



1999 - Current

FLHT Series Harley-Davidson

ELECTRIC REVERSE
SOFT START

Installation Instructions

REVISED 9/13/2024

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 were 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 DURING TRIKE KIT INSTALLATION AND BEFORE THE TRIKE BODY IS INSTALLED.

PRE ASSEMBLY:

1. Complete adjustment and tension procedure for 20mm front and 30mm rear drive belts and all clamping bolts.
2. Adjust angle of reverse assembly to the farthest rearward position (till it hits the stop) by loosening the 5 bolts shown below (blue arrow). Retighten bolts when position is correct.
3. Tension the reverse belt. Loosen 3 bolts shown below (yellow arrows). Adjust with bolt (red arrow).

Reverse belt Sonic Tension Meter specs:

MASS 004.7

WIDTH 021.0

SPAN 0172

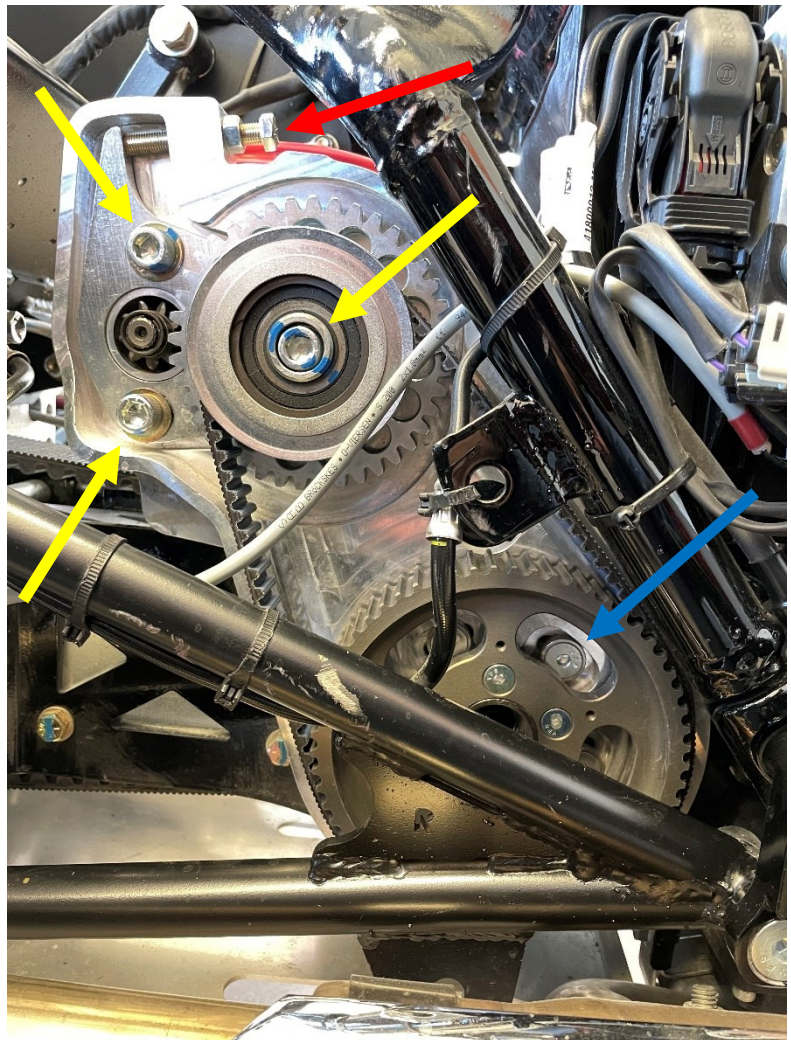
Reverse Belt Tension:

SINGLE SPAN TENSION:

49 - 55 lbs

217 - 244 Newtons

136.62 – 144.87 hz



1999 – 2013 MODELS:

1. Remove motorcycle fairing cover if Ultra Classic or rear gauge cover if Roadglide.
2. Install reverse button: Using a 15/32 inch drill bit, drill through the inner fairing opposite of the odometer trip reset button if Ultra Classic or between gauges if Roadglide.
3. Ensure the rubber washer is on the reverse button, then insert the wire through fairing or gauges and install nut and tighten.



