago Lever Nut Compact 5                          | Top of Battery                    | 03-003  |
| TB7         | -   |   |                                   |         |
| TB8         | -   |   |                                   |         |
| TB9         | -   |   |                                   |         |
| TB10        | Airbox Negative Terminal Block                | Wago Lever Nut Compact 5                          | Airbox – Right Side               | 03-003  |
| TB11        | Airbox Positive (ACCY) Terminal Block         | Wago Lever Nut Compact 5                          | Airbox – Right Side               | 03-003  |
| TB12        | Rear Aux Lighting Terminal Block              | Modified Wago Lever Nut Compact 5                 | Under Rear Taillight              | 03-007  |

## Fuse Locations

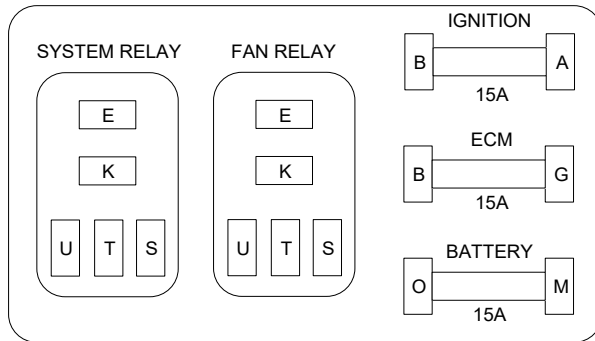
| DESIGNATION | DESCRIPTION  | TYPE / RATING                       | LOCATION                            | DRAWING                              |
|-------------|--|-------------------------------------|-------------------------------------|--------------------------------------|
| ACCY-F1     | Airbox Control Pwr (TB-11) and LED Ignition Switched Pwr. Fed from main ACCY 15A fuse in factory fuse block. | 7.5 Amp Mini Fuse                   | Main Fuse Block – Empty Fuse Slot   | 03-001<br>03-003<br>03-005<br>03-019 |
| ACCY-F2     | Airbox Control Pwr, TB-11  | 4 Amp, Universal In-line Mini Fuse. | Airbox – Right Rear                 | 03-001<br>03-005<br>03-019           |
| ACCY-F3     | SureShift Gear Indicator   | 5 Amp, Universal In-line Mini Fuse. | Left Side Cover                     | 03-008<br>03-019                     |
| BF1         | Main battery un-switched accessory power to Spare Fuse Slot 1 & 2 - Air Suspension & LED's.                  | 20 Amp, Universal In-line Mini Fuse | Top of Battery                      | 03-001<br>03-003<br>03-005<br>03-019 |
| BF2         | Air Suspension   | 15 Amp Mini Fuse                    | Main Fuse Block – Spare Fuse Slot 1 | 03-003<br>03-004<br>03-019           |
| BF3         | Show LED's   | 4 Amp Mini Fuse                     | Main Fuse Block – Spare Fuse Slot 2 | 03-003<br>03-004<br>03-019           |
| BF4         | NO2 Fire & Purge Relays and Solenoids  | 15 Amp Mini Fuse                    | Airbox – Right Front                | 03-005<br>03-019                     |
| BF5         | Battery Tender/External Charger  | 15 Amp, Universal In-line Mini Fuse | Front of Battery                    | 03-006<br>03-019                     |
| BF6         | Speed Shifter  | 10 Amp, Universal In-line Mini Fuse | Front of Battery                    | 03-016<br>03-019                     |
| BF7         | Keyless Ignition   | 1 Amp, Universal In-line Mini Fuse  | Right Side of Main Fuse Block       | 03-022                               |

## Factory Fuse Block

### FACTORY FUSE BLOCK



(61) TOP VIEW



(62) TOP VIEW

### Show LED Locations

| Assy             | Qty | Location Description                 | Type                                  | Color |
|------------------|-----|--------------------------------------|---------------------------------------|-------|
| <b>Frame</b>     | 2   | Top Engine Frame Rail - Left         | Signal Dynamics 3 LED Open Strip      | Red   |
|                  | 2   | Top Engine Frame Rail - Right        | Signal Dynamics 3 LED Open Strip      | Red   |
|                  |     |                                      |                                       |       |
|                  | 1   | Top Fuel Cell Frame Rail - Left      | Signal Dynamics 3 LED Open Strip      | Red   |
|                  | 1   | Top Fuel Cell Frame Rail - Right     | Signal Dynamics 3 LED Open Strip      | Red   |
|                  |     |                                      |                                       |       |
|                  | 1   | Bottom Fuel Cell Frame Plate - Left  | Radiantz – Flexled 1 LED Closed Strip | Red   |
|                  | 1   | Bottom Fuel Cell Frame Plate - Right | Radiantz – Flexled 1 LED Closed Strip | Red   |
|                  |     |                                      |                                       |       |
| <b>Engine</b>    | 2   | Front Sprocket Cover                 | Radiantz – Flexled 1 LED Closed Strip | Red   |
|                  | 2   | Horn Cover                           | Signal Dynamics 3 LED Open Strip      | Red   |
|                  | 2   | Front Engine Mount                   | Signal Dynamics 3 LED Step Light      | Red   |
|                  |     |                                      |                                       |       |
| <b>Rad-Cover</b> | 2   | Left Side Top & Bottom               | Radiantz – Flexled 3 LED Closed Strip | Red   |
|                  | 2   | Right Side Top & Bottom              | Radiantz – Flexled 3 LED Closed Strip | Red   |
|                  |     |                                      |                                       |       |
| <b>Swing-arm</b> | 1   | Pivot Bolt Section Left & Right Side | Radiantz – Flexled 1 LED Closed Strip | Red   |
|                  | 1   | Center Section Left & Right Side     | Radiantz – Flexled 1 LED Closed Strip | Red   |
|                  | 1   | Axle Bolt Section Left & Right Side  | Radiantz – Flexled 2 LED Closed Strip | Red   |
|                  |     |                                      |                                       |       |

|                    |   |                           |                                       |     |
|--------------------|---|---------------------------|---------------------------------------|-----|
| <b>Side Covers</b> | 1 | Left Side Screened Cover  | Radiantz – Flexled 3 LED Closed Strip | Red |
|                    | 1 | Right Side Screened Cover | Radiantz – Flexled 3 LED Closed Strip | Red |
| <b>Rear Fender</b> |   |                           |                                       |     |
|                    |   |                           |                                       |     |

## 26. Tables – Wiring Harness

### Left Side Handlebar Controls - OMP Momentary Switches

| <u>Switch Position</u> | <u>Function</u>  | <u>Handlebar Switch Wire</u> | <u>Grey Plug Pin No.</u> | <u>Receptacle Pin No.</u> | <u>Harness Wire</u> | <u>Description</u>                               |
|------------------------|------------------|------------------------------|--------------------------|---------------------------|---------------------|--|
| Outside                | Left Turn Signal | Orange                       | Pin 4                    | Pin 4                     | Blue                | Accessory Power – Ignition Switched              |
| Outside                | Left Turn Signal | Green                        | Pin 5                    | Pin 5                     | White/Purple        | Left Turn Signal - Output to TSSM                |
| Center                 | Headlight Hi-Lo  | Red                          | Pin 2                    | Pin 2                     | Red                 | Hi/Lo Headlight Relay Plug Pin 3 (12V+)          |
| Center                 | Headlight Hi-Lo  | Black                        | Pin 3                    | Pin 3                     | Black               | Hi/Lo Headlight Relay Plug Pin 1 Momentary Input |
| Inside                 | Horn             | Yellow                       | Pin 6                    | Pin 6                     | Yellow/Black        | Switched output to horn.                         |
| Inside                 | Horn             | Brown                        | Pin 1                    | Pin 1                     | Orange/White        | Accessory Power – Ignition Switched              |

### Right Side Handlebar Controls - OMP Momentary Switches

| <u>Switch Position</u> | <u>Function</u>   | <u>Handlebar Switch Wire</u> | <u>Black Plug Pin No.</u> | <u>Receptacle Pin No.</u> | <u>Harness Wire</u> | <u>Description</u>                  |
|------------------------|-------------------|------------------------------|---------------------------|---------------------------|---------------------|-------------------------------------|
| Outside                | Right Turn Signal | Yellow                       | Pin 1                     | Pin 1                     | Orange/White        | Accessory Power – Ignition Switched |
| Outside                | Right Turn Signal | Brown                        | Pin 5                     | Pin 5                     | White/Brown         | Right Turn Signal - Output to TSSM  |
| Center                 | Engine Kill       | Red                          | Pin 3                     | Pin 3                     | Red                 | Ignition Input from Grey in         |

|        |              |        |       |       |             |   |
|--------|--------------|--------|-------|-------|-------------|---|
|        |              |        |       |       |             | Harness and 12V+ Engine Stop Relay Red        |
| Center | Engine Kill  | Black  | Pin 4 | Pin 4 | Purple      | Momentary Input Engine Stop Relay White/Black |
| Inside | Engine Start | Orange | Pin 2 | Pin 2 | White/Black | Input to Start Sw. from Stop/Run Sw. Output.  |
| Inside | Engine Start | Green  | Pin 6 | Pin 6 | Black/Red   | Output from Start Sw. to Start Relay Coil.    |

### Left Side Handlebar Connector

#### Grey 6-Pin Connector

| <u>PIN Number</u> | <u>Wire Color/Stripe - Description</u>                                     |
|-------------------|--|
| 1                 | Orange/White - Accessory Power Ignition Switched – Horn Sw & left turn Sw. |
| 2                 | Red - Hi/Lo Headlight Relay Plug Pin 3 (12V+)                              |
| 3                 | Black – Hi/Lo Headlight Relay Plug Pin 1 Momentary Input                   |
| 4                 | Orange/White - Accessory Power – Ignition Switched                         |
| 5                 | White/Purple – Left Turn Signal - Output to TSSM                           |
| 6                 | Yellow/Black – Switched output to Horn.                                    |

### Right Side Handlebar Connector

#### Black 6-Pin Connector

| <u>PIN Number</u> | <u>Wire Color/Stripe - Description</u>                                      |
|-------------------|---|
| 1                 | Orange/White – Accessory Power Ignition Switched - Brake Sw, Right Turn Sw. |
| 2                 | White/Black - Input to Start Sw. from Stop/Run Sw. Output.                  |
| 3                 | Red – Ignition Input from Grey in Harness and 12V+ Engine Stop Relay Red    |
| 4                 | Purple - Momentary Input Engine Stop Relay White/Black                      |
| 5                 | White/Brown Light – Right Turn Signal Output to TSSM                        |
| 6                 | Black/Red – Output from Start Sw. to Start Relay Coil.                      |

### Front Brake Switch

#### (No Connector)

| <u>Flag Terminal</u> | <u>Wire Color/Stripe - Description</u>                                      |
|----------------------|---|
| Red                  | Orange/White – Accessory Power Ignition Switched - Brake Sw, Right Turn Sw. |
| Black                | Red/Yellow – Output from brake switch to brake light lamps                  |

### Front Turn Signals

| <u>Harness Wire Color/Stripe - Description</u>  | <u>Converter Input Connector PIN No.</u> | <u>Converter Output Connector PIN No.</u> | <u>Handlebar Wire</u> | <u>Turn Signal</u> |
|---|--|---|-----------------------|--------------------|
| Black/Mark – Right Turn Ground                  | 1  | Right Pin 1                               | Blue                  | Black              |
| Brown/Mark – Right Turn Input to Lamp from TSSM | 2  | Right Pin 2                               | White                 | White              |
| Blue/Mark – Right Turn Running Light            | 3  |   | N/A                   |                    |
| Blue – Left Turn Running Light                  | 4  |   | N/A                   |                    |
| Purple - Left Turn Input to Lamp from TSSM      | 5  | Left Pin 2                                | White                 | White              |
| Black – Left Turn Ground                        | 6  | Left Pin 1                                | Blue                  | Black              |

### Headlight Hi/Lo Handlebar Switch Control Relay (OMP)

| <u>Relay Wire Color</u> | <u>Connector Pin No.</u> | <u>Wire Color / Stripe - Description</u>                           |
|-------------------------|--------------------------|--|
| Red                     | 6                        | Blue - Main Harness Headlight Circuit (12V+)                       |
| White                   | 5                        | White – Headlight Harness Low Beam Lamp                            |
| Yellow                  | 4                        | Yellow – Headlight Harness High Beam Lamp                          |
| Orange                  | 3                        | Red – Left Side Handlebar Harness Connector Pin 2 (Hi/Lo Switch)   |
| Black                   | 2                        | Black - Tee from Main Harness & Black to Cluster Harness (Ground)  |
| Orange                  | 1                        | Black – Left Side Handlebar Harness Connector Pin 3 (Hi/Lo Switch) |

### Stop/Run (Kill Switch) Control Relay (ThunderHeart)

| <u>Relay Wire Color</u>         | <u>Harness Wire Color / Stripe</u>   |
|---------------------------------|--|
| Red (12V+ Power)                | Tee – Grey Ignition Circuit Main Harness, Grey Cluster Harness, Grey DGD Keyless Ignition Module, Red Right Side Handlebar Harness Connector Pin 3 (Kill Switch) |
| White (12V+ Latch Output 1)     | Tee - White/Black Main Harness, White/Black DGD Keyless Ignition Module  |
| Grey (12V+ Latch Output 2)      | Unused   |
| Black (Ground)                  | Black - Main Harness Ground  |
| White/Black (Momentary Input 1) | Purple - Right Side Handlebar Harness Connector Pin 4 (Kill Switch)  |
| Grey/Black (Momentary Input 2)  | Unused   |

### Garage Door Opener

| <u>Transmitter Wire Color</u> | <u>Connector Pin No.</u> | <u>Wire Color / Stripe - Description</u>                          |
|-------------------------------|--------------------------|---|
| Orange/White                  | 1                        | Blue - Main Harness Headlight Circuit (12V+)                      |
| White                         | 2                        | White – Headlight Harness Low Beam Lamp                           |
| Yellow                        | 3                        | Yellow – Headlight Harness High Beam Lamp                         |
| Black                         | 4                        | Black - Tee from Main Harness & Black to Cluster Harness (Ground) |

### Arnett Air Switch Connector

| <u>Arnett Wire Color</u> | <u>Connector Pin No.</u> | <u>Wire Color / Stripe - Description</u>                            |
|--------------------------|--------------------------|---|
| Red                      | 1                        | Red – +12V from Airbox 15A Fuse to Rear Cylinder Mounted Switch     |
| Black                    | 2                        | Black - Switched Dump Valve On Circuit Rear Cylinder Mounted Switch |
| Orange                   | 3                        | Black - Switched Compressor On Circuit Rear Cylinder Mounted Switch |
| N/A                      | 4                        | N/A   |

### Instrument Cluster Connector – Clamshell

| <u>PIN Number</u> | <u>Wire Color/Stripe - Description</u> |
|-------------------|--|
| 1                 | Red / Orange – Battery                 |
| 2                 | White – Hi-Beam                        |
| 3                 | Purple – L Turn                        |
| 4                 | Brown – R Turn                         |
| 5                 | Black – Ground                         |
| 6                 | Grey – Ignition                        |
| 7                 | Green / Purple – Data Buss             |
| 8                 | Plug                                   |
| 9                 | Green / Yellow – Oil Pressure          |
| 10                | Beige – Neutral                        |
| 11                | Yellow / White – Fuel Level            |
| 12                | Orange / White - Accessory             |
|                   |  |

### Rear Taillight Main Connector

| <u>PIN Number</u> | <u>Wire Color / Stripe</u> |
|-------------------|----------------------------|
| 1                 | Blue                       |
| 2                 | Orange/White               |
| 3                 | Red/Yellow                 |
| 4                 | Black                      |

### Twin Scan Wego Sensor Connectors

| <u>PIN Number</u> | <u>Wego Wire Color / Stripe</u> | <u>Front Cylinder Jumper</u> | <u>O2 Sensor Wire Color / Stripe</u> |
|-------------------|---------------------------------|------------------------------|--------------------------------------|
| 1                 | Red                             | Red                          | Red                                  |
| 2                 | Black                           | Black                        | Black                                |
| 3                 | Brown                           | Brown                        | Yellow                               |
| 4                 | White                           | White                        | White                                |
| 5                 | Green                           | Green                        | Grey                                 |
| 6                 | Plug                            | Plug                         | Plug                                 |

### Data Connectors

| <u>Data 1- PIN No</u> | <u>Wire Color / Stripe</u> | <u>Pigtail Color</u> | <u>Data 2- PIN No</u> |
|-----------------------|----------------------------|----------------------|-----------------------|
| 1                     | Green/Red                  | Green                | 1                     |
| 2                     | Black                      | Black                | 2                     |
| 3                     | Green/Violet               | Red                  | 3                     |
| 4                     | Grey                       | Grey                 | 4                     |

### Twin Scan Main Connector

| <u>PIN Number</u> | <u>Wire Color / Stripe</u> |
|-------------------|----------------------------|
| 1                 | Plug                       |
| 2                 | Black                      |
| 3                 | Grey                       |
| 4                 | Red                        |

### LED Main +12V Terminal Block (Fuse Block)

| <u>T.B. No</u> | <u>Wire Color</u> | <u>Description</u>                               |
|----------------|-------------------|--|
| 1              | Red               | Top Engine Frame Rail Left Front                 |
|                | Red               | Top Engine Frame Rail Left Rear                  |
| 2              | Red               | Top Engine Frame Rail Right Front & Rear         |
| 3              | Red               | Tail Light                                       |
| 4              | Red               | Bottom End +12V Terminal Block (TB/1)            |
|                | Black             | Front Left Side Cover +12V Terminal Block (TB/1) |
|                | Black             | Upper Rear Screen LED's                          |
| 5              | Black             | Main +12V Input from Load Side of LED Switch     |

### LED Main -12V Terminal Block (Fuse Block)

| <u>T.B. No</u> | <u>Wire Color</u> | <u>Description</u>                               |
|----------------|-------------------|--|
| 1              | Black             | Top Engine Frame Rail Left Front                 |
|                | Black             | Top Engine Frame Rail Left Rear                  |
| 2              | Black             | Top Engine Frame Rail Right Front & Rear         |
| 3              | Black             | Tail Light                                       |
| 4              | Black             | Bottom End -12V Terminal Block (TB/5)            |
|                | Red               | Front Left Side Cover -12V Terminal Block (TB/5) |
|                | Red               | Upper Rear Screen LED's                          |
| 5              | Black             | Main -12V Input from Rear Cylinder Ground        |

LED Bottom +12V Terminal Block (Fuel Cell Protector)

| <u>T.B. No</u> | <u>Wire Color</u> | <u>Description</u>                                 |
|----------------|-------------------|--|
| 1              | Red               | Main +12V Input from Main + LED (Fuse Block) +TB/4 |
| 2              | Red               | Lower Frame Screen LED's Right Side                |
| 3              | Red               | Lower Frame Screen LED's Left Side                 |
| 4              | Red               | Sprocket Cover LED Connector (2 Pin)               |
| 5              | Red               | Swingarm Right Side LED's                          |
|                | Red               | Swingarm Left Side LED's                           |

LED Bottom -12V Terminal Block (Fuel Cell Protector)

| <u>T.B. No</u> | <u>Wire Color</u> | <u>Description</u>                                 |
|----------------|-------------------|--|
| 1              | Black             | Swingarm Left Side LED's                           |
|                | Black             | Swingarm Right Side LED's                          |
| 2              | Black             | Sprocket Cover LED Connector (2 Pin)               |
| 3              | Black             | Lower Frame Screen LED's Left Side                 |
| 4              | Black             | Lower Frame Screen LED's Right Side                |
| 5              | Black             | Main -12V Input from Main - LED (Fuse Block) +TB/4 |

LED Nose Cone +12V Terminal Block (Left Side Cover)

| <u>T.B. No</u> | <u>Wire Color</u> | <u>Description</u>                                     |
|----------------|-------------------|--|
| 1              | Black             | Main +12V Input from Main + LED (Fuse Block) +TB/4     |
| 2              | Black             | Radiator Cover LED's                                   |
| 3              | Black             | Front Frame Cover Screen – Right Side                  |
| 4              | Black             | Front Frame Cover Screen – Left Side Connector (2 pin) |
| 5              | Red               | Front Engine Mount LED's                               |

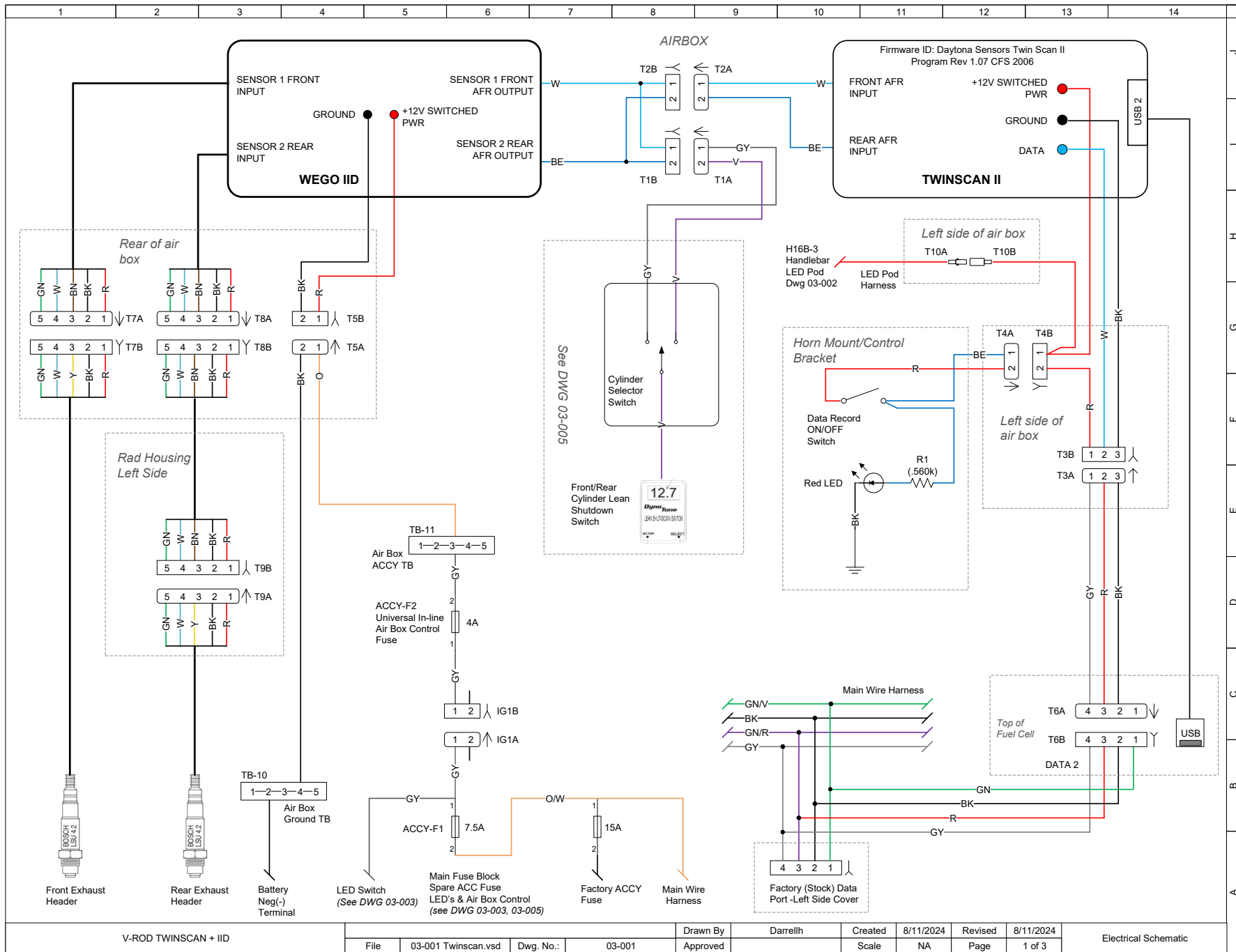
LED Nose Cone -12V Terminal Block (Left Side Cover)

| <u>T.B. No</u> | <u>Wire Color</u> | <u>Description</u>                                     |
|----------------|-------------------|--|
| 1              | Black             | Front Engine Mount LED's                               |
| 2              | Red               | Front Frame Cover Screen – Left Side Connector (2 pin) |
| 3              | Red               | Front Frame Cover Screen – Right Side                  |
| 4              | Red               | Radiator Cover LED's                                   |
| 5              | Red               | Main -12V Input from Main - LED (Fuse Block) +TB/4     |

