



## **Trike Conversion Kit**

# **KAWASAKI**

**Vulcan 900 CLASSIC- CLASSIC LT  
AND CUSTOM MODELS 2006-CURRENT**

## **Installation Instructions**

**Revised 1 - 2017**

**California Sidecar Parts & Technical Support  
434.263.8866**



## Table of Contents:

<b>1. Warnings and Considerations</b>	<b>4</b>
<b>2. Maintenance Schedule</b>	<b>5</b>
<b>3. Disassembly of Motorcycle</b>	<b>6</b>
<b>4. Modification of Frame</b>	<b>11</b>
<b>5. Modification of OEM Mufflers</b>	<b>12</b>
<b>6. Component Installation</b>	<b>14</b>
<b>7. Rear Suspension Unit Installation</b>	<b>15</b>
<b>8. Brake Line Installation</b>	<b>17</b>
<b>9. Brake Bleeding Procedure</b>	<b>18</b>
<b>10. Link to CSC Belt Tensioning video</b>	<b>19</b>
<b>11. Setting up the Sonic Tension Meter</b>	<b>19</b>
<b>12. Using the Sonic Tension Meter</b>	<b>19</b>
<b>13. Tensioning the Front Drive Belt</b>	<b>20</b>
<b>14. Gravel Pan</b>	<b>21</b>
<b>15. Suspension Setup</b>	<b>22</b>
<b>16. Reassembly of Motorcycle</b>	<b>24</b>
<b>17. Muffler and Tailpipe Installation</b>	<b>25</b>
<b>18. Tensioning the Rear Drive Belt</b>	<b>27</b>
<b>19. Trike Body Installation</b>	<b>29</b>
<b>20. Trike Body Alignment</b>	<b>29</b>
<b>21. Securing the Trike Body</b>	<b>30</b>
<b>22. Preloader Installation</b>	<b>31</b>
<b>23. Final Assembly</b>	<b>32</b>

## Warnings and considerations:

**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.

1. **“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.
2. Always wear safety glasses when using hand and/or power tools.
3. When working in and around the fuel system, always work in a well-ventilated area, free from sparks and open flames.
4. All directional references to the “right side” and the “left side” are as you were seated on the motorcycle.
5. 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. Thread locking compound (Loctite 242 minimum).
2. High temperature Silicone sealant.

## Maintenance Schedule: INDY

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 axle 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.

This Schedule **is in addition to** the Kawasaki 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 idle for more than 2 weeks** you should **remove** the 15 amp fuse from the red fuse holder located under your seat or right side cover. Another option is using a battery tender.

**Service & Maintenance questions – contact Parts & Service at  
434.263.8866**

# Disassembly of Motorcycle



- 1. Remove seat using motorcycle ignition key**
- 2. Remove Battery Cover (2 fasteners)**
- 3. Remove Saddle Bags (if equipped) and the Mounts/Brackets**
- 4. Remove Backrest**

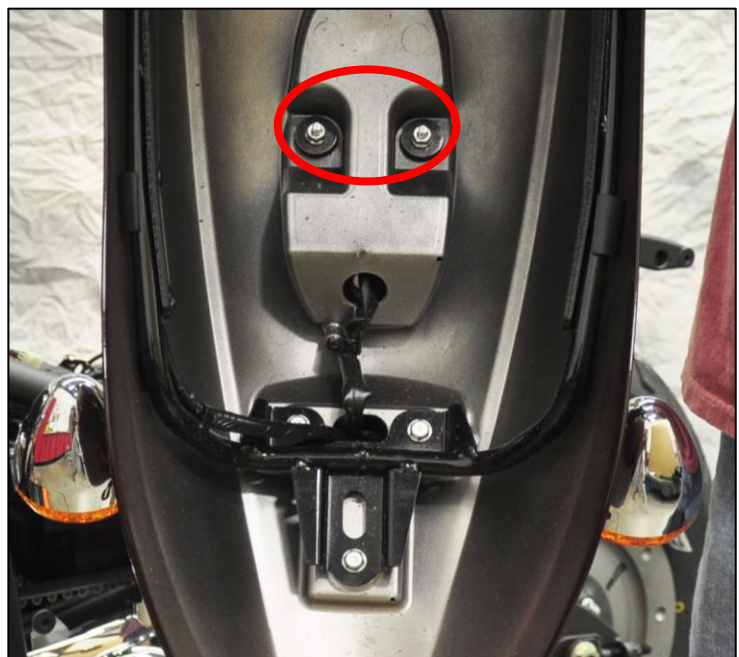


5. Unbolt Seat Latch Assembly (2 Fasteners) and both Side Covers (1 Fastener each)
6. Unplug fender wiring plug and remove Chrome Frame Covers (2 fasteners each)

