



# Trike Conversion Installation Manual

For

## Honda VTX 1300

# Independent Rear Suspension

All Models



Revision 3  
Sept. 2010

**CAUTION:** Champion's independent suspension was designed to enhance your riding comfort and performance. However, to achieve maximum results adjustments must be made for individual riding styles, passenger weight and whether they are traveling with a trailer.

Failure to make the proper adjustment will potentially lead to serious personal injury and/or property damage and may void the warranty.

Champion does not guarantee fit form or function to any of their trike kits if altered or aftermarket components were added to the original bike design.

All dealers or installers should make proper adjustments with the customer before delivery. Champion is not responsible for additional adjustments made under warranty.

***Champion Motorcycle Accessories International Inc.***

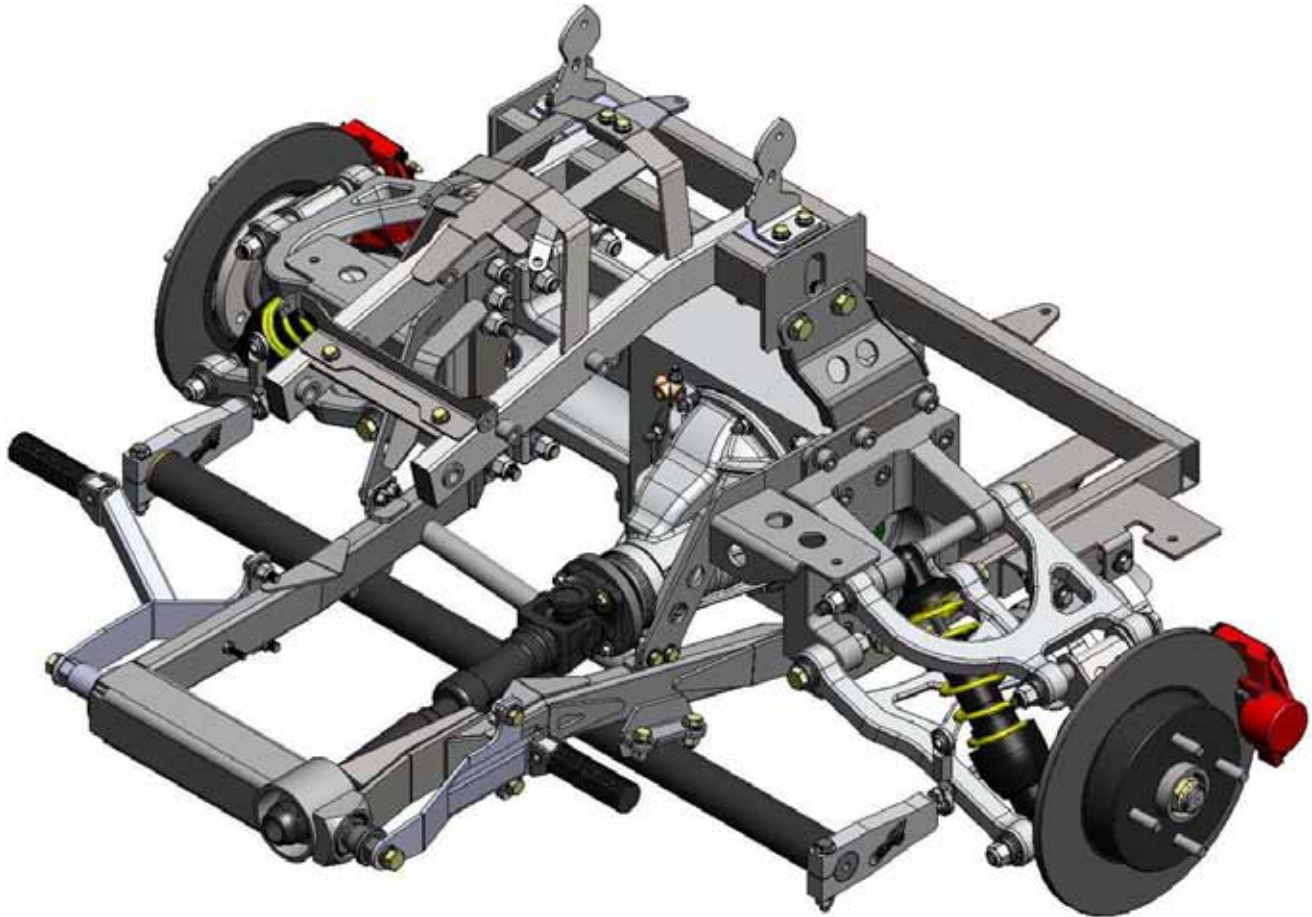
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# *Champion Trikes*