## 27. V-ROD Drawing Index

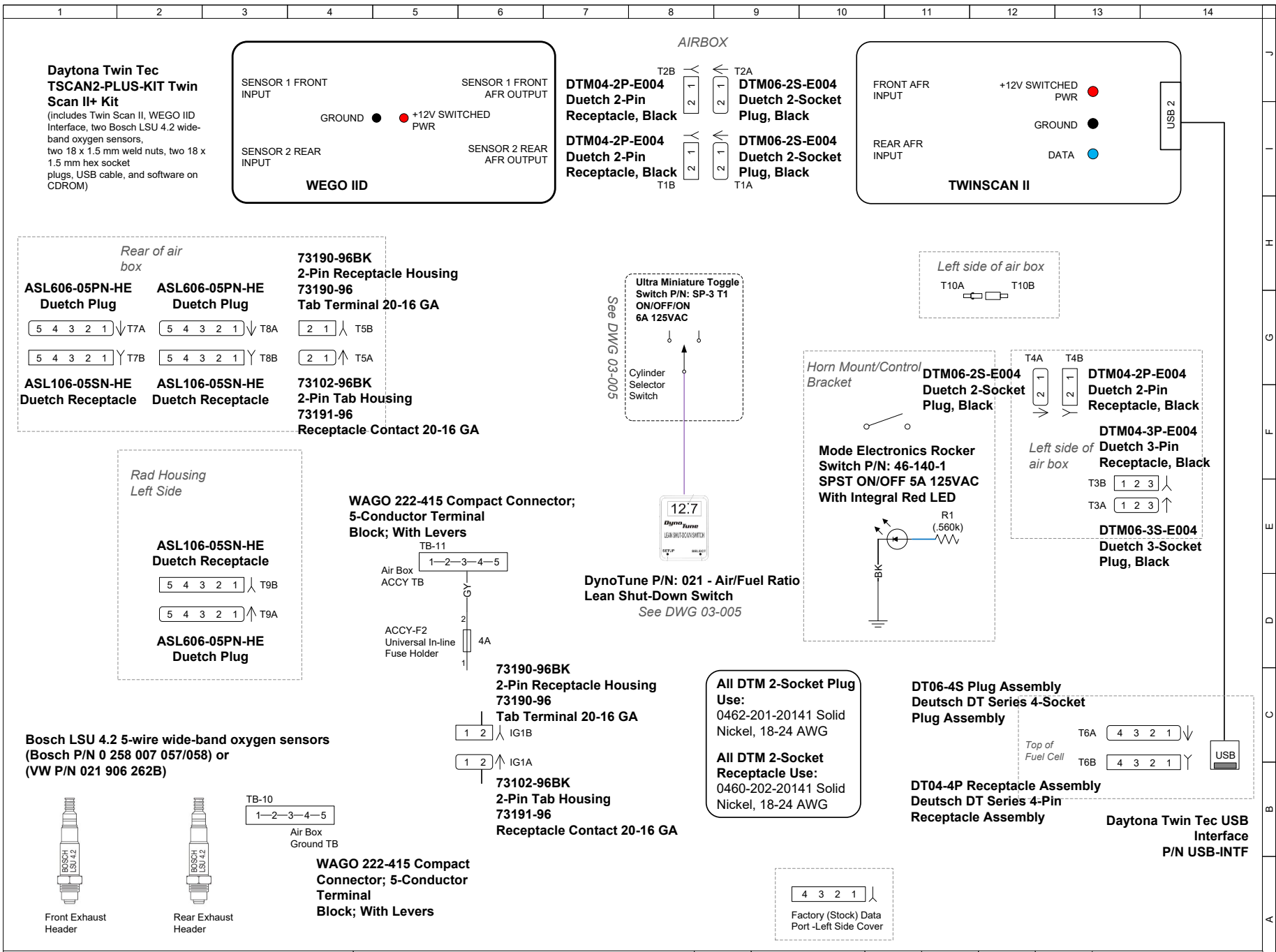
| <b>Drawing #</b> | <b>Title</b>                     | <b>Contents</b>  |
|------------------|----------------------------------|--|
| 03-001           | V-Rod TwinScan + IID             | Sheet 1 - Electrical Schematic<br>Sheet 2 - Component ID   |
| 03-002           | V-Rod Handlebar Controls         | Sheet 1 - Electrical Schematic Sheet 1 of 2<br>Sheet 2 - Component ID Sheet 1 of 2<br>Sheet 3 – Instrument Cluster   |
| 03-003           | V-Rod LED                        | Sheet 1 - Electrical Schematic<br>Sheet 2 - Component ID-1<br>Sheet 3 - Component ID-2   |
| 03-004           | V-Rod Air Suspension             | Sheet 1 - Arnott Kit 9022 System Schematic   |
| 03-005           | V-Rod NOS Control                | Sheet 1 - Electrical Schematic<br>Sheet 2 - Electrical Component ID<br>Sheet 3 - Plumbing<br>Sheet 4 - Rear Bottle Positions<br>Sheet 5 - Front Bottle Positions |
| 03-006           | V-Rod Battery Charger            | Sheet 1 - Schematic  |
| 03-007           | V-Rod Rear Lighting              | Sheet 1 - Electrical Schematic   |
| 03-008           | V-Rod Front / Rear Brake Control | Sheet 1 - Front Brake Control<br>Sheet 2 - Rear Brake Control<br>Sheet 3 – Rear Caliper Dwg  |
| 03-009           | V-Rod Clutch Control             | Sheet 1 - Clutch Control   |
| 03-011           | V-Rod Airbox Layout              | Sheet 1 - Left Side<br>Sheet 2 - Right Side<br>Sheet 3 – Front<br>Sheet 4 – Rear<br>Sheet 5 – Top  |
| 03-012           | V-Rod Coolant Hoses              | Sheet 1 - Water Temp Gauge   |
| 03-013           | V-Rod Oil Pressure Gauge         | Sheet 1 - Oil Pressure Gauge   |
| 03-015           | V-Rod Throttle Control           | Sheet 1 - Throttle Assembly  |
| 03-016           | V-Rod Speed Shift                | Sheet 1 - System Schematic<br>Sheet 2 - Component ID   |
| 03-018           | V-Rod Gear Indicator             | Sheet 1 - System Schematic<br>Sheet 2 - Component ID   |
| 03-019           | V-Rod DC Distribution            | Sheet 1 – Positive Distribution<br>Sheet 2 – Negative Distribution   |
| 03-020           | V-Rod Clutch Interlocks          | Sheet 1 - System Schematic   |
| 03-021           | V-Rod Temp Sensor Override       | Sheet 1 - System Schematic   |
| 03-022           | V-Rod Keyless Ignition           | Sheet 1 - Electrical Schematic<br>Sheet 2 – Component ID   |
| 03-024           | V-Rod Front Fork/Wheel Lighting  | Sheet 1 - Electrical Schematic<br>Sheet 2 - Component ID   |
| 03-025           | V-Rod Controls & Indicators      | Sheet 1 – Controls Indicators  |
| 03-027           | V-Rod Stator Change              | Sheet 1 – Stator   |
| 03-0228          | V-Rod Injectors                  | Sheet 1 – System Schematic   |

# Drawing #03-001 – V-Rod Twin Scan + IID



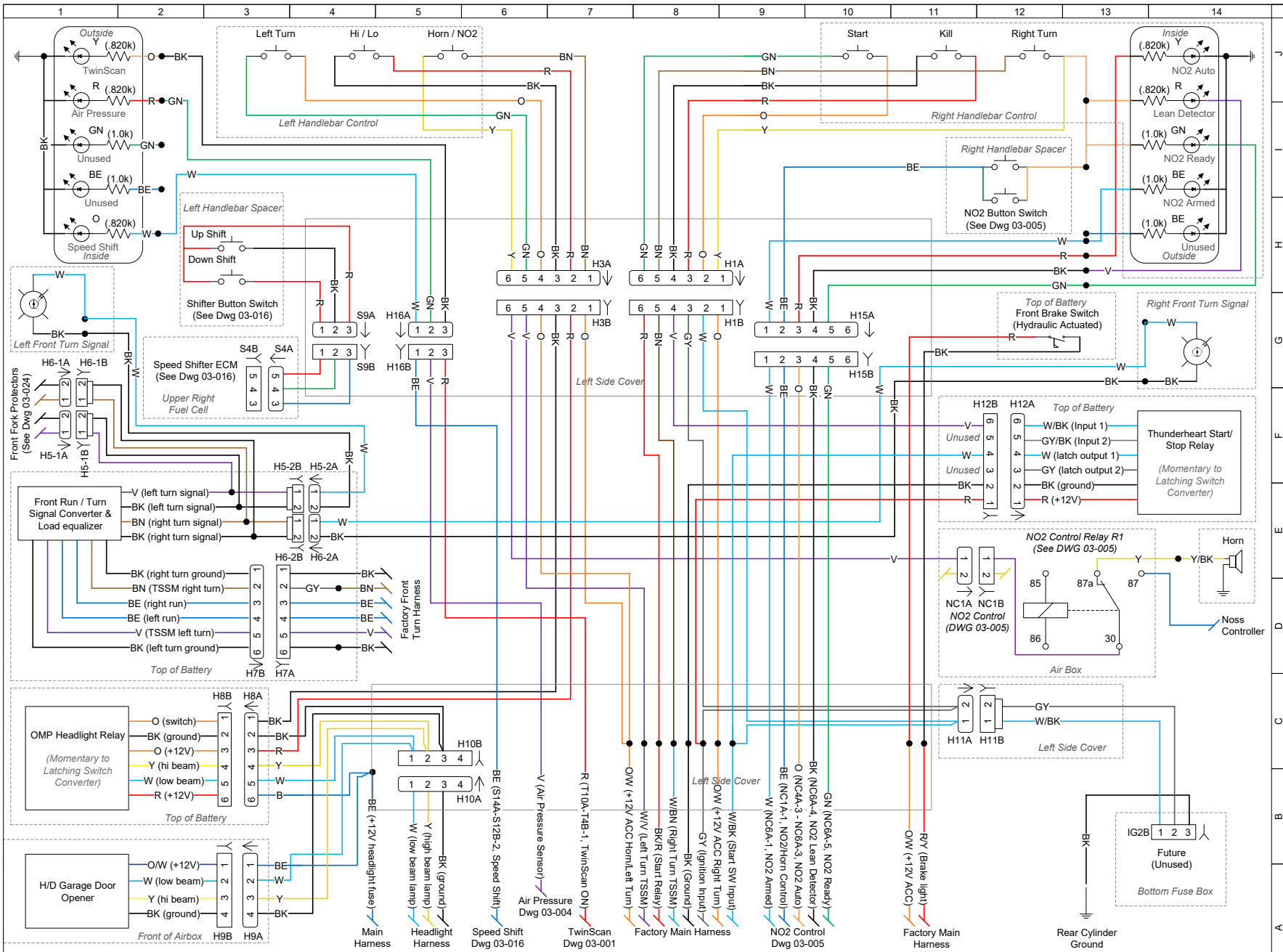
V-ROD TWINSKAN + IID

|          |                     |           |        |          |          |         |           |         |           |                      |
|----------|---------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|----------------------|
| File     | 03-001 Twinscan.vsd | Dwg. No.: | 03-001 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Electrical Schematic |
| Approved |                     | Scale     | NA     | Page     | 1 of 3   |         |           |         |           |                      |

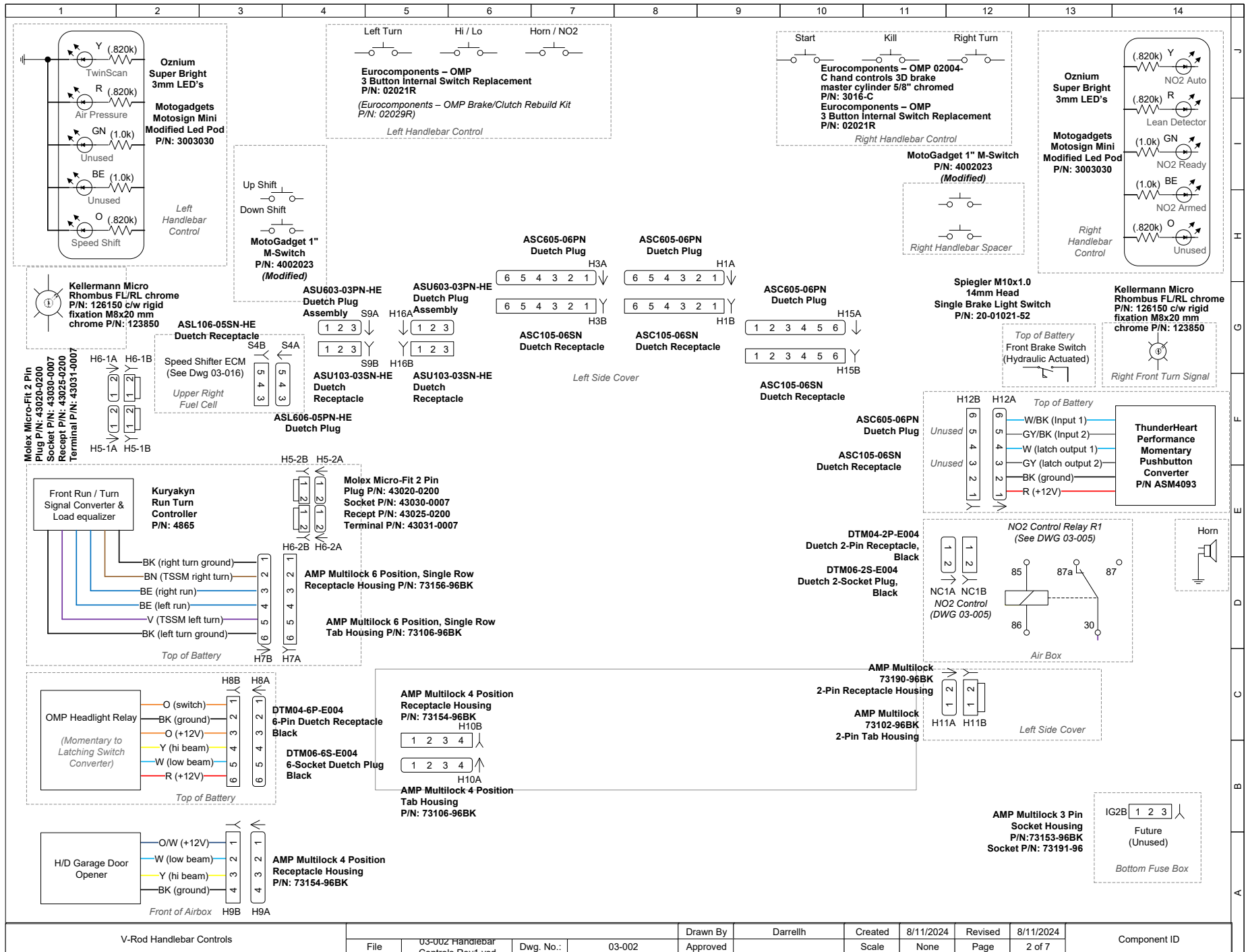


|                      |  |       |      |      |        |              |  |           |  |        |          |          |         |           |         |           |                |
|----------------------|--|-------|------|------|--------|--------------|--|-----------|--|--------|----------|----------|---------|-----------|---------|-----------|----------------|
| V-ROD TWINSKAN + IID |  |       | File |      | 03-001 | Twinscan.vsd |  | Dwg. No.: |  | 03-001 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Component I.D. |
|                      |  | Scale | NA   | Page | 2 of 3 |              |  |           |  |        |          |          |         |           |         |           |                |

# Drawing #03-002 – V-Rod Handlebar Controls

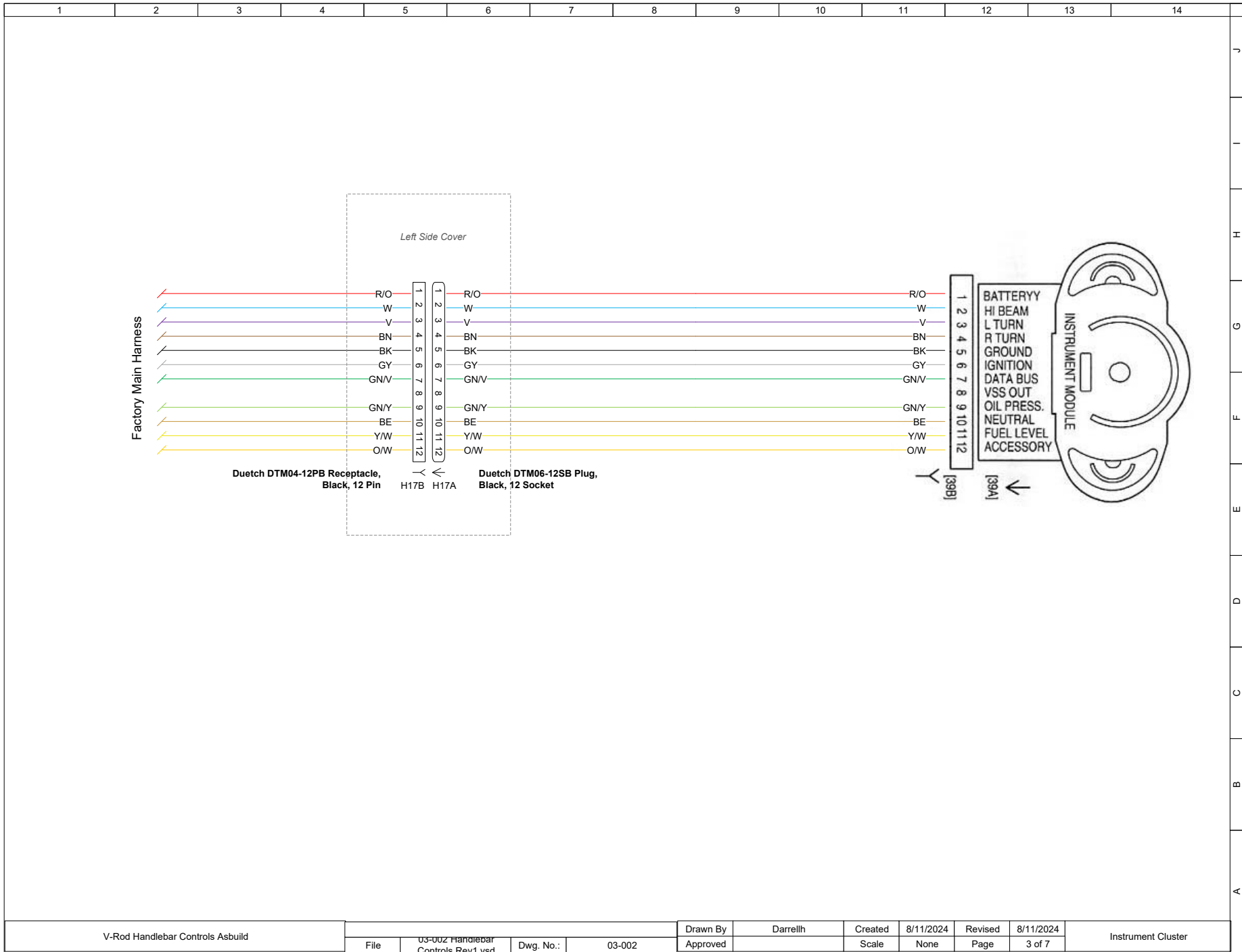


|                          |       |                                    |           |        |          |          |         |           |         |           |                      |
|--------------------------|-------|------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|----------------------|
| V-Rod Handlebar Controls | File  | 03-002 Handlebar Controls_Rev1.vsd | Dwg. No.: | 03-002 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Electrical Schematic |
|                          | Scale |                                    |           |        | Approved |          | None    | Page      | 1 of 7  |           |                      |

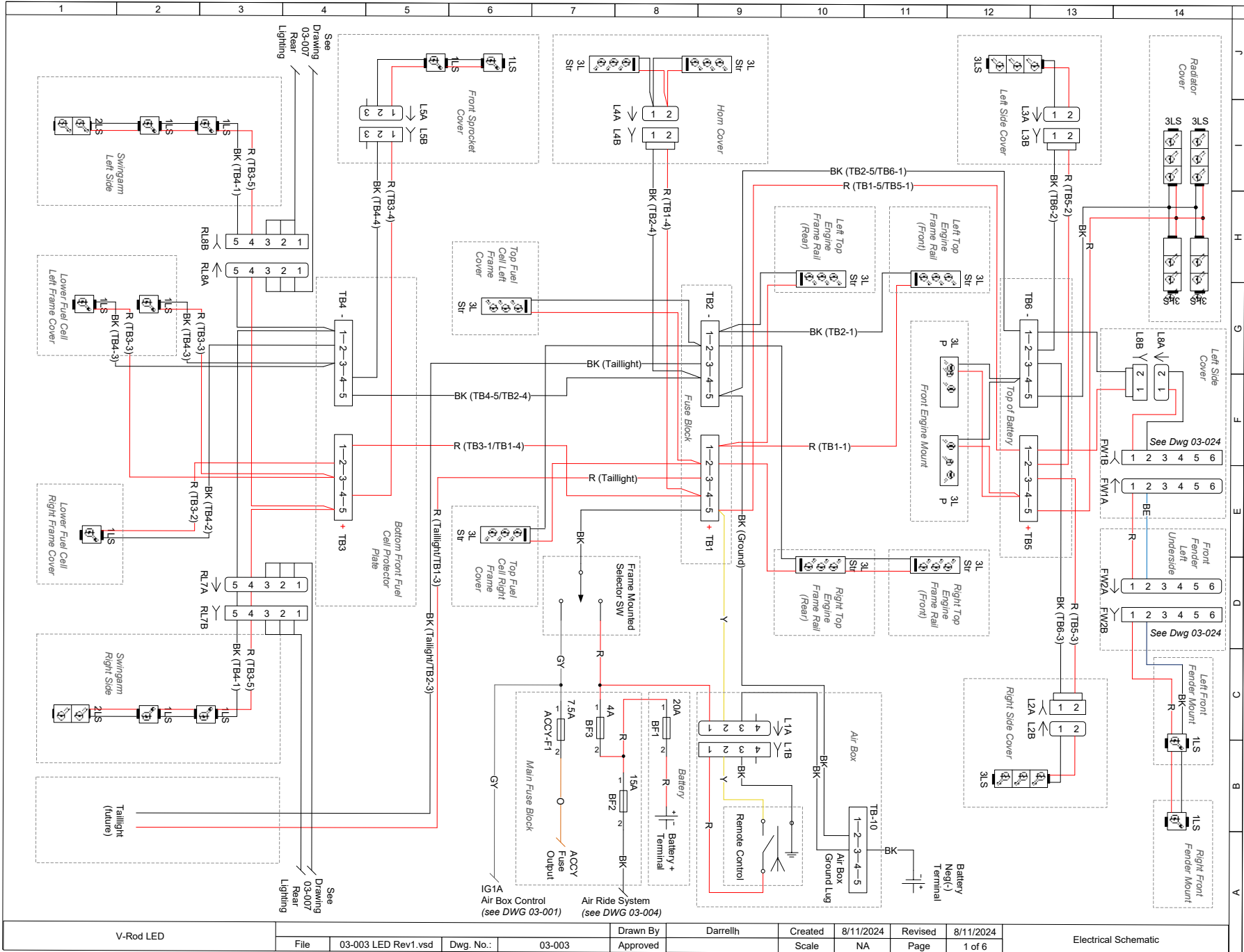


V-Rod Handlebar Controls

|          |                                    |           |        |          |          |         |           |         |           |              |
|----------|------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|--------------|
| File     | U3-002 Handlebar Controls Rev1.vsd | Dwg. No.: | 03-002 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Component ID |
| Approved |                                    | Scale     | None   | Page     | 2 of 7   |         |           |         |           |              |

