Trike Conversion Installation Guide

for

Harley-Davidson® Dyna Motorcycles 2007 & Up

Revision 1

	Warning - This product was not intended for more than one rider. Weight limit on this product has been set at 400 lbs. maximum and should not be exceeded. Failure to follow these warnings could result in serious injury or death.	

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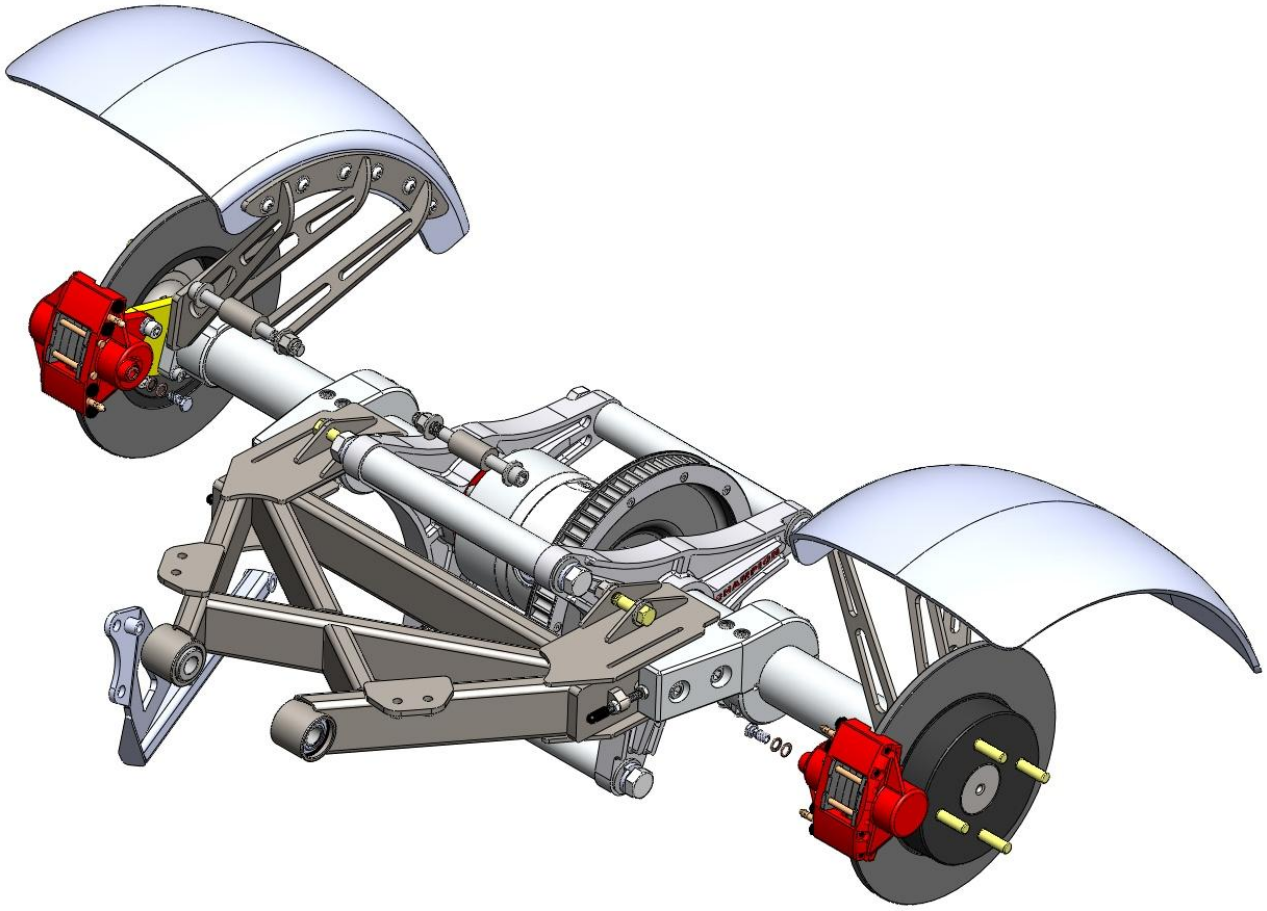
Champion Trikes

Trike Conversion Kit for
2006 & Up
Harley-Davidson® Dyna Motorcycles



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*Please check to see if you have all components before assembly.