## **Honda VTX 1300 Conversion Kit Independent Rear Suspension All Models**





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## 1 General Information

The Champion Sidecars Trike Conversion Kit is designed with the utmost consideration to safety, quality and ease of installation. The kit comes complete with all necessary hardware and fasteners. However, it is assumed that the installer has advanced and/or professional skills in motorcycle servicing. It is recommended that the installer obtain an OEM service manual for the vehicle to which the Trike kit is to be installed. In addition, the Champion Independent was designed to enhance your riding performance and comfort. The independent must be adjusted per the individual riding style. Please review the installation instructions before installing the kit.

### 1.1 Installation Information

The information contained in this Installation Manual is intended for use by technicians of advanced to professional skill levels. Attempting installation without the proper training, tools and equipment could cause injury to you or others. It could also damage the vehicle or cause an unsafe condition and can void the warranty.

### 1.2 For Your Safety

Because this manual is intended for technicians of advanced to professional skill levels, we do not provide warnings about many basic shop safety practices. If you have not received shop safety training or do not feel confident about your knowledge of safety practices, we recommend that you do not attempt to perform the procedures described in this manual.

Some of the most important general safety precautions are given below. Champion Sidecars cannot warn you of every conceivable hazard that can arise. Only you can decide whether or not you should perform a given task.

#### 1.2.1 Important Safety Precautions

- a. Make sure you have a clear understanding of all basic shop safety practices and that you wear appropriate clothing and use safety equipment. Be especially careful of the following:
  - Read all directions before you begin, and make sure you have the tools, the parts and the skills required to perform the tasks safely and completely.
  - Protect your eyes by using proper safety glasses, goggles or face shields any time you hammer, drill, grind, pry or work around pressurized air or liquids, and springs or other stored-energy components.
  - Use other protective wear when necessary, for example gloves or safety shoes. Handling hot or sharp parts can cause severe burns or cuts.
  - Protect yourself and others when you have a vehicle up in the air. Anytime you lift a vehicle, either by hoist or a jack, make sure that it is securely supported.
- b. Make sure the engine is turned off and the battery disconnected before you begin work.
  - Carbon Monoxide poisoning from exhaust gases: Be sure there is adequate ventilation whenever you run the engine.
  - Burns from hot parts: Let the engine and exhaust system cool before working on those areas.
  - Injury from moving parts: If running the engine, keep hands, fingers and clothing away from moving/rotating parts.



### 1.3 Specifications

	<b>VTX 1300</b>
Overall width	55.5 in.
Overall length	106.875 in.
Overall length w/ EZ-Steer	109.875 in
Wheelbase	71 in.
Wheelbase w/ EZ-Steer	74 in.
Load capacity	600 lbs.
Brakes	High-performance rear disc
Tires	205/70R-15
Wheels	Offset +42 mm 15x7JJ 4x4.5
Turning Radius	11.8 ft.
Tire Pressure	24-26 psi

\*Champion does not change certain components that will affect EPA, CARB, or any laws that will change the emission characteristics of the motorcycle.

- **Suspension:**

The suspension is a Double A-arm Independent suspension with a standard single setting anti-roll bar. The A-arms are equipped with bushings that do not require servicing.

The suspension system is designed to give you the best ride with a load of no more than 600 pounds (passengers plus cargo plus trailer tongue weight).

- **Rear Differential:**

Champion Left Hand Drive Light Weight Rear Differential Assembly.

- **Brakes:**

Original front plus two high performance disc brakes at rear.

- **Storage Capacity:**

6.75 cubic feet – 3 full-face helmets and additional over wheel storage.



## 2 Removal of Original Parts

- a. Secure and raise the motorcycle 9 to 10 inches using a quality motorcycle lift.
- b. Remove the following from the vehicle. See OEM manual for detailed instructions. Items to be retained for re-installation after modification are noted.
  - Rider's Seat (to be re-installed without modification)
  - Passenger Seat (to be re-installed without modification)

**NOTE:** OEM front and rear seat mounting bolts and brackets to be retained and reused.

- Left and right passenger foot rests (to be re-installed later).
- Mufflers (to be re-installed and relocated with minor modification)
- Rear Fender (complete w/ sub frame and all attaching parts)
- Swing Arm, Drive Shaft and Rear Wheel (complete w/ all attaching parts)
- Rear brake line to hard line in front of the Swing Arm.

