GL1800

2001-2011

DFT Trike Conversion

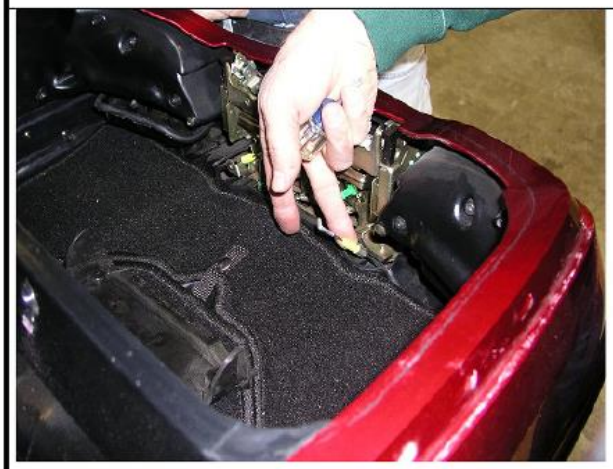
Installation Instructions

INDEX

Bike Disassembly

1 Place bike on center stand on the floor or on a lift table

2 First open both saddle bags, then remove plastic cover inside center rear of trunk to access saddle bag release cables. Disconnect both cables (make sure you have the right ones!!!) Re-install cover only after saddle bags are removed – there are 5 screws, 3 that have metal threads in the center of the cover and 2 that have sheet metal threads at either end…(this is usually the last thing to do after all else is done).



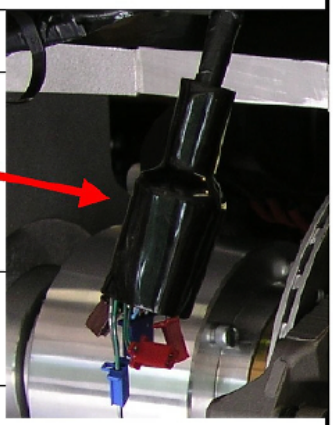
Bike Disassembly

3 Remove passenger backrest, seat, side covers and right side carb cover

4 Remove center rear plastic section between saddle bags

5 Locate large wire connector cover in center rear under trunk (round flexible black plastic cover) Unplug electrical connectors to both saddle bags – note that they are color coded for Left/Right (blue plugs are right and Red plugs are left)

Cut wire that goes to license plate light (it is no longer used) this is where you will attach wire for the new license plate light in the trike body.



6 Unbolt & remove saddle bags – latch cables will pull out thru the bottom of the trunk - put saddle bags aside

7 Remove Mufflers –
Two bolts at clamp in front, 1 bolt at rear – pull straight back
Metal gaskets will probably stay on header pipe, if they come off with muffler, slide back in place and leave on header pipe.

Remove and retain two small rubber guides on tabs at front of each muffler for re-install
Remove muffler clamps and retain for re-install (note install position)

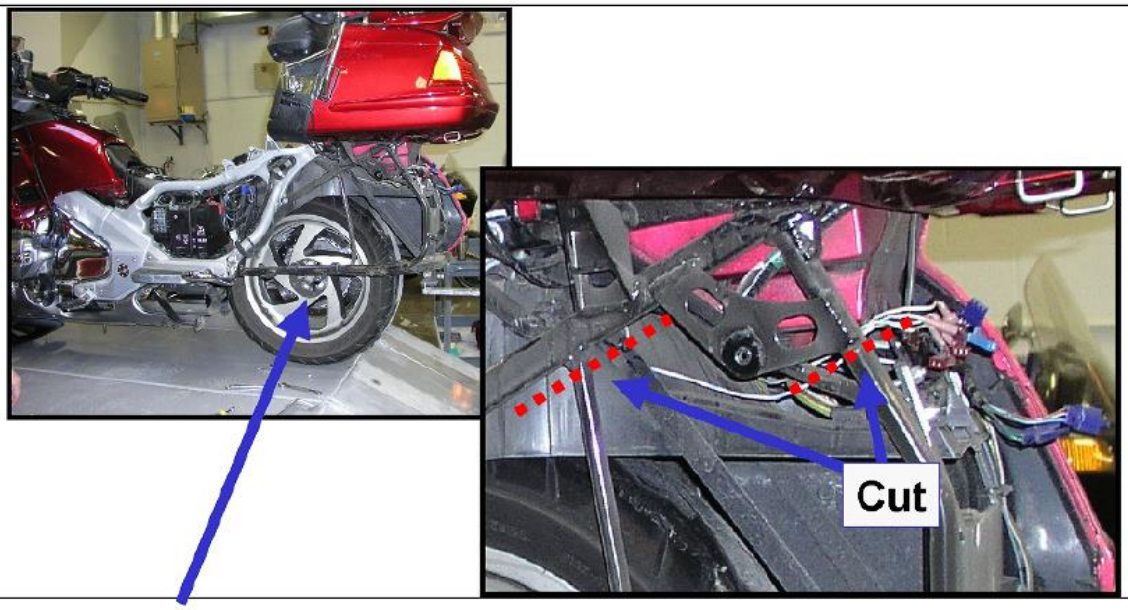
8 Remove muffler tips (3 bolts & washers), put aside & retain for re-install

9 Box & ship mufflers to DFT for modification if desired

10 Remove lower footrest covers and chrome tubular bag protection bars

Bike Disassembly

11 Cut & remove lower saddle bag support frame – use abrasive cut-off wheel or hacksaw (aluminum tubing) , smooth edges



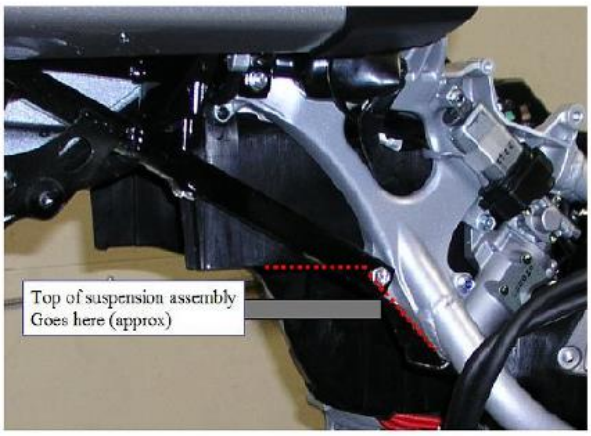
12 Remove rear wheel/tire assembly

Bike Disassembly

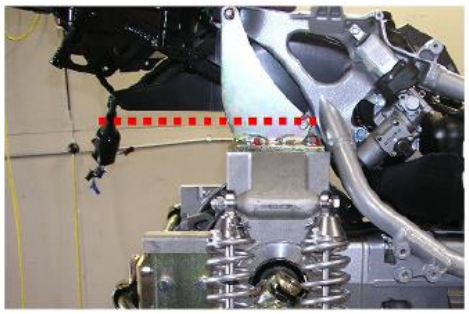
13 unplug and remove audio amplifier (2006 & later bikes))

