VENTURA by CSC TRIKES

Trike Conversion Kit

Victory
CrossRoads
CrossCountry
CrossCountry Tour
HardBall

Installation Instructions

Revised 3 - 2018

California Sidecar Parts & Technical Support
434.263.8866

Table of Contents:

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 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.

Recommended Lubricants:

1. Fluorinated grease for splines
2. Thread locking compound (Loctite 242 minimum).
3. High temperature Silicone sealant.

Torque values of fasteners:

1. 3/8–16 x 1 3/4 SHCS. 47 ft-lbs Frame mount
2. M10 x 1.25 x 40 SHCS. 54 ft-lbs Frame mount
3. Pivot shaft 90 ft-lbs

Maintenance Schedule: VENTURA

Frequency (miles)	Daily	4k	8k	12k	16k	20k	24k
Item							
Belts	I	I	I	I	I	T	I
Brake Pads and Rotors [1]		I	I	I	I	I	I
Half Shaft Boots		L	L	L	L	L	L
Wheel Bearings [2]		I	I	I	I	I	I
Wheels and Tires		I	I	I	I	I	I
All Lighting	I						
Tire Pressure [3]	I						
Brake fluid		I	I	R	I	I	R

I: Inspect: clean, lubricate, and/or replace as necessary.
R: Replace
L: Lubricate with Silicone Spray
T: Tension

NOTE:
[1] Minimum pad thickness is 0.04 inches (1.02mm)
[2] Wheel bearing torque 200 FT.-LBS.
[3] Rear tire pressure 15" & 16" WHEELS 28 PSI
17" WHEELS 25 PSI

At higher odometer readings, repeat at frequency intervals established here.

Note:
This Schedule is in addition to the Victory Maintenance Schedule

NOTICE:
The remote door opener installed on this unit has a very small electrical draw on your motorcycle battery. If your trike will be unridden for more than 2 weeks you should remove the 15 amp fuse from the red fuse holder located up front under your starter solenoid cover. Another option is to use a battery tender.

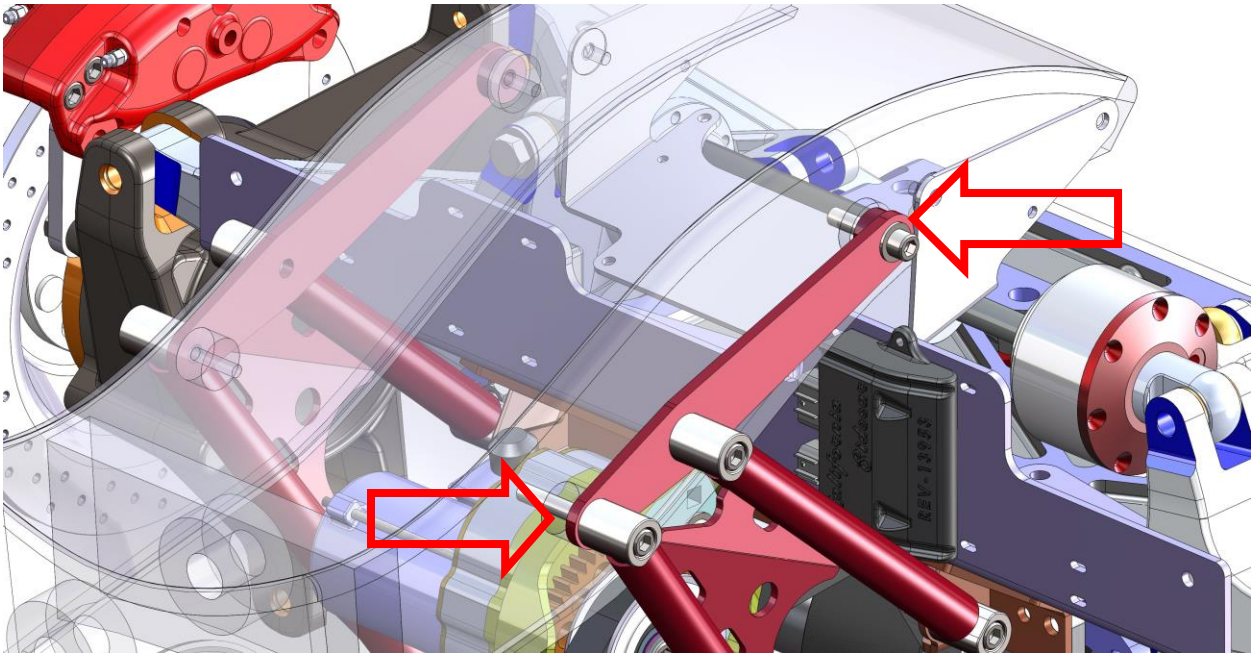
Disassembly of motorcycle:

1. Place the motorcycle on the lift and secure.
2. Disconnect negative battery terminal. Battery is located in the lower front fairing. Remove four SHCS to access the battery.
3. Remove both saddlebags.
4. Remove both side covers.
5. Remove two SHCS and the seat.
6. Remove tour box if equipped. Unplug the harness then from the inside remove four HHCS and three SHCS, remove the tour box from its mount.
7. Remove and discard the tour box mount.
8. Remove five HHCS and each rear crash protection bar.
9. Remove exhaust heat shields, left side two clamps, right side one clamp and one HHCS.
10. Loosen muffler clamps and remove mufflers.
11. Remove two SHCS from each tour box mount.
12. Unplug fender and remove four HHCS from the fender.
13. If equipped remove the ABS computer three HHCS from its mount.
14. Completely disconnect the ABS wire harness. (Pull on the orange clip.)
15. Remove four HHCS and the inner fender.
16. Removing the swing arm.
17. Remove the rear SHCS from under the seat area.
18. Remove both passenger floorboard or peg nuts and washers. Remove the left side floorboard or peg mount.
19. Loosen the rear head pipe by removing the head pipe stud nuts, the exhaust clamp between the front and rear pipes, and the HHCS from the lower left side exhaust mount bracket.
20. Pull the head pipe rearward enough to remove the right side passenger floorboard or peg mount.
21. Remove the chrome sprocket cover.
22. Remove the axle nut, axle, and the rear wheel.

23. Remove the caliper.
24. Remove the wheel speed sensor and shims.
    Save for reinstallation.
25. Remove one side swing arm pivot shaft nut and washer then remove the pivot shaft.
26. Remove the plastic inner fender from under the seat area.
27. Remove the shock air line and vent line.
28. Remove the upper shock pivot shaft.
29. Remove the swing arm and shock assembly.
30. Remove and Discard the belt.
31. Remove the two HHCS from the brake line holder.
32. Remove the antenna from wire and discard antenna.