**After the following assembly is tested make sure to torque all fasteners to factory specifications.

***Before installation of your Champion kit we recommend that your motorcycle be serviced by a qualified mechanic. Any worn parts should be replaced before or during the installation process.

	Box Contents
Box 1	Tire/Wheel,
Box 2	Tire/Wheel, Hardware Kit
Box 3	Swing Arm, Fenders
Box 4	Rear Differential with Pulley (Left)
Box 5	Rear Differential Assembly (Right), Fender Brackets

1 General Information

The Champion Trike Conversion Kit is designed with the utmost consideration for 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/professional skills in motorcycle servicing. It is recommended that installer obtain an OEM service manual for the motorcycle on which the Trike kit is to be installed.

	**Warning** – Failure to follow these instructions may result in serious injury or death.	

1.1 Installation Information

The information contained in this Installation Guide 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.

1.2 For Your Safety

Because this guide in 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 guide.

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.

1.3 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 anytime 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 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.

c. Gasoline vapor and hydrogen gases from batteries are explosive. To reduce the possibility of fire or explosion, be careful when working near gasoline and batteries.

d. Use only nonflammable solvent, not gasoline, to clean parts.

e. Never drain or store gasoline in an open container.

f. Keep all cigarettes, sparks or flame away from the battery and all fuel related parts.

1.4 Specifications

Overall Length:	94”
Overall Width:	55”
Wheel Base:	68”
Load Capacity:	400 Lb
Tire Size (15”):	205 / 70 / R15
Wheel Size (15” 4 lug)	Offset +35 mm 15x7JJ 4 x 4.5
Tire Pressure:	20-25 PSI
Suspension:	“Zero-Flex” Swing Arm Utilizing OEM Coil-Over Shock
Rear Differential:	Custom Built Aluminum Rear Differential Utilizing OEM Belt
Brakes:	Original Front plus 2 High Performance Disc Brakes in Rear

	**Warning** – Failure to follow these instructions may void warranty.	

2 Removal of Original Parts

Secure and raise motorcycle 9 to 10 inches using a quality motorcycle lift.

Remove or perform the following listed below. See OEM manual for detailed instructions. Items to be retained for re-installation after modification are noted.

- Left and right saddle bags (if so equipped)
- Left and right rear crash bars, saddlebag rails (if so equipped)
- Mufflers and hanger
- Disconnect rear brake line at caliper and remove clamp from swing arm (Note: Prior to disconnecting line, depress foot brake and secure in down position (e.g., zip-tie to floor board). This will prevent fluid flow when rear brake line is disconnected. Cap line to prevent introduction of dust/debris into line. Rear brake line and clamp will be used later.)
- Loosen belt tension and remove from sprocket (Note: Champion recommends replacing the belt if worn or out of factory specification.)
- Shocks
- Front pivot bolt
- Swing arm assembly, a.k.a. “Rear Fork” (Figure 1)
- Passenger foot rests

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- Pivot bolt and nut from swing arm will be used later. The spherical bearing/spacer on the belt side of the swing arm will also be used later in the installation. Champion supplies one new spherical bearing/spacer in the kit. It is recommended to use a new spherical bearing, HD Part # 9208, with the Champion swing arm if the OE bearing is worn. Figure 1

*Champion does not recommend removing any factory original parts that may change the emission from CARB or EPA requirements.

Figure 1

3 Installation of Trike Conversion Kit

3.1 Install Swing Arm Pivot Bearings into Champion Swing Arm

a. Press both spacers into the bearings before installing into Champion swing arm.

b. First, press in bearing/spacer into the left side bearing cup of the swing arm until bottoming on shoulder. Then install supplied retaining ring. Figure 2

c. Then press in second bearing/spacer until a distance of 5.35" is reached between the ends of each spacer. (Note: This bearing is designed to slide into position within the bearing cup when tightening the swing arm pivot bolt.) Figure 2

CAUTION: When installing bearing, always press on outer race. Failure to do this will void warranty.