4. Remove motorcycle fuel tank on 08-13 motorcycles or chrome center tank cover on 99-07 motorcycles.
5. Plug the CSC reverse wire harnesses into the reverse module pigtail.
6. Route the single blue wire to the reverse motor solenoid and plug onto the solenoid tab.
7. Route the long CSC wire harness under the seat and fuel tank into the head light area.
8. Locate the motorcycle red/yellow wire (brake light) under the seat at the motorcycle fender plug. Connect the CSC red wire using a sealed butt connector or solder joint.
9. Locate the motorcycle yellow/green wire group (fuel pump/injector power) in the main harness under the rear portion of the fuel tank. Connect the CSC green wire to the larger gauge yellow/green wire using a sealed butt connector or solder joint.

NOTE: If installing reverse on a carbureted bike. Connect the CSC green wire to either the orange/white accessory wire or the blue tail light wire at the fender plug.

10. Locate the motorcycle tan wire (neutral indicator) at the neutral light inside the fairing for Ultra Classic and inside gauge panel for Road Glide. Connect the CSC brown wire using a sealed butt connector or solder joint.
11. Locate the motorcycle yellow/black (horn) wire inside the fairing for Ultra Classic and inside gauge panel for Road Glide and coming from the left handlebar harness. Cut wire and connect CSC yellow wire to the button side, and CSC black wire to the harness side of the cut wire using sealed butt connectors or solder joint.
12. Connect the CSC harness to the reverse button.
13. Install the CSC black negative cable to the ground boss on the reverse housing using included 1/4-20 flange bolt and star washer.
14. Route the other end of the negative cable to the motorcycle frame.
NOTE: star washer is sandwiched between the cable lug and the reverse housing/frame.
15. Install terminal boot onto CSC red positive cable.
16. Connect the CSC red positive cable to the stud on the reverse controller marked "B" using included star washer and flange nut.
NOTE: star washer is sandwiched between the cable lug and the brass boss. Install terminal boot.
17. Route the positive cable under the battery box to the motorcycle starter solenoid stud for 99-08 models, or directly to battery for 09-13 models and attach.
18. Ensure that all wires and miscellaneous components are secured to the frame with cable ties.
19. Reinstall fuel tank (if removed) and test reverse (see operating instructions below)
20. If test is positive reinstall fairing components.
21. Refer back to trike instructions and continue with trike installation.

2014 – CURRENT MODELS:

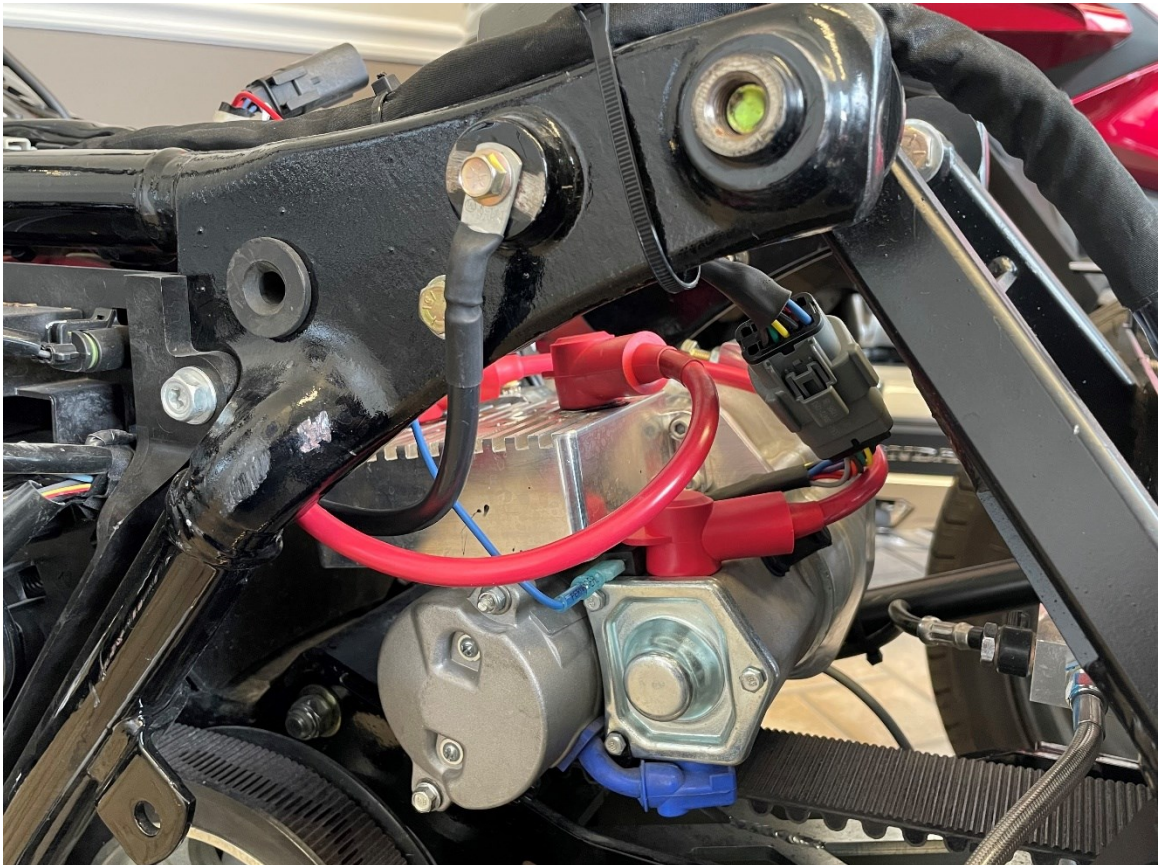
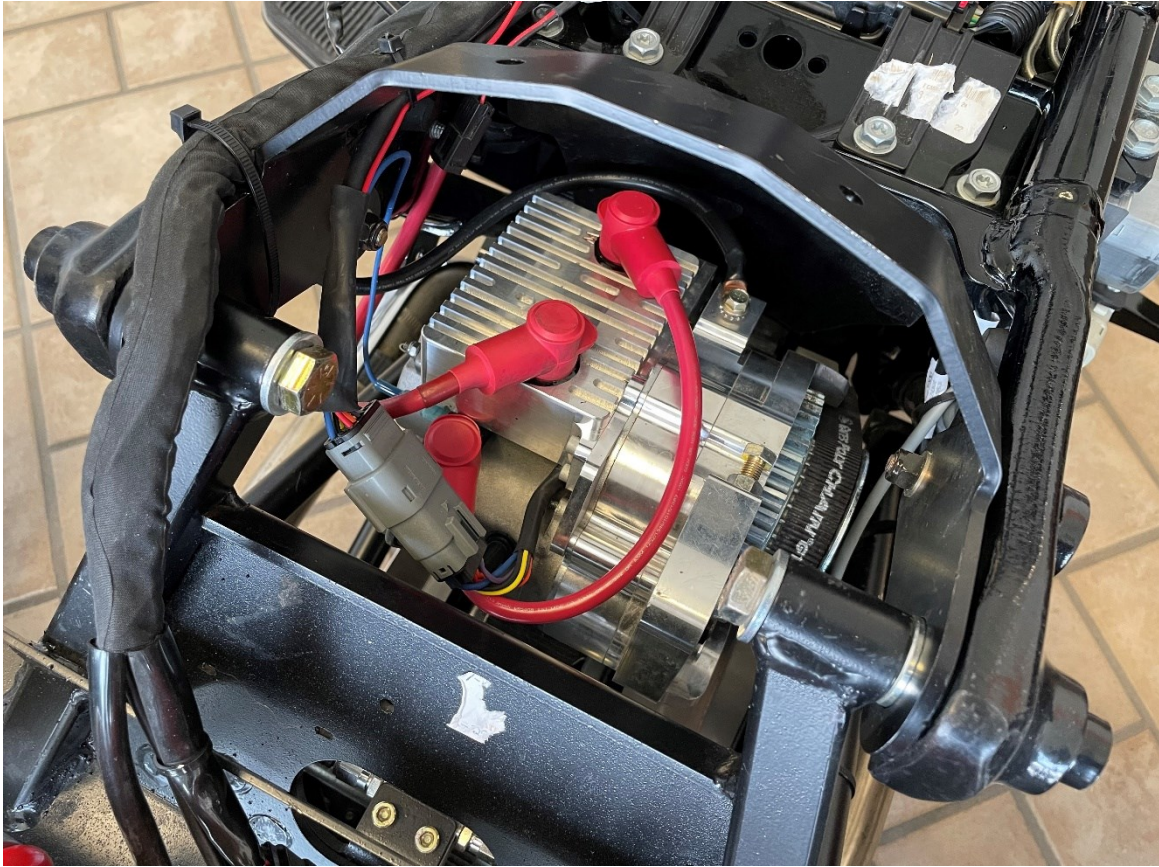
1. Remove motorcycle fairing cover if Ultra Classic or rear gauge cover if Roadglide.
2. Install reverse button: Using a 15/32" drill bit, drill through the inner fairing to the left of the radio screen for Ultra Classic or between gauges if Roadglide.