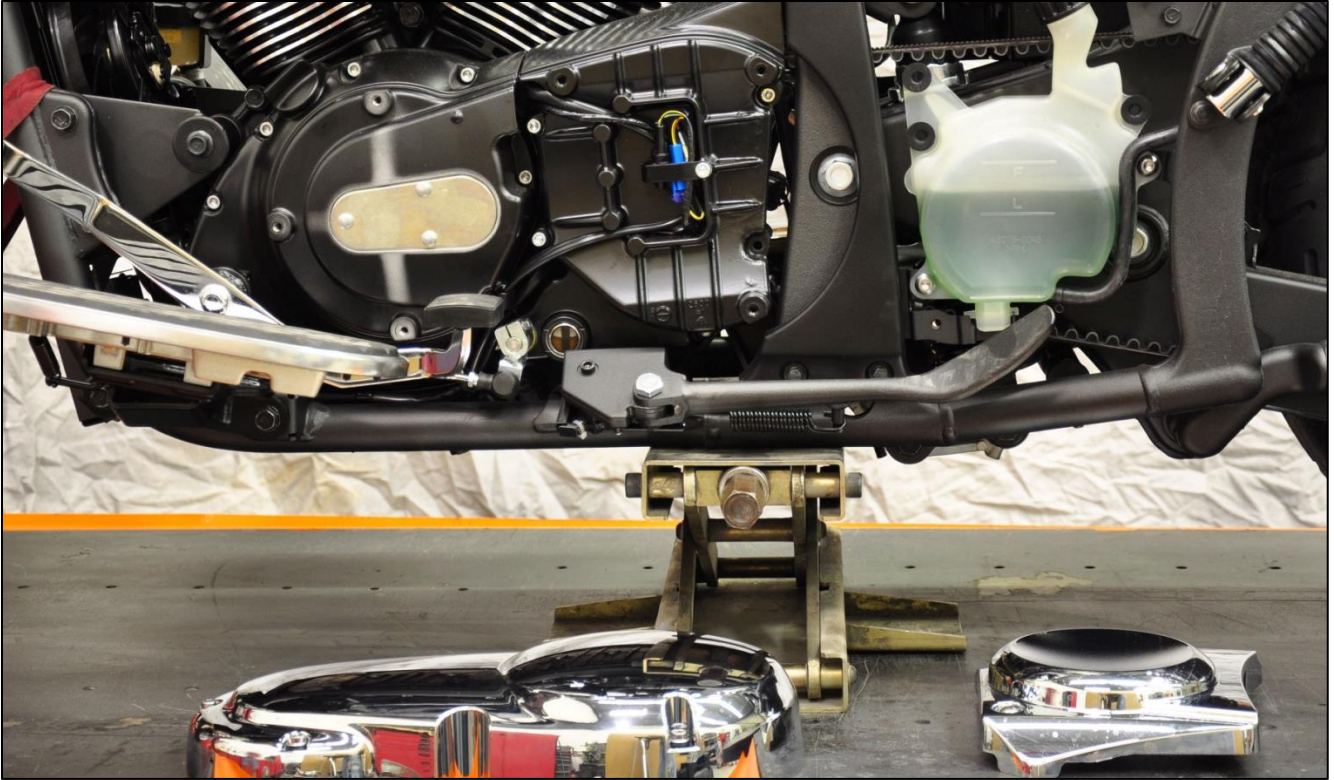


7. Remove Fender (4 fasteners)
8. Remove Taillight Assembly (2 fasteners)

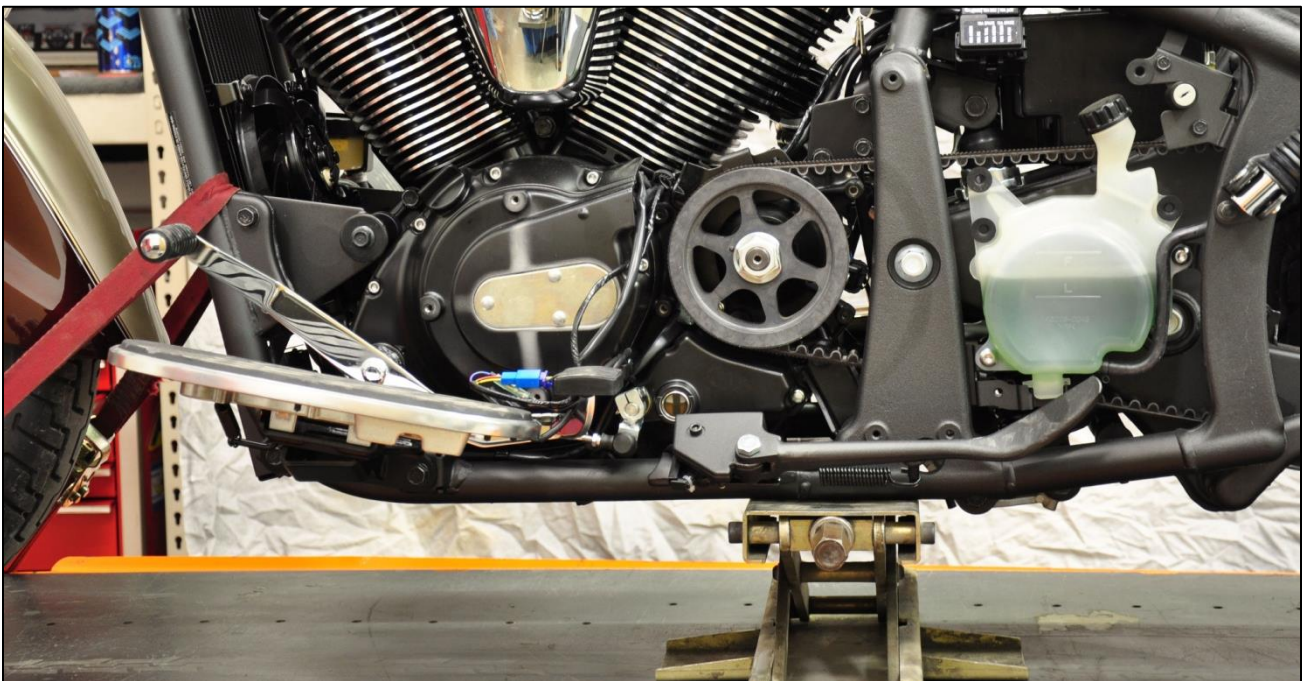
**The OEM Taillight is used in the Trike body**



**9. Remove chrome Engine Side Cover (6 fasteners) and Coolant Cover (1 fastener)**

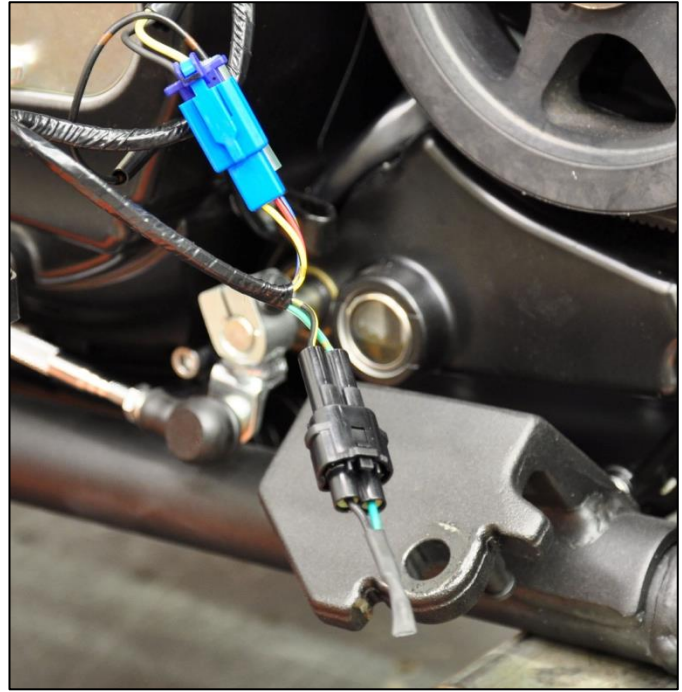


**10. Remove black plastic Frame Cover (3 fasteners)**  
**11. Remove aluminum Sprocket Cover (4 fasteners)**



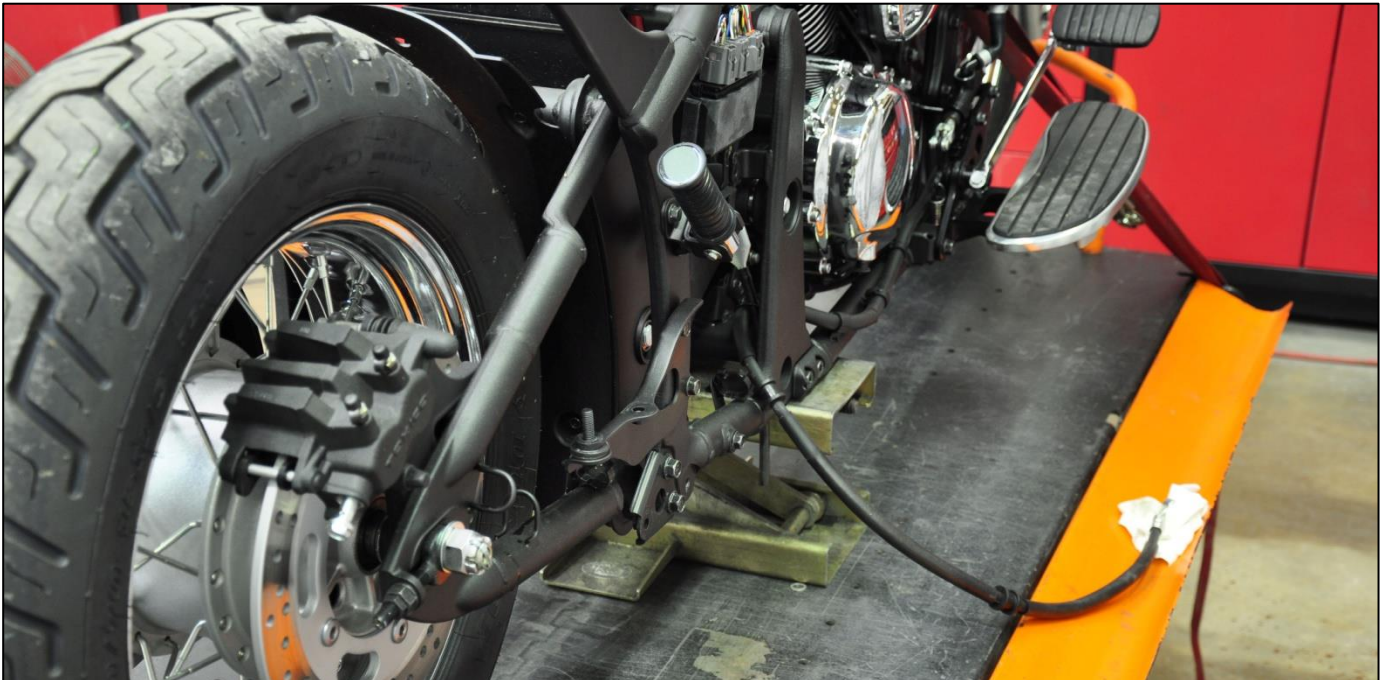


- 12. Remove Side Stand and attached Switch
- 13. Remove Switch Connector and splice Green and Black wires together as shown



**Remove Exhaust Assembly as a unit**

- 14. Remove flange fasteners from cylinder head
- 15. Remove 4 fasteners and Sleeved Grommets from Rear Bracket
- 16. Remove Brake line from the Caliper and route line out of the way