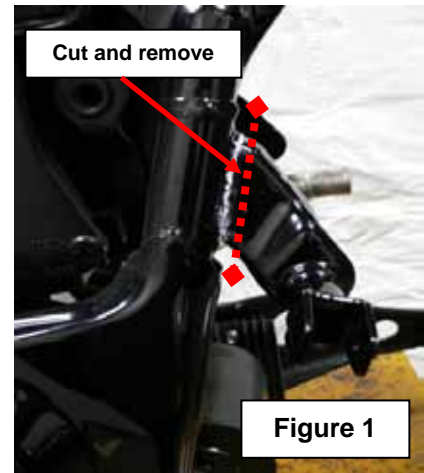
### 2.1 Core Returns for Deposit Refund

There are *NO* core return parts for this model.

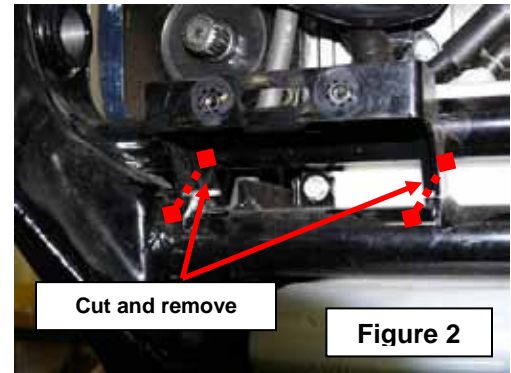
### 3 Installation of Champion Trike Conversion Kit

#### 3.1 Modify Frame and Passenger Footrests.

- a. Cut and remove passenger foot rest mount from OEM frame on both sides (left hand side picture shown). See Figure 1
- b. Clean cut frame and paint black.

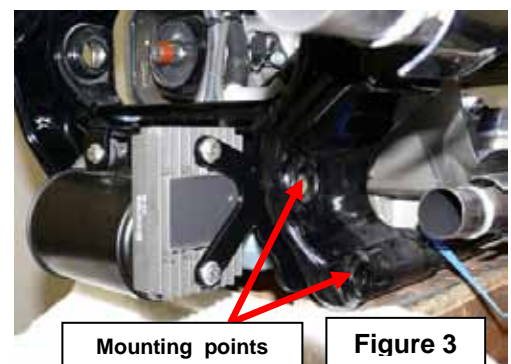


- c. Remove and secure Charcoal Canister.
- d. Cut and remove charcoal canister frame bracket. See Figure 2
- e. Clean cut frame and paint black



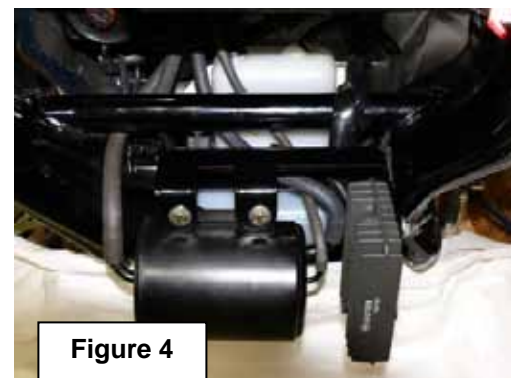
- f. Install supplied Canister/Regulator bracket with supplied hardware. See Figure 3. Make sure the hoses/electrical wires are routed underneath the bracket as shown. See Figure 4

Qty	Description
2	3/8-24x1-3/4 hex head bolt
4	3/8 SAE flat washers
2	3/8-24 Nyloc nuts



- g. Install Canister and Regulator with supplied hardware. See Figure 4

Qty	Description
4	1/4-20x1-1/4 hex head bolt
8	1/4 SAE flat washers
4	1/4-20 Nyloc nuts



- h. Remove rubber brake hose and block from the hard brake line. Install 11" braided brake line to the hard brake line – Attach the "large" end of the braided line to the hard line. See Figure 5
- i. Install supplied (red) residual valve to supplied 24.75" braided brake line (See Figure 6), and attach to the 11" line (See Figure 5). The banjo end of the braided brake line will connect later to the T-block on the Rear End.

