Arrow

By CSC TRIKES

INDIAN MOTORCYCLES

ROADMASTER - CHIEFTAIN – SPRINGFIELD
CHIEF & VINTAGE MODELS
2014 – CURRENT

ELECTRIC REVERSE
SOFT START

Installation Instructions

Revised 12/6/2023

California Sidecar Parts & Technical Support
434.263.6500

Warnings and considerations:

1. **Disclaimer** - These instructions assume a level of understanding of motorcycle repair and maintenance beyond that of a “beginner” and/or “novice” and California Sidecar cannot be liable for an installer’s failure to understand or follow these instructions as written. Likewise, California Sidecar cannot be responsible if any of the steps are omitted or shortcuts are taken, or parts other than those supplied by California Sidecar, are used in installing this trike kit.
2. “**WARNINGS**” are all printed in bold type and capitalized. They mean to use extreme care in a given step so as not to damage the part, motorcycle, and/or yourself.
3. **Always** wear safety glasses when using hand and/or power tools.
4. When working in and around the fuel system, **always** work in a well-ventilated area, free from sparks and open flames.
5. All directional references to the “right side” and the “left side” are as if you are seated on the motorcycle.
6. All directional references to “forward” mean to the front of the motorcycle while ”back” means the rear of the motorcycle unless otherwise stated.
7. Please consult the appropriate Service Manual for your motorcycle if further detail is necessary.

INSTALL ENTIRE REVERSE MECHANISM AND WIRING BEFORE TRIKE BODY IS INSTALLED.

Pre Assembly:

1. Install all trike chassis and brake parts, complete adjustment and tension procedure for 28mm and 50mm drive belts and tighten all belt clamping bolts.
2. Adjust angle of reverse assembly to the farthest rearward position that maintains clearance to the brake line by loosening the 5 bolts shown in fig 1. (blue arrow). Retighten bolts when position is correct.

Set Tension of the Reverse belt:

1. Sonic Tension Meter specs:
   MASS 004.7
   WIDTH 021.0
   SPAN 0176
   Reverse Belt Tension:
   SINGLE SPAN TENSION:
   49-55 lbs
   217-244 Newtons
   136.62 – 144.87 hz

2. Tension the reverse belt. Loosen the 3 bolts shown below (Red 1 – 3 see fig 1).
3. Adjust tension with bolt (fig 1. red arrow) then retighten the 3 fasteners
4. Check belt tension.
5. Follow this proceeded until the proper tension is achieved.