Modification of Motorcycle Frame:

1. Drill through four M8 threaded holes (two on each side) on motorcycle frame with 3/8 drill bit (Red Arrows)



Reassembly of the motorcycle:

1. Install **NEW CSC** drive belt.
2. Reinstall the chrome sprocket cover.

ABS Models:

3. Route the ABS harness through the large hole in the top of the motorcycle frame and reconnect it to the ABS computer.
4. Install the ABS computer module to the CSC ABS mount using three OEM HHCS.
5. Standing behind the frame rotate the ABS computer counterclockwise 180 degrees. **Like a Plate, not like a Clock.**
6. Secure the mount to the rear of the frame with four OEM HHCS. Refer to picture for orientation.
7. Secure all wiring with cable ties. Leave the fender plug pointing forward and accessible.

Rear Suspension Unit Installation:

1. Place the rear suspension unit onto a floor jack.
2. Slide unit into place as far forward as possible.
3. Install **NEW CSC** drive belt onto sprocket.
4. Align pivot shaft holes. Apply a light coat of grease on pivot shaft and reinstall in reverse order.
   Install washer and nut, leave loose.
5. Locate the Frame Mount Plate on side of frame using the included spacer placed between the frame and Mount Plate in the rear hole. Install 3/8-16 x 1-3/4 SHCS with washer through rear hole of Plate, then spacer, last through the drilled out hole in frame and secure with 3/8 nyloc nut and washer on inside of frame. Install 3/8-16 x 3 SHCS through front Frame Mount boss and Plate with 3/8 nyloc nut and washer on inside of frame (see fig 2).
6. Insert a 3/8-16 x 1-1/4 SHCS into the upper rear Frame Mount boss and through the Plate with 3/8 nyloc nut and washer on inside of Plate (see fig 2).
7. Repeat on other side.
8. Push Suspension forward to align Suspension with Frame Mounts.
9. You may need to jack suspension up or down for alignment.
10. Insert two 3/8-16 x 1-3/4 SHCS into the rear bosses of the Frame Mounts and upper and lower tabs of the suspension unit. Install four 3/8 flat washers and four 3/8 nyloc nuts.
11. Tighten all ten SHCS.

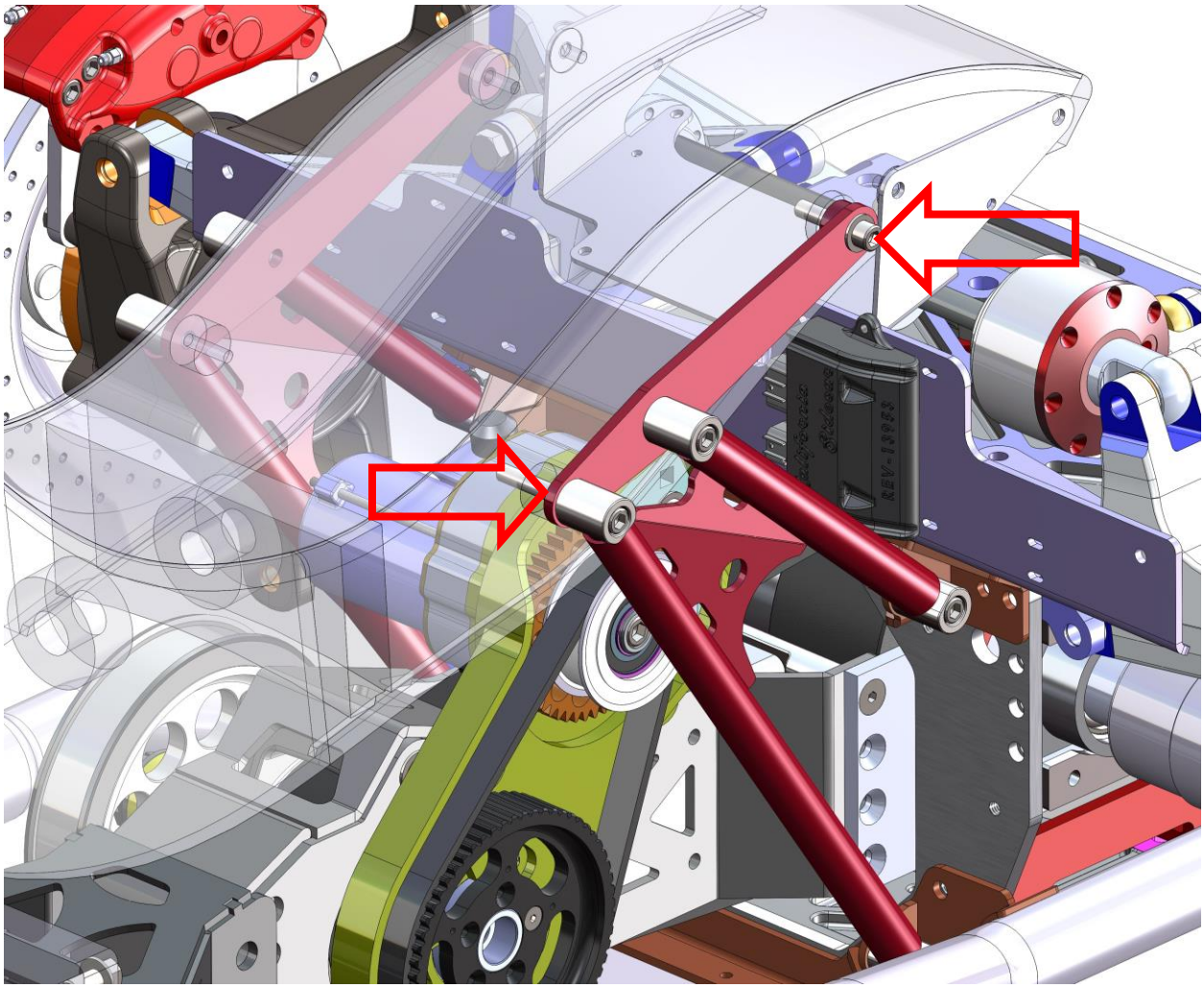


fig 2.

12. Tighten the pivot shaft nut left loose from before. Torque to specification.
13. Install the passenger floorboards or pegs with the OEM nut and washer and lower fasteners.

If installing Ground Effects:

Refer to separate Ground Effects installation instructions now. You must install only the Ground Effects mounts before going forward.

Install ABS Wheel Speed Sensor (if equipped):

1. Install ABS signal module on Trike Cross Mt. with two sided tape and zip ties included (see fig 3).
2. Install the rear wheel speed sensor on the mount located near the rear differential using the OEM fastener (see fig 4).
3. Check for .025 - .050 gap and reuse OEM shims if needed.
4. Route the wheel speed sensor wire up to the ABS signal module and plug in. Secure wire with zip ties.

