



INSTRUCTIONS

-J04021

REV. 2006-07-17

TLE/TLE-ULTRA SIDECAR ATTACHMENT KIT

GENERAL

⚠ WARNING

TLE and TLE-Ultra SIDECARS can only be installed on Touring Model family motorcycles. Use of sidecars on motorcycles other than those specified adversely affect handling and reduce braking efficiency, which could result in death or serious injury. (00103a)

NOTE

Harley-Davidson does not recommend the use of sidecars on police vehicles equipped with ABS.

Kit Number

87166-07

Models

This kit is designed and provides the mechanical components required to attach the TLE/TLE-Ultra Sidecar to 2007 and later Touring model motorcycles. This kit also contains the components and procedures required to install the Steering Damper Kit (Part Number 87142-83A). See Figure 19 and Table 1 for kit contents.

Additional Parts Required

NOTES

Configuring Turn Signal/Security System Modules (TSM,TSSM) - See following notes:

The TLE-Ultra Sidecar utilizes the same attaching kit as the TLE sidecar however, additional wiring harnesses (included with TLE-Ultra sidecar) need to be installed to connect the sidecar light harness and radio. Refer to the instructions in the Sidecar Service Manual for harness installation procedures. A Touring Model Service Manual and Sidecar Service Manual are available from your Harley-Davidson dealer. Use the Service Manuals in conjunction with this Instruction Sheet to properly install this kit.

NOTE

If your motorcycle is equipped with lower fairings, the right lower fairing must be replaced with a non-vented version for sidecar applications. Refer to the Painted Parts Manual for additional information.

⚠ WARNING

Use only Harley-Davidson approved tires. See a Harley-Davidson dealer. Using non-approved tires can adversely affect stability, which could result in death or serious injury. (00024a)

CAUTION

D.O.T. 4 brake fluid will damage painted and body panel surfaces it comes in contact with. Always use caution and protect surfaces from spills whenever brake work is performed. Failure to comply can result in cosmetic damage. (00239b)

⚠ WARNING

The rider's safety depends upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

NOTE

This instruction sheet references Service Manual information. A Service Manual for your model motorcycle is required for this installation and is available from a Harley-Davidson Dealer.

Kit Contents

See Figure 19 and Table 1.

PRE-INSTALLATION

NOTE

Before installing the Sidecar Attachment Kit, three modifications must be made according to the instructions provided in this Instruction Sheet. Follow the Pre-Installation Instructions below for each procedure.

NOTE

On Ultra models, both lower fairings must be removed prior to starting this installation.

Stock Clutch Cable Removal

NOTE

The stock clutch cable must be removed and replaced with the longer clutch cable from kit. The new clutch cable will be routed down the left side of the bike versus the right.

1. Refer to applicable Touring model Service Manual and remove right side footboard and entire exhaust system.
2. Refer to applicable Touring model Service Manual procedures and remove stock clutch cable.

New Clutch Cable Installation

NOTE

The stock clutch cable must be removed and replaced with the longer clutch cable from kit. The new clutch cable will be routed down the left side of the bike versus the right.

1. See Figure 19. Obtain Clutch Cable from kit. Refer to applicable Touring model Service Manual and follow instructions to connect clutch cable to clutch hand lever.
2. For FLHT/C/CU, follow instructions in applicable Service Manual to route clutch cable through fairing.

NOTE

Prior to performing the next step on FLHR/CI models, capture the cable in a clamp at the left upper passing lamp bolt. On FLTR models, capture the cable in a clamp at the left upper bolt securing the speedometer and tachometer housing to the upper fork bracket. These locations are identical with stock cable routing.