14 Trim plastic inner fender for suspension clearance – use heat gun to soften, then just cut with a box knife

(2006 & later bike with audio amplifier removed is shown below)



(Pre-2006 bikes with no audio amplifier)



Wiring Harness attach to fender

Note:

See Addendum Page 36 for ABS computer re-locate

Bike Disassembly

15 Unbolt brake caliper from final drive (two (2) bolts) and support it out of the way at top of frame with a zip tie or wire

16 Set suspension pre-load to zero "0" and then remove the SINGLE bottom suspension system link bolt it will not be under tension and will just slide right out (this is the bolt that attaches the spring/shock assembly to the swingarm)

Bike Disassembly

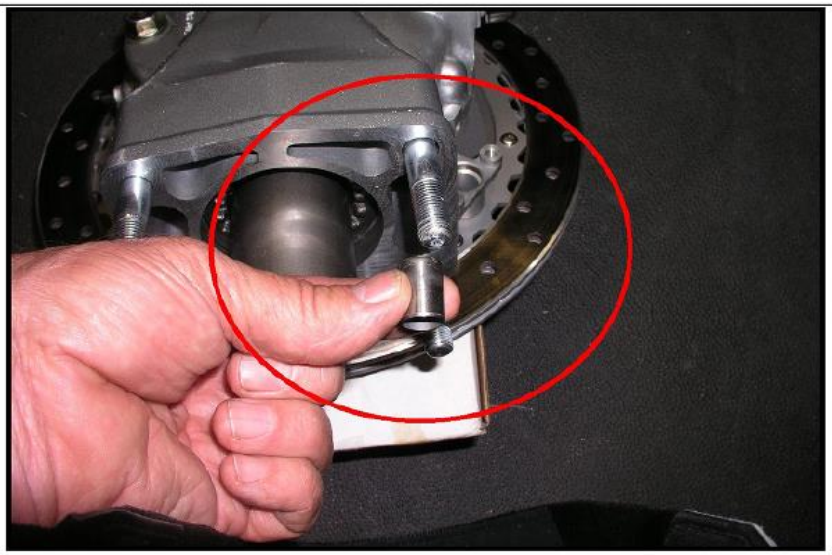
17 Remove four final drive attach (4) Bolts and remove final drive
(may need to tap housing with a rubber mallet to break loose)
**********Be sure and drain oil before removing**********

18 Driveshaft will come out with final drive, to remove just rotate and pull- put aside for re-installation
-

FINAL DRIVE MUST BE RETURNED TO DFT TO AVOID CORE CHARGE

Suspension assembly prep and install

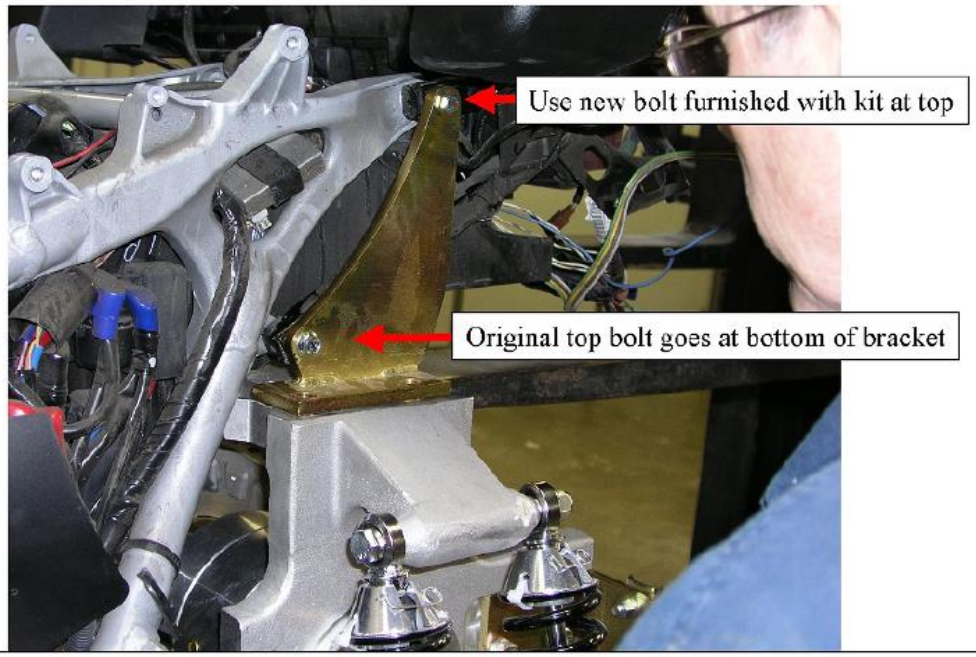
19 **Remove bushings from final drive (or use new ones) and re-install on the final drive in the suspension assembly at the same locations as originally installed. Using a deep socket, or other tool, tap bushings lightly into place in the final drive <u>until seated</u>**



Suspension assembly prep and install

20 **Remove suspension assembly brackets from top of suspension assembly and install loosely on the bike – they go on the outside of the existing trunk support bracket**