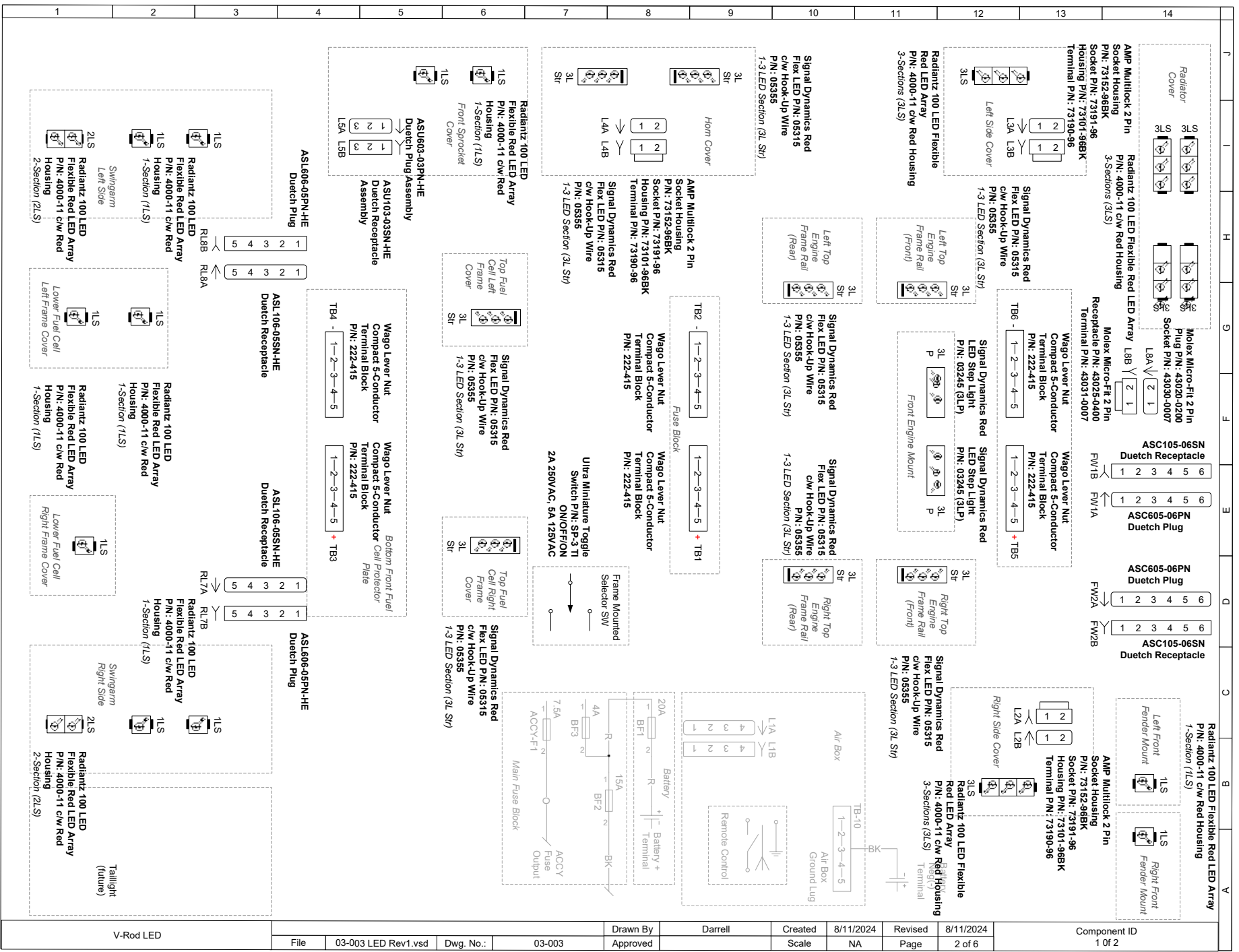


# Drawing #03-003 – V-Rod LED

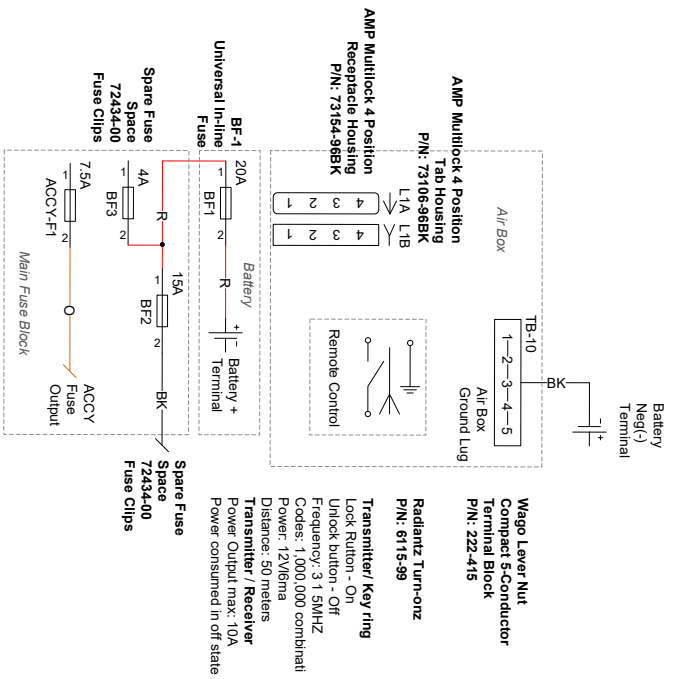


V-Rod LED

|          |                     |           |        |          |          |         |           |         |           |                      |
|----------|---------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|----------------------|
| File     | 03-003 LED Rev1.vsd | Dwg. No.: | 03-003 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Electrical Schematic |
| Approved |                     |           |        |          |          | Scale   | NA        | Page    | 1 of 6    |                      |



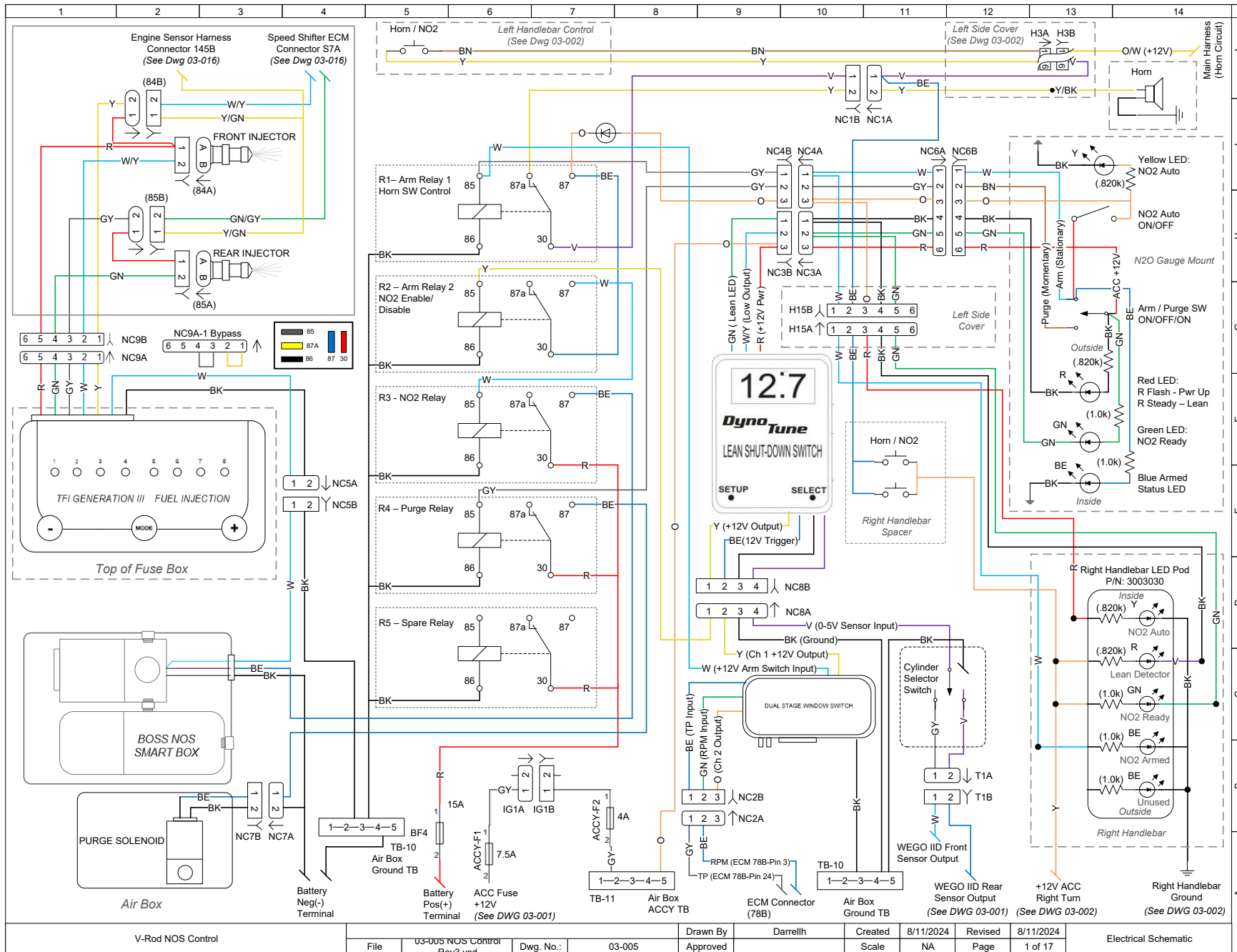
|          |                     |           |        |          |         |         |           |         |           |              |        |
|----------|---------------------|-----------|--------|----------|---------|---------|-----------|---------|-----------|--------------|--------|
| File     | 03-003 LED Rev1.vsd | Dwg. No.: | 03-003 | Drawn By | Darrell | Created | 8/11/2024 | Revised | 8/11/2024 | Component ID | 1 of 2 |
| Approved |                     |           |        |          |         | Scale   | NA        | Page    | 2 of 6    |              |        |

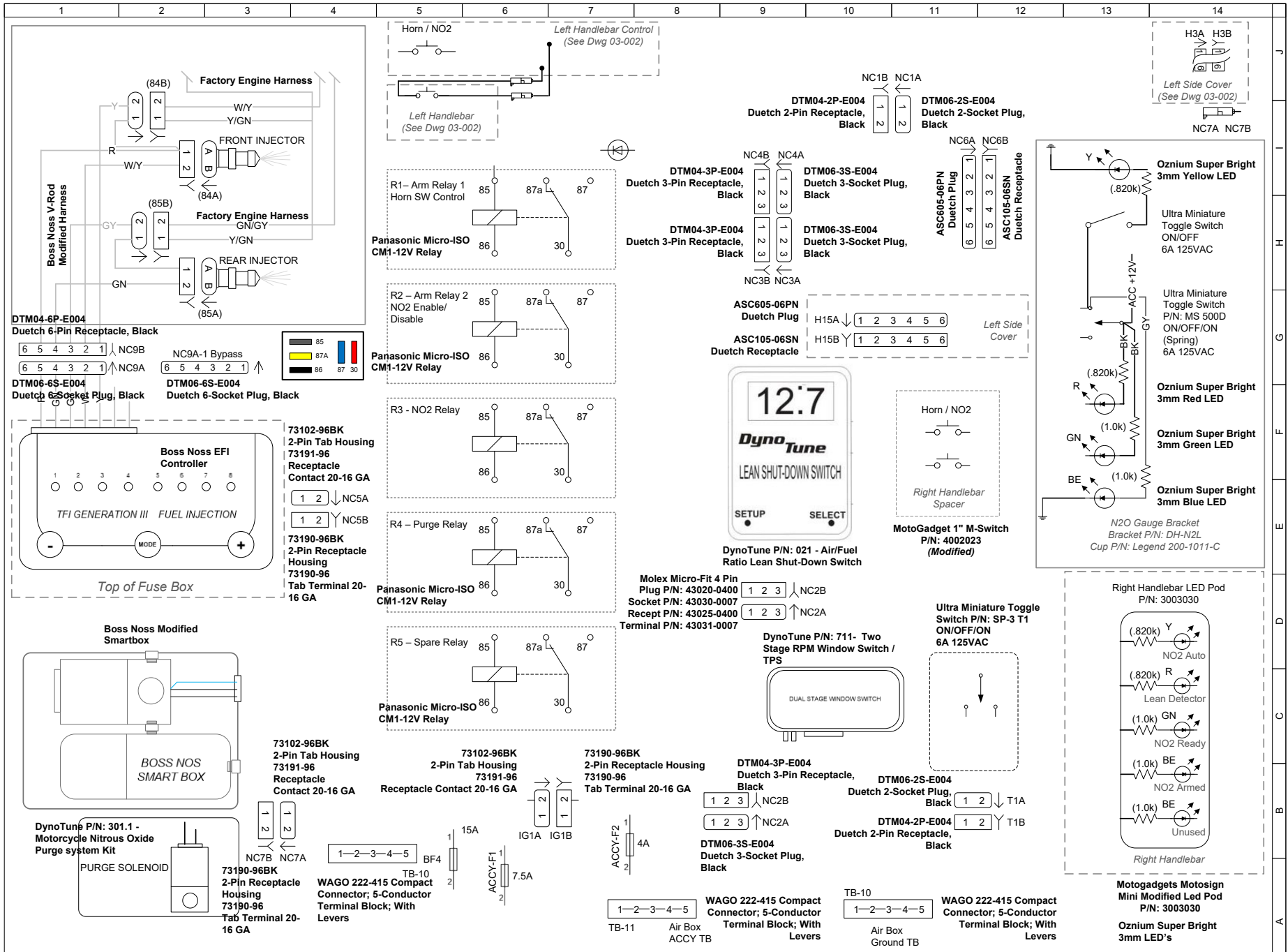


|           |          |                     |           |        |          |         |         |           |         |           |                        |
|-----------|----------|---------------------|-----------|--------|----------|---------|---------|-----------|---------|-----------|------------------------|
| V-Rod LED | File     | 03-003 LED Rev1.vsd | Dwg. No.: | 03-003 | Drawn By | Darrell | Created | 8/11/2024 | Revised | 8/11/2024 | Component ID<br>2 of 2 |
|           | Approved |                     |           |        |          |         | Scale   | NA        | Page    | 3 of 6    |                        |

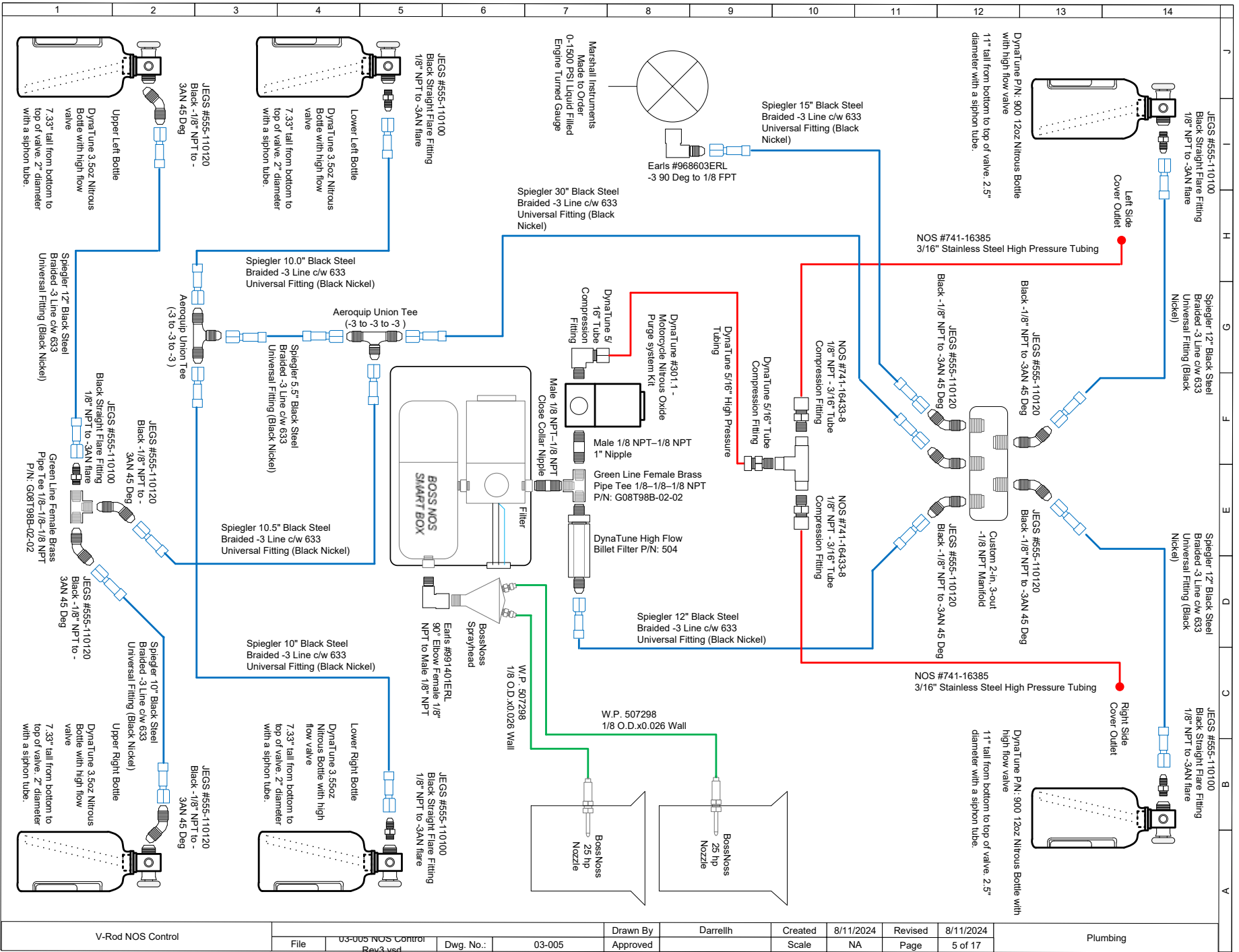


# Drawing #03-005 – V-Rod NOS Control

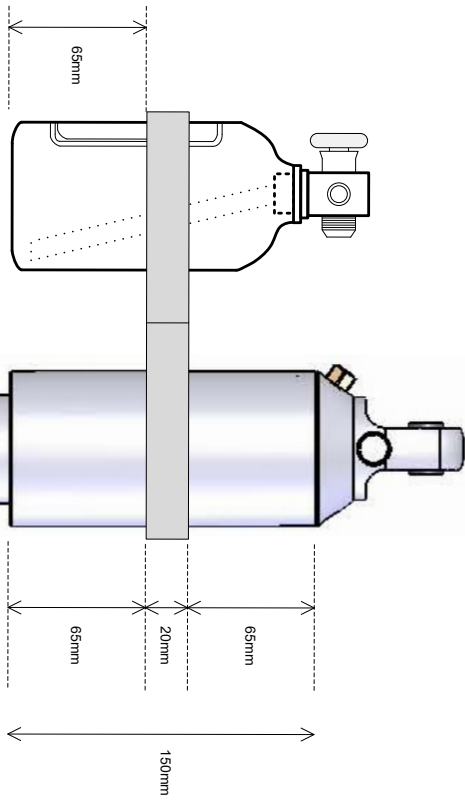




|                   |  |          |                             |           |        |          |          |         |           |         |           |                         |
|-------------------|--|----------|-----------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|-------------------------|
| V-Rod NOS Control |  | File     | 03-005 NOS Control Rev3.vsd | Dwg. No.: | 03-005 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Electrical Component ID |
|                   |  | Approved |                             |           |        | Scale    | NA       | Page    | 2 of 17   |         |           |                         |



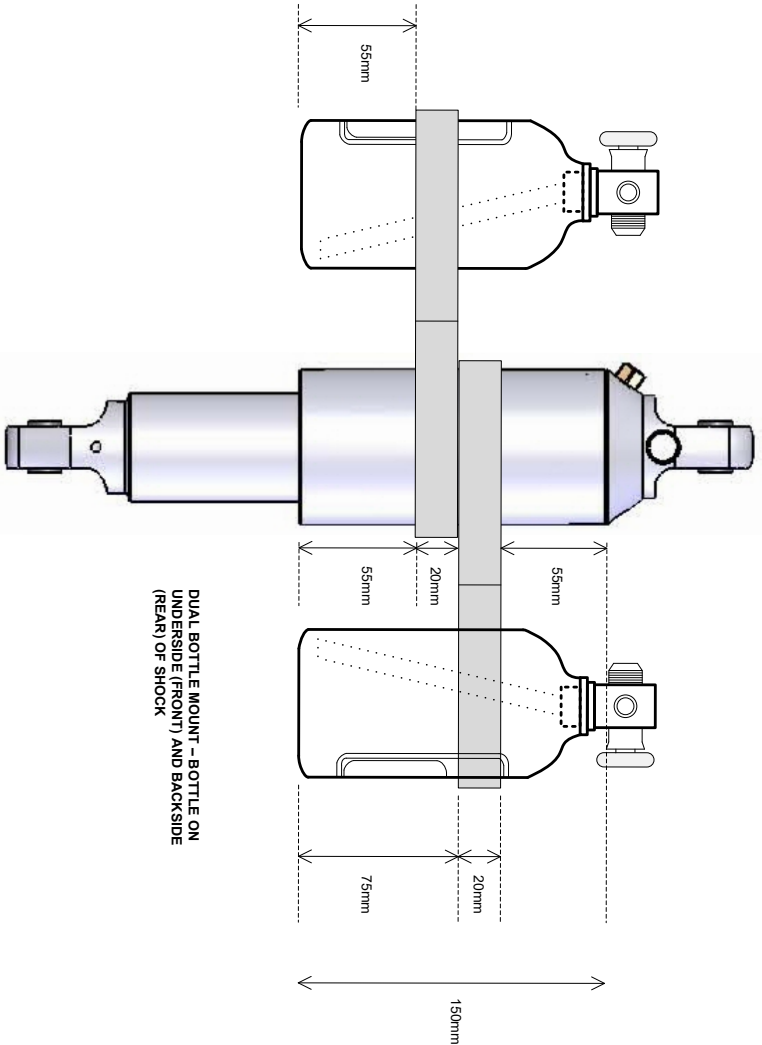
|                   |                             |                             |        |           |        |          |          |         |           |         |           |          |
|-------------------|-----------------------------|-----------------------------|--------|-----------|--------|----------|----------|---------|-----------|---------|-----------|----------|
| V-Rod NOS Control |                             | 03-005 NOS Control Rev3.vsd |        | Dwg. No.: | 03-005 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Plumbing |
| File              | 03-005 NOS Control Rev3.vsd | Dwg. No.:                   | 03-005 | Approved  |        | Scale    | NA       | Page    | 5 of 17   |         |           |          |



**SINGLE BOTTLE MOUNT - BOTTLE ON UNDERSIDE (FRONT) OF SHOCK**

**NOTES:**

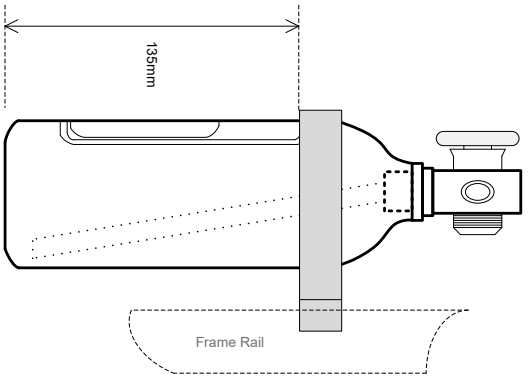
1. Ensure shock body is screwed tightly into top eye before mounting brackets.
2. Center shock lateral movement when lining up bracket/bottle position. When lines are secured properly shock body and bottle alignment will be maintained.
3. Ensure bottom side bottle does not contact the swingarm when the shock body is twisted in eye pivot to minimum clearance from bottle to swingarm.
4. Do not mount bottle lower on shock body than shown on the drawing or the bracket will contact the pulley when the shock is fully depressed.
5. Before removing bottles and brackets mark the hinge points of each bracket on the shock body with masking tape to ensure bottle angle is maintained.