- 17. Remove Lower Frame Brace- located behind the shock**
- 18. Remove upper Shock Bolt and Lower Frame to Link Bolt- retain this bolt**
- 19. Remove and retain swing arm Pivot Bolt**
- 20. Remove and Discard Drive Belt from front sprocket**
- 21. Remove and discard Swing Arm assembly**



- 22. Remove Passenger Foot Pegs retain hardware**

## Modification of Frame

Cut **Both** sides of the Frame as shown



Smooth saw cuts and paint

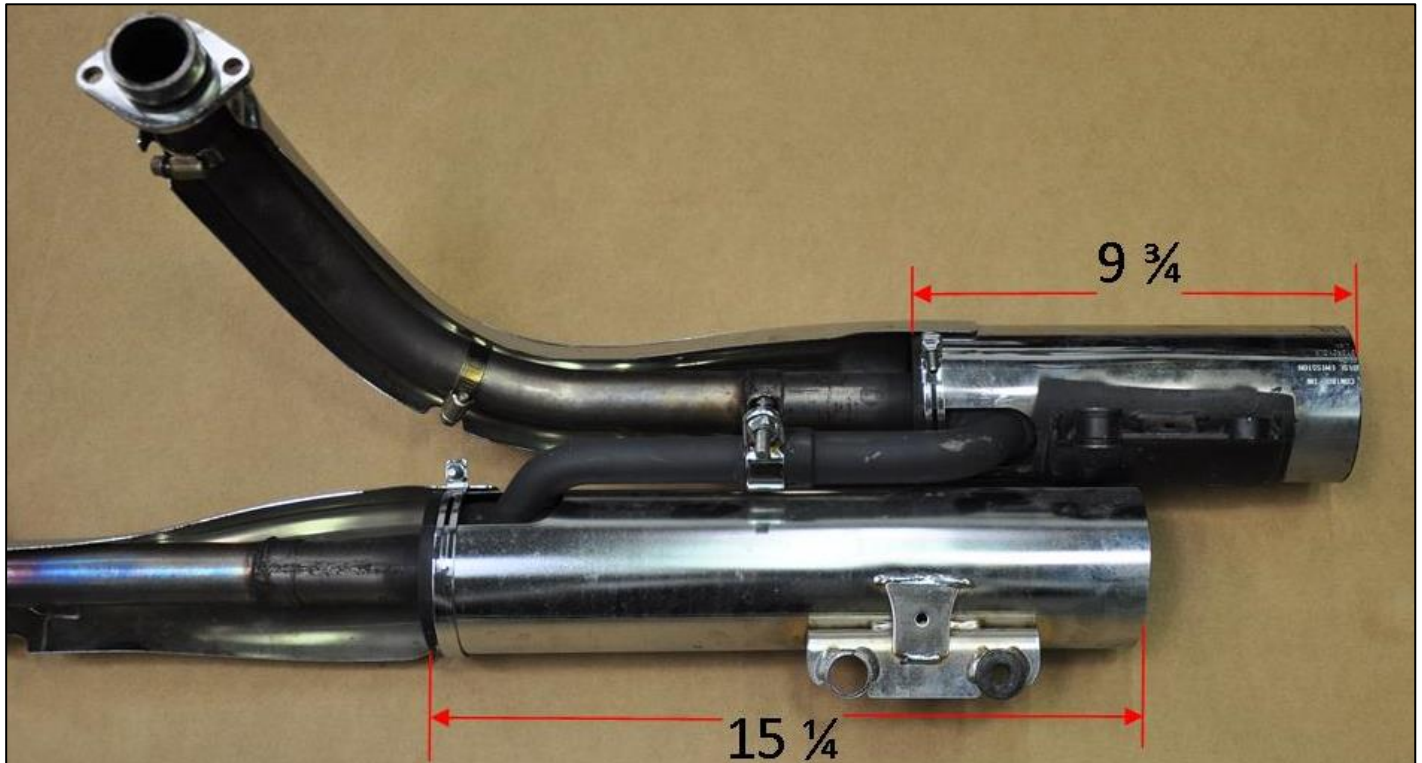
## Modification to OEM Mufflers

1. Measure from the front of the muffler can

Rear cylinder or top cut at  $9 \frac{3}{4}$  inches

Front cylinder or bottom cut at  $15 \frac{1}{4}$  inches

2. Mark the mufflers as shown and cut



3. Using a cutoff wheel. Now cut only the outer chrome heat shield even with the edge of the muffler mount  
Use caution to not cut thru the inner muffler as this will make an exhaust leak.