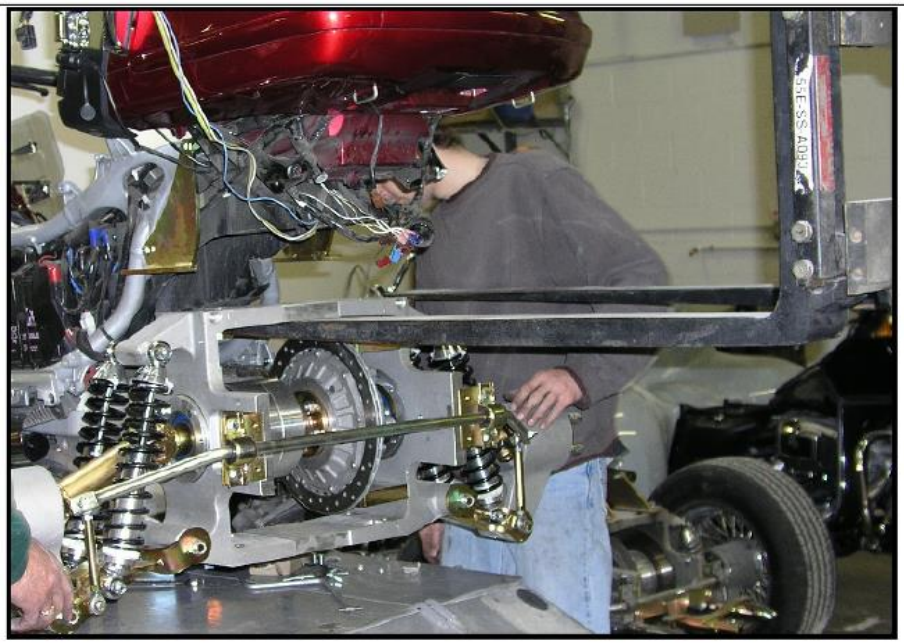
Left side shown – typical both sides



21 **Loosen the left lower suspension assembly frame bracket**

Suspension assembly prep and install

22 You'll need some way to move and hoist the suspension assembly to position for install – picture using fork lift for hoist – can also be installed from the floor with bike on center stand



Suspension assembly prep and install

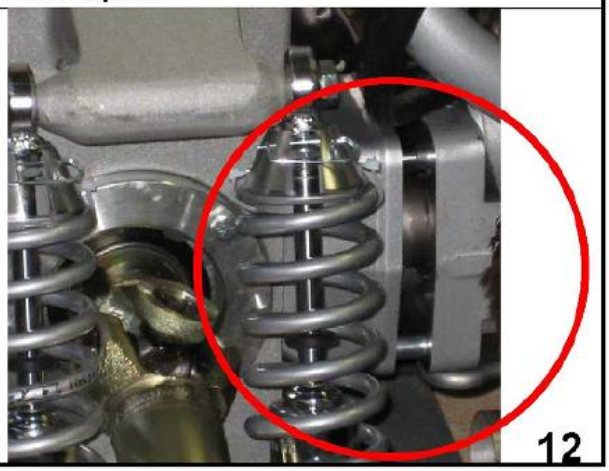
23 <u>The final drive unit in the suspension assembly attaches exactly like the one you removed,</u>

24 Install short driveshaft section in the swingarm <u>first</u> – liberally grease splines with Honda Moly grease – (helps to put bike in gear) don't push the driveshaft all the way in, must be protruding enough so you can lift it up to start into the final drive

25 Liberally grease splines on other end of driveshaft that fits into the final drive

26 Install suspension assembly – raise driveshaft with screwdriver until it starts into final drive

27 Raise/lower/tilt suspension assembly to align, lift driveshaft with screwdriver, <u>when the studs are in line</u> it will slip right in place – It normally will not go all the way flush (the spring at the driveshaft center and the bushings keep if from going all the way) but it will go far enough to start the nuts on the studs, then tighten the four nuts alternately to pull it into place.



Suspension assembly prep and install

28 **Raise the suspension assembly slowly until all four (4) bolts from the top brackets into the top of the suspension assembly can be started by hand and then start the single bolt in the bottom left bracket.**

29 **Be sure to start all bolts by hand to prevent cross-threading…**
<u>leave all attach bolts loose until all are started</u>

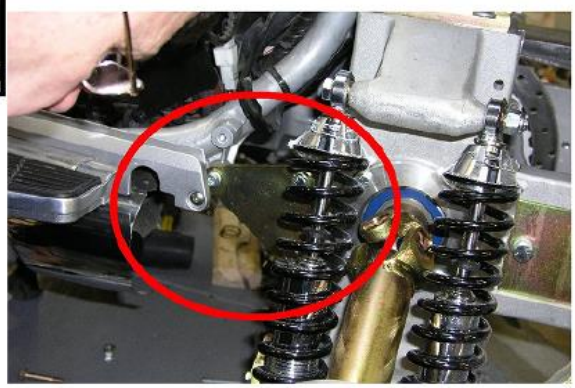
Although the DFT suspension assemblies are dimensionally uniform, not all bikes are exactly alike. Sometimes a large drift punch, screwdriver or crescent wrench must be used to help align the top bracket to suspension bolts, while others line up immediately.

All the bolts and brackets will fit – no modification is necessary!!!

Suspension assembly prep and install

30 **At this stage you should have all suspension assembly bolts started:**

Top Brackets – two to bike and two to suspension



Bottom left bracket – one bolt thru frame hard point
(Use new, longer grade 8 bolt with lockwasher
– it should go all the way thru the frame boss)

<u>When all are started, tighten all attach bolts</u>, <u>double check to make sure you get them all</u>.

"witness" marking of fasteners with paint marker after tightening is always good practice

Brake Install

31 Disconnect brake lines from caliper, don't lose gasket washers (one on each side of banjo fitting)

32 Install caliper on final drive housing in the stock position using two original bolts

33 Route brake lines thru the suspension assembly and re-attach to caliper and tighten they will only fit one way....
DO NOT OPERATE FRONT OR REAR BRAKES WHILE BRAKE LINES ARE REMOVED

34 **Rear brake pads** – Many bikers complain about GL1800 rear brake "chatter" – happens at low speed just before coming to a full stop- sensation similar to sliding the tire on gravel. This is almost always caused by using too much rear brake. Chatter that is hardly noticed on a bike becomes more noticeable on a DFT trike because the brake rotor and caliper are solidly mounted to the frame of the bike. This chatter does not degrade braking performance, it is just a noisy aggravation. After searching, we've found that Galfer high performance semi-metallic brake pads work great and if you use balanced braking habits, you'll not get chatter with these pads (some riders don't get chatter with stock pads). Galfer pads are available on request.