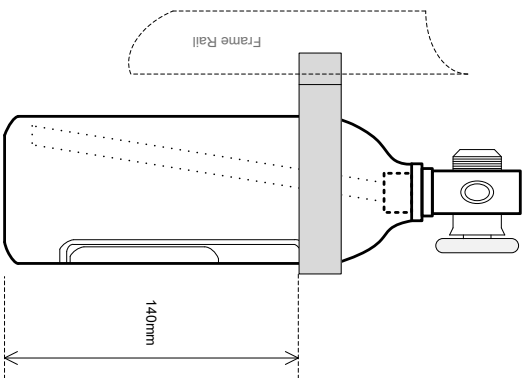
**DUAL BOTTLE MOUNT - BOTTLE ON UNDERSIDE (FRONT) AND BACKSIDE (REAR) OF SHOCK**

|                   |                             |           |        |          |          |         |           |         |           |    |                       |    |    |
|-------------------|-----------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|----|-----------------------|----|----|
| 1                 | 2                           | 3         | 4      | 5        | 6        | 7       | 8         | 9       | 10        | 11 | 12                    | 13 | 14 |
| V-Rod NOS Control |                             |           |        |          |          |         |           |         |           |    | Rear Bottle Positions |    |    |
| File              | 03-005 NOS Control Rev3.vsd | Dwg. No.: | 03-005 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 |    |                       |    |    |
|                   |                             |           |        | Approved |          | Scale   | NA        | Page    | 6 of 17   |    |                       |    |    |

**Right Side Bottle**



**Left Side Bottle**



**NOTES:**

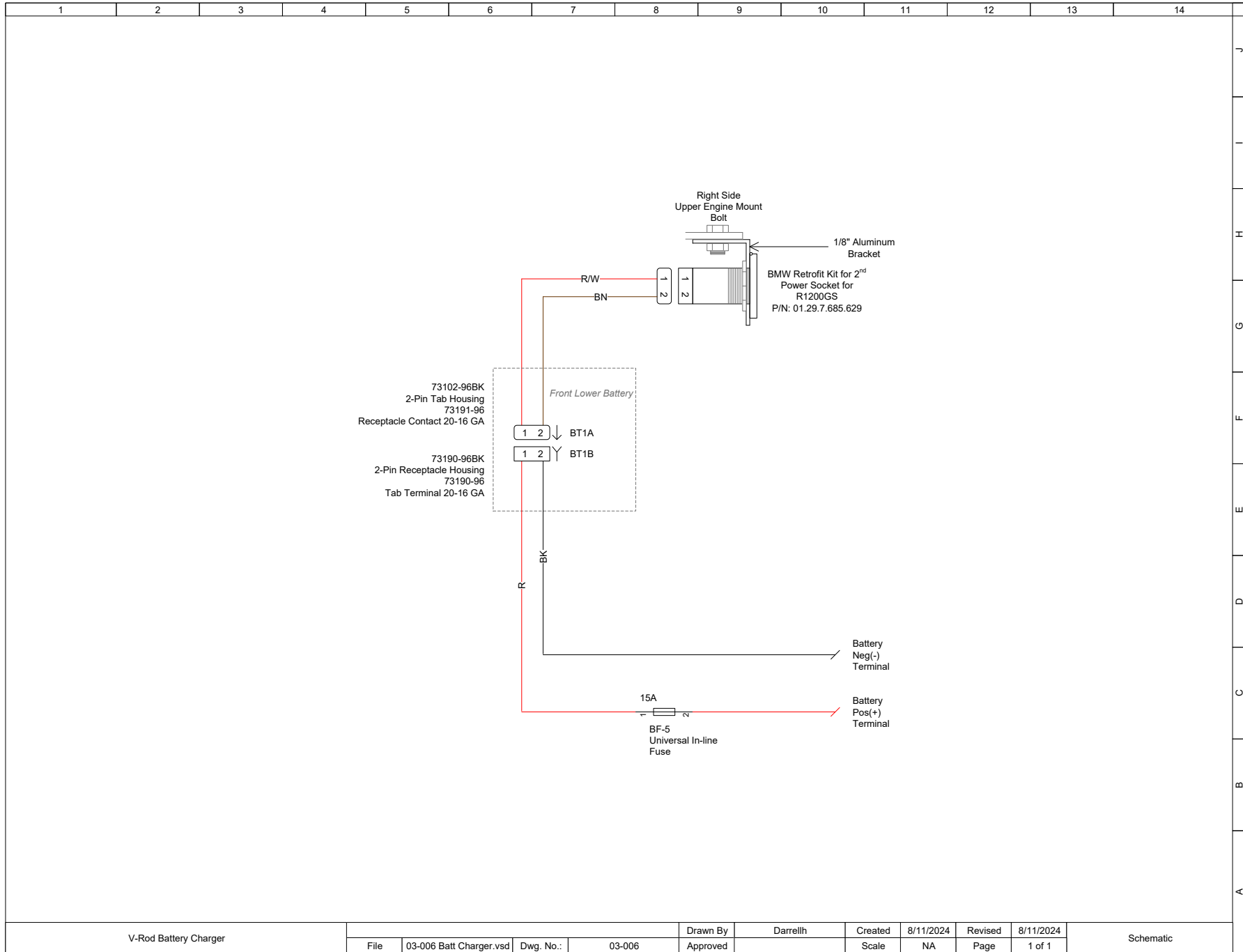
1. Bottle bracket mounting hardware (2 bolts per side) replace original lower frame rail bolts. If removing bottle bracket DO NOT remove both bolts at the same time, follow the bottle bracket installation / removal procedure exactly as listed.
2. The right side bottle bracket bolts that secure the bottle in the bracket also secure the oil pressure gauge cup. Support the oil pressure gauge when removing bottle from bracket.
3. The left side bottle bracket bolts that secure the bottle in the bracket also secure the ECT fan override switch. Move the switch to the side when removing bottle from bracket.
4. Do not mount bottle lower in bracket than shown on the drawing or the bottle will contact the shift brake lever on up shift and/or the brake lever.
5. Before removing bottles from brackets mark the bottle position with masking tape to ensure bottle angle and height is maintained.

**Bottle Bracket Installation / Removal:**

1. Bottle bracket mounting hardware (2 bolts per side) replace original lower frame rail bolts. When removing either the original frame rail bolts or the bottle bracket mount bolts that replace the original hardware DO NOT remove both bolts at the same time, follow the procedure listed below exactly as listed.
2. Install the brackets on one side of the bike at a time.
3. There are two spacers for each bottle bracket. One is attached to the top side of each bracket, the other is loose. Both Spacers will fit into the bolt recess of the frame rail.
4. Remove the original upper frame rail bolt leaving the original bottom bolt installed.
5. Separate each bottle bracket into two pieces at the hinge point. Set the sides without the mounting plate aside.
6. Using one of the supplied bracket mounting bolts, attach the bracket to the frame rail upper bolt position by placing the side of the bracket with the spacer attached inside the frame rail bolt recess and inserting the bolt through the bracket, attached spacer and into the frame. Pivot the bracket up and towards the rear of the bike so that the bottom bolt in the frame rail remains exposed. Tighten the Upper bolt but do not final torque.
7. Remove the original lower frame rail bolt with the top bracket bolt installed and insert the loose spacer into the bottom frame rail bolt recess.
8. Loosen the upper bolt securing the bracket to the frame only enough to allow the bracket to pivot. Line up the bottom hole in the bracket with the bottom frame rail hole and install the supplied bracket mounting bolt through the bracket, loose spacer and into the frame.
9. Final torque the two frame rail / bracket bolts to factory specifications.
10. Install the other half of each bracket at the hinge point.

|                   |   |                             |   |           |   |        |   |          |    |          |    |         |    |                       |  |
|-------------------|---|-----------------------------|---|-----------|---|--------|---|----------|----|----------|----|---------|----|-----------------------|--|
| 1                 | 2 | 3                           | 4 | 5         | 6 | 7      | 8 | 9        | 10 | 11       | 12 | 13      | 14 |                       |  |
| V-Rod NOS Control |   |                             |   |           |   |        |   |          |    |          |    |         |    | Rear Bottle Positions |  |
| File              |   | 03-005 NOS Control Rev3.vsd |   | Dwg. No.: |   | 03-005 |   | Drawn By |    | Darrellh |    | Created |    | 8/11/2024             |  |
|                   |   |                             |   |           |   |        |   | Approved |    |          |    | Revised |    | 8/11/2024             |  |
|                   |   |                             |   |           |   |        |   |          |    | Scale    |    | Page    |    | 7 of 17               |  |

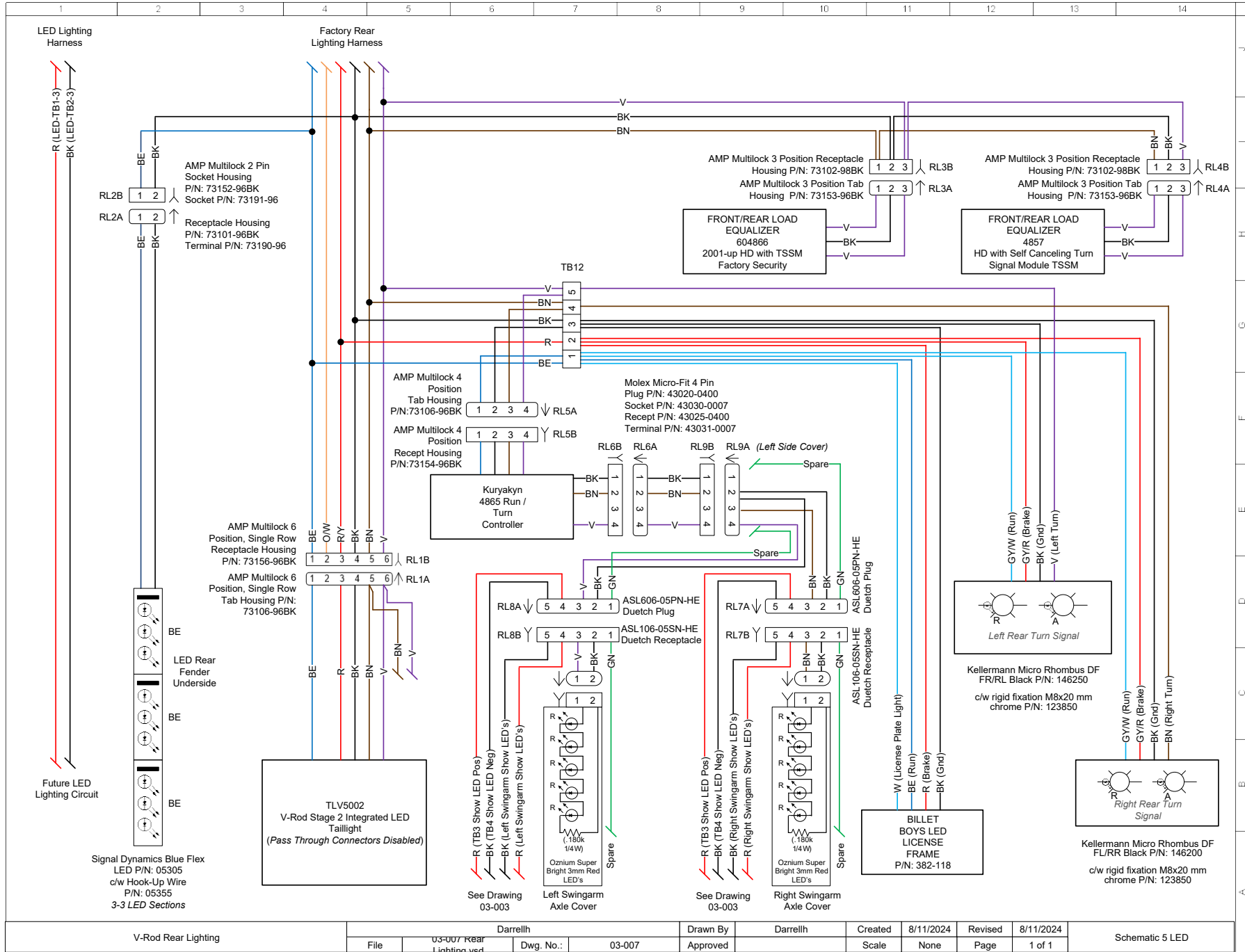
# Drawing #03-006 – V-Rod Battery Charger



V-Rod Battery Charger

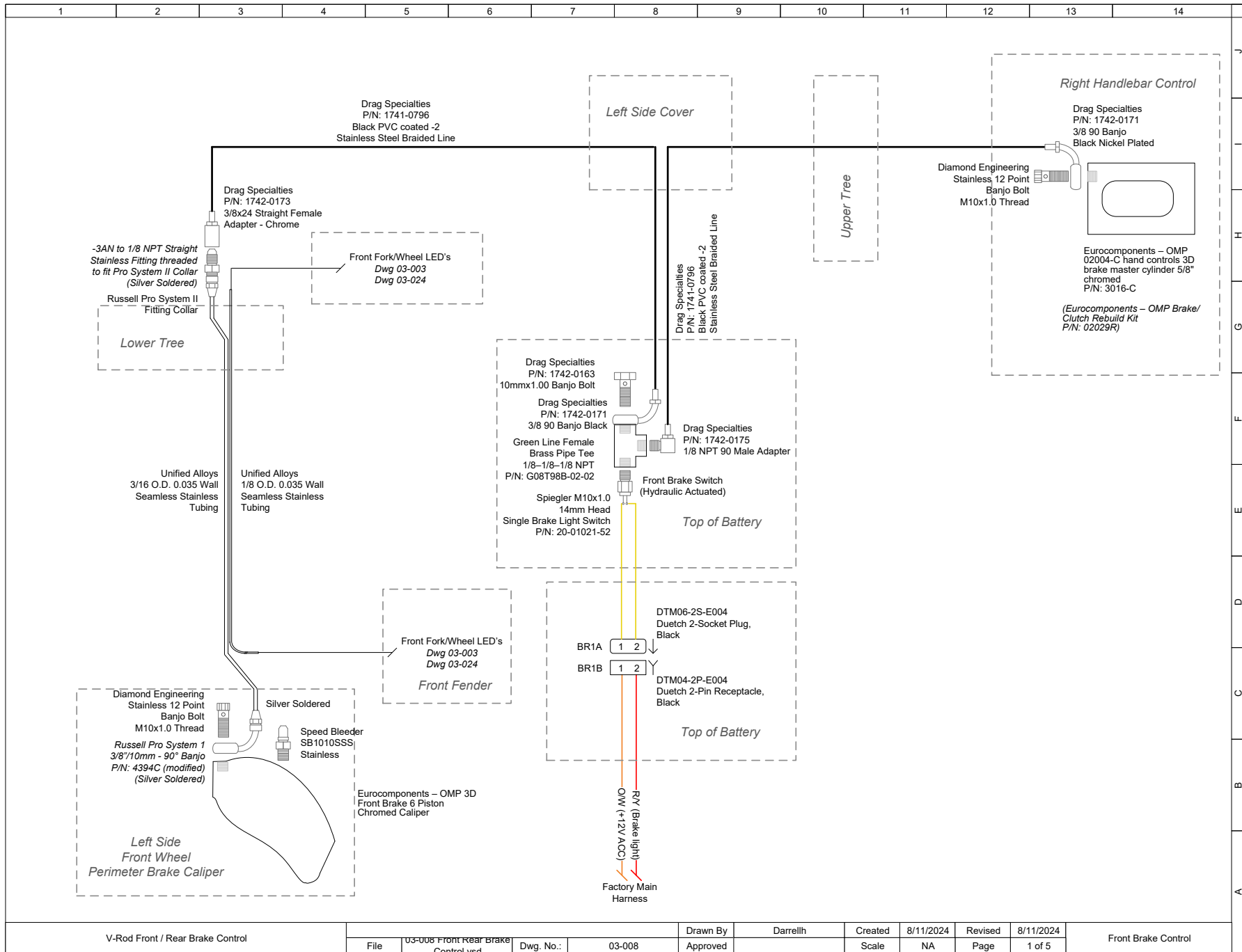
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|----------|-------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|-----------|
| File     | 03-006 Batt Charger.vsd | Dwg. No.: | 03-006 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Schematic |
| Approved |                         | Scale     | NA     | Page     | 1 of 1   |         |           |         |           |           |

# Drawing #03-007 – V-Rod Rear Lighting



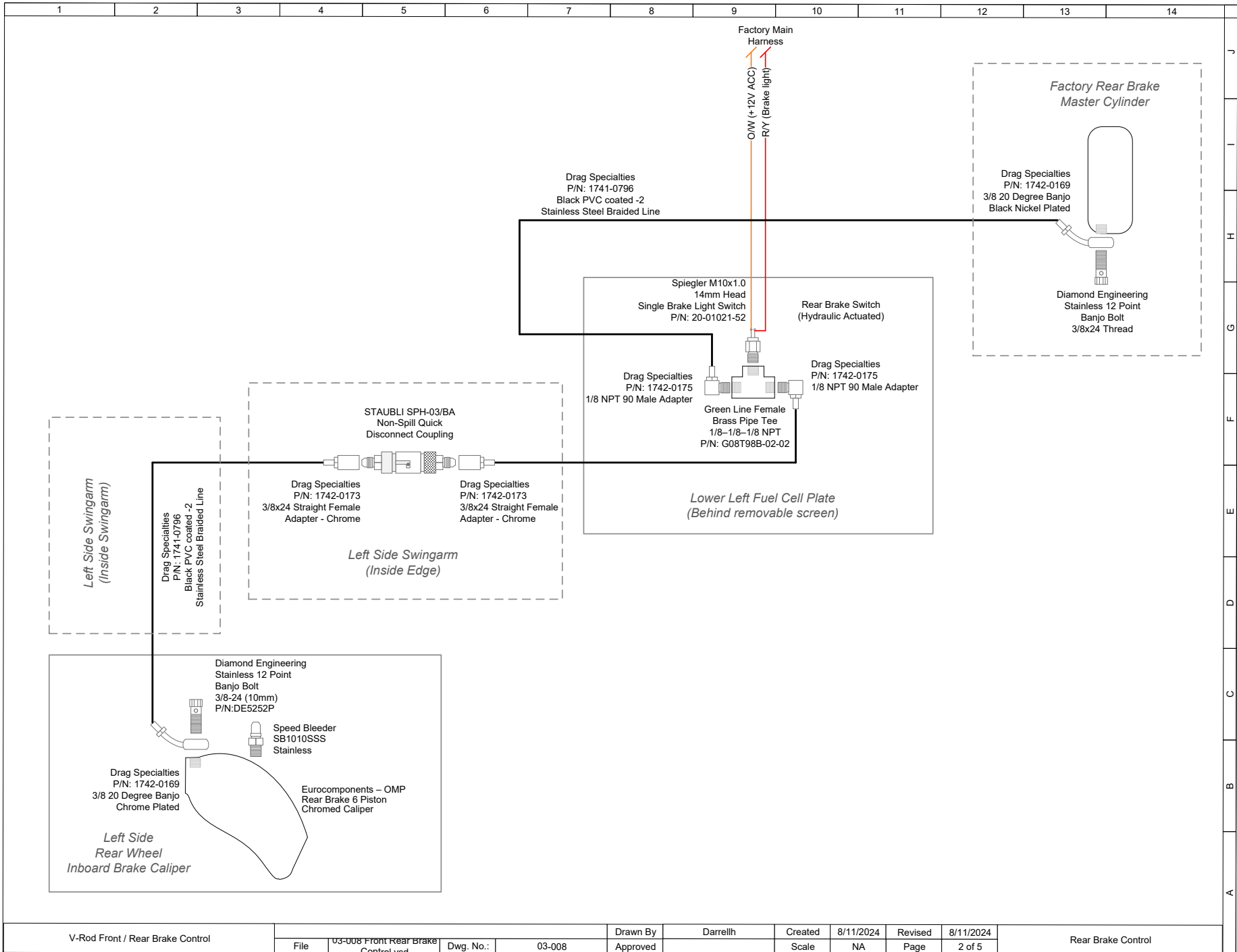
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|---------------------|----------|--------------------------|-----------|----------|----------|-----------|---------|-----------|-----------------|
| V-Rod Rear Lighting | Darrellh |                          | Drawn By  | Darrellh | Created  | 8/11/2024 | Revised | 8/11/2024 | Schematic 5 LED |
|                     | File     | 03-007 Rear Lighting.wcd | Dwg. No.: | 03-007   | Approved | Scale     | None    | Page      |                 |

# Drawing #03-008 – V-Rod Front Rear Brake Control



V-Rod Front / Rear Brake Control

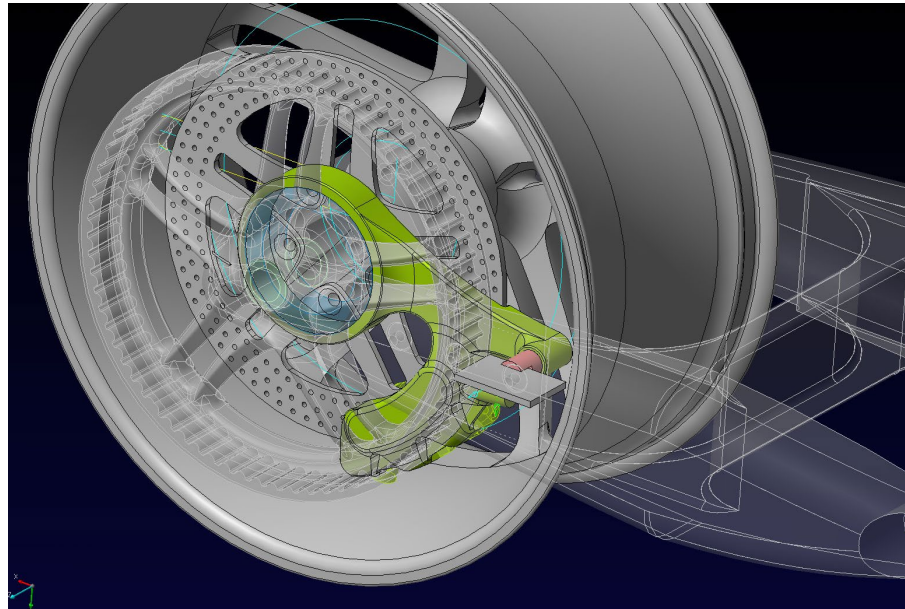
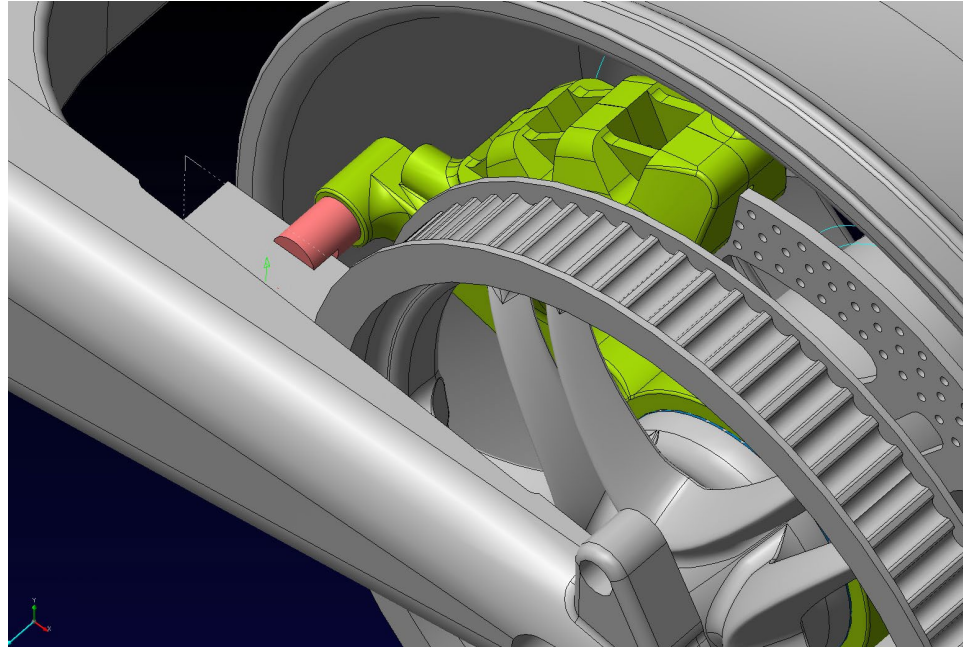
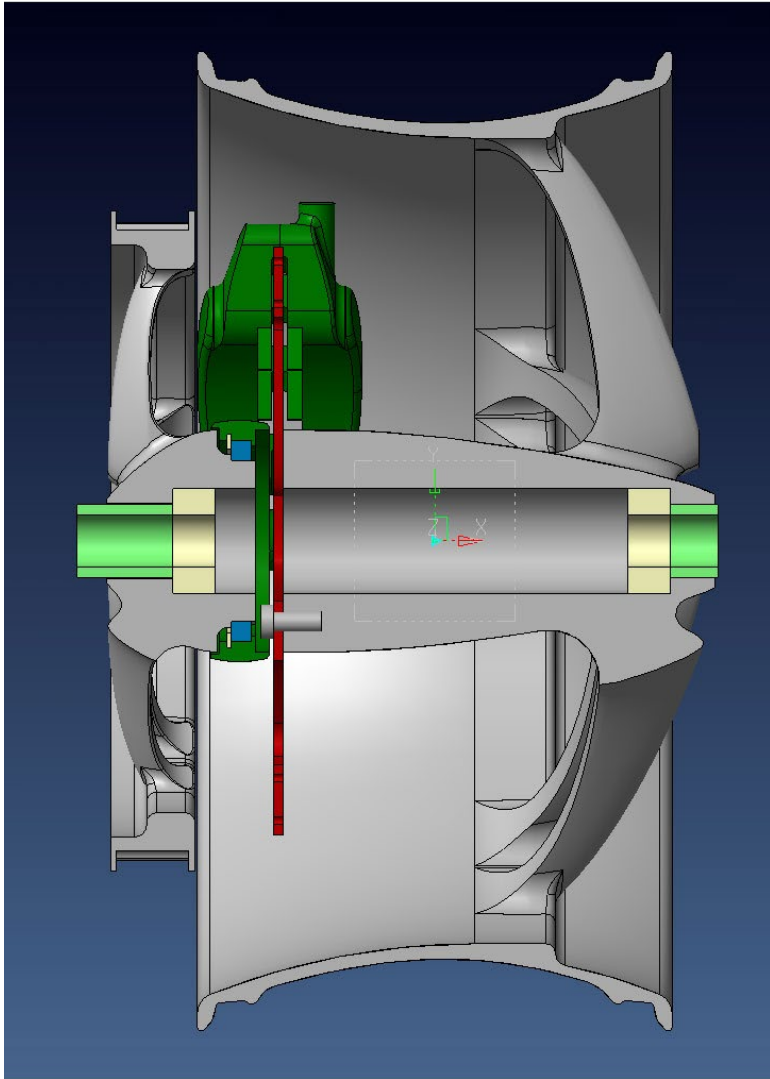
|          |                                     |           |        |          |          |         |           |         |           |                     |
|----------|-------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|---------------------|
| File     | 03-008 Front Rear Brake Control.vsd | Dwg. No.: | 03-008 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Front Brake Control |
| Approved |                                     |           |        |          |          | Scale   | NA        | Page    | 1 of 5    |                     |