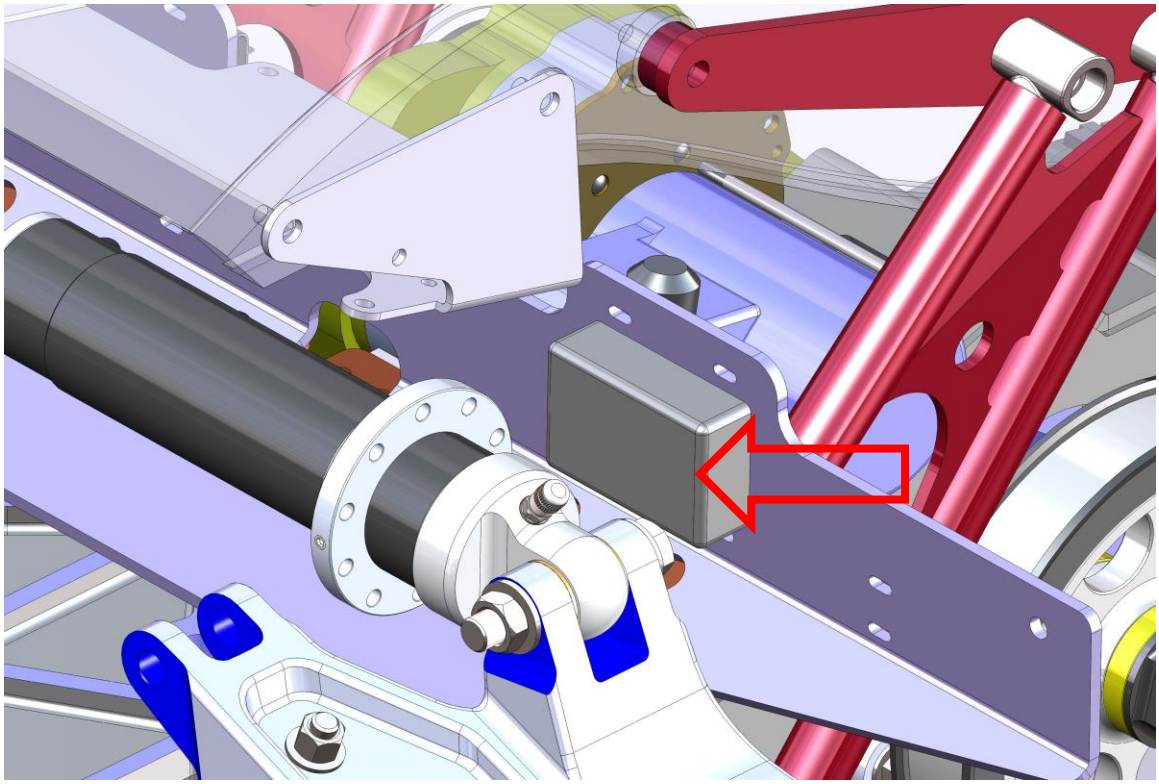


fig 3

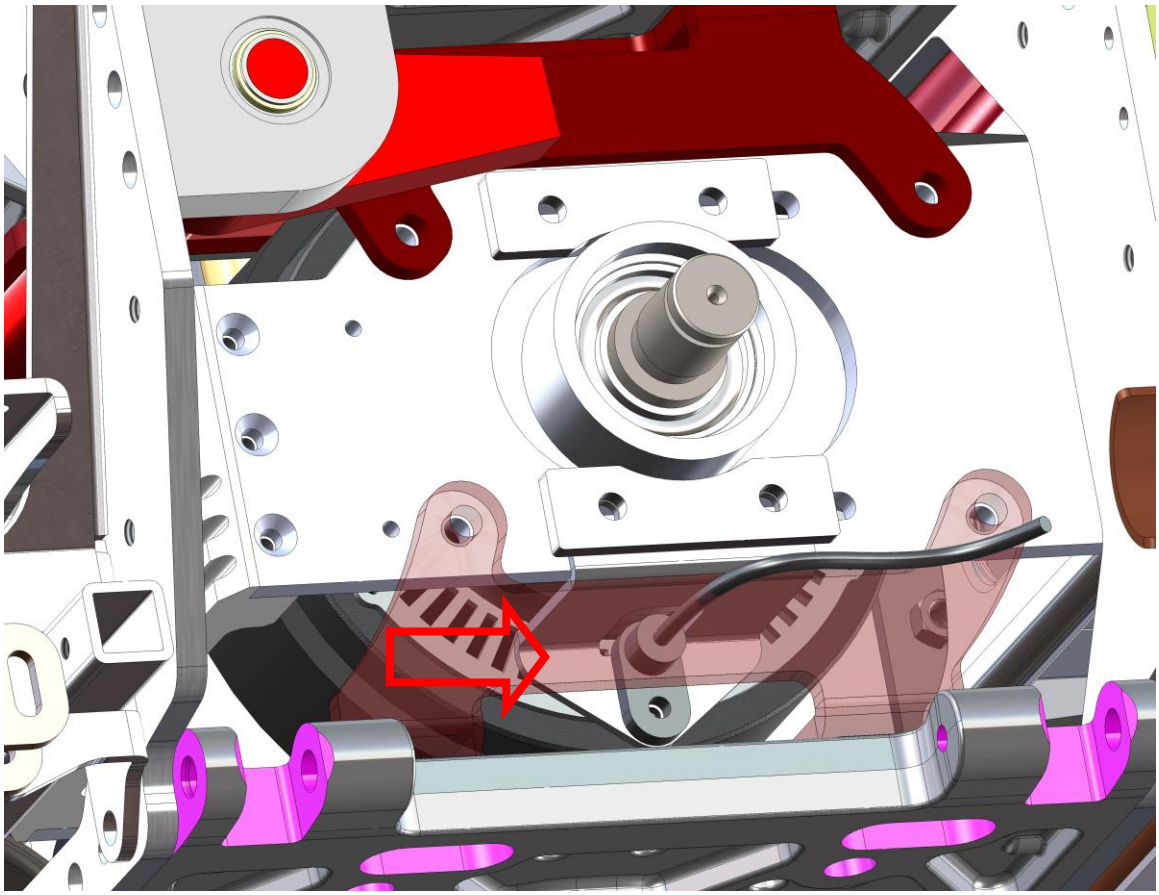


fig 4

5. Plug ABS Signal Module to trike body harness

Gravel Pan Installation:

1. Install the Gravel Pan under the tab on the Lower Rear Mount with three 1/4–20 x 3/4 HHCS, three flat washers and three nyloc nuts. Install the HHCS from the bottom up and leave finger tight (see fig 5).
2. Raise the front of the Gravel Pan and secure on the right with a HHCS and sandwich the gravel pan with the left lower exhaust mount and the OEM HHCS.
3. Align and tighten all fasteners.