If you decide to change brakes pads and are not familiar with changing procedures, it is almost too easy... After you re-install the caliper and re-connect the brake lines (before you install the body), use a hammer handle/pry bar between the caliper and the side of the suspension assembly to push the caliper to the left to compress the three caliper pistons. Then, at the bottom of the caliper is a pin that goes horizontally thru the ends of both pads. Remove the small rubber plug on the right end of the pin and with an allen wrench, remove the pin. The pads will just fall out!! Remove the backing plates from the original pads, snap them on the back of the new pads. Install the right pad, put the pin thru in to hold it, then put the left pad in, push the pin thru it, tighten and then re-install the little rubber plug. The only caution is that the tops of the pads must go into the slots at the top of the caliper

The left pad can easily be installed incorrectly and not engage the top slot

Brake Bleed

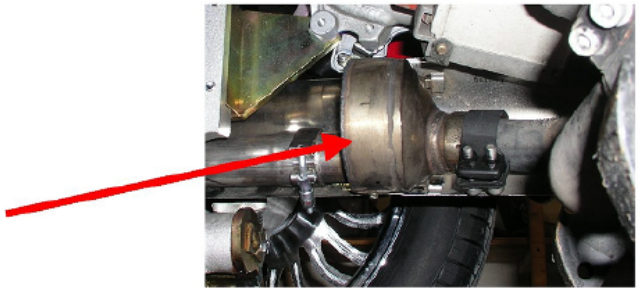
35 Brake bleeding: If desired, change brake pads before starting this step.

Although there are many options, we just use a few feet of clear plastic tubing to push over the bleeder valve to catch brake fluid in a waste container when bleeding. The clear tubing also allows you to observe air bubbles. You must bleed both valves until there are no air bubbles...be sure and open the brake reservoir before you you start bleeding, do not let it get so low that you re-introduce air from the reservoir!! We usually bleed the bottom valve first, then the top. This is very easy to do if you've ever done any brake bleeding..can easily be done by one person. Note: cover for reservoir is very difficult to remove unless you remove the reservoir – one small 8 mm bolt below the reservoir is all that holds it in place

When no more air bubbles are present, fill reservoir to indicator line, replace cap.

Confirm brake pedal is firm when applied, check that there are no fluid leaks at the caliper

Optional: Front muffler section can easily be installed at this point – see item # 62 , page 27 for directions



Final drive and differential oil

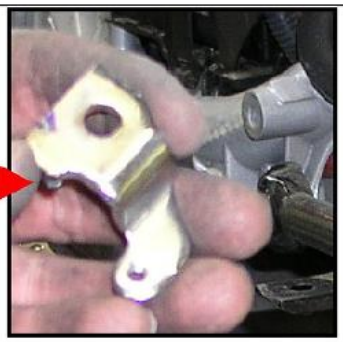
36 Fill differential assembly and final drive with 90 Wt Gear Oil – each takes 4 to 4.5 ounces

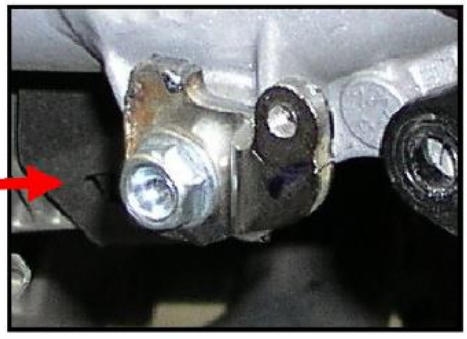
17

Footrest cover bracket modification

37 Cut footrest cover attach bracket section <u>from saddlebag protection bars</u> (use an abrasive cut-off wheel)

38 Re-install the modified saddle bag protection bar attach fitting and the footrest lower side cover

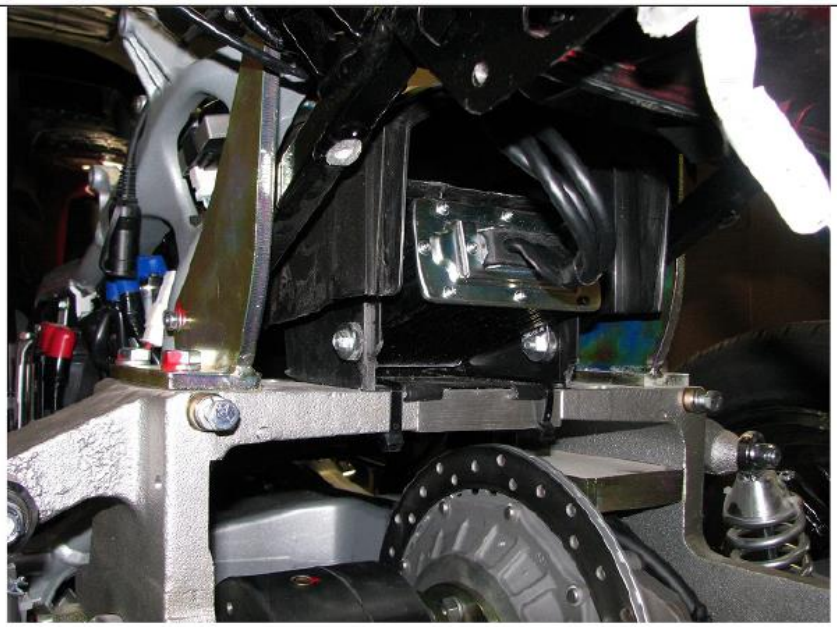




18

Audio Amplifier relocate

39 Install audio amplifier (2006 & later bikes)
After trimming the plastic case to fit in the fender cavity, it can either be bolted to the original fender or simply attached to the top of the suspension assembly with HD zip-ties (ones shown in the picture are rated for 120# capacity). Requires cutting two small slots in the front of the case for routing the zip-ties thru the case and around the suspension assembly. Just make sure the zip ties clear the brake disc.