V-Rod Front / Rear Brake Control

|      |                                     |           |        |          |          |         |           |         |           |
|------|-------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|
| File | 03-008 Front Rear Brake Control.vsd | Dwg. No.: | 03-008 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 |
|      |                                     |           |        | Approved |          | Scale   | NA        | Page    | 2 of 5    |

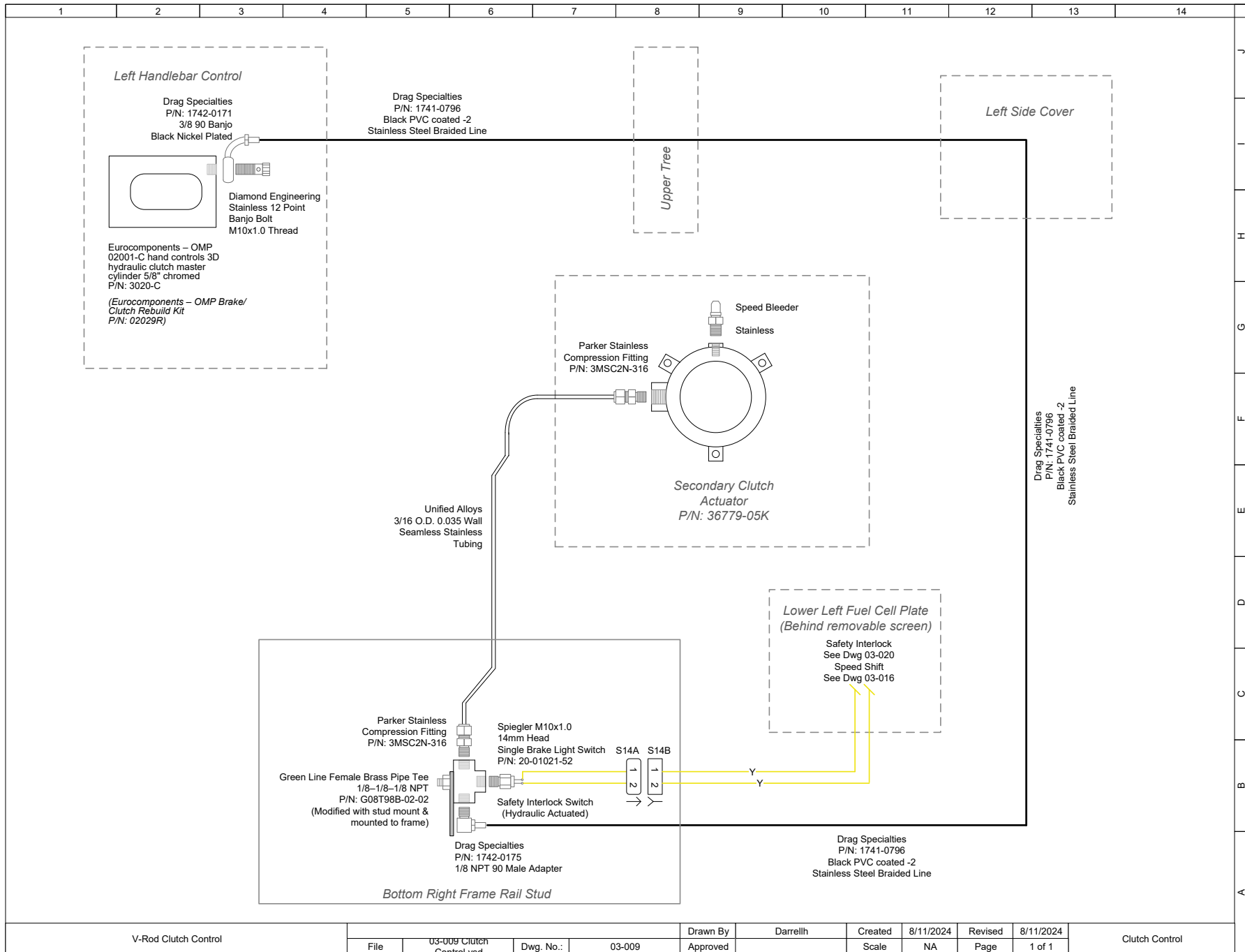
Rear Brake Control



J  
I  
H  
G  
F  
E  
D  
C  
B  
A

|                                  |      |                                     |           |        |          |          |         |           |         |           |   |
|----------------------------------|------|-------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|---|
| V-Rod Front / Rear Brake Control | File | 03-008 Front Rear Brake Control.vsd | Dwg. No.: | 03-008 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Service Note 3 – Rear Wheel/Brake Caliper Dwg |
|                                  |      |                                     |           |        | Approved |          | Scale   | NA        | Page    | 5 of 5    |   |

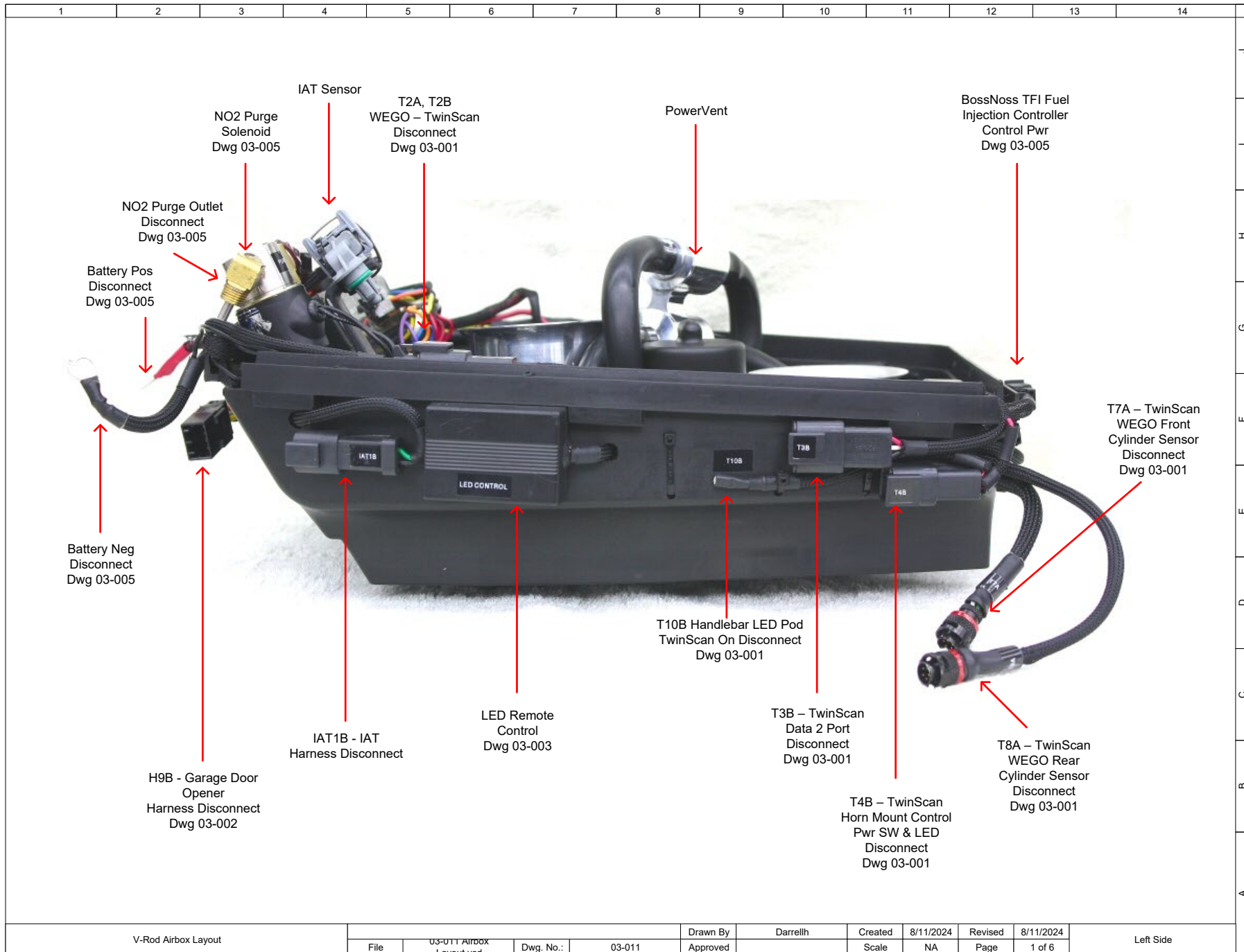
# Drawing #03-009 – V-Rod Clutch Control



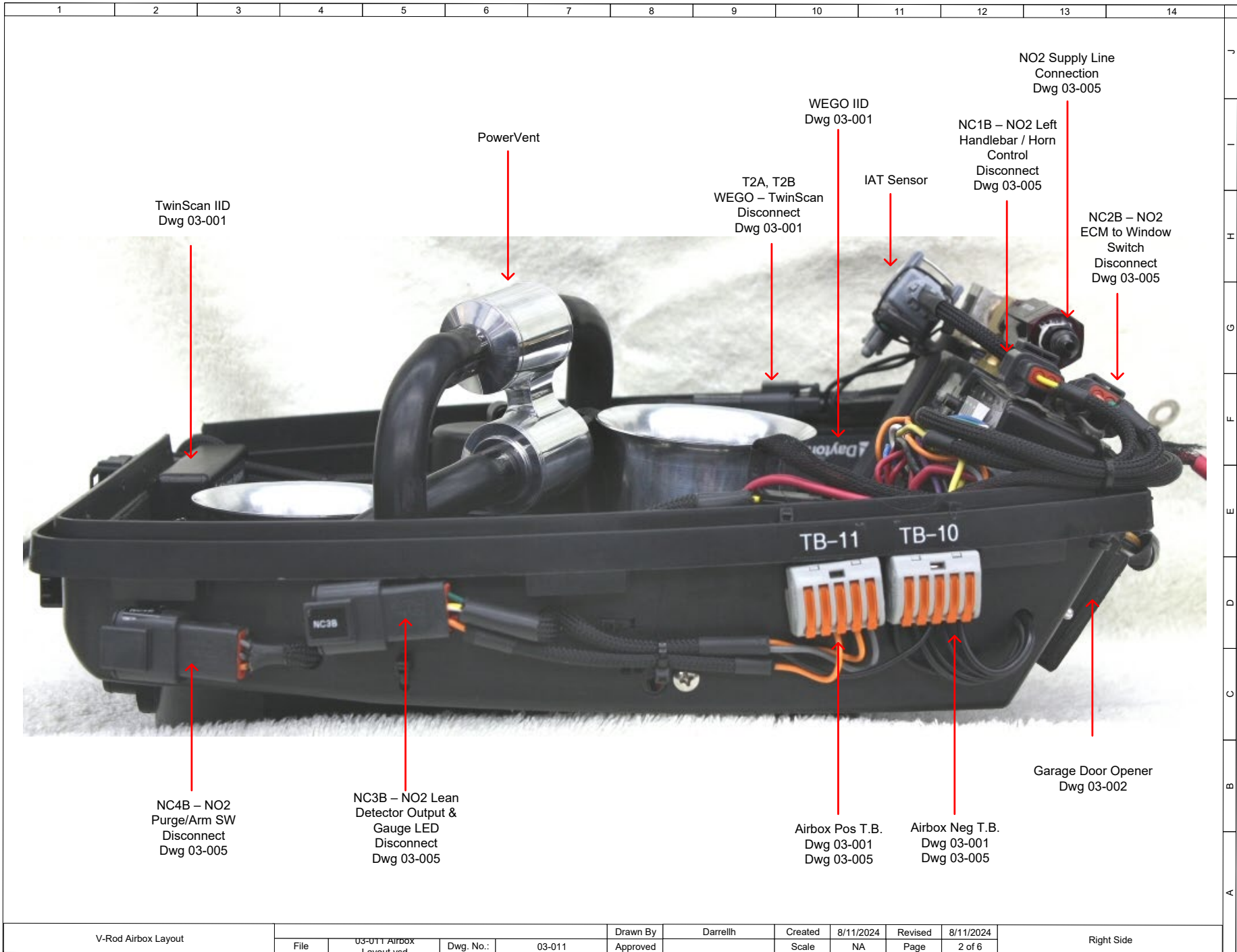
V-Rod Clutch Control

|      |                           |           |        |          |          |         |           |         |           |                |
|------|---------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|----------------|
| File | 03-009 Clutch Control.vsd | Dwg. No.: | 03-009 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Clutch Control |
|      |                           |           |        | Approved |          | Scale   | NA        | Page    | 1 of 1    |                |

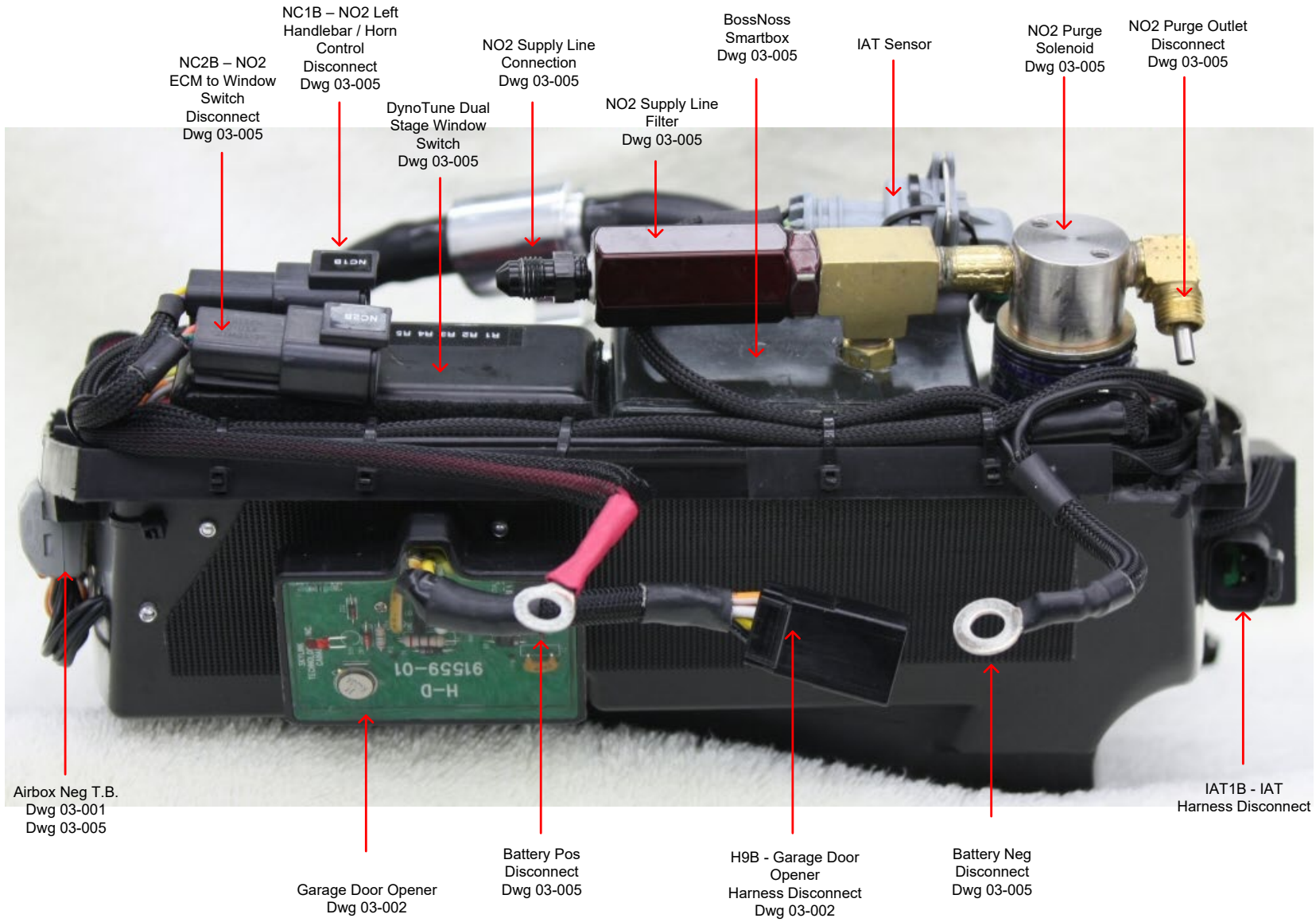
# Drawing #03-011 – V-Rod Airbox Layout



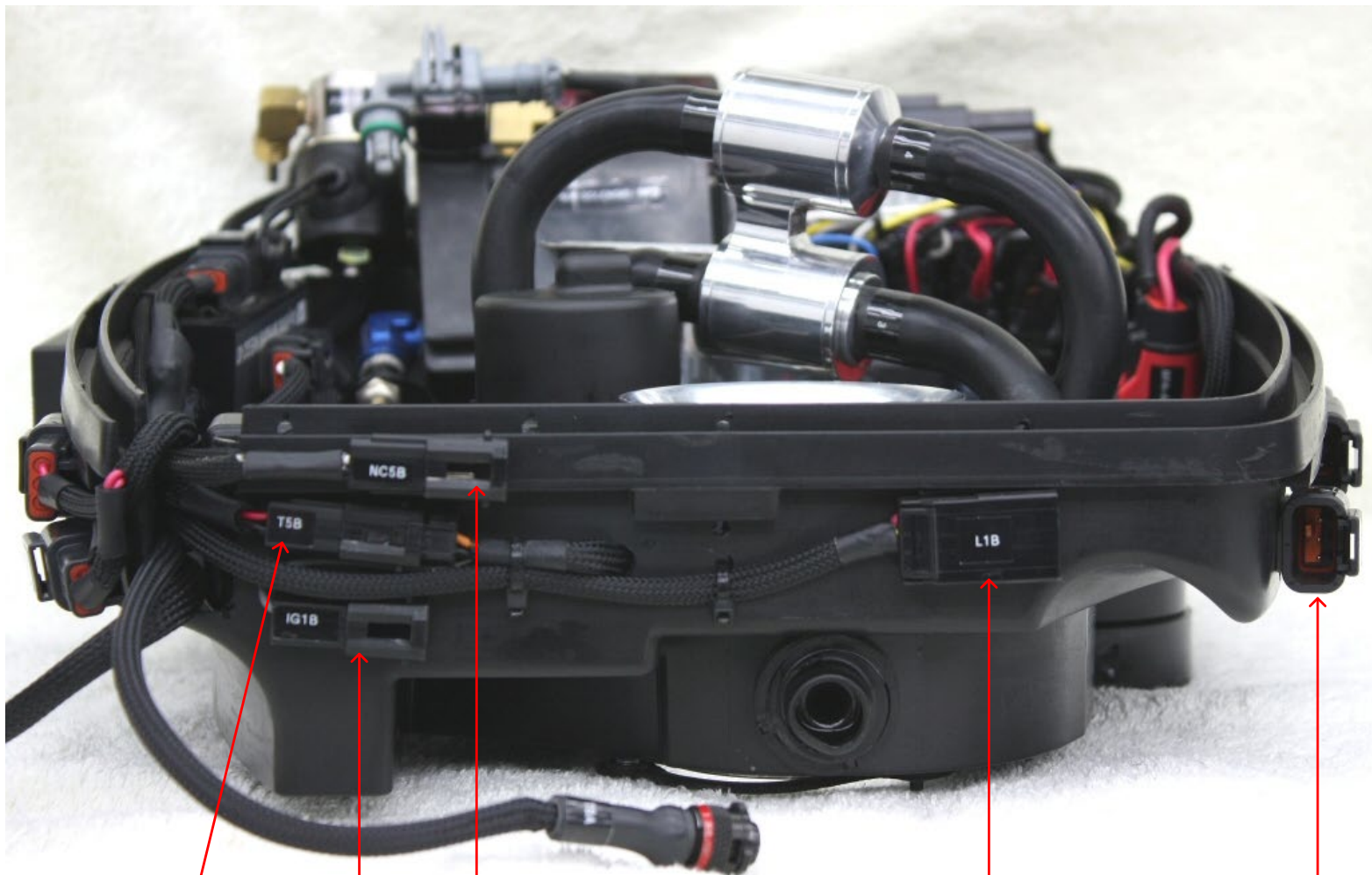
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|---------------------|------|--------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|-----------|
| V-Rod Airbox Layout | File | 03-011 Airbox Layout.vsd | Dwg. No.: | 03-011 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Left Side |
|                     |      |                          |           |        | Approved |          | Scale   | NA        | Page    | 1 of 6    |           |



|                     |      |                          |           |        |          |          |         |           |         |           |            |
|---------------------|------|--------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------------|
| V-Rod Airbox Layout | File | 03-011 Airbox Layout.vsd | Dwg. No.: | 03-011 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Right Side |
|                     |      |                          |           |        | Approved |          | Scale   | NA        | Page    | 2 of 6    |            |



|                     |      |                          |           |        |          |          |         |           |         |           |       |
|---------------------|------|--------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|-------|
| V-Rod Airbox Layout | File | 03-011 Airbox Layout.vsd | Dwg. No.: | 03-011 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Front |
|                     |      |                          |           |        | Approved |          | Scale   | NA        | Page    | 3 of 6    |       |