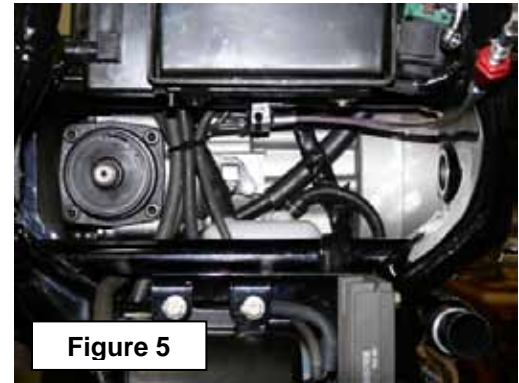


Figure 5

- j. Zip tie rubber hoses out of the way. See Figure 5

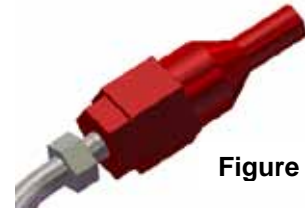


Figure 6

### 3.2 Install Swing Arm

- a. Install Champion swing arm (ensure bearings and bushings are present and properly positioned in swing arm and with drive shaft tunnel to left hand side (LHS)) to the vehicle using the supplied pivot bolts (shouldered bolt on the LHS) See Figure 7
- b. Torque LHS (shouldered bolt) to 80 ft-lb. and RHS bolt to 25 ft-lb.
- c. Move swing arm up and down several times to seat bearings. Retighten **RHS** pivot bolt to 25 ft-lb.
- d. Install RHS OEM pivot lock nut. Hold pivot bolt while tightening lock nut with Honda special tool (Honda PN 07ZMA-MCAA101), to 72 ft-lb. (108 N-m). Fig. 7 Actual torque is 80 ft-lb. but with the special offset tool the torque is 72 ft-lb.

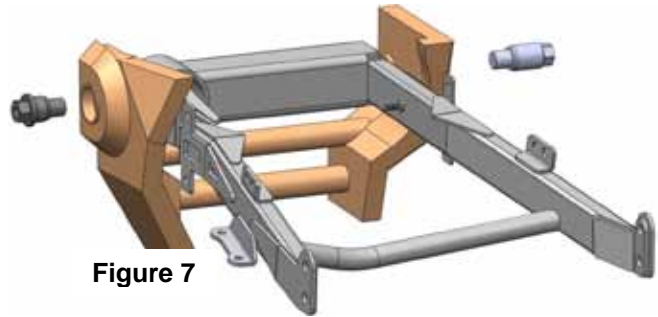


Figure 7

### 3.3 Install Top Frame / Seat Mount

- a. Install Top Frame to OEM frame using supplied hardware. See Figure 8

Qty	Description
2	14-1.5x65mm hex head bolt
2	M14 lock washer
4	3/8-24x3 1/2" hex head bolt
8	3/8" flat washer
4	3/8" NyLoc nut

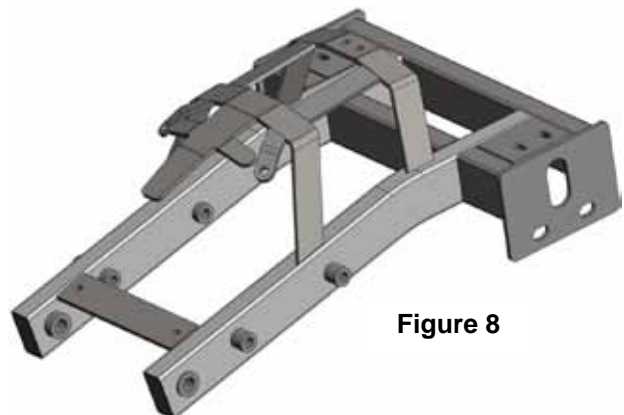


Figure 8

### 3.4 Install Drive Shaft

- a. Grease driveshaft spline with high pressure grease.
- b. Install drive shaft to vehicle output shaft through the swingarm tunnel.
- c. Ensure proper alignment and position of drive shaft yoke to the output shaft.



### 3.5 Install Complete Independent Suspension

- a. Top and middle brackets are installed for shipping purposes only.
- b. Loosen the top and middle brackets where they attach to the assembly to allow for alignment purposes.
- c. Position the rear end assembly under and raise the unit to the Top Frame. Install supplied  $\frac{1}{2}$ -13x1-1/2" bolts, washers, and nylock nuts. See Figure 9. Leave these loose for now to allow for alignment purposes.