Body Prep

40 Body Pre-fit is recommended and allows you to learn and practice the technique for installing the body without potential for damage to paint. (Start at item 51 for Install detail)

41 Drill the side cover body tabs (even if you don't pre-fit, this should always be done before paint) a ½" step drill works fine for these holes.

42 Remove the side cover rubber grommets from the saddle bags (2) each bag, install in the trike body tabs

43 Remove the taillight wiring harnesses from each saddle bag…<u>they come out as one piece with grommets still attached</u>. Do not cut or modify any wiring or remove grommets from the harnesses!!!

The part of the harness for the "saddle bag open" warning light unplugs and is left in the saddle bag

44 Remove both cable door tethers for use on trike trunk door- the larger of the two screws will be used for re-attach to the trunk door

45 Remove the two large rubber grommets from saddle bag taillight cavity – they go in corresponding holes in the trike taillight cavity

Body Prep

46 **Remove taillights from saddle bags – sometimes the black plastic flange must be trimmed for install in the body**

47 **Check taillights for fit before paint, sand as necessary for correct fit**

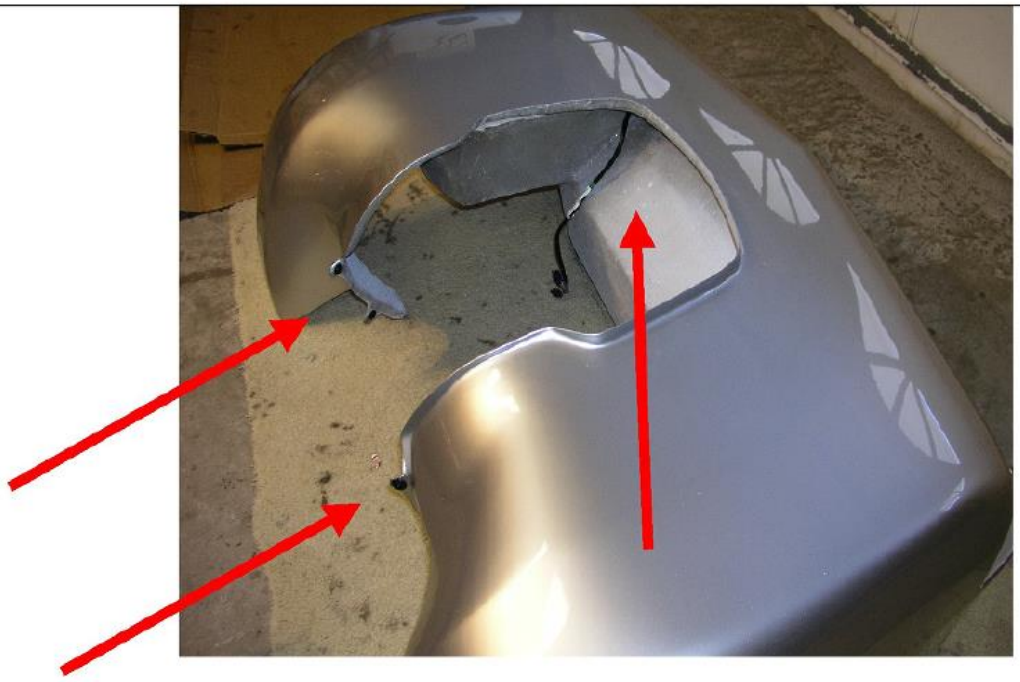
48 **Remove hinge and latch assembly hardware from trunk door and body for re-install after paint8**

49 **Your painter will need paint code (under gas filler door) and a body part (center fender section works great) for color matching**

50 **Deliver body, trunk door and center fender to painter**

Body Installation

51 **Install side cover grommets and wiring harnesses .**



Body Installation

52 Remove trailer hitch receiver/body mount sub-assembly from the suspension assembly – four (4) bolts and remove upper body mount (straight angle held on with two bolts and spacers)

53 Here's where you learn how to work the body over the suspension assembly and align everything

Body fitting requires two people - The body is not heavy, just bulky

Note in the pictures that this is where the bike needs to be raised high enough to allow dropping the back of the body almost vertical during install –

Fenders go over the top of the suspension assembly – if it doesn't want to go, you probably don't have the bike high enough to let the body down far enough in the back - when you do, it will rotate easily into place

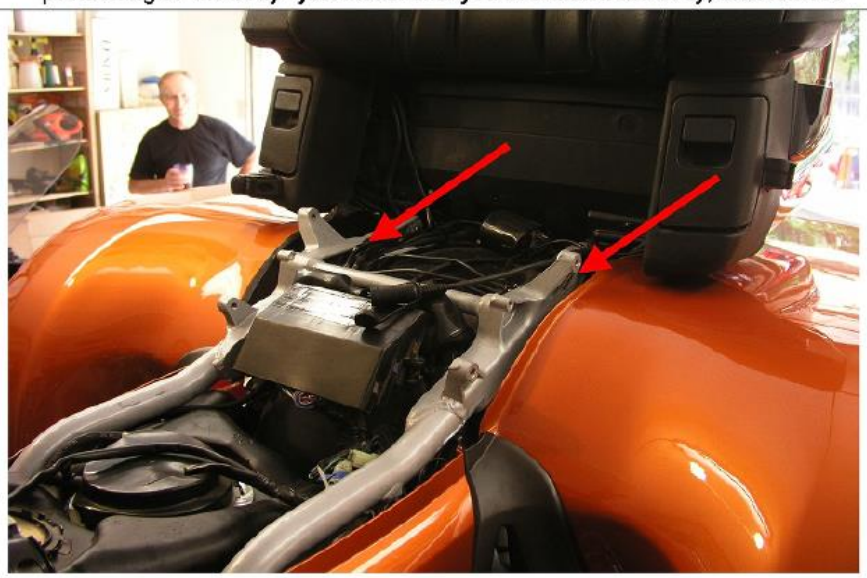
Body Installation

54 After you get the body over the front of the suspension assembly, re-install the trailer hitch/rear body support, then install the upper bracket – having a second person all during this part is helpful