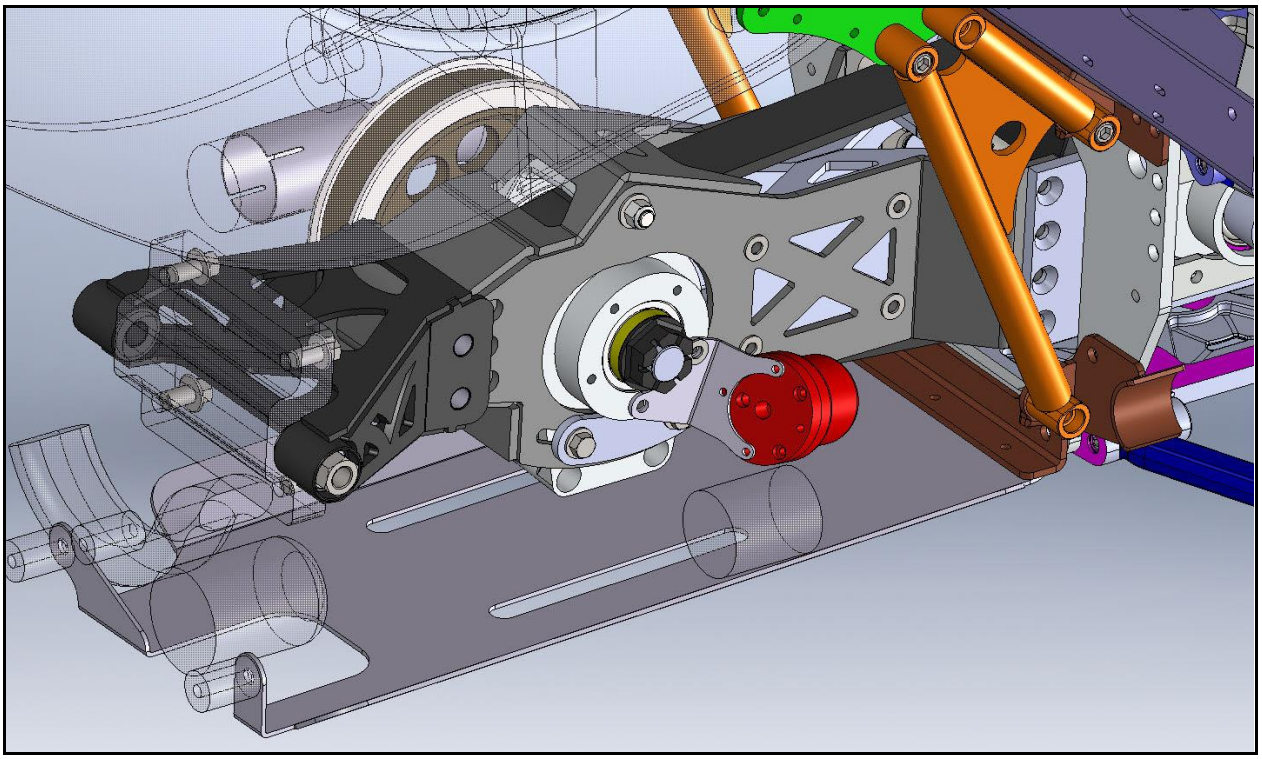


fig 5

Exhaust Mount Installation:

1. Reinstall the exhaust head pipe loosened from before.
2. Place the Left Exhaust Mount against the left side of the Body Frame.
3. Using the lower holes, Install three 5/16 – 18 x 1 1/4 HHCS and three 5/16 flat washers thru the Exhaust Mount and the Body Frame from the outside in (see fig 6).
4. Install Trailer Hitch now if equipped.
5. Loosely install three 5/16 flat washers and three 5/16 – 18 nyloc nuts.
6. Install the right side with the same procedure.
7. Tighten the six fasteners.

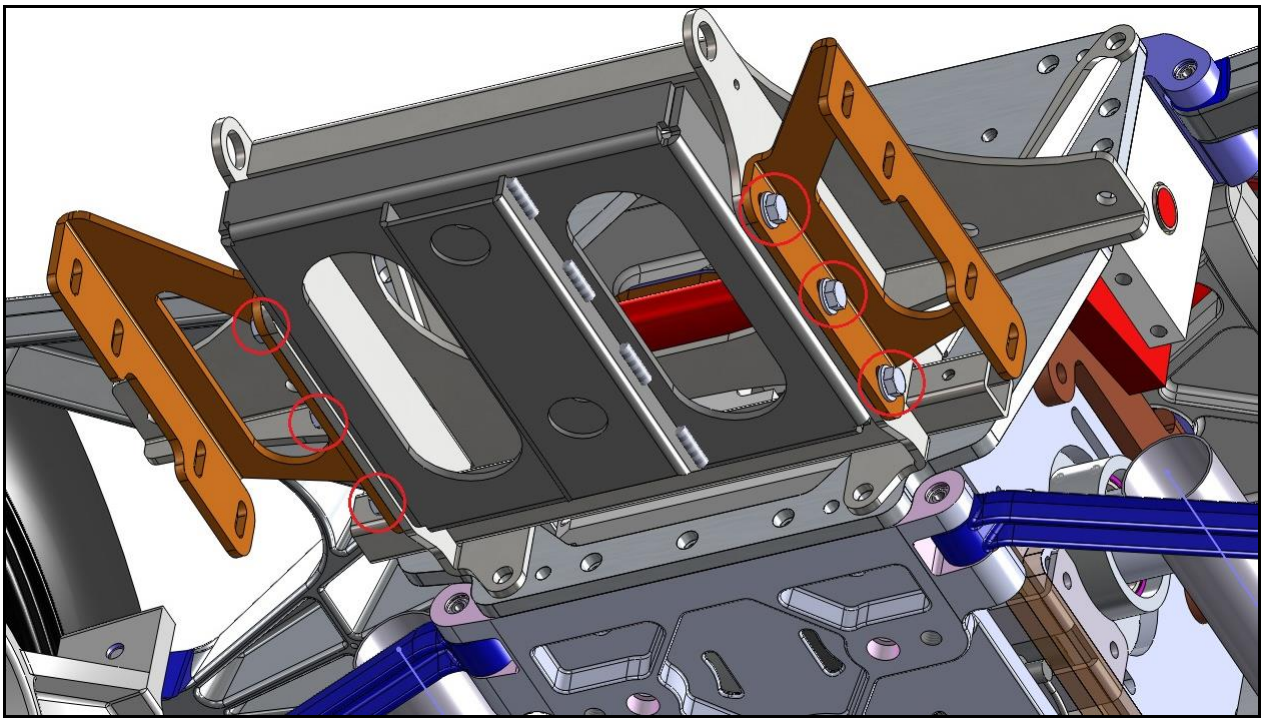


fig 6

Exhaust Tailpipe and Muffler Installation:

1. Place the OEM muffler clamps onto the front of each tailpipe and install onto each head pipe.
2. Place one new Exhaust Clamp onto each of the Tailpipes for the mid mount and one on each muffler and slide the mufflers onto the Left and Right Tailpipes.
   Note: Insure there is a 1/2 inch air gap around the inner C.V. joint
3. Loosely install four 5/16 – 18 x 3/4 HHCS with 5/16 flat washers into the mufflers using the rear holes.
4. Adjust the mufflers front to back by aligning the back of the can with the rear suspension plate (see fig 7).
5. Adjust pipes front to back, making sure there are no air gaps in the clamping slots.
6. Tighten all clamps but leave the muffler bolts loose for vertical alignment later.
7. Reinstall all the heat shields previously removed.