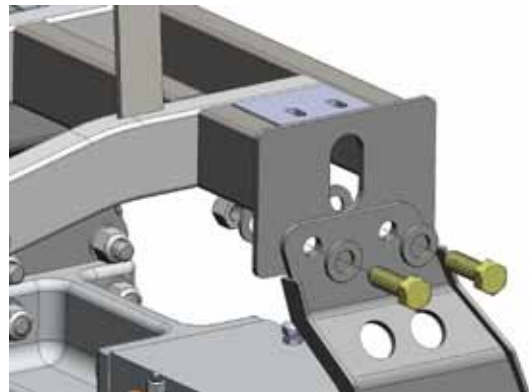


Figure 9

- d. Raise the swingarm up to the rear end assembly and install the supplied  $\frac{1}{2}$ -13 bolts, washers and nylock nuts.  $\frac{1}{2}$ -13x2-1/2" socket head plus small  $\frac{1}{2}$ " serrated washer (upper) and  $\frac{1}{2}$ -13x3" hex head plus  $\frac{1}{2}$ " washer (lower). See Figure 10.

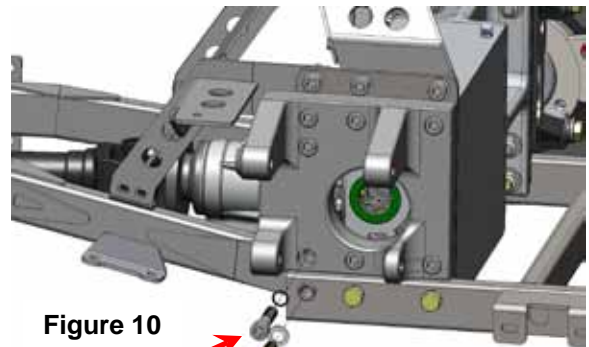


Figure 10

- e. Install the supplied  $\frac{5}{16}$ " bolts, washers, and nylock nuts to secure the middle bracket to the swingarm. See Figure 11.

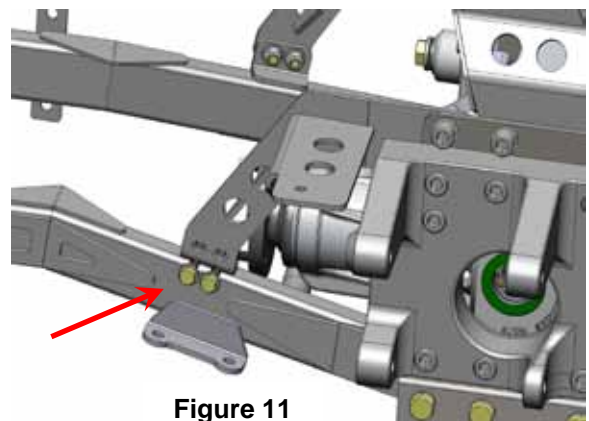


Figure 11

- f. Torque all of the  $\frac{1}{2}$ " bolts to 50 ft-lb. and the  $\frac{5}{16}$ " bolts to 20 ft-lb.
- g. Secure the driveshaft to the pinion flange and torque the four bolts to 15 ft-lb.

### 3.6 Install Brake Lines

- a. Route the 24.75" braided brake line backward along the right leg of the swing arm.
- b. To get the correct orientation of the banjo end of the 24.75" line, it may be necessary to temporarily loosen the other end at the red residual valve.
- c. Install banjo end of 24.75" braided brake line to tee fitting on rear differential as shown using supplied hardware. Figure 12. Retighten line at the residual valve.
- d. Secure the red residual valve to the mounting bolt on the inside of the right leg of the swing arm, using an Adel clamp and rubber removed from the rear OE brake lines and the supplied 1/4" flat washer and 1/4" NyLoc nut.
- e. Bleed rear brakes.

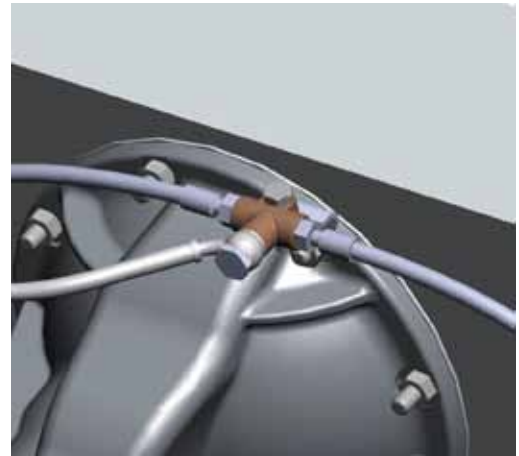


Figure 12

### 3.7 Install Backrest Mounts

- a. Install supplied backrest mounts using supplied hardware. See Figure 13
- b. These mounts are designed for the adjustable Honda OEM backrest PN 08F75-MCH-130