**Rear Cylinder Cut Approx. 8 inches**

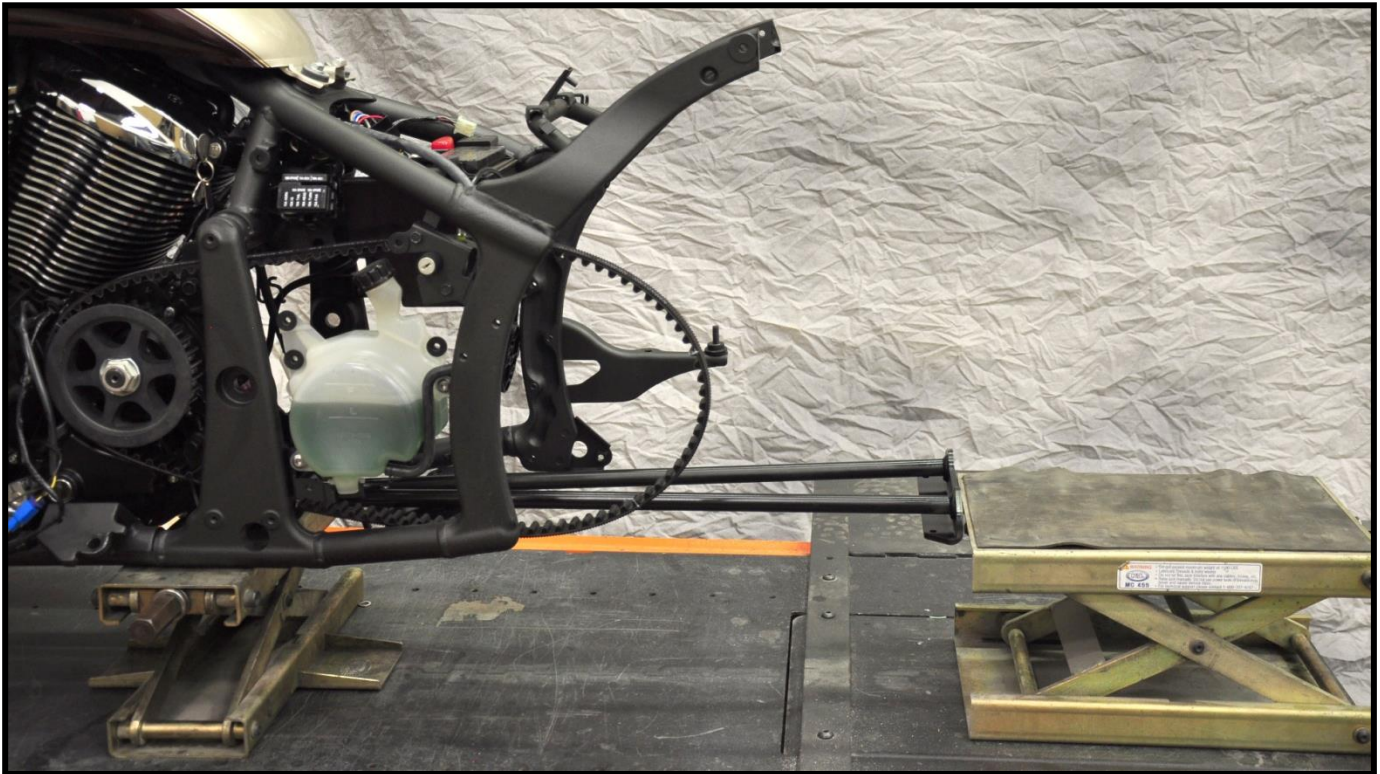


**Front Cylinder Cut Approx. 13 inches**

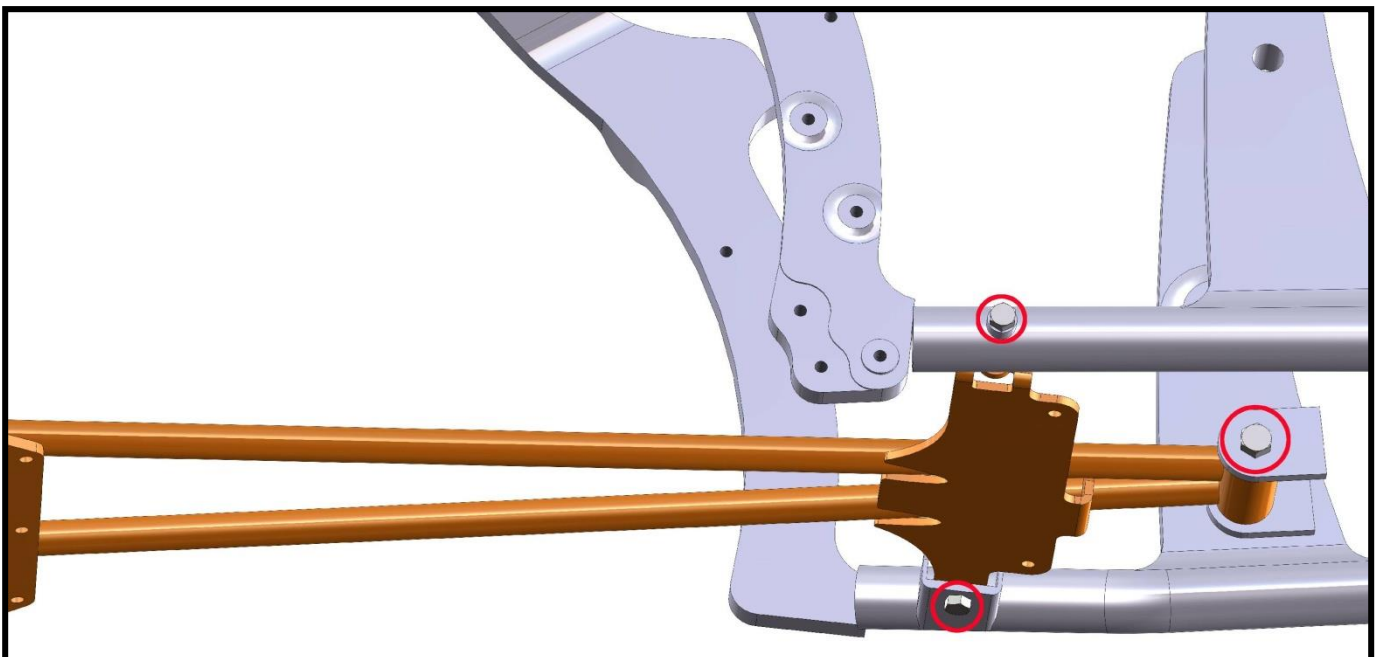


# Component Installation

## 1. Install **NEW CSC** Belt on Front Sprocket



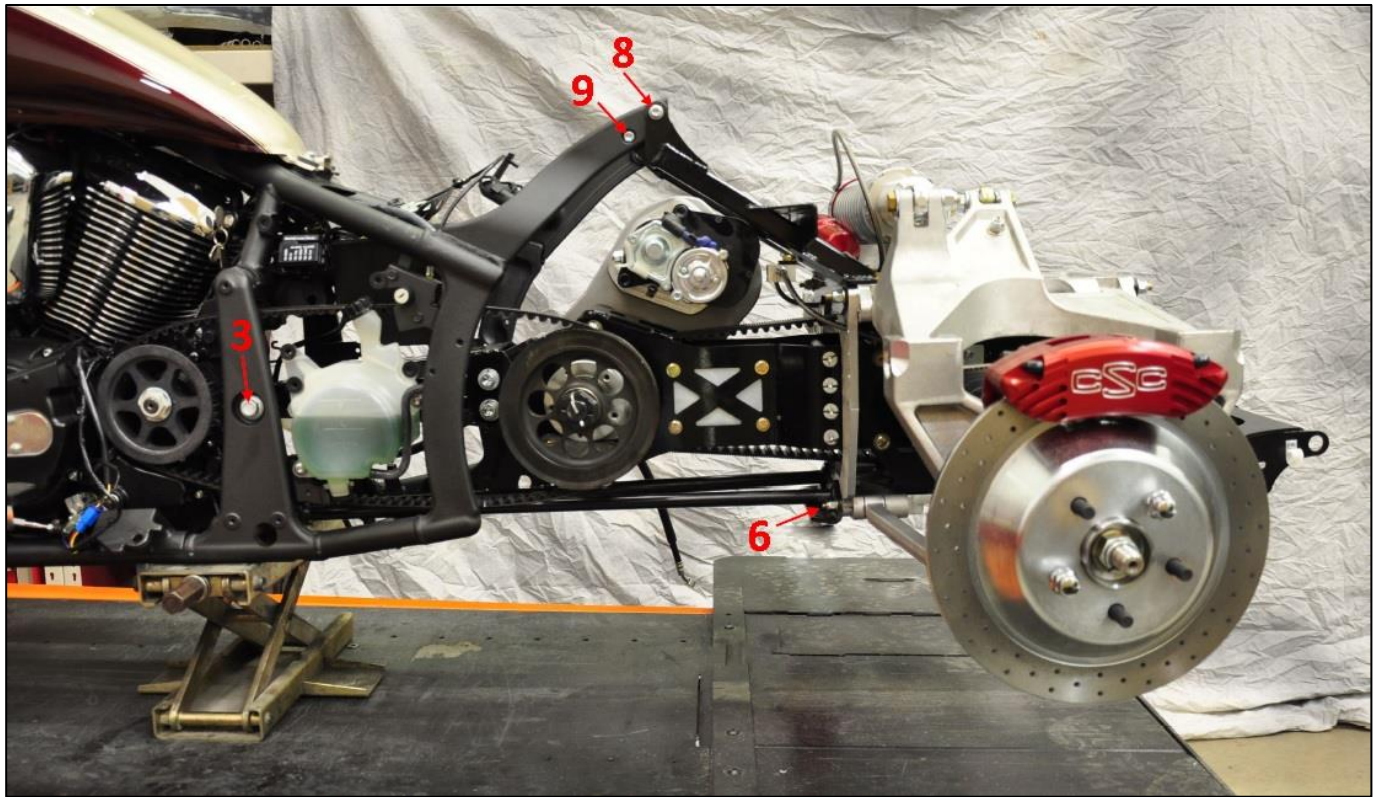
## 2. Loosely install the Subframe reusing 3 OEM fasteners on the front as shown



# Rear Suspension Unit Installation

1. Position Trike Suspension Unit behind prepared motorcycle frame
2. Install **NEW CSC** Belt on Drive Sprocket
3. Install Swing Arm Pivot Shaft [See Figure 1](#)
4. Push Suspension forward to align Lower Suspension studs with Subframe
5. You may need to raise or lower the Suspension.
6. Loosely install 2 each 3/8" nyloc nuts and flat washers on Suspension Box Studs [See Figure 1](#)
7. Align OEM Frame with the Intermediate Mount [See Figure 1](#)
8. Loosely install 2 each M8 x 20 SHCS with flat washers into the upper rear holes with thread locking agent [See Figure 1](#)
9. Loosely install 2 each M8 x 20 SHCS thru lower holes, secure with flat washer and nyloc nuts. [See Figure 1](#)