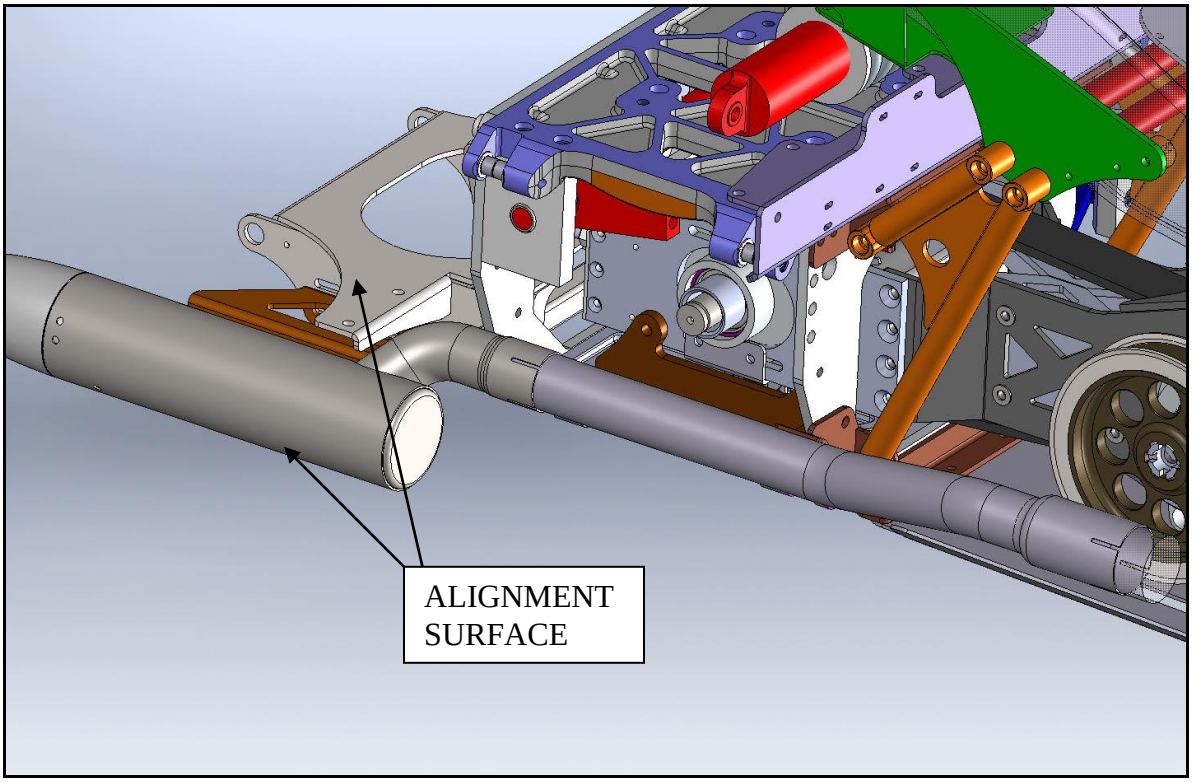


fig 7

Brake Line Installation:

1. Route the Rear Brake Hose to the inside of the Frame and onto the Distribution Block.
2. Using the provided Banjo Bolt and two Crush Washers, install the banjo fitting onto the Distribution Block.
3. Using Cable Ties, secure the Rear Brake Hose to the Frame.

Brake bleeding procedure:

1. Fill Rear Brake Master Cylinder Reservoir.
2. Using a vacuum bleeder, follow this procedure **carefully**.
    a. Left rear caliper bleed outside valves first then inside valves.
    b. Repeat for Right rear caliper.
3. Hand bleed the system using the above sequence. Until all air is removed from the lines.
4. Allow the bike to set for a minimum of 20 minutes and recheck the pedal travel.
5. If there is excessive pedal travel on the first pump, repeat steps 3 and 4.

Link to CSC Belt Tensioning video:

http://www.californiasidecar.com/support.html

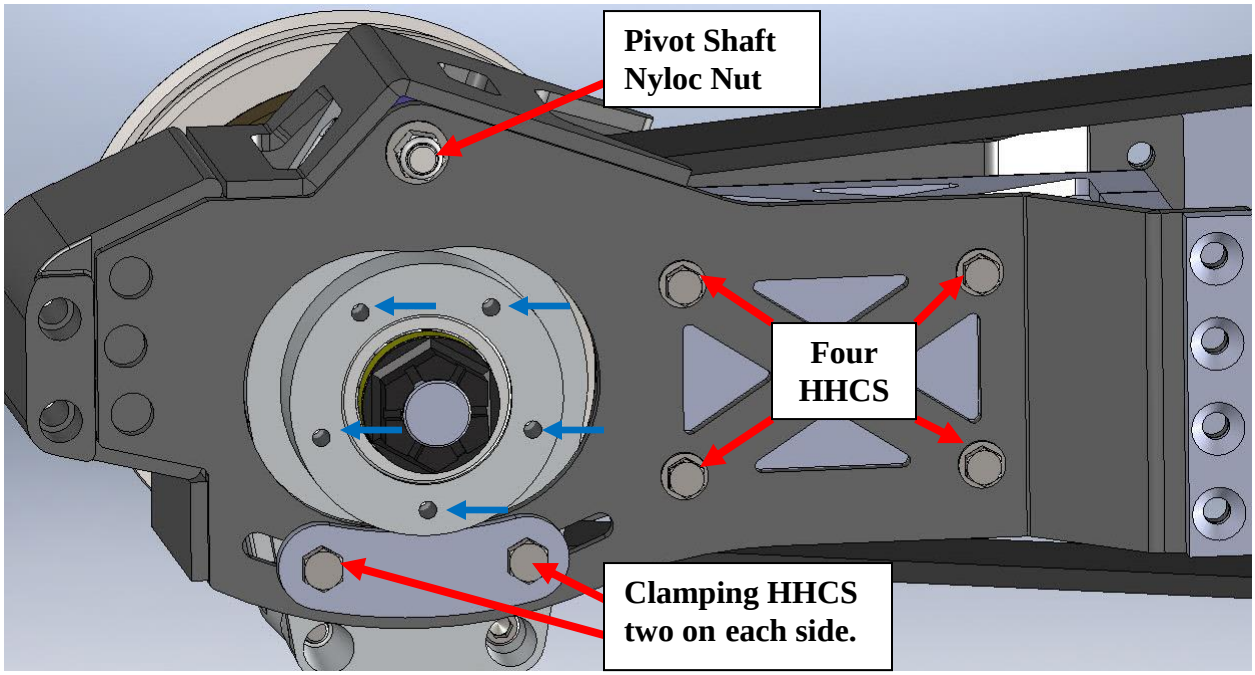
Setting up the Sonic Tension Meter:

1. Turn power on, Push Select then 1.
2. Using the charts below in Front and Rear belt tensioning push Mass then the numbers, Width and so on.
3. For the Rear belt push Select then 2. Reverse belt can be number 3 and so on.