Qty	Description
4	5/16-18x1 hex head bolt
8	5/16 SAE flat washer
4	5/16-18 Nyloc nut



Figure 13

### 3.8 Install Passenger Footrest Brackets

- a. Attach OEM passenger foot pegs previously removed to supplied footrest brackets.
- b. Install footrest brackets to the swingarm using 3/8" bolts, washers, and nylock nuts and outside of pivot bolts using 1/2-20x1-1/4" bolts with 1/2" lock washers supplied in kit. See Figure 14.
- c. Torque 3/8" bolts to 30 ft-lb. and the 1/2" bolt to 75 ft-lb.

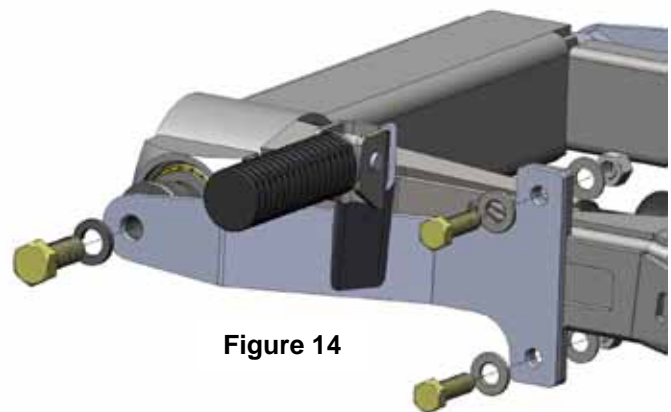


Figure 14

### 3.9 Install Anti-roll bar



Figure 15

- a. Install 3/8-24x1.25 bolts, washers and nuts through Anti-roll bar housing onto swing arm. Torque to 30 ft-lb. Figure 15 and 16

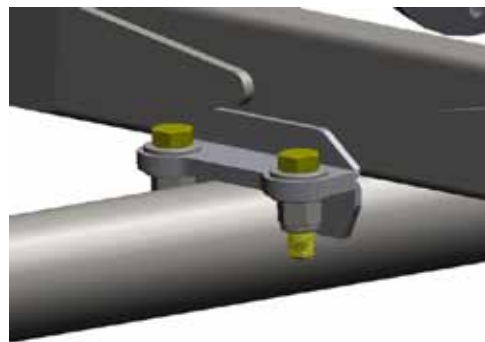


Figure 16

- b. Attach rod-end onto right control arm with 3/8-24 bolt, washer, bearing (rod-end), washer, control arm, washer and nut. Figure 17.
- c. Adjust rod-end in or out on left side to allow left side bolt to insert freely.
- d. Tighten jam nut
- e. Insert bolt, washer, bearing (rod-end), washer, control arm, washer and nut. Figure 17
- f. Torque to 30 ft-lb.



Figure 17

### 3.10 Install Exhaust Extensions / Muffler Brackets

- Locate exhaust extensions of Trike kit.
- Install exhaust extensions to the header pipes using supplied clamps and gaskets. The longer extension installs on the lower header pipe and runs to the left side muffler. The shorter, S-shaped one installs on the upper pipe and runs to the right side muffler. Tighten the clamps once the mufflers have been installed.
- Install muffler brackets to body mount frame using 5/16" supplied hardware in kit. See Figure 18

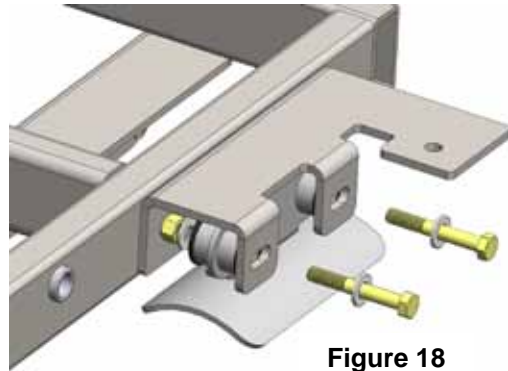


Figure 18

### 3.11 Modify OEM Mufflers

#### 3.11.1 PRE 2008:

- Remove OEM chrome tips and heat / beauty covers from mufflers. Cut welds and/or unscrew bolts as required. Be careful not to cut into the muffler. (If you do – weld it close).
- Clean cut areas for installation of supplied tips later. Figure 19.
- Cut off discharge tips as shown. Figure 20
- Install supplied exhaust tips and clamps to mufflers with supplied clamps as shown. Ensure screens have at least 1/2" of clearance from ends of discharge tubes. Figure 23



Figure 19



Figure 20

#### 3.11.2 2008 and Up:

- Remove bracket illustrated in Figure 21
- Clean cut areas and cover bare metal with paint.