Install the bottom brace for the trailer hitch/body support and tighten mounting bolts. they must be tight for subsequent proper alignment/ fitting

At this point, the body will just be sitting in place on the upper and lower support brackets

Optional: This is where simple body alignment work aids or spacers (one on each side) – help in lateral positioning of the body - just install until you fit & attach the body, then remove



Body Installation

55 Body alignment/positioning is done using the side covers as tools

56 There are (4) tabs or locating pins on each side cover

Two that attach the rear of the cover to the trike body tabs

One at the forward tip of the cover on the bike

One at the bottom edge of the cover at the passenger footrest on the bike

57 Attach both side covers thru the grommets on the two (2) trike body tabs each side

To align, install flat washers between upper and lower supports and body so that front and lower side cover tabs line up on the bike and engage easily – this takes a little time

Number of washers used varies with each installation but typically five to seven metal and one rubber washer in the rear and one or two metal and one rubber in the front (each side)

Numbers side to side will normally be the same - always use one rubber washer against the bottom of the fiberglass body

Tilt the body fore and aft by adding/removing washers front or rear to raise or lower the front side cover tab location for alignment with the grommet on the bike

Installing washers front and rear at the same time raises the side cover for the bottom tab fit

This is a trial and error effort!!!

When both bike side cover tabs will engage the grommets on the bike easily when both rear side cover tabs on the trike body are engaged the body is fitted!

Body Installation

58 Lip on top of body will fit up under trunk so that no gap between trunk and body is visible from the rear or side – there should be equal space on each side

59 Drill body mount holes:

Prior to drilling, peel up carpet from the floor of trunk and in long cubby holes on each side of trunk carpet does not drill well! Re-stick with aerosol trim adhesive.

During this process, leave side covers in place to maintain alignment
Align washers with mount holes, then drill thru body from bottom – usually drill one hole in the rear, check alignment, then install bolt from inside the trunk (use large washer) then tighten, check alignment then drill the other three holes, install bolts and tighten.

Final check alignment and if still OK, you're done.

60 Install tail-light assemblies using original 8 mm cap bolts

61 Confirm function of stop, running and turn signal lights.

Muffler Install

62 **Install front muffler short section (If not previously done) :**

Apply anti-seize lubricant to the metal gaskets on the header pipe and inside the muffler pipe
Put rubber grommets on the muffler tabs, position clamp and slide in place on the muffler
Make sure that rubber grommets go thru loops inside the chrome covers - this establishes the correct rotational position of the front muffler sections and retains the chrome cover – lightly tap with rubber mallet to help install. Loosely install clamp bolts

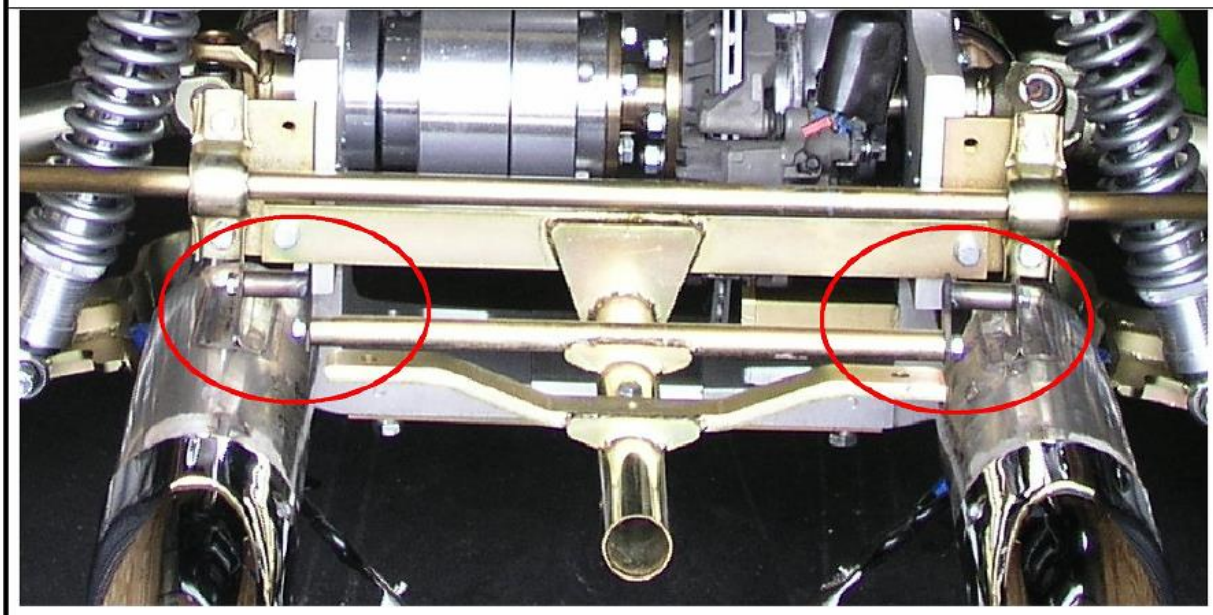
Muffler section then installs from the rear.