3. Ensure the rubber washer is on the reverse button, then insert the wire thru fairing or gauges and install nut and tighten.
4. Remove the motorcycle fuel tank, and main wire harness cover.
5. Plug the CSC reverse wire harness into the reverse module pigtail.
6. Route the single blue wire to the reverse motor solenoid and plug onto the solenoid tab.
7. Route the long CSC wire harness under the seat and fuel tank into the head light area.
8. Locate the red wire (brake) pigtail at the CSC fender plug adaptor harness (included in trike kit components and installed previously). Connect the CSC red wire to the pigtail using supplied butt connector.
9. Locate the motorcycle white neutral wire located at the BCM. Connect the CSC brown wire using sealed butt connector or solder joint.
10. Locate the motorcycle red/brown wire (fuel pump) in main motorcycle harness just behind the fuel tank. Connect the CSC green wire using sealed butt connector or solder joint.

11. Locate the motorcycle red/purple (horn) wire in main motorcycle harness and cut. Connect CSC yellow wire to the button end and CSC black wire to the harness/horn end using sealed red butt connectors or solder joint.
12. Connect the CSC harness to reverse button.
13. Install the CSC black negative cable to the ground boss on the reverse housing using included 1/4-20 flange bolt and star washer.
14. Route the other end of the negative cable to the motorcycle frame using additional 1/4-20 flange bolt and star washer.
NOTE: star washer is sandwiched between the cable lug and the reverse housing.
15. Install red terminal boot onto CSC red positive cable.
16. Connect the CSC red positive cable to the stud on the reverse controller marked "B" using included star washer and flange nut.
NOTE: star washer is sandwiched between the cable lug and the brass boss. Install terminal boot.
17. Route the other end of the positive cable to the positive terminal of the battery and attach.
18. Ensure that all wires and miscellaneous components are secured to the frame with cable ties.
19. Reinstall fuel tank and test reverse (see operating instructions below).
20. If test is positive reinstall fairing components.
21. Refer back to trike instructions and continue with trike installation.

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 pressing the reverse button. This will illuminate the blue LED light. This indicates that Reverse Mode is successfully engaged.
3. Press the motorcycle horn button and the trike will then back up as long as the horn button is pressed. NOTE: Newer H-D motorcycles have a 10 second limit on the horn circuit. This means that the reverse will stop after 10 seconds of continuous use. If you wish to continue backing up simply press the horn button again to resume.
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 blue LED will turn off.

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

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CSC SOFT START 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 switch	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.