**Numbers on picture refer to the steps in the instructions  
Figure 1**

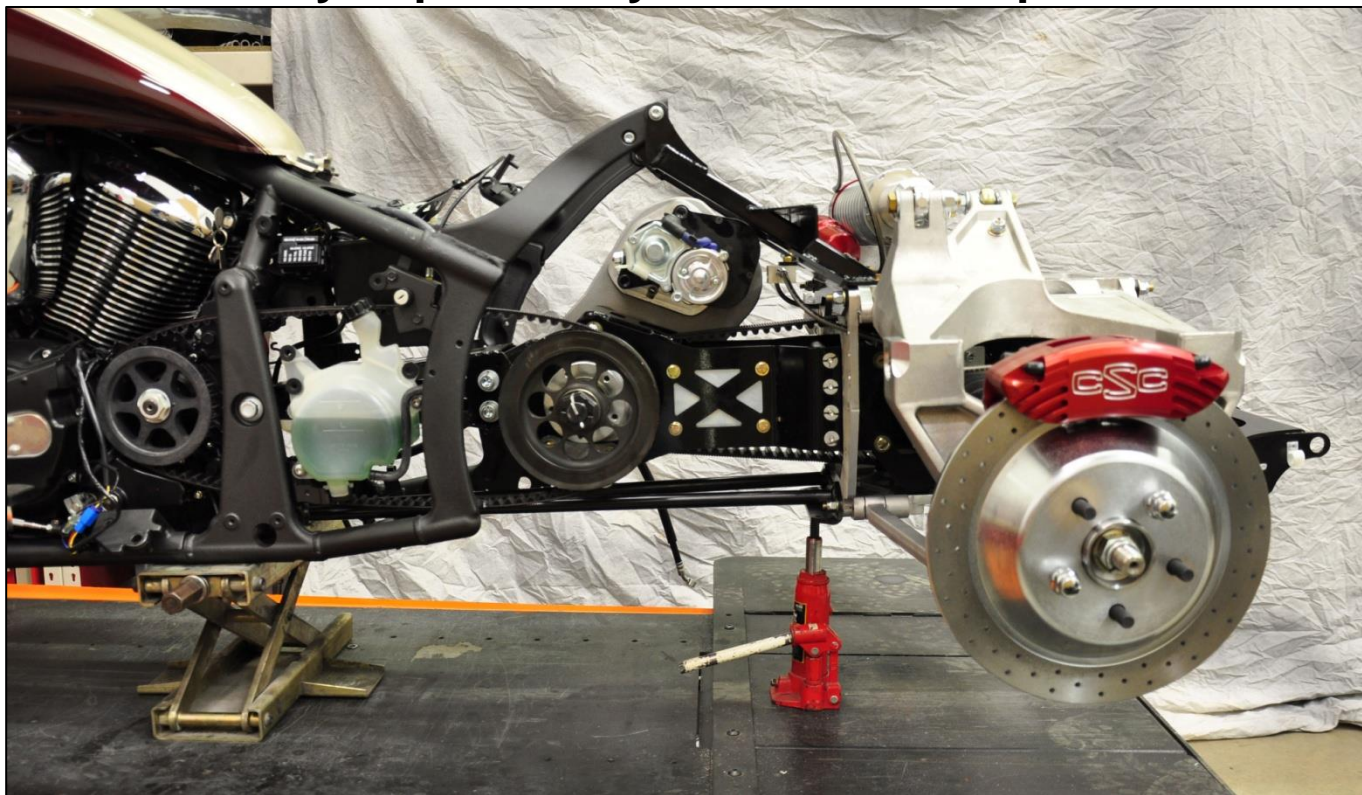


**Torque All Suspension Unit Fasteners – use this sequence**

- 1 **( 3 )** Swing Arm Pivot Shaft **90 FT.-LBS.**
- 2 **( 6 )** 3/8-16 Nyloc Nuts, Lower Subframe **18 FT.-LBS.**
- 3 front of Lower Subframe Mount  
Two M8 **18 FT.-LBS.** one M10 **45 FT.-LBS.**
- 4 **( 8, 9 )** 4 each Upper Motorcycle frame **18 FT.-LBS.**



**10. Now using a bottle jack, place it as shown below in order to tighten the 8 SHCS, 4 on the bottom that were left loose and 4 that you previously loosened in step 4 **45 FT.-LBS.****



### **Brake Line Installation:**

**1. Install the OEM brake line as shown using a new CSC banjo bolt and 2 new crush washers**



## Brake bleeding procedure

1. Using recommended brake fluid, fill Rear Brake Master Cylinder Reservoir
2. Using a vacuum bleeder, follow this procedure carefully
3. Rear caliper rear bleed valves outsides first then insides on each side
4. Rear caliper front bleed valves outsides first then inside on each side
5. Hand bleed the system using the above sequence until all air is removed from the lines
6. Allow the bike to set for a minimum of 20 minutes and recheck the pedal travel
7. 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>

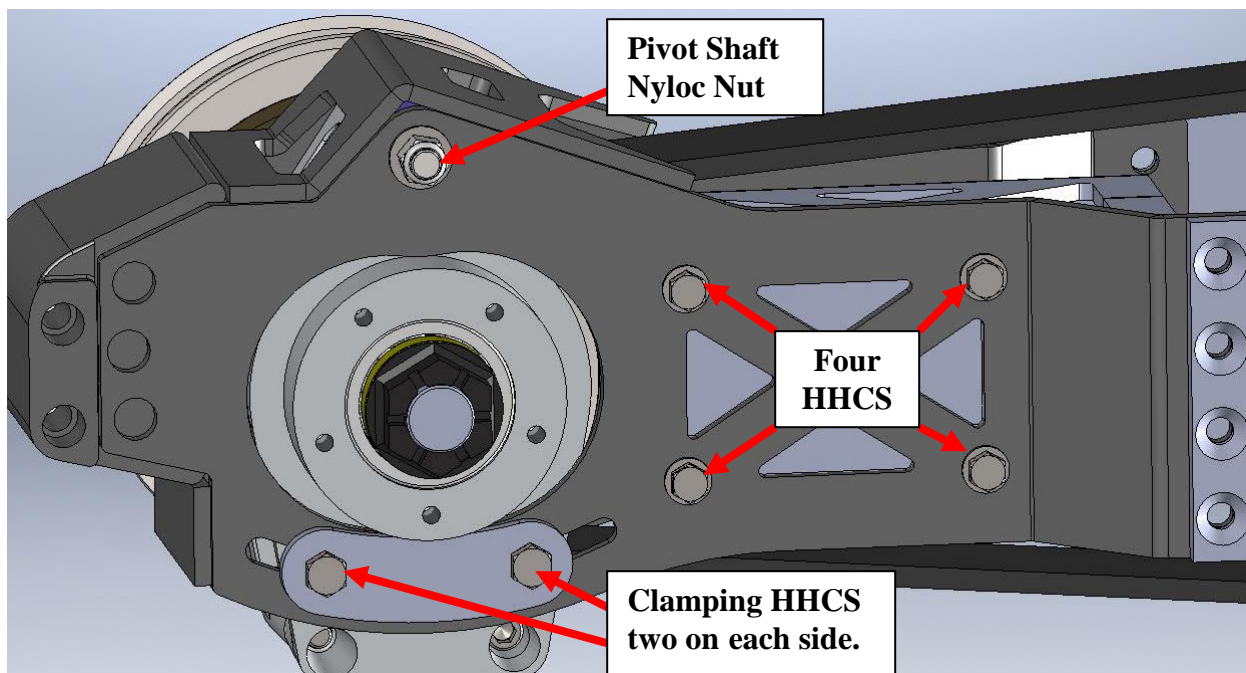
### **Setting up the Sonic Tension Meter**

- 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  $\frac{1}{4}$  and  $\frac{1}{2}$  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**