Using the Sonic Tension Meter:

1. Using the Sonic Tension Meter.
2. The microphone placement over the belt is critical.
   a. The microphone should be in the middle of the belt width-wise.
   b. The microphone should be equally in-between the two Sprockets.
   c. The microphone should be between ¼ and ½ an inch above or below the Belt.
3. Ensure that the correct setting is displayed on the LCD screen.
4. Push MEASURE then gently tap the Belt with a wrench while holding the microphone in the correct position. A measurement in Lbs. of single span tension should display. If not continue tightening the Belt until a reading is displayed.
5. In noisy environments the Sonic Tension Meter may display errant numbers. If so use in a quieter area.
6. Always take at least THREE readings of the Belt tension and average the THREE readings to determine the actual tension of the Belt.

Tensioning the Front Drive Belt:



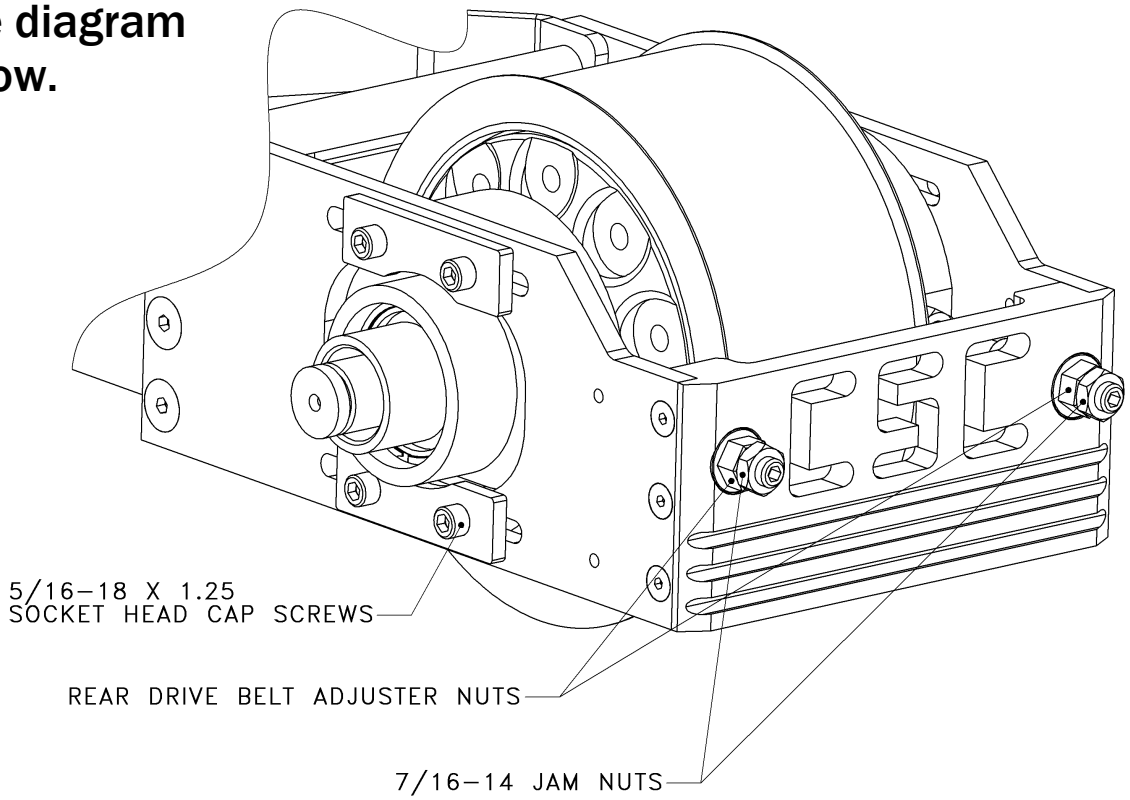
1. If you have the CSC Electric Reverse option you MUST loosen the 5 BHSHCS (BLUE ARROWS) holding the Reverse housing to the Drive Support.
2. With the four HHCS in the rear only on the right side loose. Loosen the four clamping HHCS two per side.
3. Tighten the Rear Drive Belt adjuster nuts until the slack is taken up on the Front Drive Belt.
4. Use the correct setting on the Sonic Tension Meter.

   MASS 007.9g/m
   WIDTH 028.0 mm/R
   SPAN 0434 mm
5. Check Front Drive Belt tension.
   28mm Belt: <u>130 – 150 lbs.</u> of single span tension.
6. Once the correct belt tension is achieved tighten all fasteners loosened or left loose in step 1. Eight HHCS and check the upper pivot shaft nyloc nut.
7. Verify belt tension.

NOTE: Belt tension may increase once all bolts are tightened.

Tensioning the Rear Drive Belt:

1. See diagram below.



2. Tighten the Rear Drive Belt Adjuster nuts until the slack is taken up on the Rear Drive Belt.
3. Use the correct setting on the Sonic Tension Meter.

   MASS 007.9 g/m
   WIDTH 050.0 mm/R
   SPAN 0442 mm
4. Check Rear Drive Belt tension.
   50mm belt: <u>130 – 150 lbs.</u> of single span tension.
5. In the next step you are going to run the engine. Please be aware of the safety of all those involved. Make sure you have at least two lug nuts on each rotor and that they are tight.
6. To finish alignment, the belt must have visual clearance between edge of belt and fence on front Rear Drive Sprocket. Check this by starting the engine and placing it in second gear and simply let the engine idle. Checking the alignment by eye and centering the belt as it spins. If belt has correct clearance, go to step 8. If it does not have clearance, proceed to step 7.

7. Use the Left and Right Rear Drive Belt Adjuster Nuts to align belt in order to achieve the necessary belt clearance. NOTE: The belt will always track to the side of the sprocket that is the loosest. Repeat step 4.
8. Once the correct belt alignment and single span tension is achieved, tighten the eight 5/16 – 18 x 1 ¼ SHCS that go into the Carrier Bearing Support Housings.
9. Install two 7/16 – 14 hex jam nuts onto the Rear Drive Belt Tensioning Studs and tighten.
10. Verify belt tension and alignment.
11. If the tension is correct move on to next step. If not loosen clamping bolts and return to step 4.

Service Limits on Drive Belts:

1. Service limit on the Front Drive Belt is 130 - 150 lbs.
2. Service limit on the Rear Drive Belt is 130 - 150 lbs.

If you are installing the Ventura Reverse install it now.
See separate installation instructions.

Suspension Setup:

Use this chart to select the correct spring preload. Rotate the adjuster nut on the shock until the spring is set to the desired length. Now tighten the set screw on the adjuster nut or tighten the lock nut on the fully adjustable shock.

Load: Typical weight the customer adds to the stock trike. This includes riders, luggage, and weight of a trailer tongue. When in doubt assume a higher weight than actual.