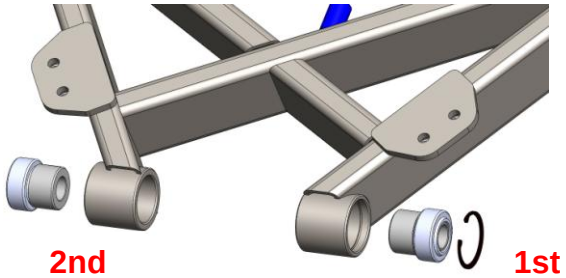

Figure 2

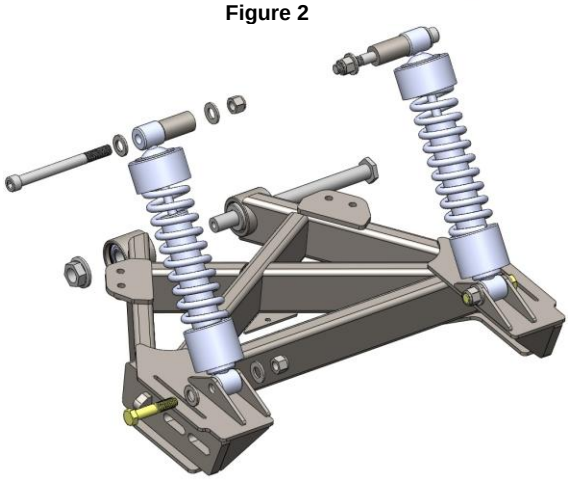

Figure 3

3.2 Installing Champion Swing Arm to Vehicle

a. Coat OE pivot bolt threads with "Blue Loctite" thread lock.

b. Install Champion swing arm on bike.

c. Use OE pivot bolt/nut and torque to 70 lb. ft.

3.3 Install Shocks

a. Bolt OE shocks to OE upper shock mount and swing arm as shown using the supplied hardware from Box 2. Figure 3

Qty per side	Description
1	1/2-20x5-1/2 socket head bolt
3	½ SAE SS flat washer
1	Upper Shock Spacer
1	1/2-20x2-1/2 gr8 hex head bolt
1	1/2-20 nylock nut

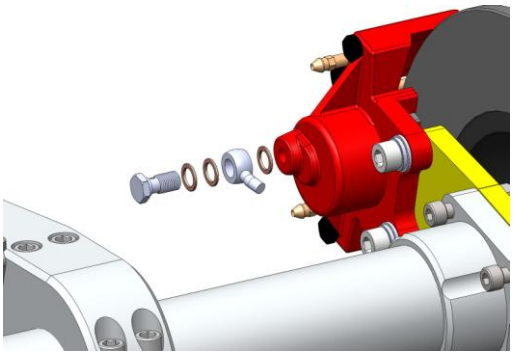

Figure 4

3.4 Install Rear Brake Lines and Components from Box 2

a. Attach brake line with bend as seen in Figure 4 to each caliper using the supplied banjo bolts and crush washers. (Note: Use a total of three crush washers.) Figure 4

b. Install t-block using supplied 1/4" bolt, spacer, washer, and nylock nut with the OE brake line clamp. Torque nut to 8 lb. ft. Figure 5

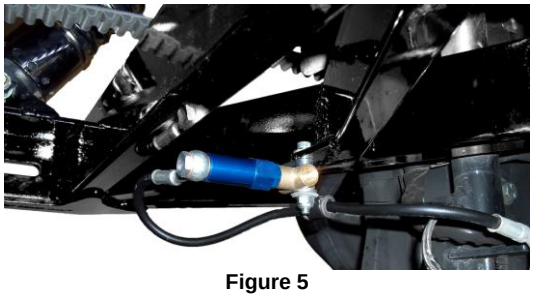

Figure 5

c. Connect blue pressure residual valve to t-block using a crush washer between the two. Torque to 17-19 lb. ft.

d. Connect OE brake line from rear master cylinder to pressure residual valve using 10mm single banjo bolt and two crush washers. Torque 17 to 19 lb. ft. Use OE brake line clamp and screw to secure to swing arm.

3.5 Assemble Rear End

a. Slide Right Rear End Assembly (RREA) from Box 5 into Left Rear End with Differential Assembly (LREA) from Box 4.