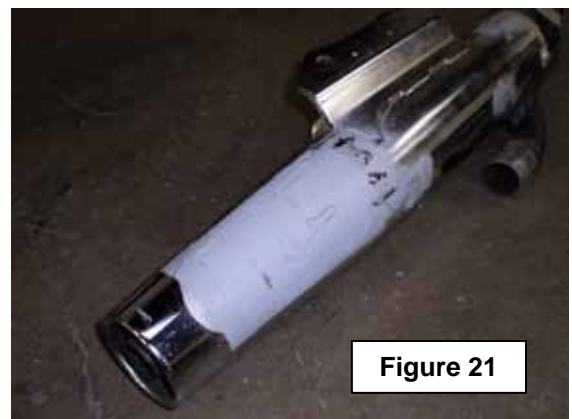


Figure 21

### 3.12 Install Mufflers

- a. Install mufflers to extensions and secure to exhaust brackets with supplied T-bolt clamps. Install crossover pipes before tightening T-bolt clamps. See Figure 23
- b. Tighten all clamps.

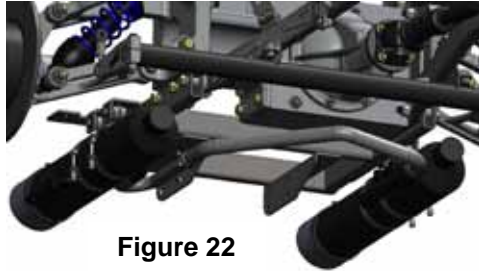
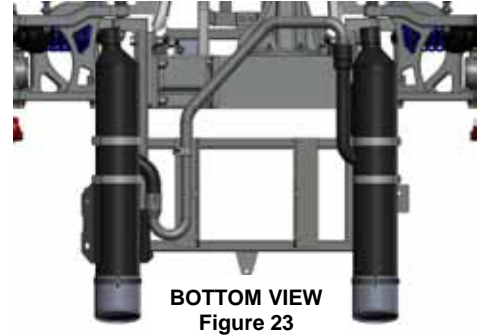


Figure 22



BOTTOM VIEW  
Figure 23

### 3.13 Install Body

Note: The installation/alignment of the body is an iterative process to find the correct position of body in relation to the wheels. The four holes already in the body are primarily for shipping purposes. These holes might line up with the pre-drilled body frame holes when the body is fitted. Follow instructions below to re-drill holes if required.

- a. Carefully position body over top frame and body frame.
- b. Position the four mounting holes already in the body above the corresponding body frame tabs and test fit with the supplied bolts.
- c. Final alignment of the body will be done after the seat mounting brackets are installed in next section.

Qty	Description
5	3/8-24x1-1/4 hex head bolt
5	3/8x1-1/2 fender washer
5	3/8 SAE flat washer
5	3/8-24 Nyloc Nut

### 3.14 Connect electrical wires to the motorcycle

- a. Connect the electrical wires from the pigtail attached to the body to the motorcycle main harness where the motorcycle rear fender harness was unplugged as follows:

	Champion harness	Motorcycle
<b>Running lights</b>	Brown	Brown
<b>Brake lights</b>	Red	Green/Yellow
<b>Turn signal, right</b>	Green	Blue
<b>Turn signal, left</b>	Yellow	Orange
<b>Accessory</b>	Blue	Brown
<b>Ground</b>	Black (two)	Green (two)

- b. Remove flasher unit behind the fuse box under the right side side-cover and replace/plug in with the supplied flasher relay. Tie down with cable tie.