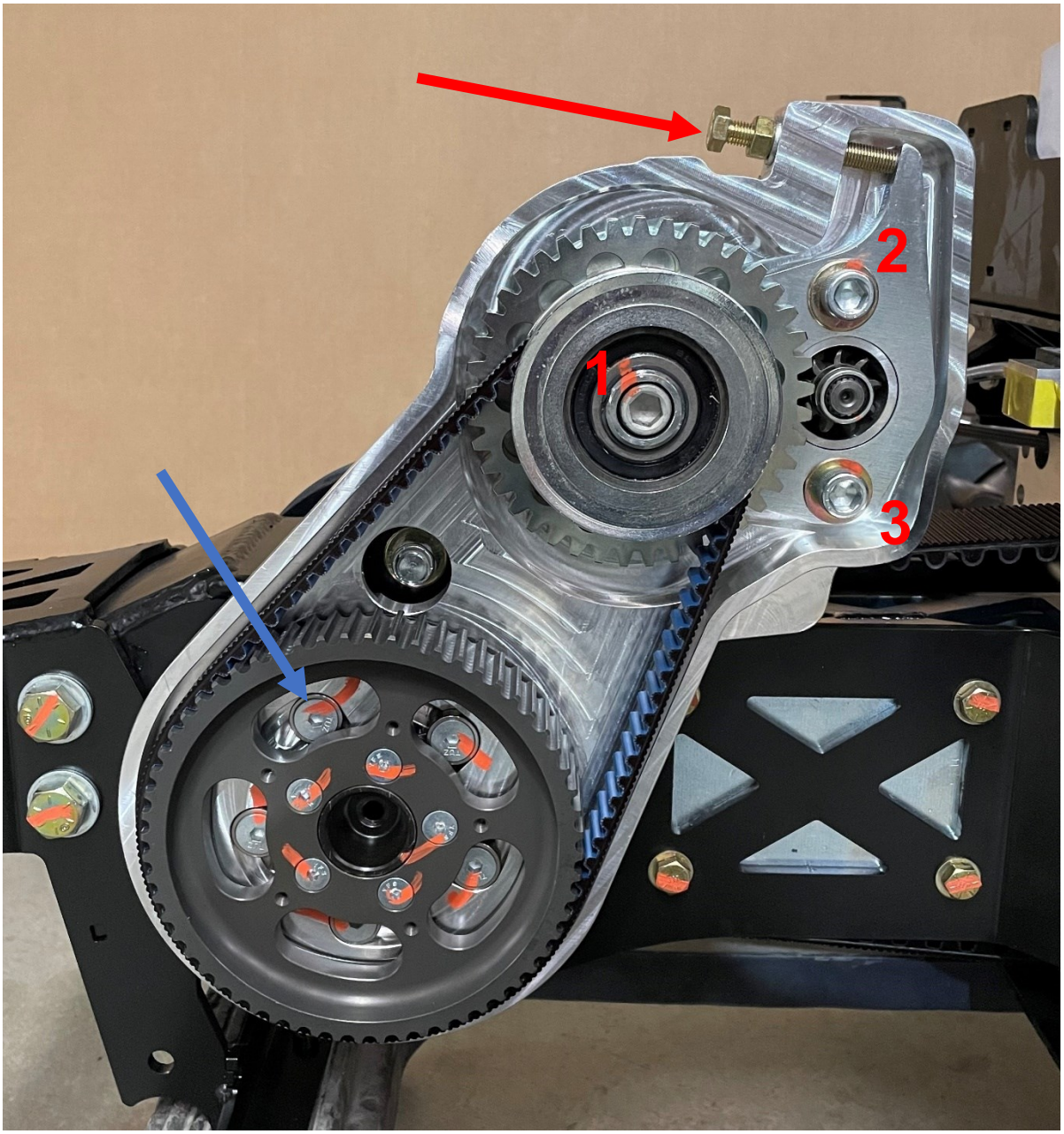


Fig #1
Image shown without frame mounts for clarity.

Wiring:

1. Confirm negative battery cable is disconnected.
2. Secure the neutral detector module (included) to the left side of mount plate.
3. Plug CSC reverse wire harness main connector into reverse module pigtail.
4. Plug neutral module pigtail into CSC reverse harness.
5. Route the blue wire (CSC harness) to the reverse motor solenoid and plug onto solenoid tab.
6. Route the long wire portion of the reverse harness forward under the seat along the side of the frame.
7. Remove (unplug) the fender plug adaptor harness from your trike body.
8. Plug it into the fender plug on the motorcycle.
9. Connect the Red wire (CSC harness) to the Red wire in the fender plug adaptor (brake light) with attached butt connector, don't forget to heat shrink.
10. Remove 2 fasteners from the OEM fuse box and pull out so that you can get to the wiring on the back side.
11. Locate the Purple/Yellow wire (Fuel pump, OEM harness).
12. Connect the Green wire (CSC harness) to the Purple/Yellow wire using a sealed butt connector or solder joint. Reinstall fuse box.
13. At the VCM center connector, cut the horn wire at pin #4 leaving 2-3 in of pigtail out of the connector.