- Ensure RREA has grease for bearing to slide into.
- Ensure RREA axle splines, LREA and differential are clean of debris.

*Mating of Components: Differential carrier bearing into RREA is a slip fit. If assembly binds, separate the two and ensure RREA and LREA are aligned properly. Lightly tap the two components into position with rubber mallet.

b. Apply 2-3 drops of oil to threads of ¾" front cross tube bolts and assemble to specified torque of 150 lb. ft. Figure 6

c. Remove the two remaining cross tubes to allow for belt installation at a later time. Figure 6

d. Tap supplied dowel pin into the right side axle housing.

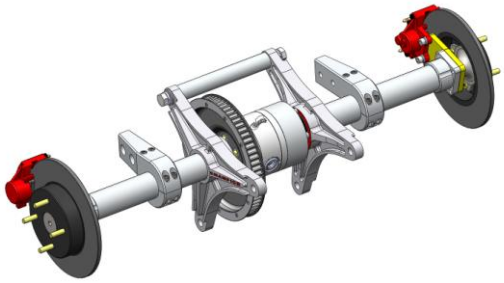

Figure 6

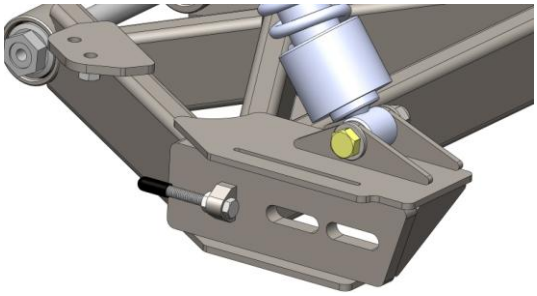

Figure 7

3.6 Install Rear Axle Clamps

a. Install rear axle clamps onto axle housing from Box 2 using the supplied hardware. The right hand side clamp slot must register into dowel pin on rear end. (Note: The rear brake lines run through each clamp with a nylon protective tube.)

Qty per side	Description
2	3/8-16x2-1/2 socket head bolt
2	3/8-16x3-1/2 socket head bolt
8	3/8 SAE SS flat washers
4	3/8-16 nylock nut

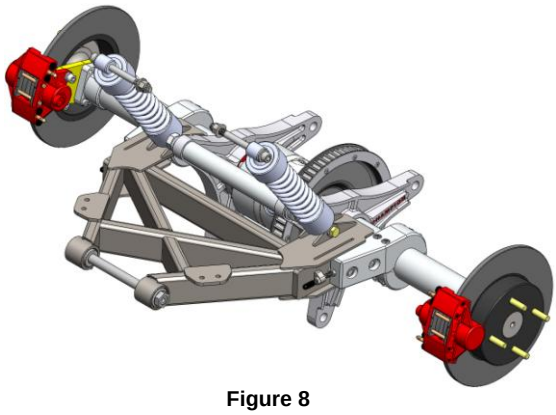

Figure 8

3.7 Install Rear End Assembly

CAUTION: Do not use air driven impact tools to assemble the Champion aluminum rear end assembly.

a. Install the supplied 5/16-18x2-1/4 hex head adjuster bolts and jam nuts onto swing arm. Adjuster bolt should be in the furthest forward position to allow room to place belt around rear pulley in a later step. Figure 7

b. Loosen axle housing clamps just enough to be able to align clamps with rear of swing arm.

c. Passing the left side of the rear end assembly through drive belt, position assembly accordingly and slide axle clamps into the end of the swing arm. Figure 8

d. Attach axle clamp to swing arm using the supplied hardware. Snug hardware just enough to still allow the clamps to slide in the swing arm as adjustments will be made later. Figure 9

Qty per side	Description
1	1/2-13x2-1/4 socket head bolt (front hole)
1	1/2-13x2-1/2 socket head bolt (rear hole)
4	½ SAE SS flat washers
2	1/2-13 nylock nut

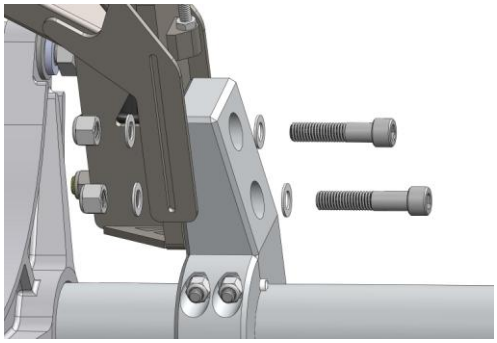

Figure 9

e. Position drive belt onto rear pulley.

f. Install remaining cross tubes using 2-3 drops of oil on the cross tube bolt threads, install and torque to 150 lb. ft.