### 3.15 Install Seat Mounting Brackets

#### 3.15.1 R Models:

- a. Install previously removed OEM rear seat bracket with the supplied hardware

Qty	Description
2	5/16-18x1 hex head bolt
4	5/16 SAE flat washer
2	5/16-18 Nyloc nut

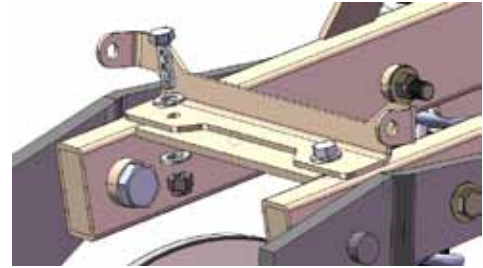


Figure 24

- b. Install rider seat bracket to top frame as shown with supplied hardware. Figure 24

Qty	Description
2	5/16-18x1 hex head bolt
4	5/16 SAE flat washer
2	5/16-18 Nyloc nut

- c. Install rear seat mount tab to top frame as shown with supplied hardware. Figure 25

Qty	Description
2	5/16-18x1 hex head bolt
2	5/16 SAE flat washer

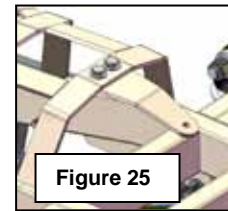


Figure 25

- d. Install Seat using the OEM bolts

#### 3.15.2 C Models:

- a. Install rider seat bracket to top frame as shown with supplied hardware. Figure 26

Qty	Description
2	5/16-18x1 hex head bolt
4	5/16 SAE flat washer
2	5/16-18 Nyloc nut

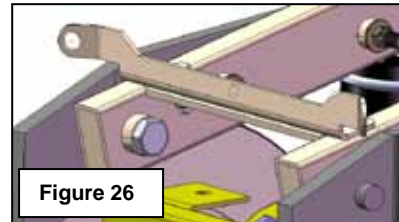


Figure 26

- b. Install rear seat mount tab to top frame as shown with supplied hardware. Figure 27

Qty	Description
2	5/16-18x1 hex head bolt
2	5/16 SAE flat washer

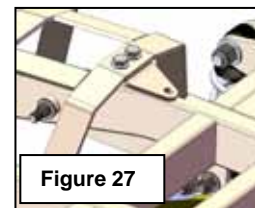


Figure 27

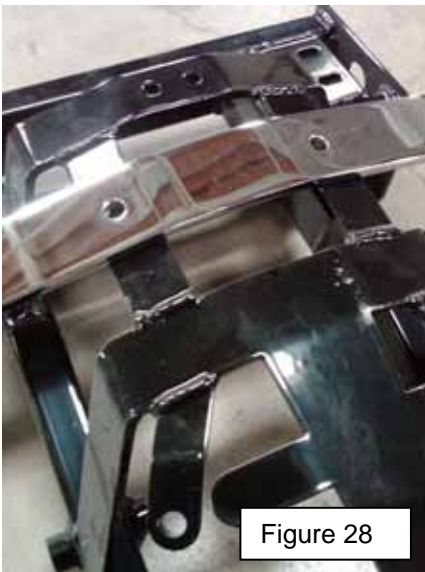
- c. Install seat using the OEM bolts.

### 3.16 Align and secure body

- a. Temporarily install wheels to help with the alignment process.
- b. Align body with the wheels and the shock tower mount. Remove previously installed four bolts if the body needs more movement.
- c. When aligned, drill from below through frame tabs two center tab holes through body and bolt it down with supplied hardware. Body will now be locked in position.
- d. If required, drill from below the original four holes and bolt down with supplied hardware. It may be easier if the wheels are removed for this process

### 3.17 Install Grab Rail (Optional)

- a. Locate grab rail on mounting bracket and temporarily position the seat. Move grab rail to desired position. Figure 28
- b. Use tape on the body to mark grab rail position. Drill two holes accordingly and assemble. Figure 29



### 3.18 Install Wheels

- a. Install wheels to rear end using supplied lug nuts.
- b. Torque lug nuts to 75 lb. ft.
- c. Tire pressure should be between 24-26 psi.

## 4 Shock Adjustment

### 4.1 Adjusting Shock Preload

- a. The preload adjuster is factory-set at the softest level for a plush ride. Increasing preload may be advisable if need be for additional weight.
- b. To adjust the preload, turn by hand the black collar located on the bottom of the spring just as you would with a fastener with right handed thread.

**NOTE:**

Both Shock Absorbers must be adjusted equally resulting in the equal spring preload. Not having equal adjustments will affect handling that could lead to potential harm.



More Preload = Stiffer      Less Preload = Softer



**NOTE:**

Recommended spring preload as follows:

- + 1/4" up to 200 lbs.
- + 1/2" up to 400 lbs.
- + 5/8" with trailer

Champion recommends using a shortened #2 Phillips head screwdriver to adjust spring preload. Tool tip diameter needs to be 1/4".