T5B – WEGO  
+12V Control Pwr  
Disconnect  
Dwg 03-001

IG1B – Airbox  
+12V ACCY Pwr  
T.B. Input  
Disconnect  
Dwg 03-001

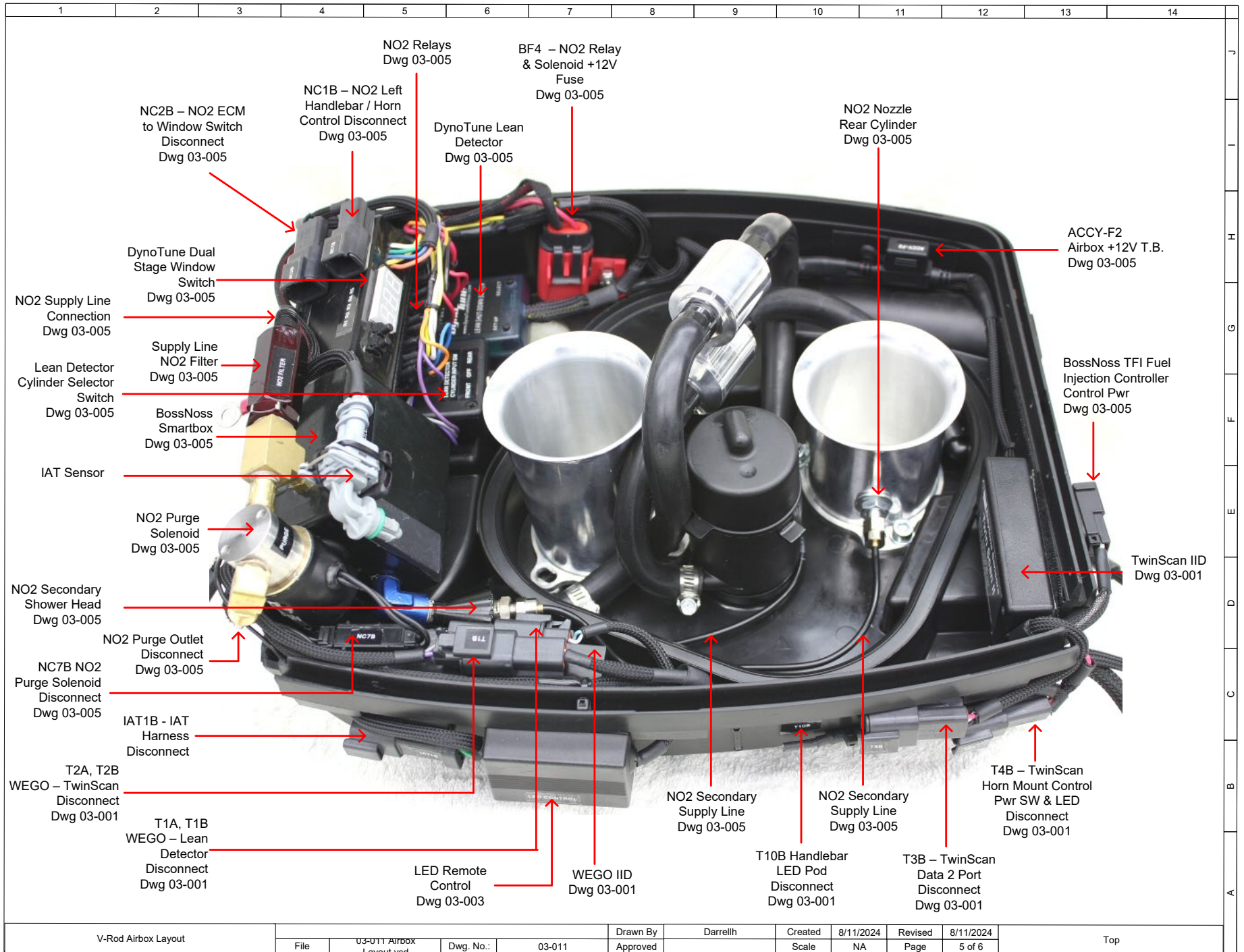
NC5B - BossNoss TFI  
Fuel Injection Controller  
Control Pwr  
Dwg 03-005

T8A – TwinScan  
WEGO Rear  
Cylinder Sensor  
Disconnect  
Dwg 03-001

L1B  
LED Remote  
Control Disconnect  
Dwg 03-003

NC4B – NO2  
Purge/Arm SW  
Disconnect  
Dwg 03-005

|                     |      |                          |           |        |          |          |         |           |         |           |      |
|---------------------|------|--------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|
| V-Rod Airbox Layout | File | 03-011 Airbox Layout.vsd | Dwg. No.: | 03-011 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Rear |
|                     |      |                          |           |        | Approved |          | Scale   | NA        | Page    | 4 of 6    |      |

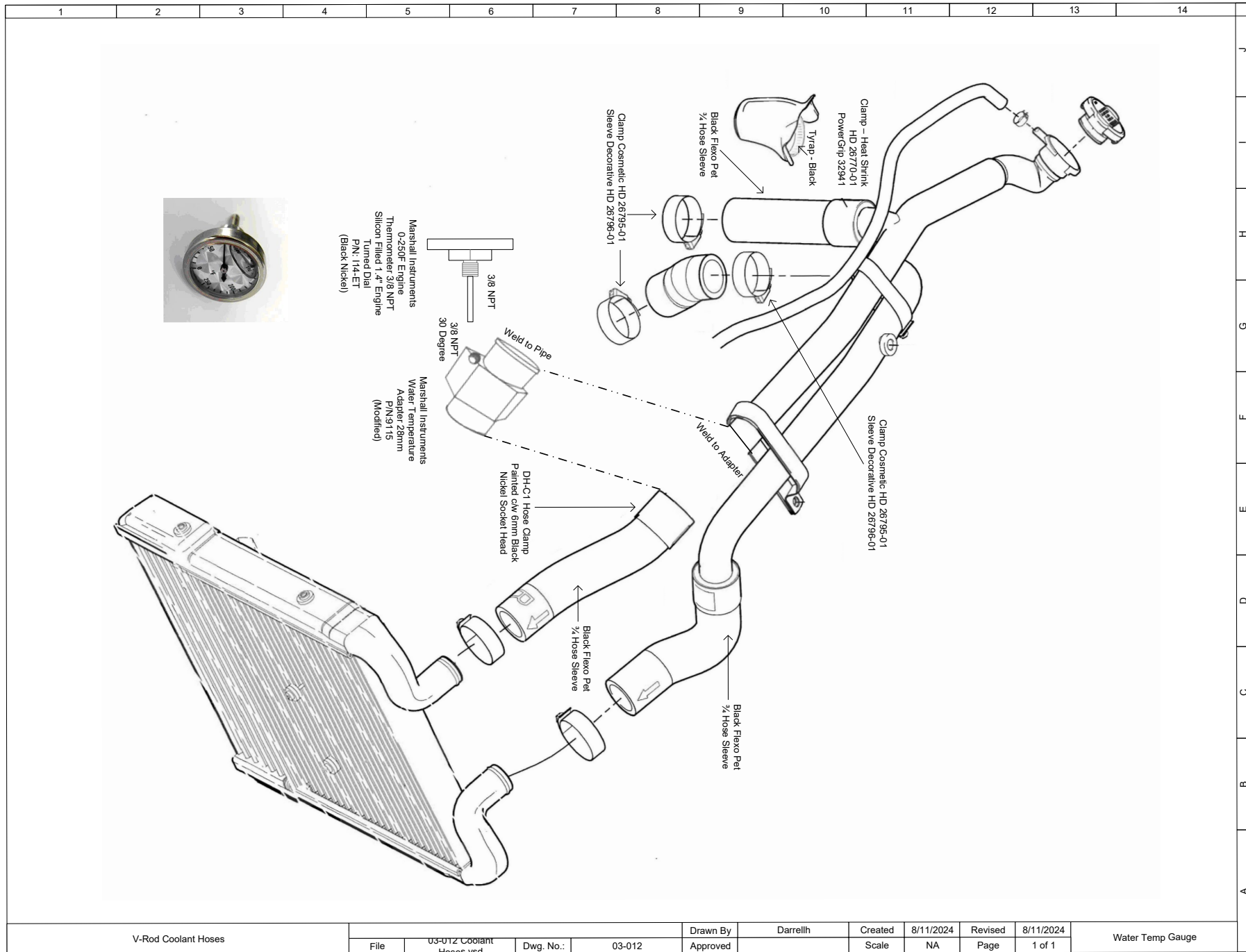


V-Rod Airbox Layout

|      |                          |           |        |          |          |         |           |         |           |
|------|--------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|
| File | 03-011 Airbox Layout.vsd | Dwg. No.: | 03-011 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 |
|      |                          |           |        | Approved |          | Scale   | NA        | Page    | 5 of 6    |

Top

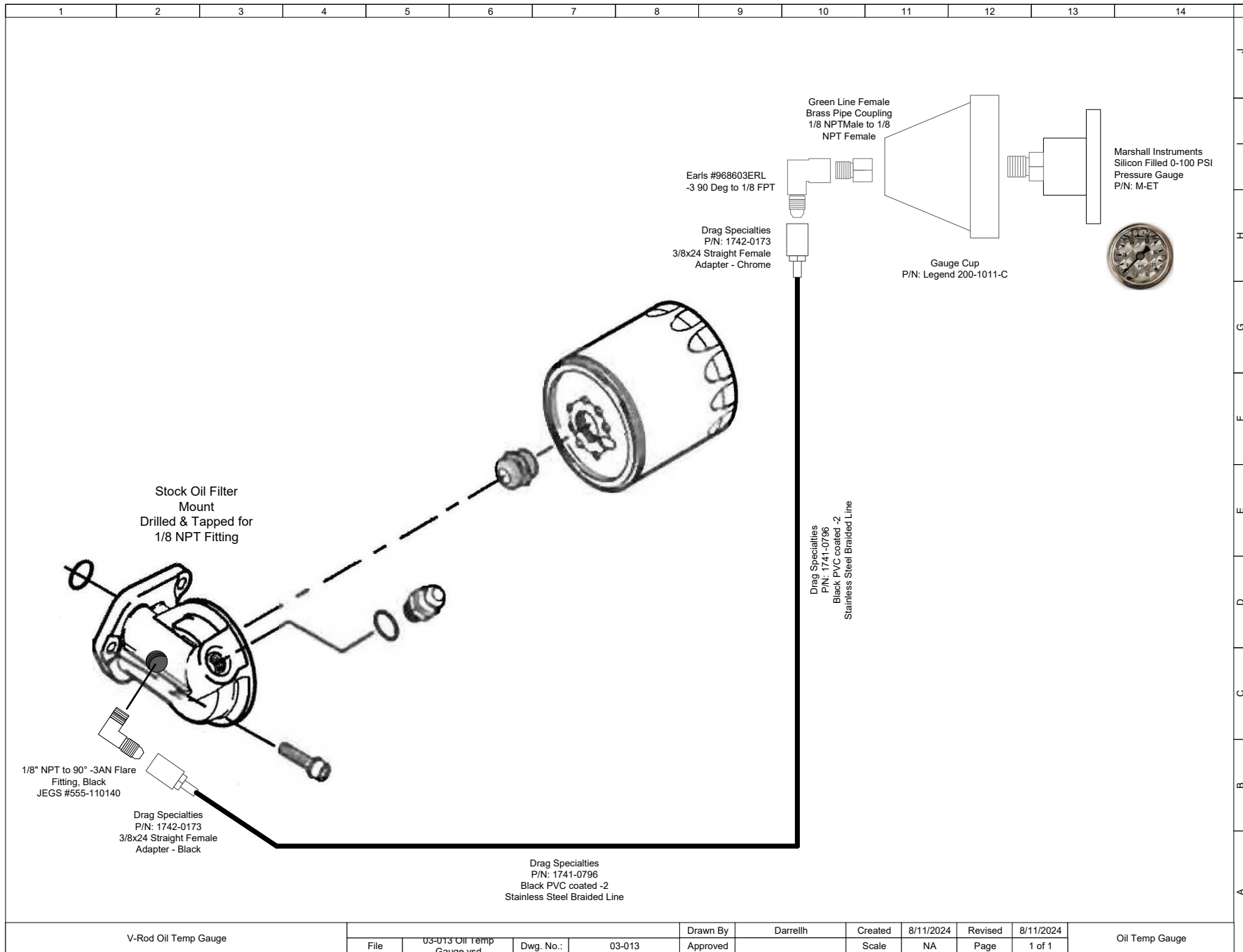
# Drawing #03-012 – V-Rod Coolant Hoses



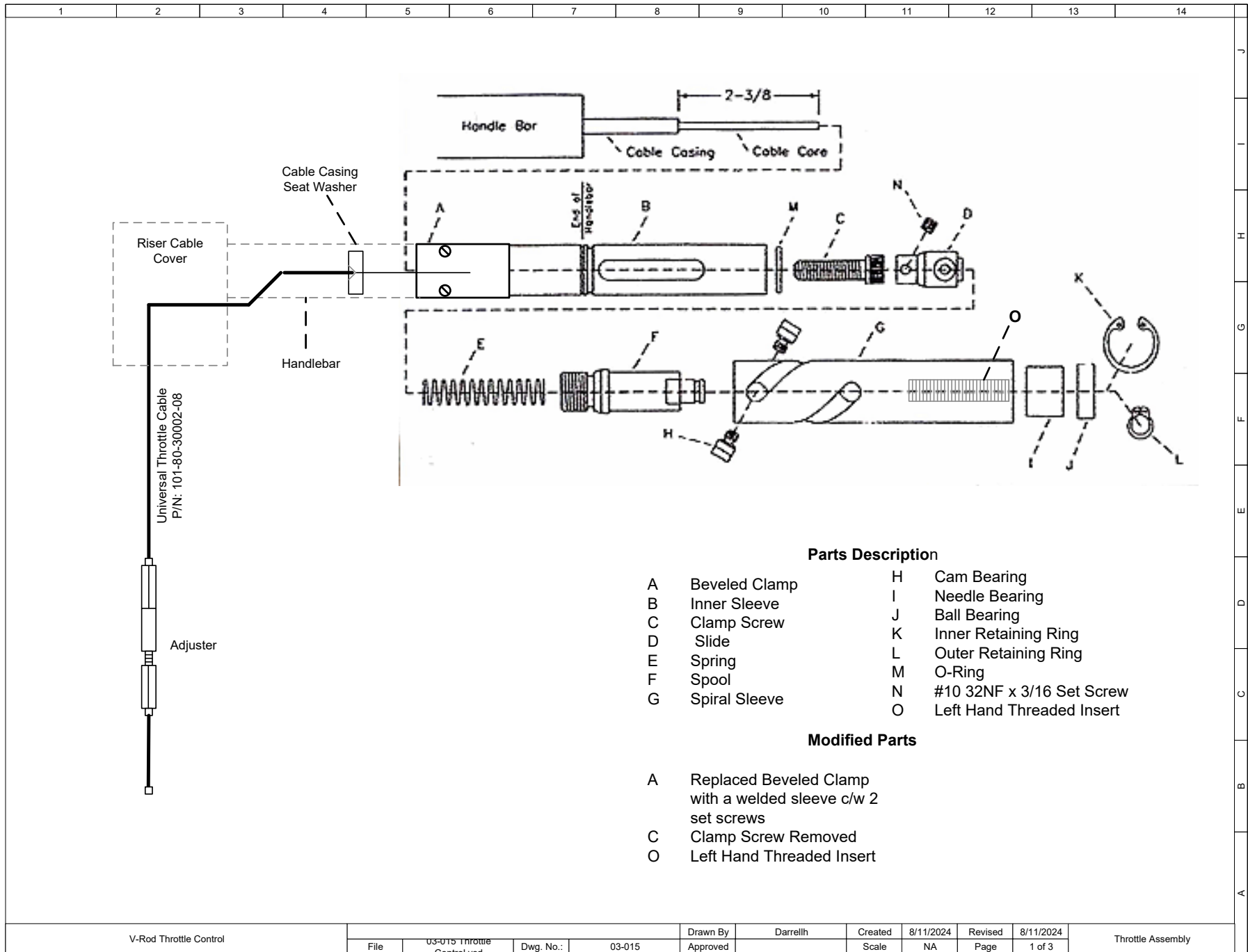
V-Rod Coolant Hoses

|      |                          |           |        |          |          |         |           |         |           |                  |
|------|--------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------------------|
| File | 03-012 Coolant Hoses.vsd | Dwg. No.: | 03-012 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Water Temp Gauge |
|      |                          |           |        | Approved |          | Scale   | NA        | Page    | 1 of 1    |                  |

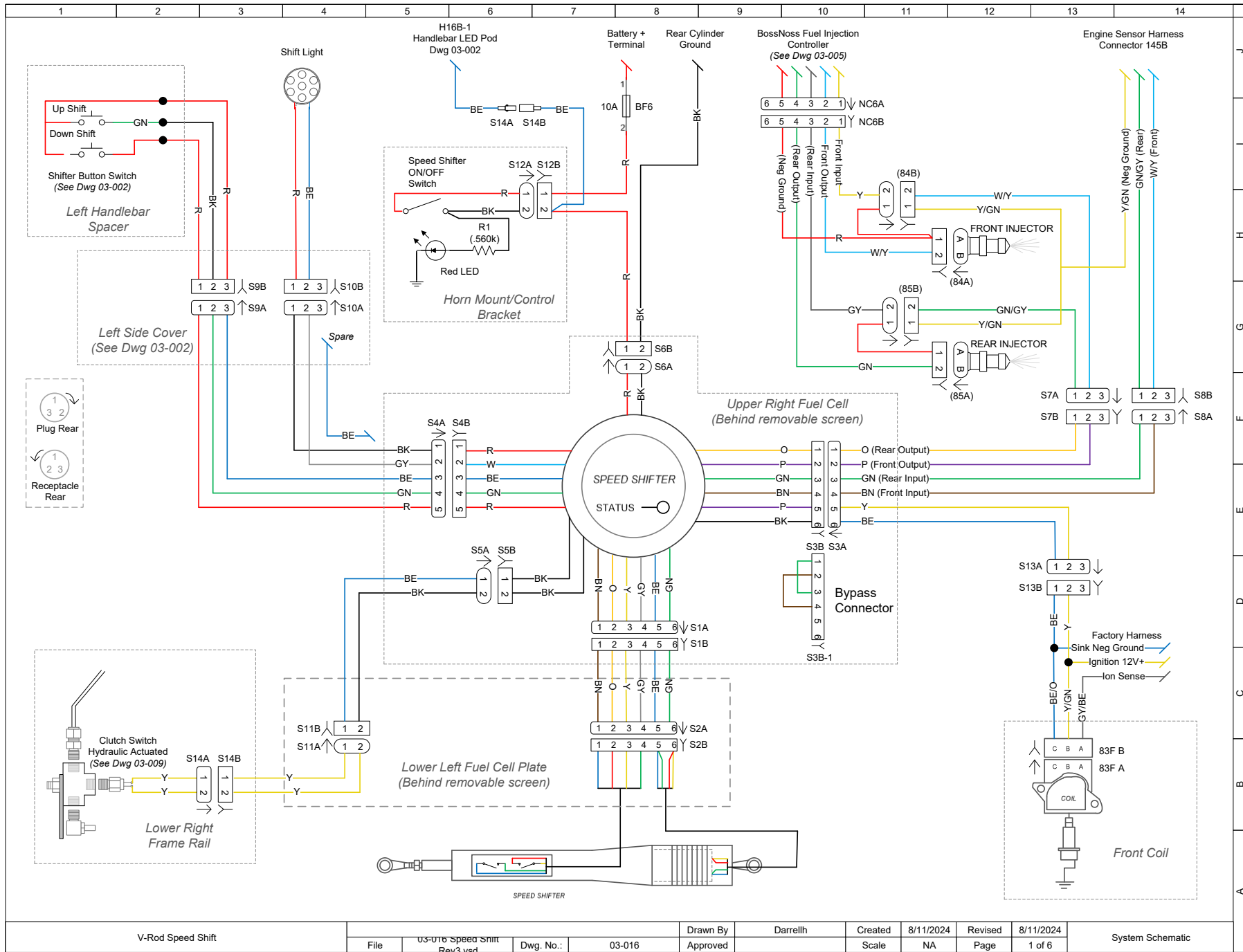
# Drawing #03-013 – V-Rod Oil Pressure Gage



# Drawing #03-015 – V-Rod Throttle Control



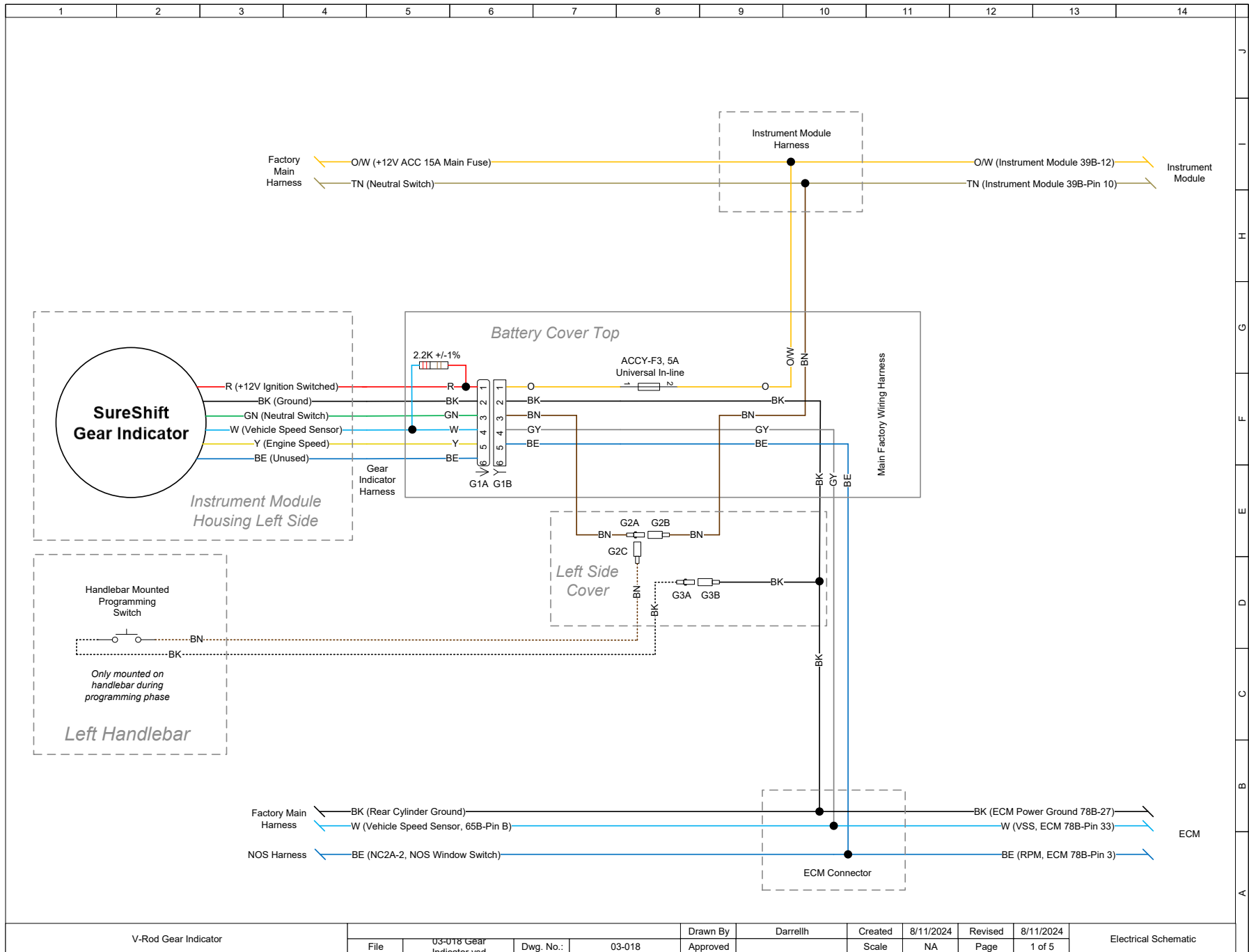
# Drawing #03-016 – V-Rod Speed Shift



|                   |  |          |                             |           |        |          |          |         |           |         |           |                  |
|-------------------|--|----------|-----------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------------------|
| V-Rod Speed Shift |  | File     | 03-016 Speed Shift Rev3.vsd | Dwg. No.: | 03-016 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | System Schematic |
|                   |  | Approved |                             |           |        | Scale    | NA       | Page    | 1 of 6    |         |           |                  |