    2014 – 2016 Horn wire – Clear or Shielded
    2017 – UP Horn wire – White

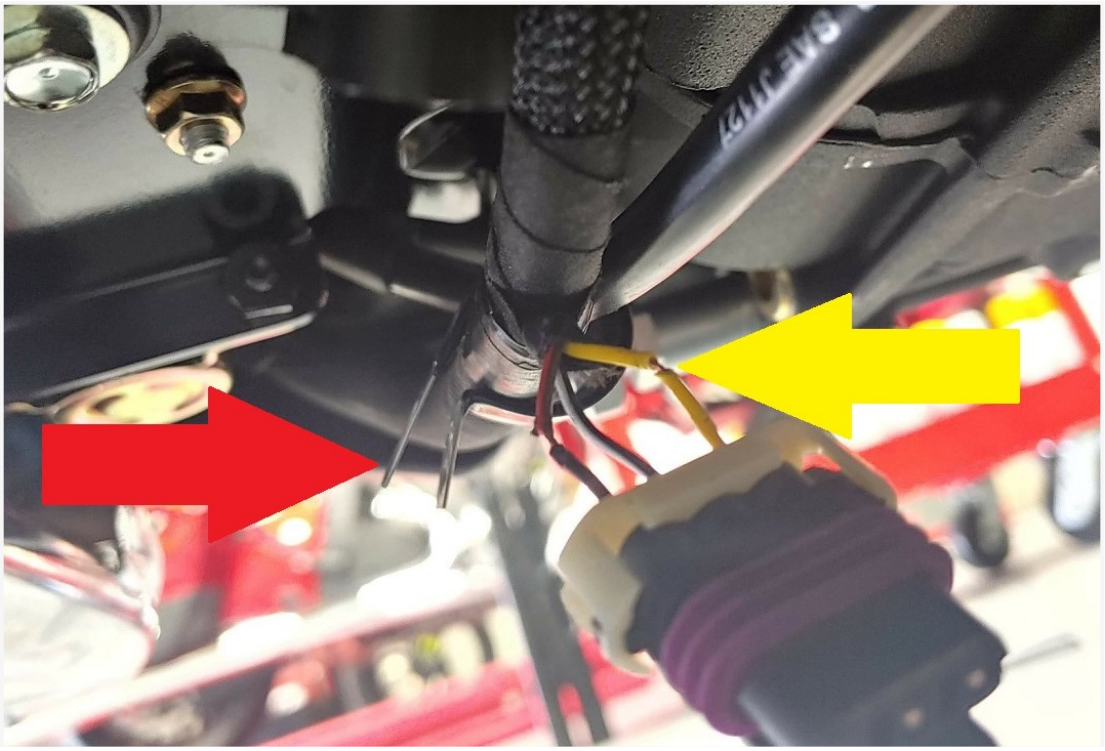
14. Connect the Black wire (CSC harness) to the portion of the horn wire that goes to the horn using a sealed butt connector or solder joint.
15. Connect the Yellow wire (CSC harness) to the portion of the horn wire attached to the VCM connector using a sealed butt connector or solder joint.

2014 - 2019 Models do steps 16 - 17 then skip to step 23:

16. At the VCM left hand Black connector, locate the Yellow/Black wire (neutral switch) at pin #17.
17. Connect the Yellow/Black wire (CSC harness) to the Yellow/Black VCM wire using a sealed butt connector or solder joint.

2020 – UP Models:

18. The Yellow/Black wire (OEM neutral switch) is located under the bike at the connection to the gear position sensor.
19. Route the CSC harness Yellow/Black wire to this location.



20. Unbolt the P-clamp RED arrow.
21. Unplug the sensor and locate the Yellow/Black wire, (Yellow arrow) and connect to the CSC Yellow/Black wire using a sealed butt connector or solder joint.
22. Reinstall connector and P-clamp.

All Models:

23. Install terminal boot onto CSC Red positive cable.
24. Connect the CSC Red positive cable to the stud on the reverse control module marked “B” and install boot over stud.
25. Connect the other end of the CSC Red positive cable to the motorcycle positive terminal stud on the rear of the battery box.
26. Install the Black ground cable to the gearbox boss on the reverse housing using included ¼-20 flange head bolt and star washer (star washer goes between housing and cable). Route the other end of the ground cable to the motorcycle ground cable on the frame.
27. Ensure that all wires and miscellaneous components are routed neatly and secured to the frame with cable ties.
28. Temporarily connect power and ground to the neutral module using the included test plug. Connect the Red wire to battery “+” and the White wire to battery “–“ and plug into the Reverse Harness. This will allow you to operate the reverse mechanism with the body off the trike. NOTE: The reverse will not work if the test plug is not installed while the trike body is off the trike.

All Models continue:

29. Decide where to put the CSC reverse activate button. For 2014 - 2016 models with fairings, the button can be installed above the fog light button.
    All years and models can use the supplied handlebar mounting bracket if preferred.
    All 2017 and up models must use the supplied handlebar bracket as there is no place to put the button on the fairing

Install Reverse Button in Fairing 2014 - 2016:

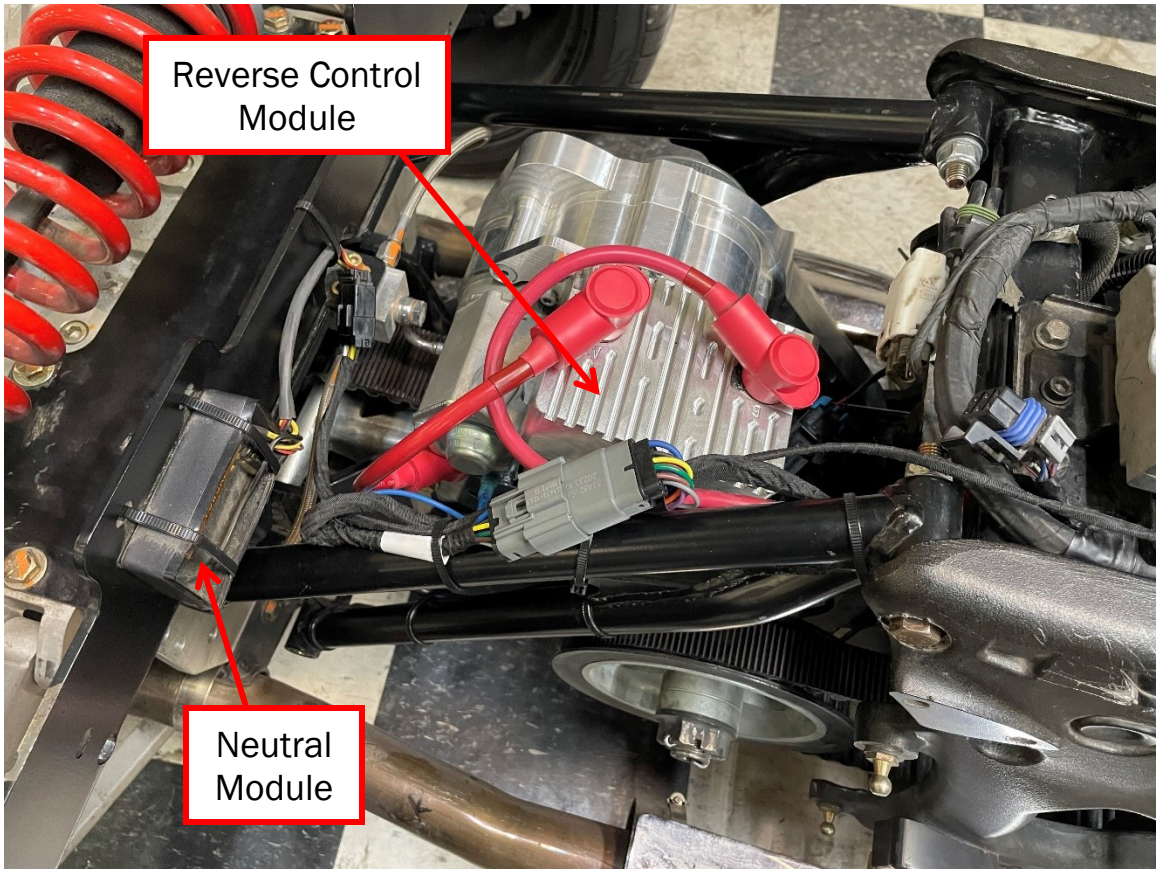
30. Route the remaining end of the CSC harness with the 3 pin connector forward under the gas tank to the front end.
31. Remove outer cover from fairing.
32. The best place to locate the button is above and to the left of the fog light button. Once the location has been determined, drill a 15/32 hole and install the button.

33. Continue to route the CSC harness up into the fairing making sure the wire cannot be pinched or stretched when the handlebars are turned.
34. Connect button to harness and replace faring cover.

Install Reverse Button on Handlebars, All models:

35. Route the remaining end of the harness with the 3 pin connector forward under the gas tank to the front end. Continue routing up towards the left handlebar control. Make sure the wire cannot be pinched or stretched when the handlebars are turned.
36. Insert the reverse button thru the bracket, install nut and tighten.
37. Install button bracket on left lower clutch clamp screw. See picture.
38. Connect the harness to the reverse button and secure wires with cable ties so that the wire has clearance and cannot be pinched when handlebars are turned.
39. Reconnect battery negative cable.
40. Test reverse. See below for how to operate the reverse.
41. NOTE: Once the trike body is installed remove the Test Plug from the trike and connect the Reverse Harness plug to the mating plug from the trike body. Keep test plug for future installations.

FINISHED INSTALLATION (TYPICAL)



OPERATING THE ELECTRIC REVERSE:

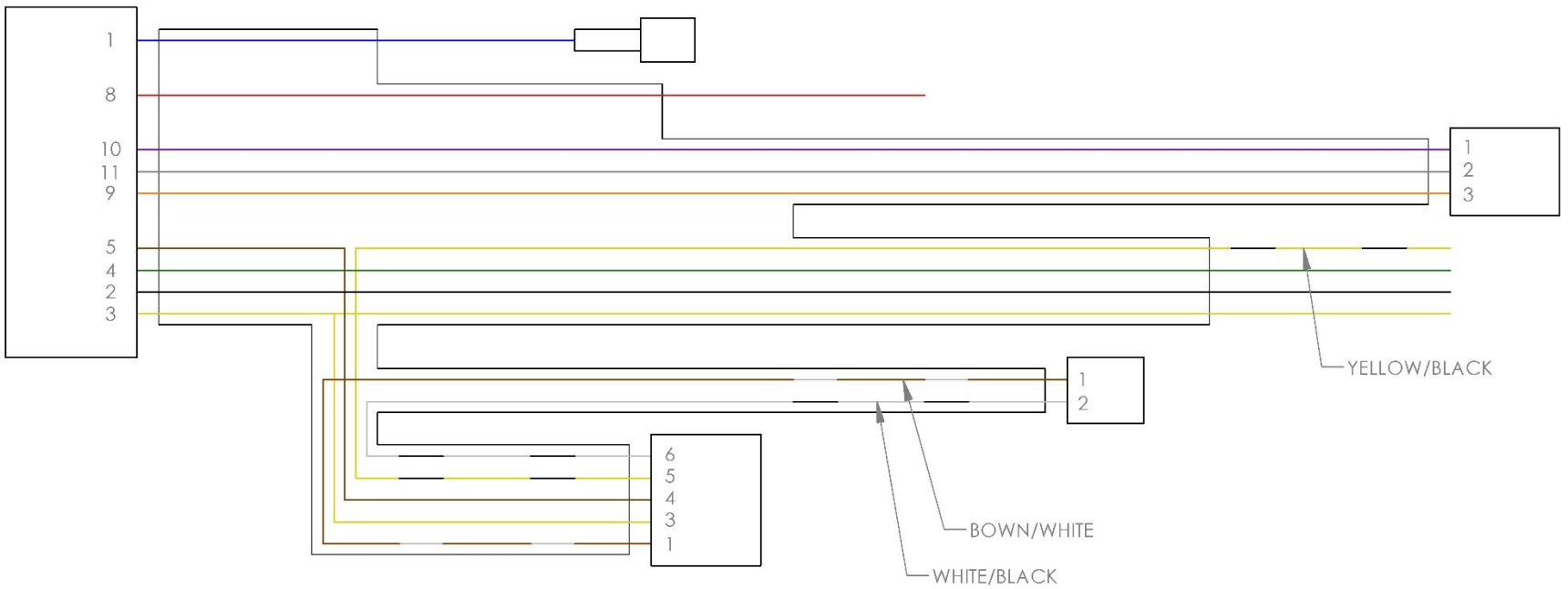
1. With the trike in neutral, start the engine. Reverse Mode will not engage if the trike is not in neutral, or the engine is not running.
2. Engage Reverse Mode by depressing the reverse button and the blue LED will light. This indicates that Reverse Mode is engaged.
3. Press the motorcycle horn button and the trike will then back up as long as the horn button is pressed.
4. If the brakes are applied the reverse will pause until the brakes are released.
5. To exit Reverse Mode either put the trike in gear or press the reverse button and the LED will turn off.

From all of us at California Sidecar.
Enjoy the ride!

California Sidecar Parts & Technical Support
434.263.6500

CSC REVERSE CONTROLLER LOGIC

Pin NO.	Wire Color	Function	
1	**blue**	Output: to starter solenoid	Outputs 12V to reverse motor solenoid when all conditions are met. Solenoid engages pinion gear and makes electrical connection to motor.
2	**black**	Output: to horn	Outputs 12V to horn when reverse is not activated. This makes the horn work normally when the reverse is not being used.
3	**yellow**	Input: from horn button	Input 12V to control module to start reverse motor. Inputs 12V only when the horn button is pressed and reverse mode is engaged.
4	**green**	Input: engine run	Input 12V to control module, only when engine is running. Typical connection is to fuel pump power. Engine must be running to keep battery from being drawn down too far to start trike.
5	**brown**	Input: from neutral module	Input 0V to control module when in neutral and 2-12V when in gear. This makes sure the motorcycle is not in gear while also in reverse. The reverse would be damaged if the motorcycle was trying to move forward and backward at the same time.
8	**red**	Input: from brake switch	Input 12V to control module when brake is depressed. This pauses the reverse until the brake is released. It avoids running the reverse while the brakes are applied potentially damaging the reverse.
9	**orange**	Pushbutton: power to LED	When reverse is activated, 3-4V is supplied to button to light the LED.
10	**purple**	Pushbutton: reverse enable	When purple is momentarily connected to grey reverse mode is enabled. If connected a second time, reverse mode is disabled.
11	**grey**	Pushbutton: ground	Ground for the LED, and for the pushbutton.