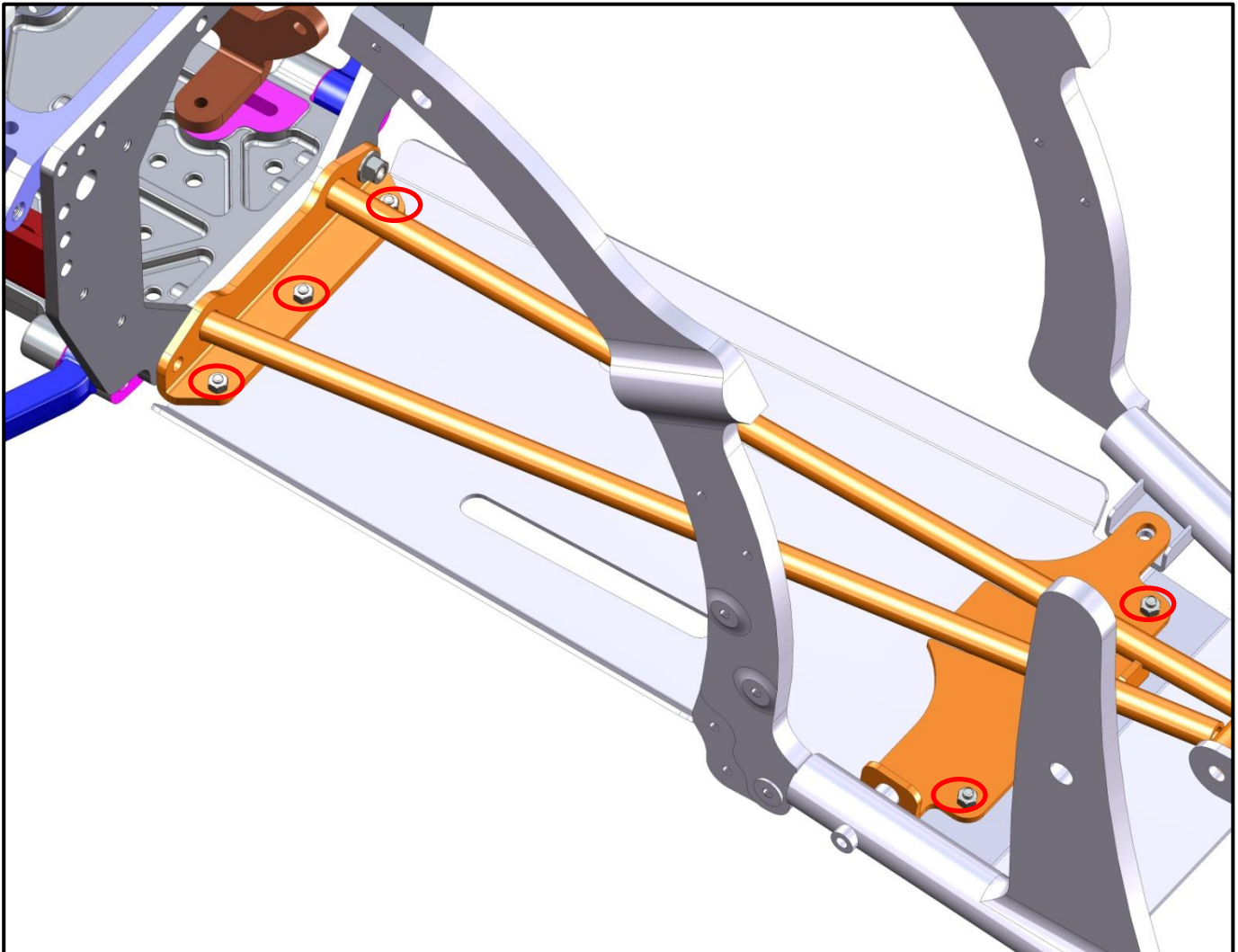
## Tensioning the Front Drive Belt



1. With the four HHCS in the rear only on the left side loose. Loosen the four clamping HHCS two per side.
  2. Tighten the Rear Drive Belt adjuster nuts until the slack is taken up on the Front Drive Belt.
  3. Use the correct setting on the Sonic Tension Meter.  
MASS 007.9g/m  
WIDTH 023.5 mm/R  
SPAN 0532 mm
  4. Check Front Drive Belt tension.  
23.5mm Belt: 130 – 150 lbs. of single span tension.
  5. 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.
  6. Verify belt tension.
- NOTE:** Belt tension may increase once all bolts are tightened.

## Gravel Pan Installation:

1. Install the Gravel Pan under the tab on the Lower Rear Mount
2. Using 3, 1/4 HHCS and flat washers from the bottom up, then secure with nyloc nuts
3. Raise the front of the Gravel Pan and secure with 2, 1/4 HHCS, flat washers and nyloc nuts
4. Align and tighten all fasteners



# 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, but do not over tighten.

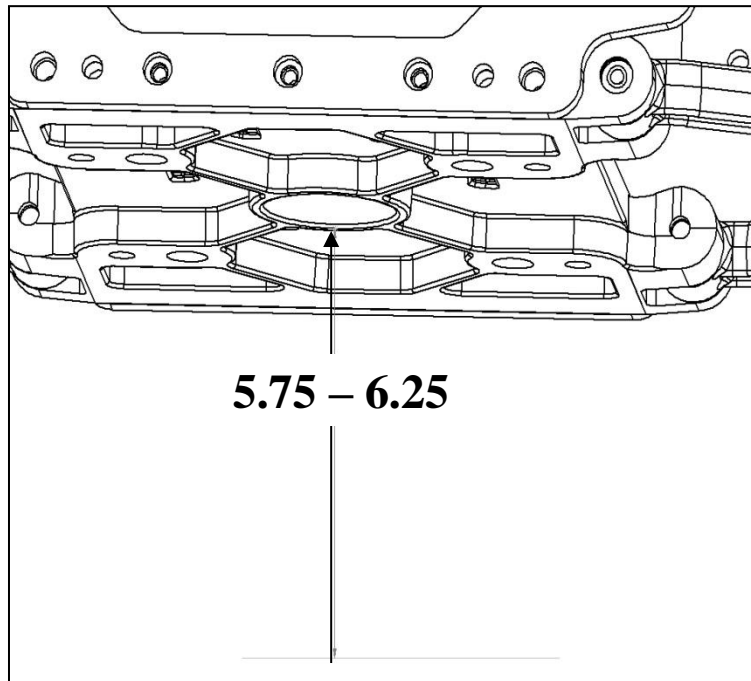
**Load:** Typical weight the customer adds to the trike. This includes riders, luggage, and weight of a trailer tongue. When in doubt assume a higher weight than actual.

**Length:** Suggested length the spring should be adjusted to with the suspension completely unloaded, rear tires in the air, and the preloader adjusted all the way out

<b>INDY</b>								
<b>SHOCK with GREY SPRING</b>								
	LOAD	LENGTH		LOAD	LENGTH		LOAD	LENGTH
<b>250 LB/IN SPRING</b>	100	11 1/8	<b>300 LB/IN SPRING</b>	100	11 1/4	<b>350 LB/IN SPRING</b>	100	11 3/8
	200	10 7/8		200	11		200	11 1/8
	300	10 9/16		300	10 13/16		300	10 7/8
	400	10 1/4		400	10 1/2		400	10 5/8
				500	10 3/8		500	10 1/2
				600	10 1/8		600	10 1/4
							650	10 1/8

<b>INDY</b>								
<b>SHOCK with RED SPRING</b>								
	LOAD	LENGTH		LOAD	LENGTH		LOAD	LENGTH
<b>250 LB/IN SPRING</b>	100	13 1/8	<b>300 LB/IN SPRING</b>	100	13 1/4	<b>350 LB/IN SPRING</b>	100	13 3/8
	200	12 7/8		200	13		200	13 1/8
	300	12 9/16		300	12 13/16		300	12 7/8
	400	12 1/4		400	12 1/2		400	12 5/8
				500	12 3/8		500	12 1/2
				600	12 1/8		600	12 1/4
							650	12 1/8

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.



## Reassembly of Motorcycle

1. Reinstall aluminum Sprocket Cover (4 fasteners)
2. Reinstall Chrome Engine Side Cover (6 fasteners) and Coolant Cover (1 fastener)
3. Reinstall black plastic Frame Cover (3 fasteners)