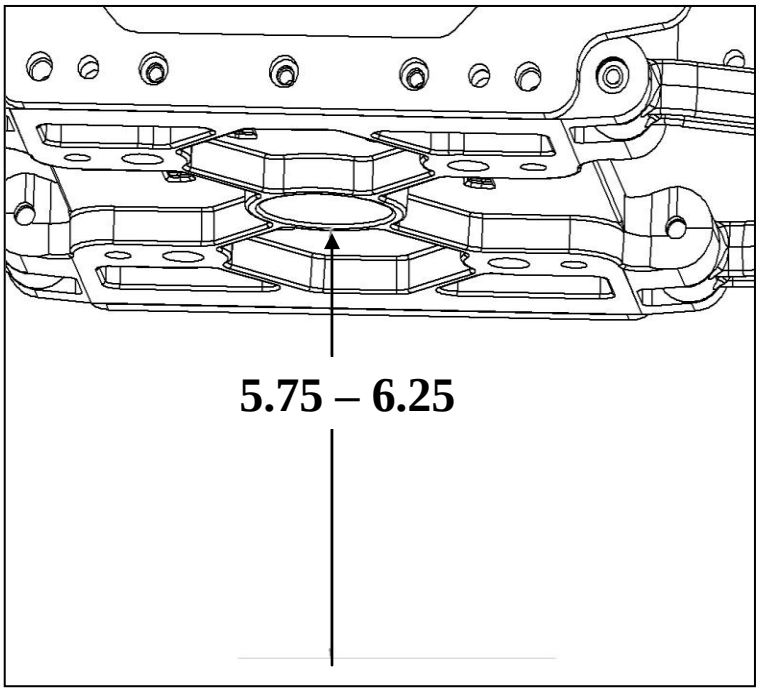
Length: Suggested length the spring should be adjusted to with the suspension completely unloaded and the preloader adjusted all the way out.

VENTURA								
SHOCK with GREY SPRING								
	LOAD	LENGTH		LOAD	LENGTH		LOAD	LENGTH
250 LB/IN SPRING	100	11 1/16	300 LB/IN SPRING	100	11 1/4	350 LB/IN SPRING	100	11 7/16
	200	10 7/8		200	11 1/16		200	11 1/4
	300	10 5/8		300	10 7/8		300	11 1/8
	400	10 5/16		400	10 5/8		400	10 15/16
	500	10 1/8		500	10 7/16		500	10 3/4
				600	10 1/4		600	10 5/8
							700	10 1/2
							800	10 3/8

VENTURA								
SHOCK with RED SPRING								
	LOAD	LENGTH		LOAD	LENGTH		LOAD	LENGTH
250 LB/IN SPRING	100	13 1/16	300 LB/IN SPRING	100	13 1/4	350 LB/IN SPRING	100	13 7/16
	200	12 7/8		200	13 1/16		200	13 1/4
	300	12 5/8		300	12 7/8		300	13 1/8
	400	12 5/16		400	12 5/8		400	12 15/16
	500	12 1/8		500	12 7/16		500	12 3/4
				600	12 1/4		600	12 5/8
							700	12 1/2
							800	12 3/8

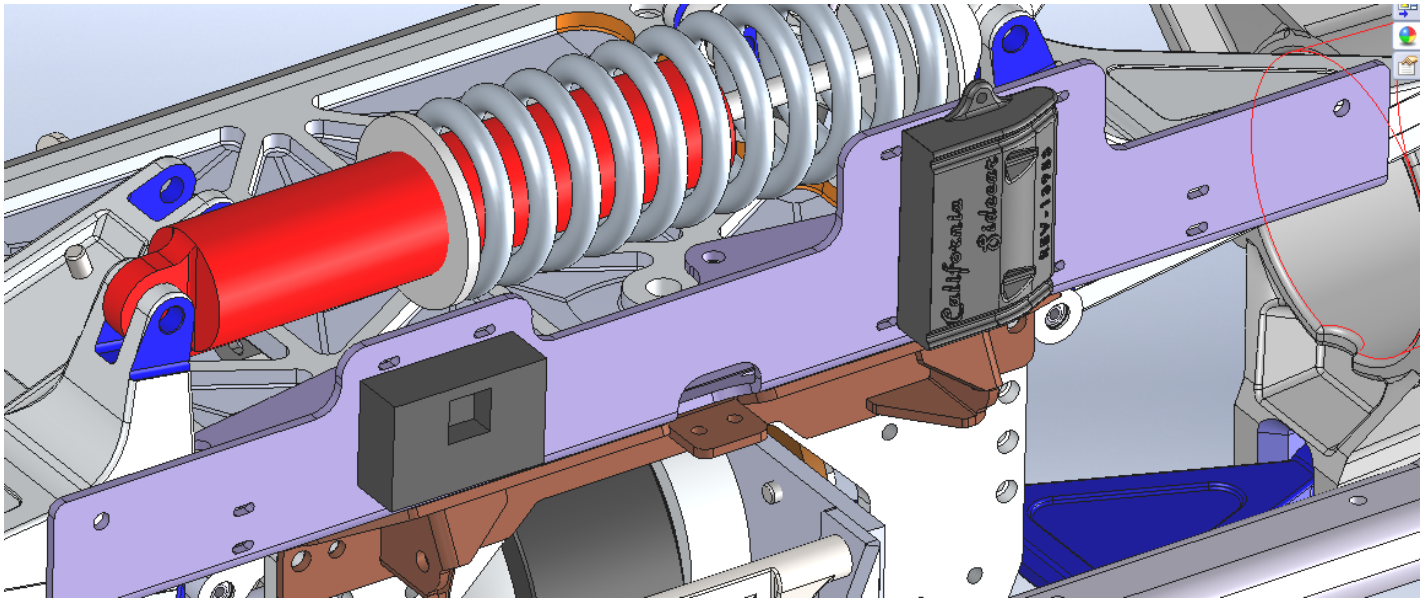
These lengths are only estimates. If you would like to confirm a correct setting, load the completed trike to the customer's typical riding situation and measure from the ground to the middle of the lower suspension plate. The center hole should be 5.75" – 6.25" from the ground.

Attention: This is the only suspension adjustment needed. All other settings are factory set and should not be tampered with. There is no need to remove trike from the lift to check camber, toe, or the drop links.



Trike Body installation:

1. If installing Ground Effects.
   Install the controllers to the Upper Frame Mount with two sided tape and zip ties using slots provided.
   Connect and route the wiring. Refer to separate installation instructions if necessary.



2. Lower the body onto the trike with the front of the body pointing downward until it comes to rest onto the upper tray and body frame.

Trike Body alignment:

1. The Trike Body can move left, right, forward, backward, up, down, and angled. Shimming with the provided 1/4 and 1/8 Rubber Washers may be required to get the Trike Body into alignment.
2. Install the seat and right and left OEM side covers.
3. Raise the front of the body to obtain the vertical location around the side covers and the seat.
4. Then slide the body front to back to get the horizontal location.