Install the two muffler hanger adapters shipped with mufflers to the body support. These adapters point out and rotate forward and all the way up - typically leave approximately 3/16" clearance from the bottom of the body for proper positioning of mufflers. Visually check for vertical alignment matching to body and tighten mounting bolts. Adjust for correct rotational alignment of the mufflers when viewed from the rear – use channel lock pliers on the muffler tube to rotate – when aligned, tighten all clamps

See overview picture next page (note: mufflers cannot be installed before body install)

Muffler Install

63 Picture shows mufflers and hanger adapters – they rotate forward and almost up and against the bottom of the trunk - this install must be done after body is installed. Tighten front (original) clamps first, then after final alignment tighten secondary clamp



Trunk door install

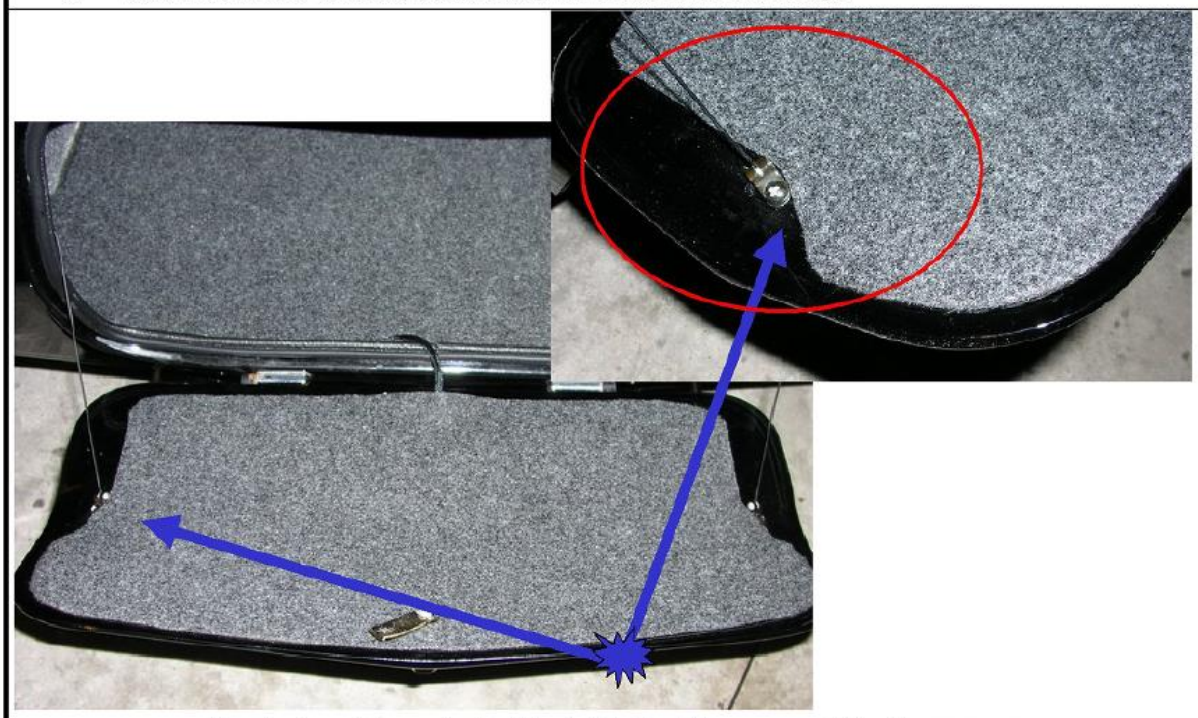
64 **Install trunk door seal using rubber mallet. Start at the bottom center and work around opening**

65 Re-install the **trunk door & latch assembly**

Optional carpet on door can be attached with spray adhesive

Trunk door install

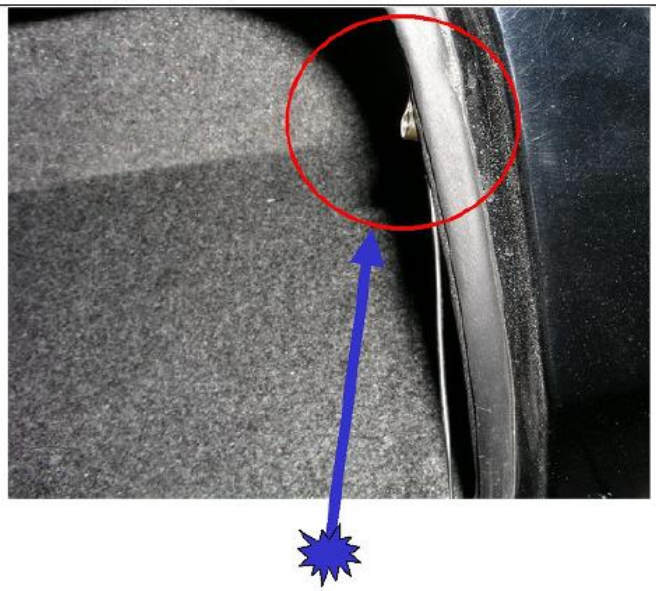
66 **install cable door tethers (2) previously removed from saddle bags**



Trunk door tether – typical Install both sides - use original large screw
Drill pilot hole just large enough to start screw, tighten snug, don't overtighten

Trunk door install

67 **Install cable door tethers (2) previously removed from saddle bags**



Trunk door tether – TOP Attach - typical Install both sides - drill thru the metal edge of the door molding and the fiberglass lip - screw head should be almost invisible

Drill and attach one side then carefully measure the other side to obtain equal tension on each tether

Trunk door install

68 **Install license plate light and license plate frame – (customer preference), a simple chrome license plate frame is shown attached using 2 - ¼" bolts at bottom and 2 blind fasteners at top.**

Use license plate frame for a drill template
Mount as high as possible against the LED light previously installed

Drill two ¼" holes all the way thru the door at the bottom
Drill two 3/8" holes only thru the outside of the door at the top (for blind fastener if used)

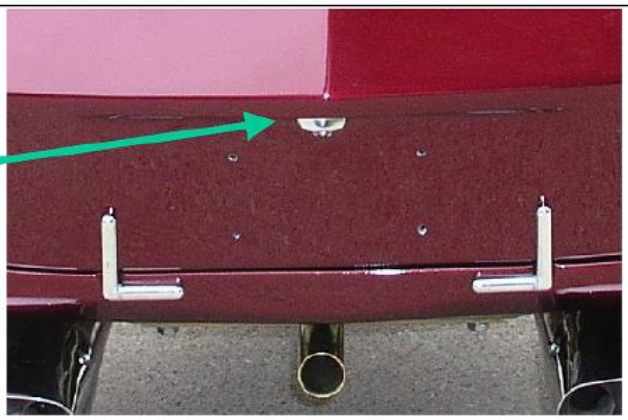
If using blind expanding fasteners at the top, bottom must be thru-bolted
a hole saw can be used to open the inside of the two bottom holes so bolts heads can be recessed

67 To secure wires out of the way in trunk, use scrap carpet strips - spray scrap strip with adhesive AND spray surface to attach it to (if only one side is sprayed, they will not stay in place!)