# Drawing #03-018 – V-Rod Gear Indicator



|                      |  |          |                           |           |        |          |          |         |           |         |           |      |        |                      |
|----------------------|--|----------|---------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|--------|----------------------|
| V-Rod Gear Indicator |  | File     | 03-018 Gear Indicator.vsd | Dwg. No.: | 03-018 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Page | 1 of 5 | Electrical Schematic |
|                      |  | Approved |                           |           |        |          |          | Scale   | NA        |         |           |      |        |                      |

**Motogadget SureShift Polished**  
**P/N: 4001030**  
 c/w  
**SureShift Chrome Bracket**  
**P/N: 4001006**




**SureShift  
Gear Indicator**

*Instrument Module  
Housing Left Side*

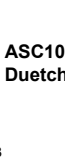
*Left Side Cover*

**ASC605-06PN**  
Duetch Plug




G11A G11B

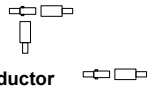
**ASC105-06SN**  
Duetch Receptacle



**ACCY-F3, 5A**  
Universal In-line

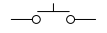


*Left Side Cover*



**Single Conductor  
Spade Male/  
Female Connector**

Handlebar Mounted  
Programming  
Switch



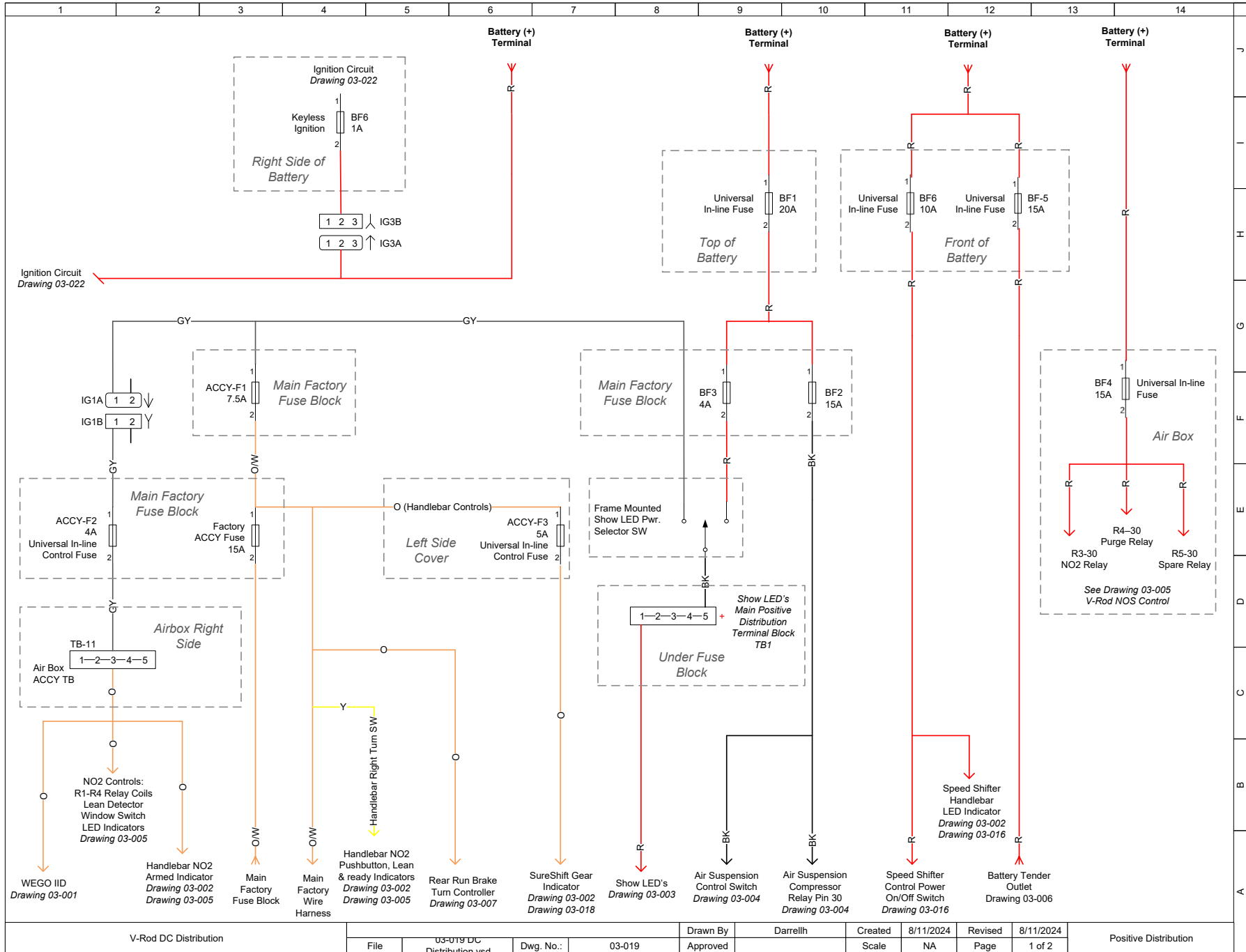
*Only mounted on  
handlebar during  
programming phase*

*Left Handlebar*

**Motogadget SureShift Mini**  
**Push Button**  
**P/N: 9003010**  
 c/w  
**One of Plastic Mounting  
Bracket**

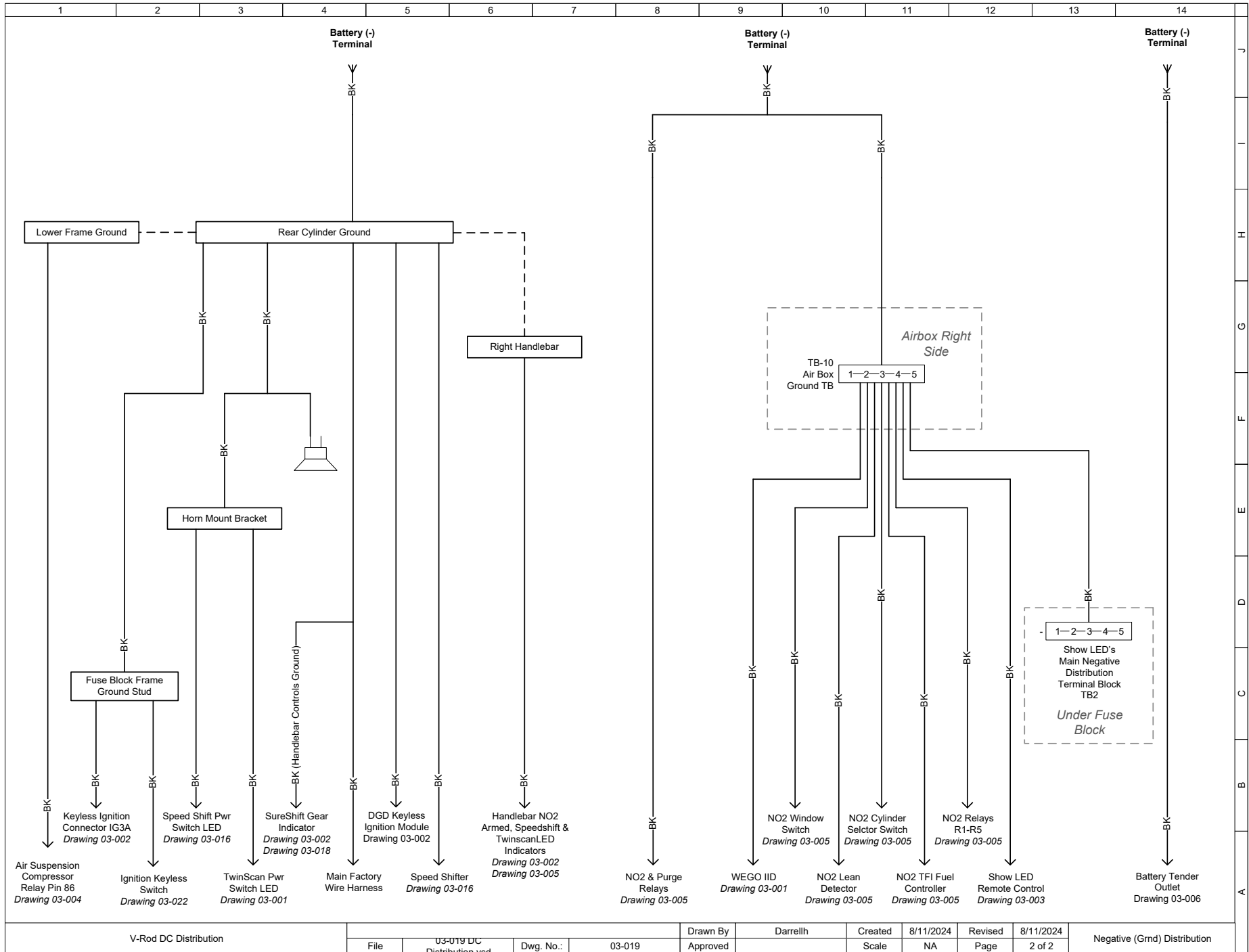
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|----------------------|------|---------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|--------|--------------|
| V-Rod Gear Indicator | File | 03-018 Gear Indicator.vsd | Dwg. No.: | 03-018 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Page | 2 of 5 | Component ID |
|----------------------|------|---------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|--------|--------------|

# Drawing #03-019 – DC Distribution



V-Rod DC Distribution

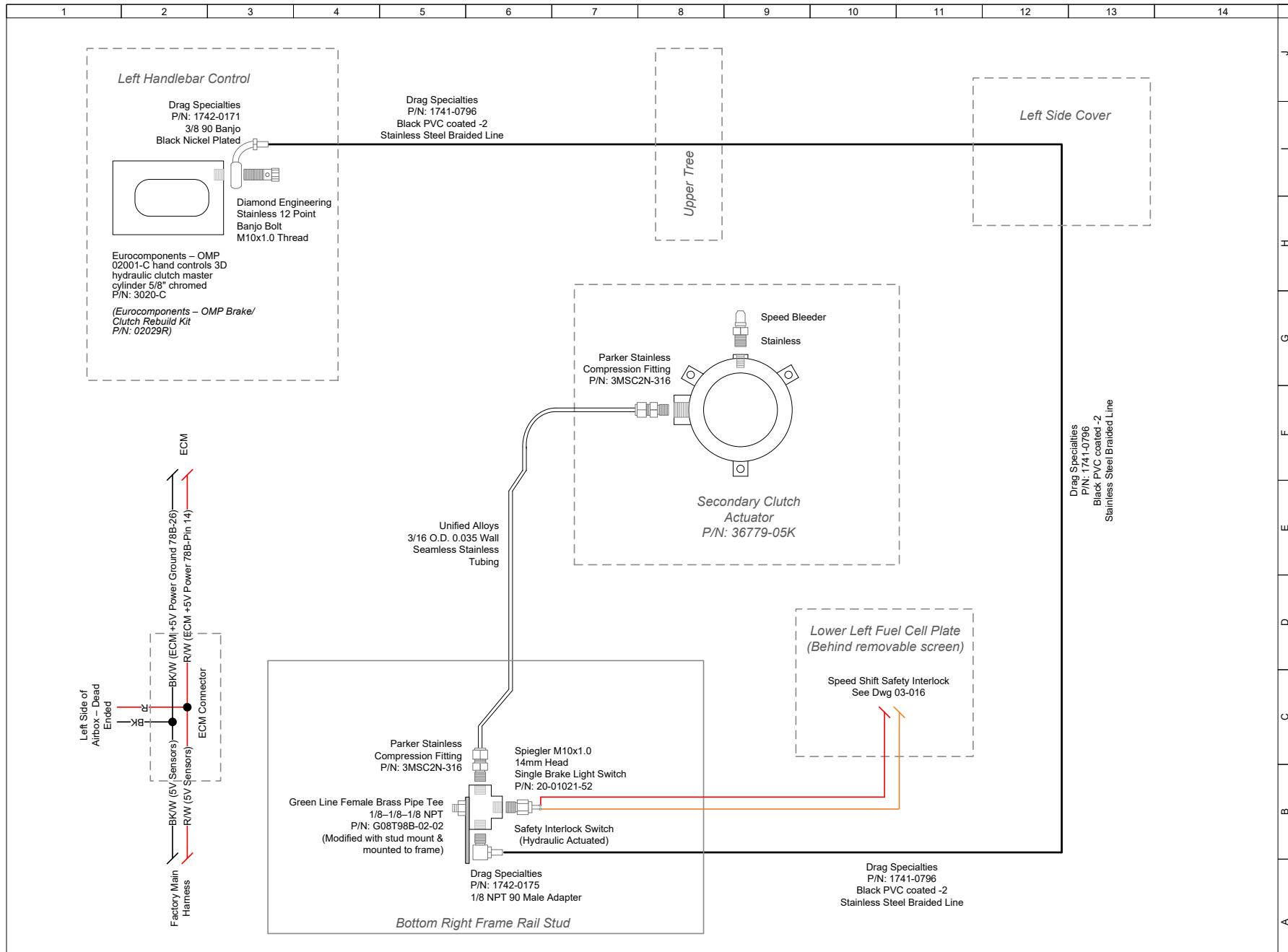
|          |                            |           |        |          |          |         |           |         |           |                       |
|----------|----------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|-----------------------|
| File     | 03-019 DC Distribution.vsd | Dwg. No.: | 03-019 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Positive Distribution |
| Approved |                            |           |        | Scale    | NA       | Page    | 1 of 2    |         |           |                       |



V-Rod DC Distribution

|      |                            |           |        |          |          |         |           |         |           |                              |
|------|----------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------------------------------|
| File | 03-019 DC Distribution.vsd | Dwg. No.: | 03-019 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Negative (Grnd) Distribution |
|      |                            |           |        | Approved |          | Scale   | NA        | Page    | 2 of 2    |                              |

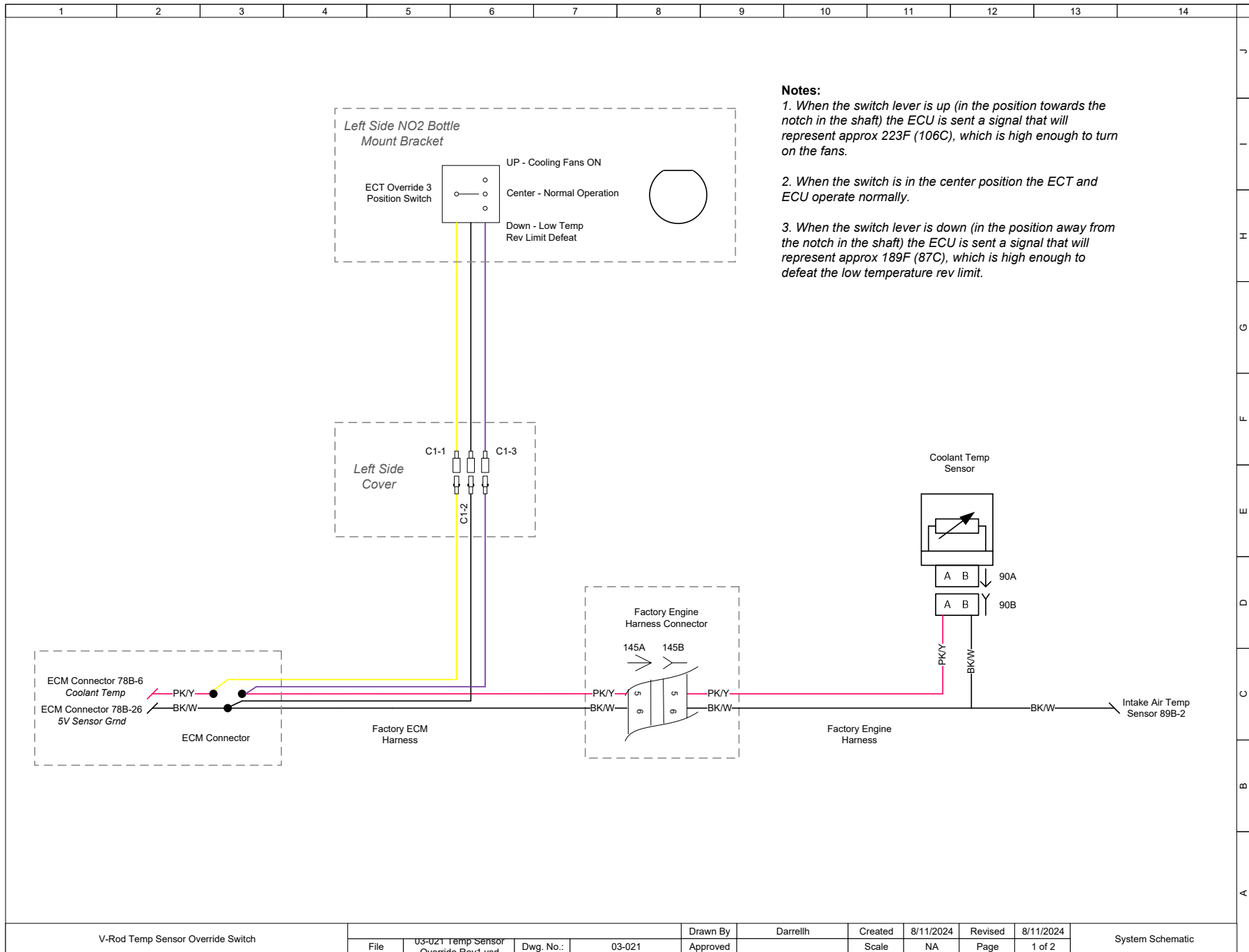
# Drawing #03-020 – V-Rod Clutch Interlocks



|                                       |      |                   |           |        |          |           |         |           |         |           |                  |
|---------------------------------------|------|-------------------|-----------|--------|----------|-----------|---------|-----------|---------|-----------|------------------|
| V-Rod Jiffy Stand / Clutch Interlocks | File | Clutch Interlocks | Dwg. No.: | 03-009 | Drawn By | Darrellih | Created | 8/11/2024 | Revised | 8/11/2024 | System Schematic |
|                                       |      |                   |           |        | Approved |           | Scale   | NA        | Page    | 1 of 1    |                  |

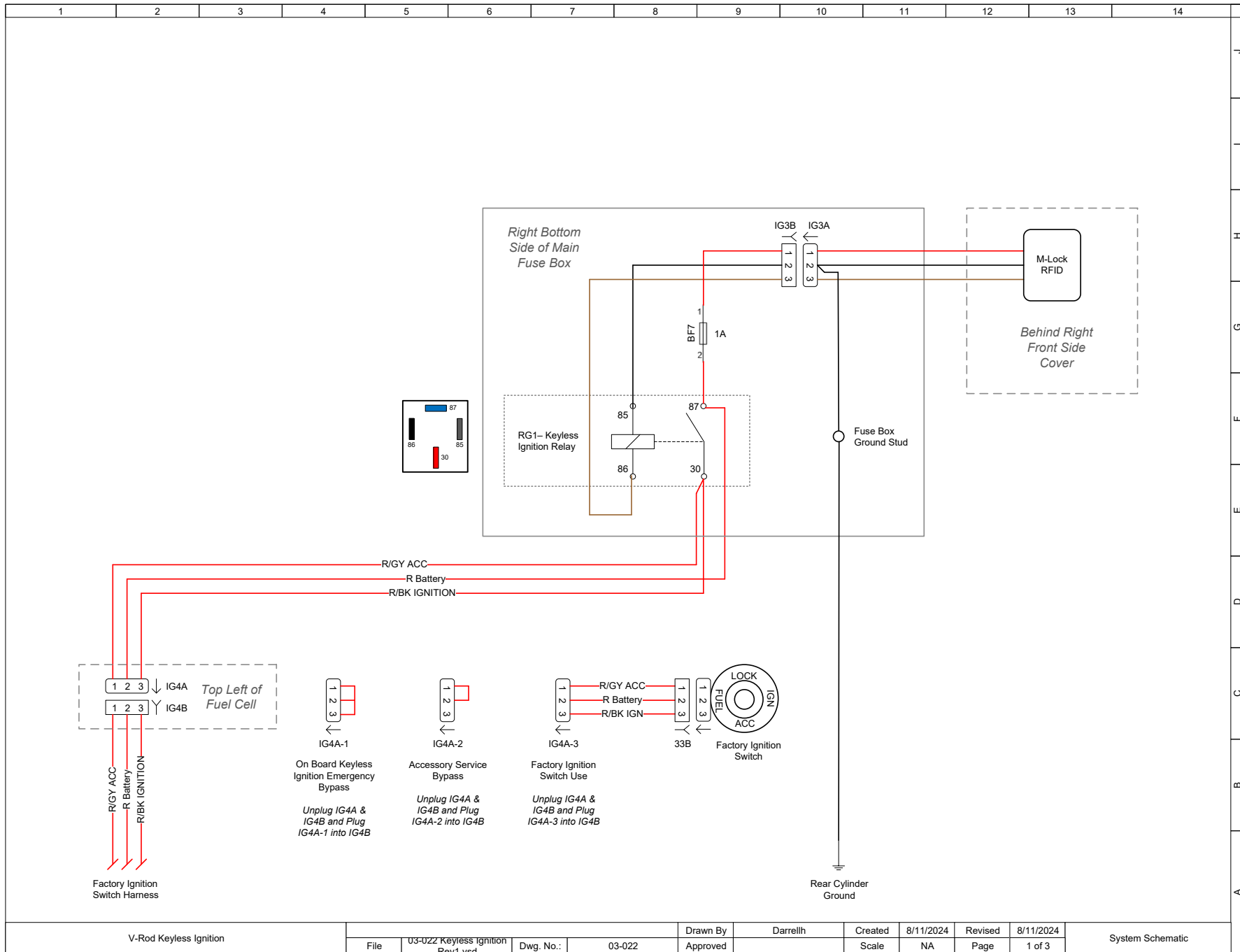
Rev1.vsd

# Drawing #03-021 – V-Rod Temp Sensor Override



|                                   |  |      |                                      |           |        |          |          |         |           |         |           |                  |
|-----------------------------------|--|------|--------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------------------|
| V-Rod Temp Sensor Override Switch |  | File | 03-021 Temp Sensor Override Rev1.vsd | Dwg. No.: | 03-021 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | System Schematic |
|                                   |  |      |                                      |           |        | Approved |          | Scale   | NA        | Page    | 1 of 2    |                  |

# Drawing #03-022 – V-Rod Keyless Ignition

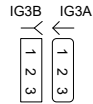


V-Rod Keyless Ignition

|       |                                  |           |        |          |          |         |           |         |           |      |        |                  |
|-------|----------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|--------|------------------|
| File  | U3-022 Keyless Ignition Rev1.wpd | Dwg. No.: | 03-022 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Page | 1 of 3 | System Schematic |
| Scale |                                  | Approved  |        |          |          | Scale   | NA        | Page    |           |      |        |                  |

AMP Multilock 3 Pin  
 Socket Housing  
 P/N: 73153-96BK  
 Socket P/N: 73191-96  
 Receptacle Housing P/N:  
 73103-96BK  
 Terminal P/N: 73190-96

Right Bottom  
 Side of Main  
 Fuse Box

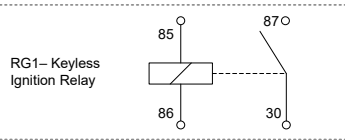
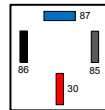