5. With the body temporarily held into place, raise the adjustable 90° body support brackets until they seat against the body's inner liner.
6. Tighten the two 5/16 – 18 x 3/4 HHCS and two 5/16 – 18 nyloc nuts on the Adjustable 90° Support Brackets.
7. Center the Trike Body left to right with the mufflers. You can also measure off the brake rotors to the fender well with a carpenter square.

Securing the trike body:

Note: A small section of Trike Body Carpet has not been glued at the location of the Trike Body Frame mounting tabs to allow removal of the bolts used in shipping, and installation of the Trike Body mounting hardware. The predrilled bolt holes may need to be enlarged or relocated for Trike Body attachment to the Trike Body Frame mounting tabs. If relocation is necessary, the preexisting holes will need to be sealed with silicone sealant.

1. Using a 5/16 twist drill, drill up through the Trike Body Frame mounting tabs.
2. Insert two 5/16–18 x 1 1/4 HHCS, two 5/16 x 1 1/2 fender washers, and rubber washers if necessary through the drilled holes.
3. Using a 5/16 twist drill, drill up through the Adjustable 90° Body Support Brackets.
4. Insert two 5/16–18 x 1 1/4 HHCS and two 5/16 x 1 1/2 fender washers through the adjustable 90° body support brackets.
5. Install four 5/16–18 nyloc nuts and four 5/16 flat washers onto the four 5/16–18 x 1 1/4 HHCS screws and tighten.
6. Re-align the Mufflers into the Trike Body cutout and tighten hardware.

Installing the Victory Tour Box:

1. Set the tour box in place on top of the CSC filler panel.
2. Loosely reinstall the four OEM HHCS.
3. Install three BHCS from underneath and three torx head flanged nuts on the inside.
4. Secure the tour box by evenly tightening the seven fasteners. Be sure not to over tighten the three BHCS.

Reassembly of the motorcycle:

1. Connect Body Wiring Harness connector under the Frame to the Rear Fender Wiring Harness Connector.
2. Route the red wire with Fuse Holder and white wire up to the battery.
3. Connect the red wire to the Positive Battery terminal.
4. Reconnect the negative battery terminal with the new white wire from the Trike Body Wiring Harness.

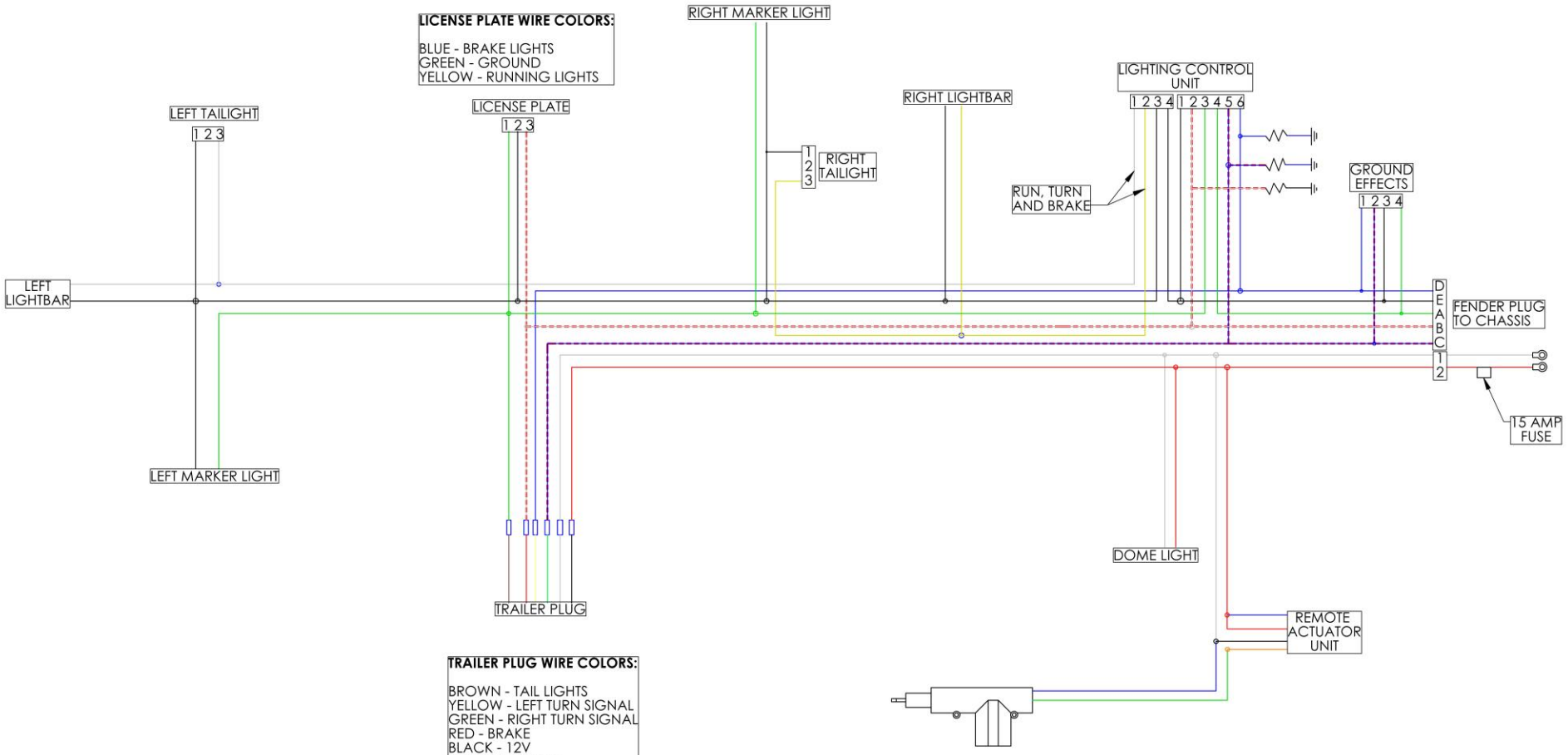
Final Reassembly of the motorcycle:

1. Reinstall the wheel and tire assemblies with ten m12 x 1.5 ET conical lug nuts. Torque to 75 FT-LBS.
2. Recommended tire pressure
   15" & 16" wheels – 28 psi
   17" wheels – 25 psi

Refer to the Maintenance Schedule on p. 4 for details regarding future service inspections and maintenance.

From all of us at California Sidecar.

Enjoy the ride.



WIRE COLORS:

GREEN - TAIL LIGHT
BLUE/RED - RIGHT SIGNAL
BLUE - LEFT SIGNAL
RED/WHITE - BRAKE LIGHT
YELLOW - RIGHT TAIL/TURN/BRAKE
GREY - LEFT TAIL/TURN/BRAKE
BLACK - GROUND, HARNESS
WHITE - GROUND, BATTERY
RED - 12V FUSED, BATTERY

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

TITLE: WIRE HARNESS, VENTURA

REV: C