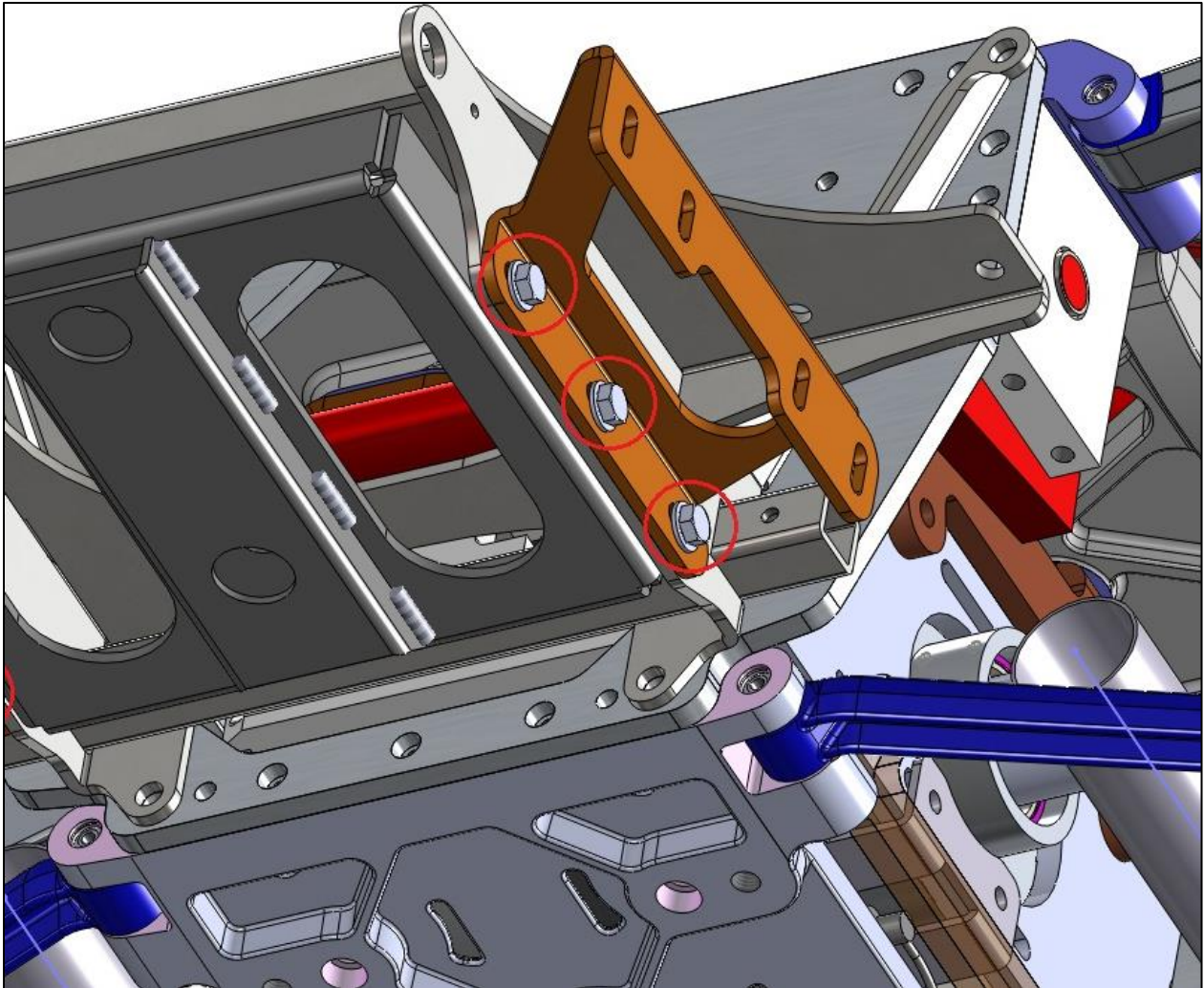


**Now refer to the CSC Electric Reverse Instructions.**

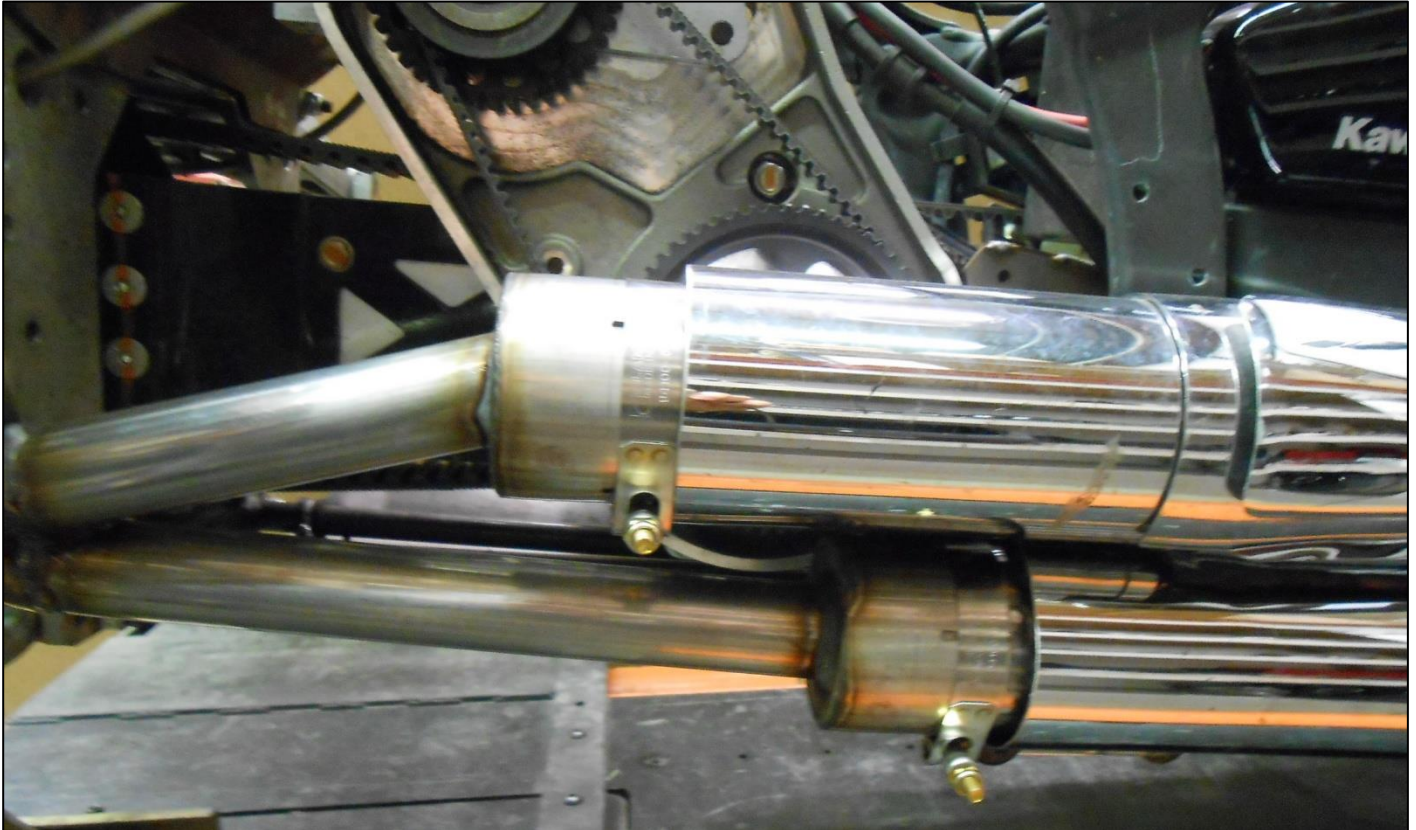


## Muffler and Tailpipe Installation

1. Reinstall Modified exhaust reusing OEM hardware leaving all fasteners loose
2. Install Muffler Mount using three 5/16-18X1 1/4 HHCS, 6 flat washers and 3 nyloc nuts in the lower set of holes
3. If installing the Trailer Hitch Option, install it now