3.8 Aligning and Tensioning Drive Belt

The slots in the swing arm axle clamp mount plate allow the rear end assembly to move approximately 1.25" forward or rearward. The rear end assembly also has a total movement of approximately 1.125" side to side. This movement is accomplished by sliding the axle housing within the axle clamps; it is limited by the dowel pin and grove. The following steps are a starting point to properly align the belt.

a. Center rear end assembly within the axle clamps. Ensure center by measuring from axle clamp to fender bracket on both sides until equal.

b. Tighten nuts on axle clamp to 31 lb. ft. (Note: Ensure braided brake line is seated properly in saddle and does not get pinched between the two halves.)

c. Adjust adjuster bolts to set belt tension and to square rear end assembly to swing arm. The belt should have approximately ¾" of total vertical movement. Tighten jam nut to lock adjuster bolt.

d. Rotate rear sprocket several times by hand to register belt on sprocket. The belt should run in the center of the rear sprocket. Make small adjustments if needed and recheck alignment. Figure 10

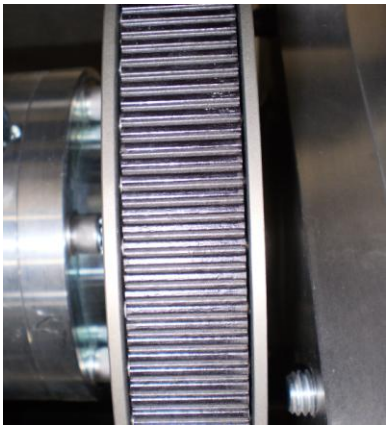

Figure 10

NOTE: Belt tension and alignment should be checked prior to final assembly of trike kit. Check with vehicle secured on jack stands and adjust accordingly if needed.

3.9 Connect Brake Lines to T-Block

a. Connect braided lines from each wheel caliper to t-block.

b. Using brake fluid specified on the master cylinder, bleed rear brake system thoroughly using the *upper* bleeders, Figure 11, on the rear brake calipers. Once assembled replace with new factory specified brake fluid; adjust accordingly and check for leaks. You may need to adjust the rear brake push rod to get the pedal in a comfortable position due to the increased pedal throw associated with the dual rear calipers.

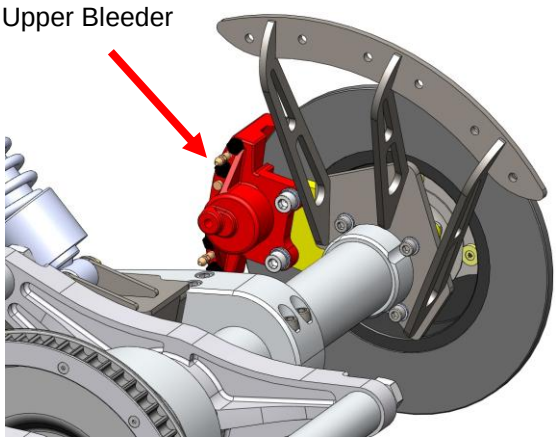

Figure 11

3.10 Install Fenders

a. Attach fender brackets from Box 5 to rear end housing using the supplied hardware. Torque to 19 lb. ft. Figure 11

Qty per side	Description
3	M8x1.25x45 socket head bolt
3	M8 flat washer
3	M8x1.25 stover lock nut

e. Attach fenders to brackets using the supplied hardware. Torque to 17 lb. ft. Figure 12 and 13

Qty per side	Description
6	5/16-18x1 button head bolt
6	5/16 flat washer SS ¾" OD
6	5/16 sae flat washer clear zinc
6	5/16-18 nylock nut clear zinc