WIRE COLORS:
WHITE/BLACK: GROUND
BROWN/WHITE: 12V
BLUE: 12V TO MOTOR SOLENOID
GREEN: ENGINE RUN INPUT
YELLOW: INPUT FROM HORN BUTTON
BLACK: HORN OUTPUT TO OEM HORN
RED: BRAKE INPUT
YELLOW/BLACK: GEAR INDICATOR INPUT
BROWN: NEUTRAL INPUT FROM NEUTRAL INDICATOR
PURPLE: REVERSE ENABLE BUTTON
GREY: REVERSE ENABLE BUTTON AND LED GROUND
ORANGE: POWER TO REVERSE ENABLE BUTTON LED

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.
ALL THREAD FITS TO BE 2A (EXTERNAL) OR 2B (INTERNAL)

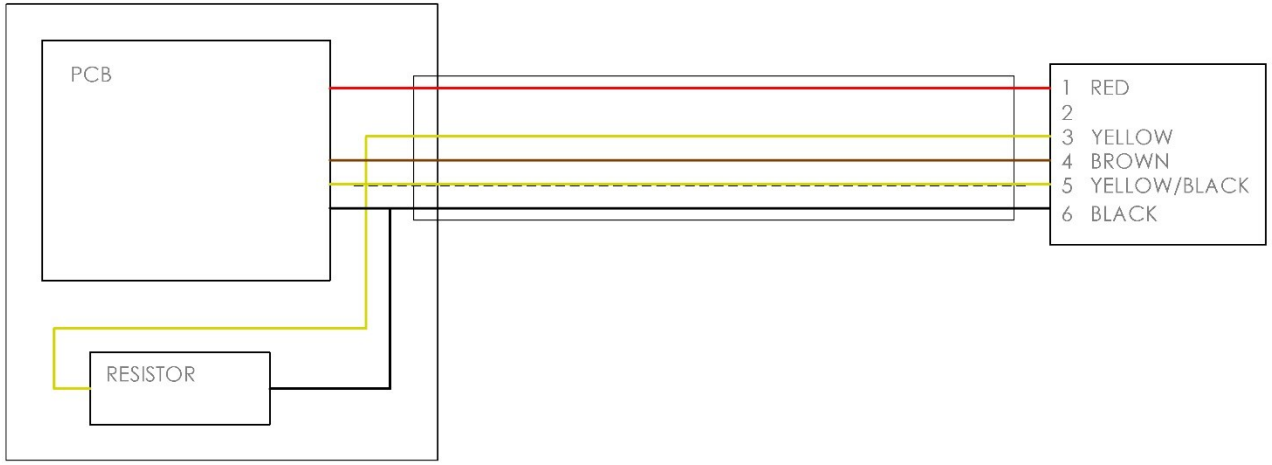
APPROVALS	DATE
DRAWN BY TODD WIGHTMAN	30-JULY-2021
CHECK	
APPROVED	

TOLERANCES:	
DECIMAL: X.XXX ±	0.010
FRACTIONAL:	1/8

California Side Car inc.
100 MOTORCYCLE RUN, ARRINGTON, VA 22922

TITLE
WIRE HARNESS, SSR, ARROW

SIZE	PART NUMBER	REV
A	REV-65058	B
SCALE 1:1	VENDOR DRW NUMBER N/A	SHEET 2 OF 2



WIRE COLORS:
RED: TO MOTORCYCLE SWITCHED POWER
YELLOW: INPUT FROM HORN
BROWN: TO NEUTRAL SWITCH INPUT ON REVERSE CONTROLER
YELLOW/BLACK: TO MOTORCYCLE GEAR INDICATOR
BLACK: CHASSIS GROUND

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.
ALL THREAD FITS TO BE 2A (EXTERNAL) OR 2B (INTERNAL)

APPROVALS	DATE
DRAWN BY TODD WIGHTMAN	29-MAY-2015
CHECK	
APPROVED	

TOLERANCES:	
DECIMAL: X.XXX ±	0.010
FRACTIONAL:	1/8

California Side Car inc.

100 MOTORCYCLE RUN, ARRINGTON, VA 22922

TITLE

NEUTRAL INDICATOR MODULE, ARROW

SIZE	PART NUMBER	REV
A	REV-44882	E

SCALE	VENDOR DRW NUMBER	SHEET
1:1	N/A	3 OF 3