Flourishing  
 FLV4-L-12V-H-F  
 NC 30A 14VDC  
 NO 40A 14VDC



M-Lock  
 RFID

Behind Right  
 Front Side  
 Cover  
 Motogadget M/Lock



○ Fuse Box  
 Ground Stud

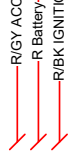
TYCO VCF4-1001  
 Relay Harness Connector

DTM06-3S-E004  
 Duetch 3-Socket Plug,  
 Black



IG4A  
 IG4B  
 Top Left of  
 Fuel Cell

DTM04-3P-E004  
 Duetch 3-Pin Receptacle,  
 Black



Factory Ignition  
 Switch Harness

DTM06-3S-E004  
 Duetch 3-Socket Plug,  
 Black



IG4A-1

DTM06-3S-E004  
 Duetch 3-Socket Plug,  
 Black

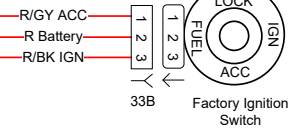


IG4A-2

DTM06-3S-E004  
 Duetch 3-Socket Plug,  
 Black



IG4A-3

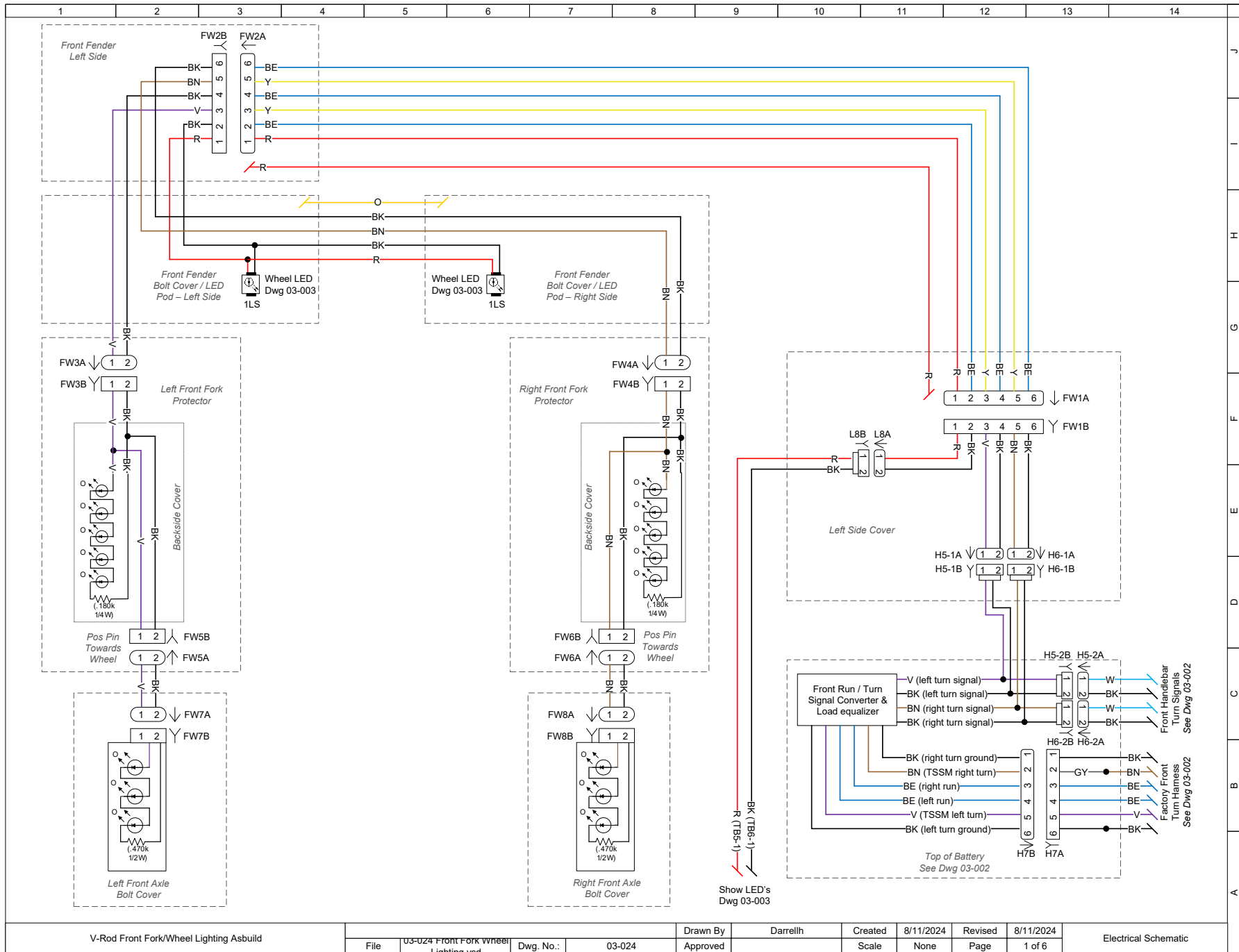


33B  
 Factory Ignition  
 Switch

V-Rod Keyless Ignition

|      |                                     |           |        |          |          |         |           |         |           |      |        |              |
|------|-------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|--------|--------------|
| File | U3-02Z Keyless Ignition<br>Rev1.vsd | Dwg. No.: | 03-022 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Page | 2 of 3 | Component ID |
|------|-------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|--------|--------------|

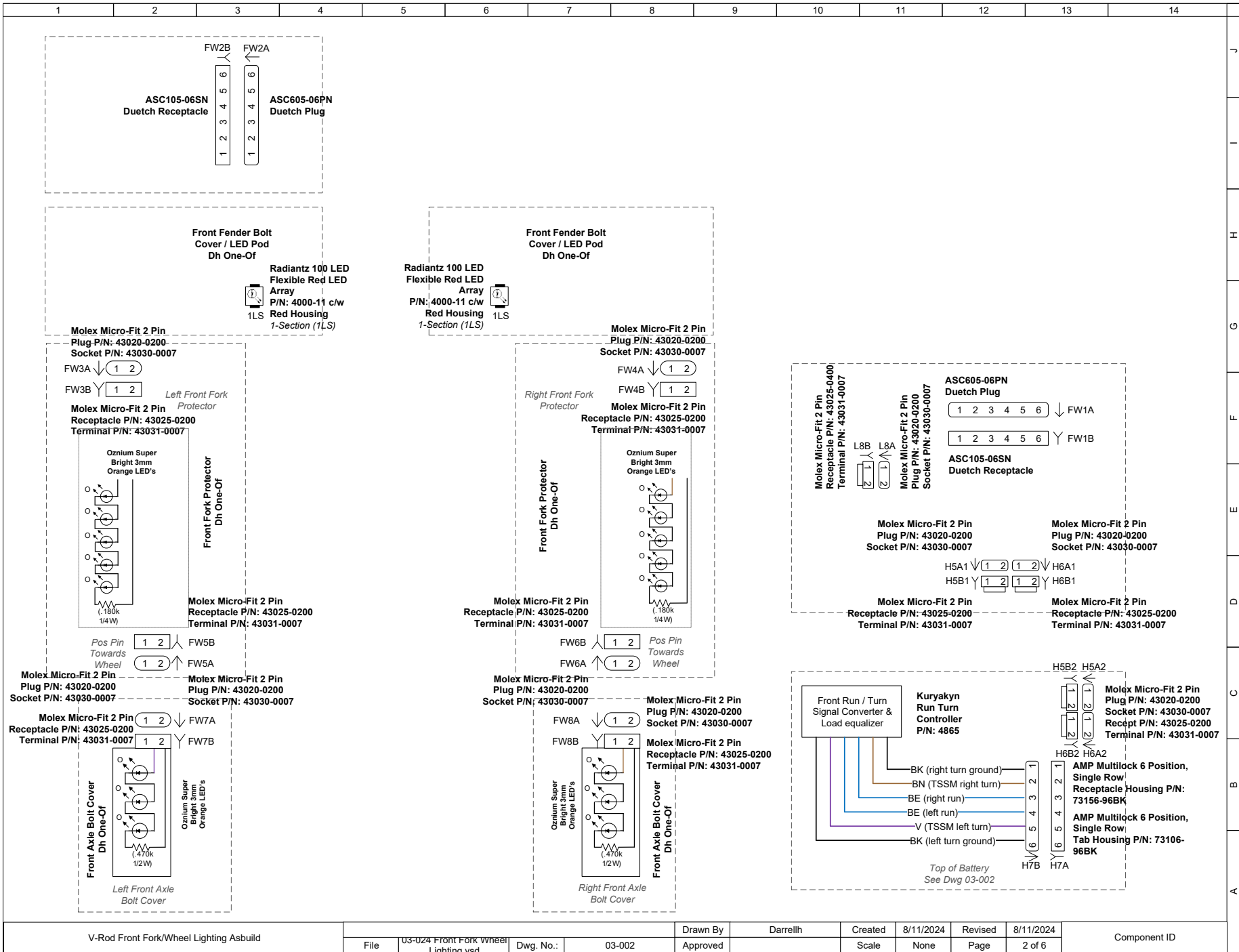
# Drawing #03-024 – V-Rod Front Fork/Wheel Lighting



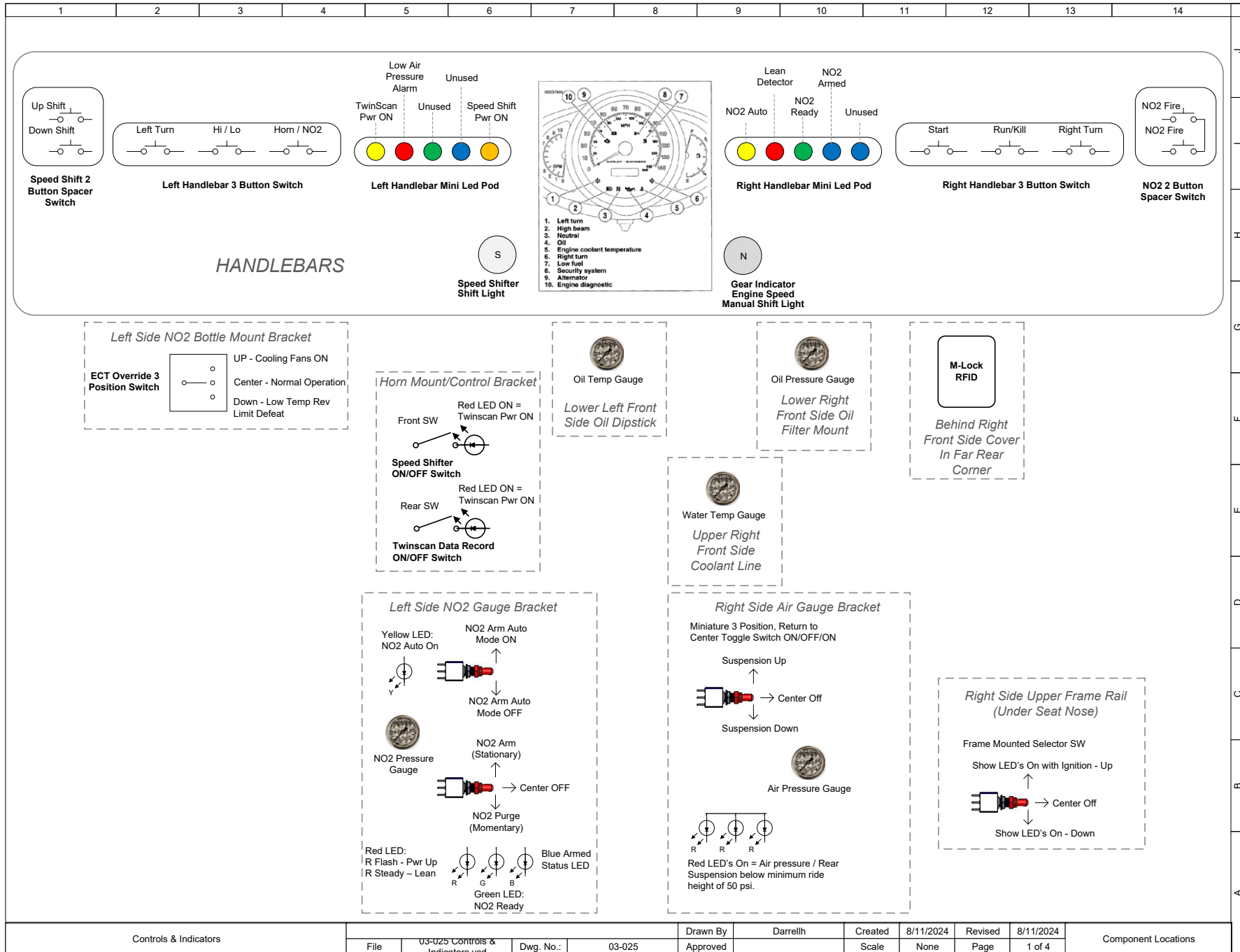
V-Rod Front Fork/Wheel Lighting Asbuid

|          |                                      |           |        |          |          |         |           |         |           |
|----------|--------------------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|
| File     | 03-024 Front Fork Wheel Lighting.vsd | Dwg. No.: | 03-024 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 |
| Approved |                                      |           |        |          |          | Scale   | None      | Page    | 1 of 6    |

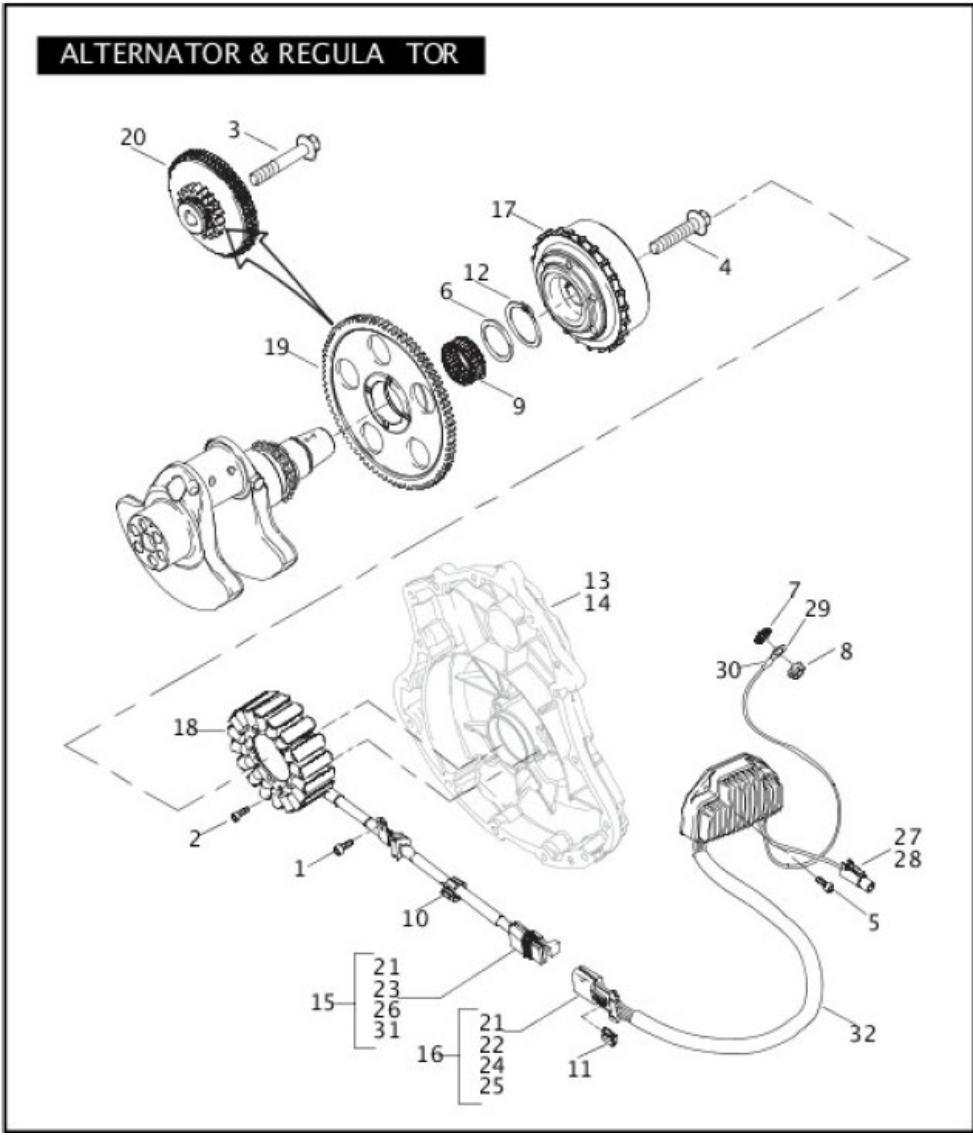
Electrical Schematic



# Drawing #03-025 – V-Rod Controls Indicators



Drawing #03-027 – V-Rod Stator Change

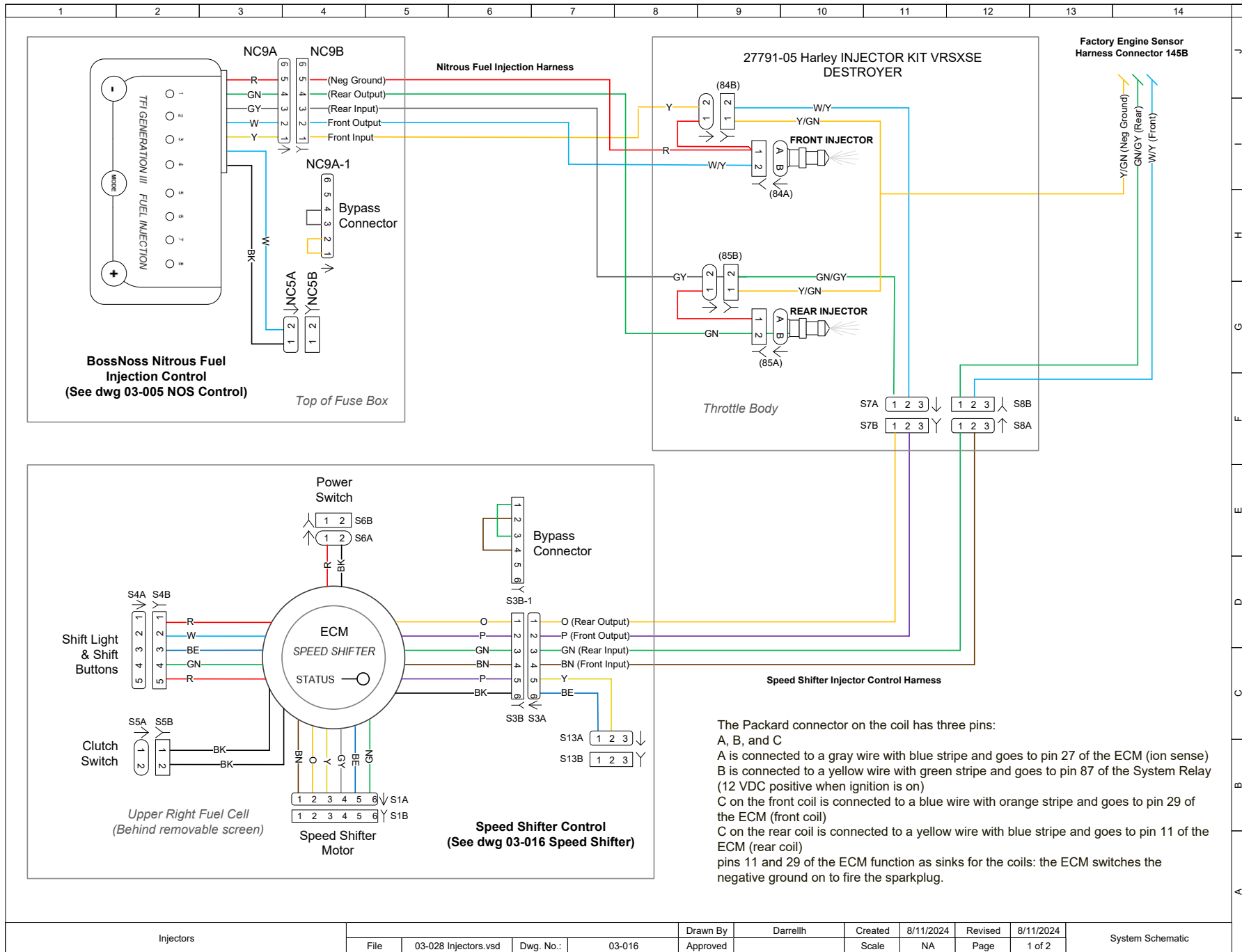


| INDEX NO. | PART NO.   | DESCRIPTION   | MODEL(S) |
|-----------|------------|---|----------|
| 1         | 965M       | SCREW   | ALL      |
| 2         | 978M       | SCREW (14)  | ALL      |
| 3         | 1027M      | SCREW   | ALL      |
| 4         | 1035M      | SCREW   | ALL      |
| 5         | 3729M      | SCREW (2)   | ALL      |
| 6         | 6176MA     | WASHER  | ALL      |
| 7         | 7229W      | LOCKWASHER (2)                                      | ALL      |
| 8         | 7495       | NUT   | ALL      |
| 9         | 8002K      | NEEDLE ROLLER AND CAGE ASSEMBLY                     | ALL      |
| 10        | 10108      | CLIP  | ALL      |
| 11        | 10141      | CLIP  | ALL      |
| 12        | 11328M     | RETAINING CLIP                                      | ALL      |
| 13        | 25881-01KA | COVER KIT/STATOR, w/ 1, 2, 14, 18, 23 & 26 (chrome) | ALL      |
| 14        | 25895-04K  | ALTERNATOR COVER (chrome)                           | VRSCA    |
|           | 25311-04K  | ALTERNATOR COVER (polished)                         | VRSCB    |
| 15        | 25918-04K  | STATOR CONNECTOR KIT, w/ 21, 23, 26 & 31            | ALL      |
| 16        | 25919-04K  | REGULATOR CONNECTOR KIT, w/ 21, 22, 24 & 25         | ALL      |
| 17        | 30731-01K  | ROTOR ASSEMBLY, w/ ball catch assembly              | ALL      |
| 18        | 30734-04K  | STATOR ASSEMBLY, w/ plug assembly stator            | ALL      |
| 19        | 31301-01K  | GEAR, ball clutch                                   | ALL      |
| 20        | 31303-01K  | LIMITER ASSEMBLY                                    | ALL      |
| 21        | 72412-97   | SEAL CABLE (3)                                      | ALL      |
| 22        | 72088-04   | TERMINAL, pin (3)                                   | ALL      |
| 23        | 72089-04   | SOCKET HOUSING, 3-way female (black)                | ALL      |
| 24        | 72090-04   | PIN HOUSING, 3-way male (black)                     | ALL      |
| 25        | 72091-04   | LOCK, secondary 3-way                               | ALL      |
| 26        | 72092-04   | LOCK, secondary 3-way                               | ALL      |
| 27        | 72171-01   | SOCKET TERMINAL, 8-10 AWG.                          | ALL      |

2003 VRSCA Stator 30734-01K changed to 2004 VRSCA Stator 30734-04K required for NLC engine cover fit. Rotor change not required.

|                             |  |          |                          |           |        |          |          |         |           |         |           |      |        |               |
|-----------------------------|--|----------|--------------------------|-----------|--------|----------|----------|---------|-----------|---------|-----------|------|--------|---------------|
| Stator Change to 2004 VRSCA |  | File     | 03-027 Stator Change.vsd | Dwg. No.: | 03-001 | Drawn By | Darrellh | Created | 8/11/2024 | Revised | 8/11/2024 | Page | 1 of 1 | Stator Change |
|                             |  | Approved |                          |           |        |          |          | Scale   | NA        | Page    |           |      |        |               |

# Drawing #03-028 – V-Rod Injectors



Injectors

File 03-028 Injectors.vsd

Dwg. No.: 03-016

Drawn By Darrellh  
 Approved

Created 8/11/2024  
 Scale NA

Revised 8/11/2024  
 Page 1 of 2

System Schematic