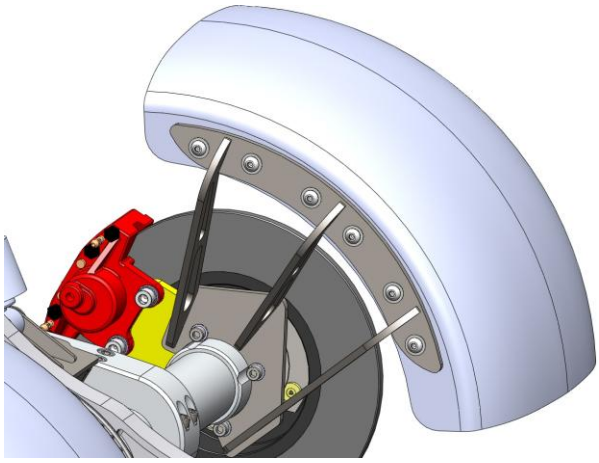

Figure 12

3.11 Install Wheels and Tires

a. Install wheels/tires and torque to 75 lb. ft.

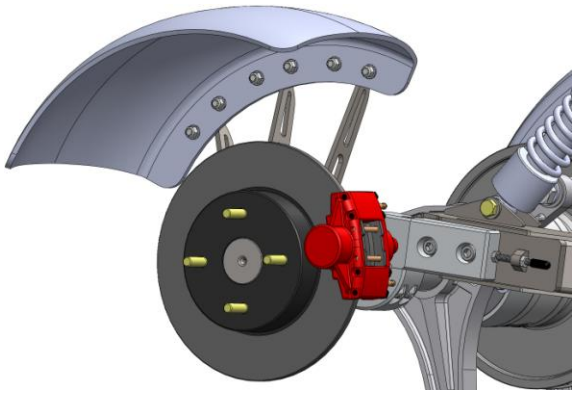

Figure 13

3.12 Install Exhaust Components

Note: The rear header pipe on all Dyna models, except Wide Glide and Fat Bob, must be shortened. Measure 2.25" from weld seam and cut as seen in Figure 14. Measure 5" from inside hose clamp bracket and cut as seen in Figure 15.

a. Install supplied muffler hanger with OE hardware. Figure 16. Note: If installed on non Wide Glide or Fat Bob model, use the supplied 3/8-16x1.5" bolt on the front tab of muffler hanger.

b. Install exhaust extensions onto header using supplied clamps.

c. Bolt OE mufflers together as seen in Figure 17 or onto supplied muffler hanger if not used on Wide Glide or Fat Bob. Install mufflers onto exhaust extensions using supplied clamps and attach to muffler hanger. Figure 18

d. Attach chrome covers to exhaust extensions with supplied hose clamps. Figure 19

Figure 14 (Header Pipe After Cut / Low Rider, Super Glide, and Street Bob Only)

Figure 15 (Chrome Cover After Cut / Low Rider, Super Glide, and Street Bob Only)

Figure 16 (Wide Glide/Fat Bob Configuration Shown)

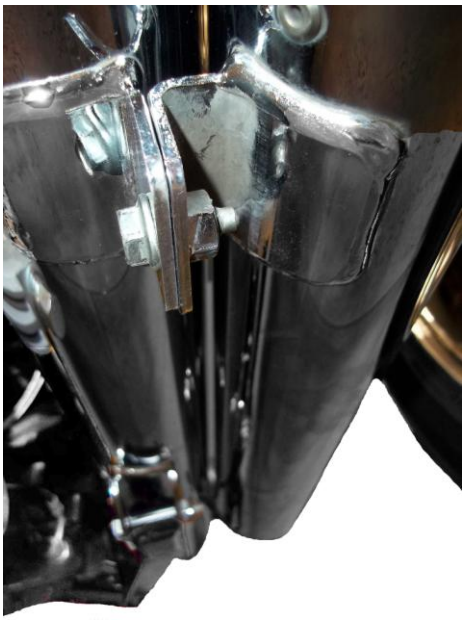

Figure 17 (Wide Glide/Fat Bob Configuration Shown)

Figure 18 (Wide Glide/Fat Bob Configuration Shown)

Figure 19 (Wide Glide/Fat Bob Configuration Shown)