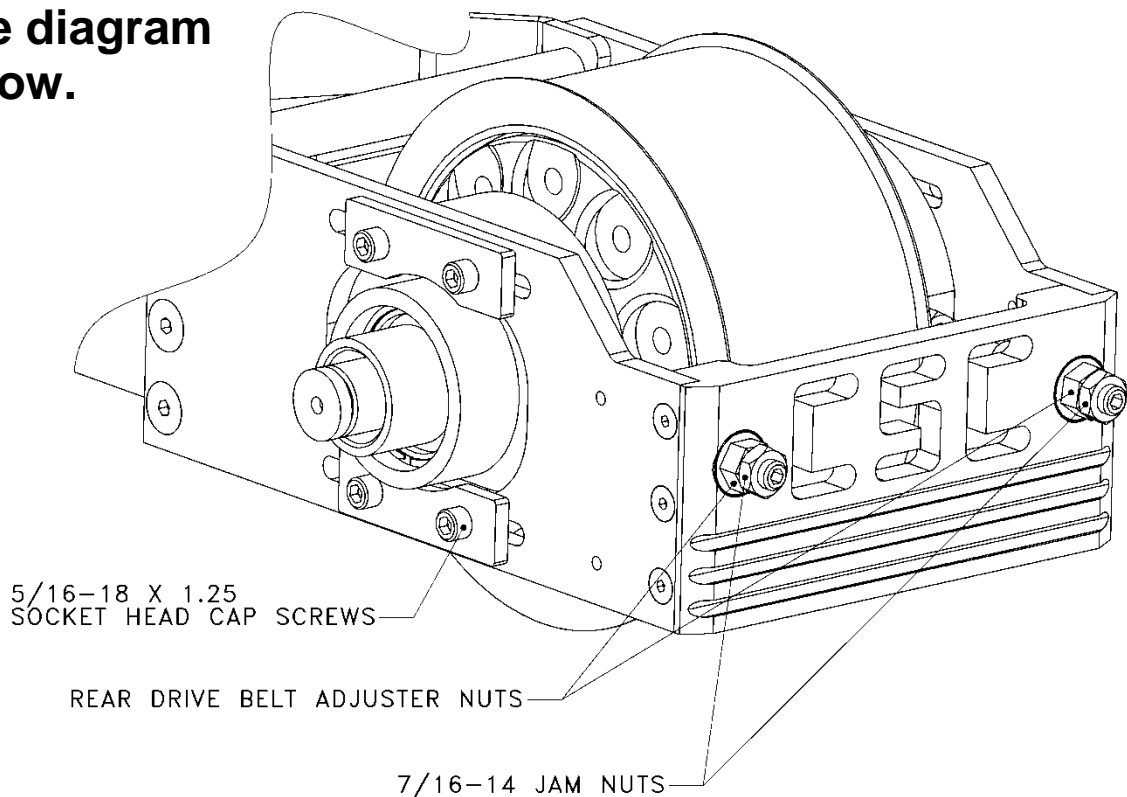
- 4. Install CSC Tailpipes onto the rear of the Modified Mufflers using 2 large clamps**
- 5. Install the CSC Muffler onto the tailpipe securing it to the muffler mount with two 5/16-18X3/4 HHCS and flat washers, and to the tailpipe with a clamp**



- 6. Tighten clamps and all the OEM hardware but leave the 2 HHCS securing the mufflers loose to be tightened after the body is installed**

## 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: 130 – 150 lbs. 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 brake 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.**

## **Trike Body installation**

- 1. 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 both side covers**
- 3. Reinstall the seat latch and the cable holder plate securing with new longer phillips screws, flat washers and nyloc nuts**
- 4. Latch the seat in place to help with body alignment**
- 5. Reinstall the passenger foot pegs with OEM hardware**
- 6. Raise the front of the body to align the cutout for the passenger foot pegs**
- 7. With the body temporarily held into place, raise the adjustable 90° body support brackets until they seat against the body's inner liner, Tighten the two 5/16 – 18 x 3/4 HHCS and nyloc nuts on the Adjustable 90° Support Brackets**
- 8. Align the muffler with the muffler cutout in the body**
- 9. Center the Trike Body left to right measuring off the rotors with a carpenters square**



## **Securing the trike body**

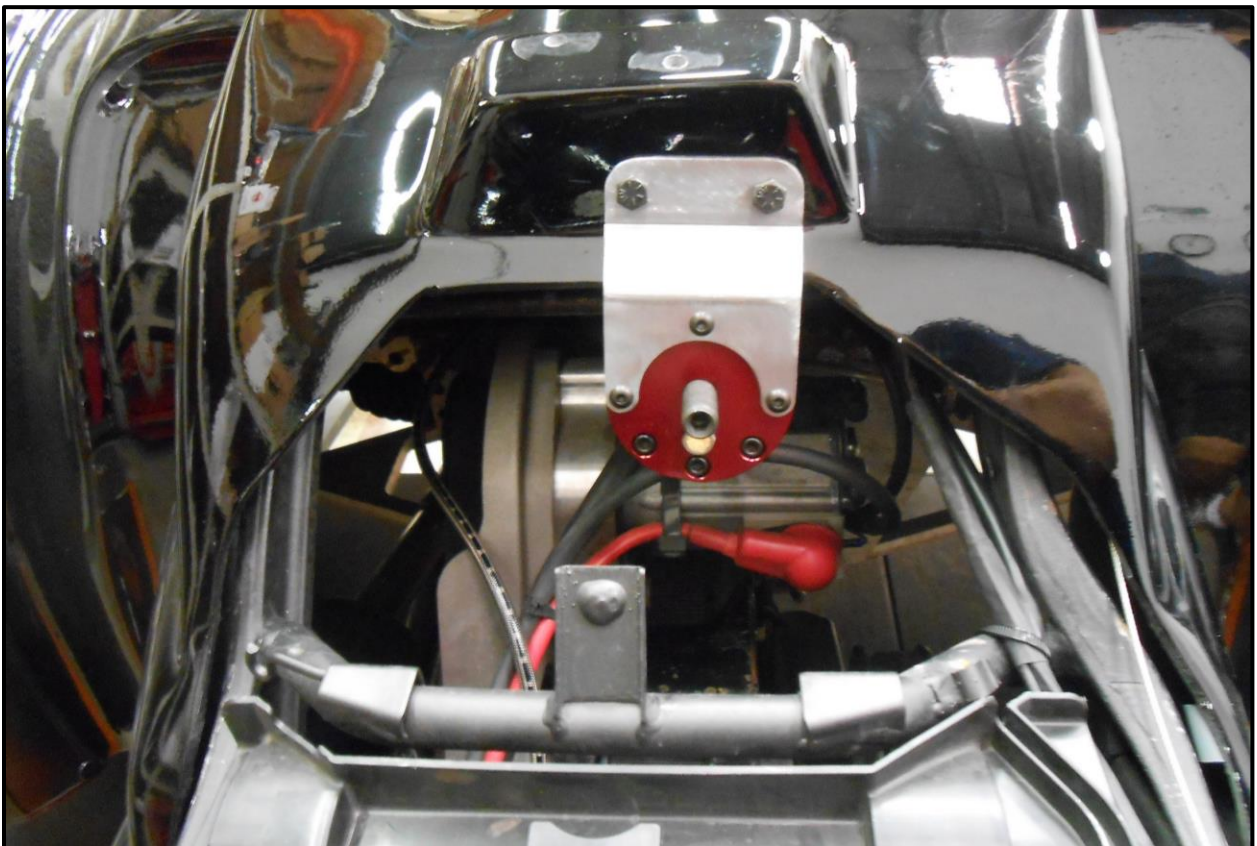
**Note: A small section of Trike Body Carpet has not been glued at the location of the Trike Body Frame mounting tabs to allow removal of the bolts used in shipping, and installation of the Trike Body mounting hardware. The predrilled bolt holes may need to be enlarged or relocated for Trike Body attachment 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 5/16–18 x 1 1/4 HHCS, fender washer, and rubber washers if necessary through the holes drilled**
- 3. Install nyloc nuts and flat washers onto the rear HHCS and tighten**

4. Using a 5/16 twist drill, drill up through the Adjustable 90° Body Support Brackets
5. Insert 5/16–18 x 1 1/4 HHCS and fender washers through the adjustable 90° body support brackets.
6. Install nyloc nuts and flat washers onto the front HHCS and tighten
7. Re-align the Mufflers and tighten hardware
8. Use silicone to seal the shipping holes and to glue the carpet down

### **Shock Spring Preloader Installation**

1. Align the Preloader Bracket off to the left side (RT side as you are looking at it) as shown, just below the seat latch feature in the body under the seat. Drill two 1/4 holes and mount the bracket with two 1/4-20 X 1 HHCS and secure with flat washers and nyloc nuts
2. Raise the Preload adjuster into the bracket as shown and secure with three 10-32 X 1 BHSCS



## Final Assembly

1. Connect the fender plug to the trike body plug
2. Connect the **RED** fusible link to the positive battery post and the Black wire to the negative
3. Just in front of the battery box is the OEM flasher unit. Unplug it and install the CSC LED flasher
4. Reinstall the wheel and tire assemblies with ten m12 x 1.5 ET conical lug nuts. Torque to 75 FT-LBS.
5. Recommended tire pressure
  - 15 & 16" wheels – 28 psi
  - 17" wheels – 25 psi

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