Trunk door install

69 Install the LED light, center & pre-drill two small holes for the small self-tapping screws
Before installing, drill a ¼" hole for the wire all the way thru the door behind the light - makes it much easier to fish the wire thru to the bottom of the door

The LED light wire is long enough to fish thru to the bottom, then make solder connections to a longer wire to go to bike and then push spliced connections back inside the hollow door.



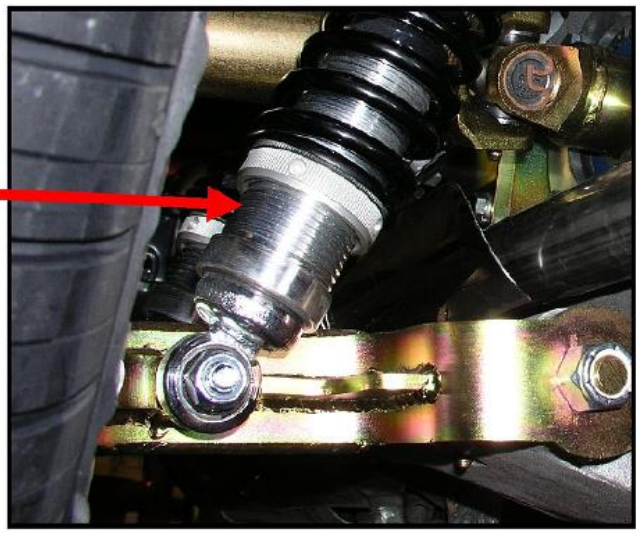
The license plate light should be connected to the brown plug in the bike's central connector (where the taillight assemblies plug in) use a male plug removed from the harness not used in the saddle bag harness or just cut/splice. LED's are polarity sensitive so if the light doesn't initially work, just swap wires before soldering. Getting the wire from the LED down thru the hollow door takes a little patience.

Suspension adjustment

70 Rotate the adjustment collar on the coil-over shock spring assembly to establish ride height adjustment and the optimum running angle of the short drive shafts – You should have 5 ½ to 6 inches from center of suspension assembly to floor when sitting unloaded – After initial adjustment you must "roll" the bike before checking the final ride height. This means you must install tires/wheels and let the bike settle. All four must be set the same.
If the ride height is not within the limits shown above, change the pre-load and measure again.

Takes a little time however this is a one-time adjustment....not something you must do every time you ride!!!.

Typical



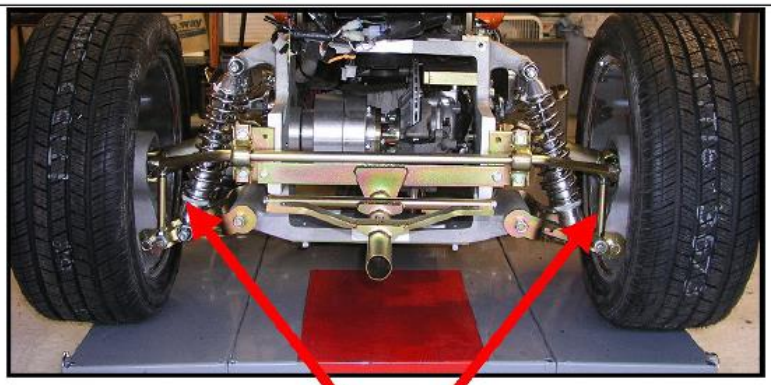
Final Detail

71 Install tires and wheels, torque lug bolts 70 to 75 ft lbs.

72 Install seat

A 36" 3/8 extension and allen head socket makes installing the seat bolts much easier.
BE SURE and use anti-seize lubricant on the bolts –
these are steel bolts into the aluminum frame - very easy to cross-thread

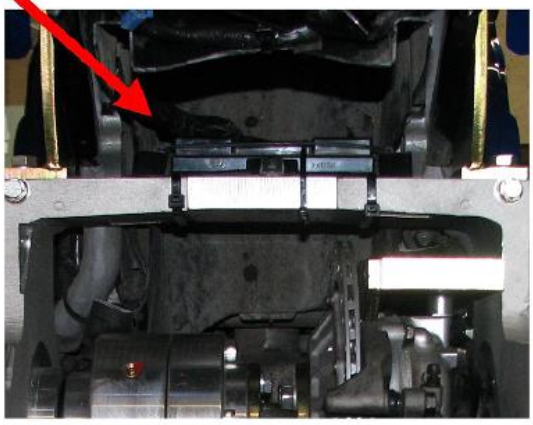
73 Last step!!! After test ride, adjust sway bar- see below: **This is a one-time adjustment**



Lock the left side, then establish
neutral (no load) on the right turnbuckle and lengthen it one turn
and lock in place (this gives a little pre-load for off camber roads)

Addendum – ABS Computer Relocate

These pictures show the relocation of the ABS computer on a pre-2006 bike. The ABS computer sits in a tray on top of the rear fender and is secured in place by large rubber bands. Just remove the rubber bands and the computer and wiring harness can be unplugged to allow you to set the computer out of the way until after the suspension is installed. After the computer is removed you can then trim the fender for clearance. The section of the fender that the computer sits in must be removed to allow clearance for the suspension assembly install. After removal, trim the tray so that it will sit on top of the suspension assembly, oriented in the same position as the original. Use heavy duty zip ties to secure the tray to the suspension assembly then put the computer in the tray, plug the wiring harness back in and secure with the original rubber bands. Always add an additional smaller zip tie around the computer just as a safety – see pictures below



Tire Pressure Monitor System (TPMS)

Access the TPMS control module

1. Remove the right front fairing pocket
2. Locate the TPMS Module
3. Unplug the gray module plug
4. **Locate the Green and White/Yellow wires**
5. Install jumper between these two wires
6. Use crimp-on t-taps or simply solder in place
7. Re-install module plug and fairing pocket