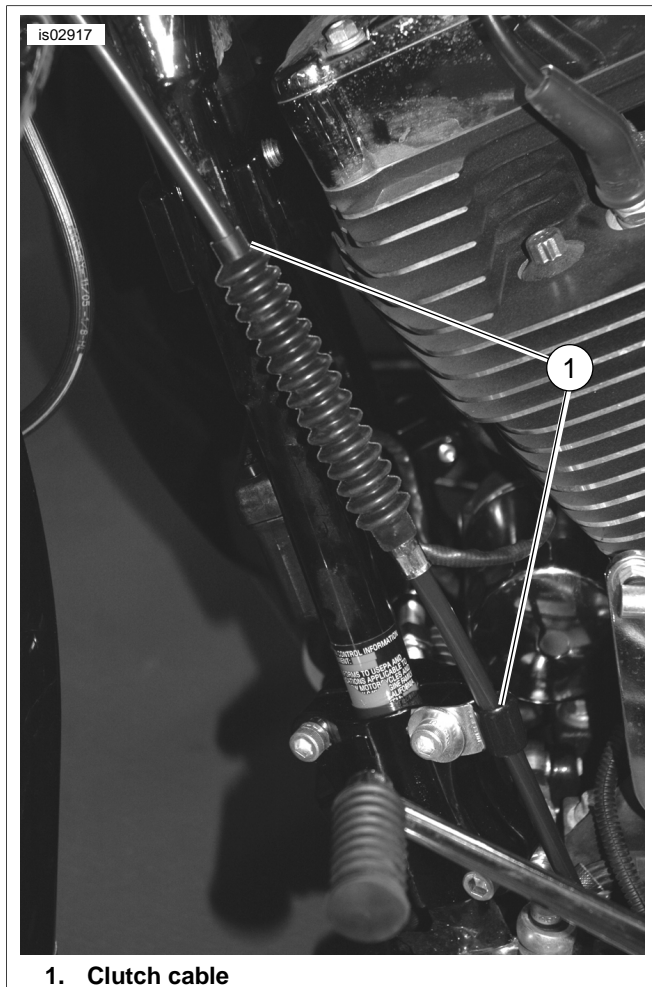


Figure 1. Route Cable Down Along Left Frame Tube (Left Side Shown)

3. See Figure 1. Continue to route clutch cable down along left frame downtube.

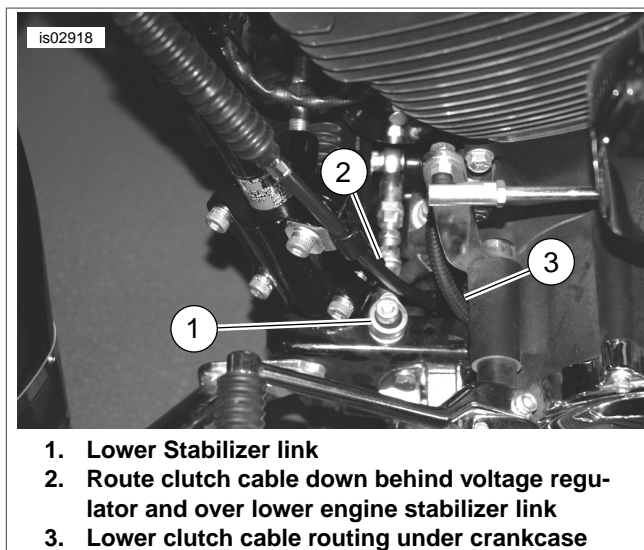


Figure 2. Revised Lower Clutch Cable Routing

4. See Figure 2 and Figure 3. Continue to route cable down behind regulator, over engine stabilizer link and diagonally under crankcase, over the electrical caddy, and to clutch release cover on right side of transmission.
5. Follow procedures in applicable Touring model Service Manual and install clutch cable fitting into clutch release cover.

NOTE

The final positioning and attachment of the clutch cable and clutch cable adjustment will be performed after sidecar mounts have been installed.

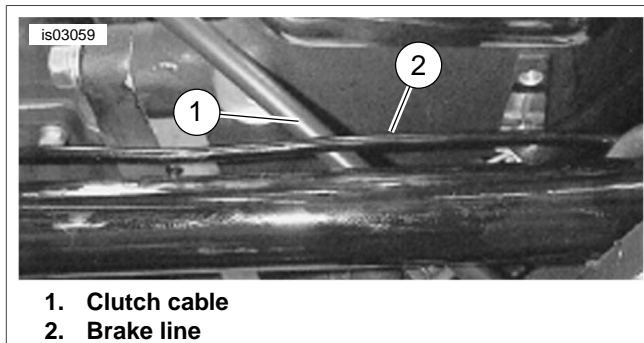
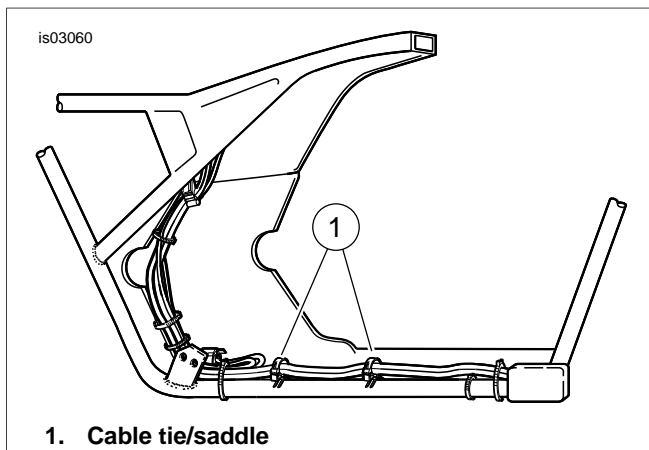


Figure 3. Contact Between Clutch Cable and Brake Line (Right side shown)



1. Cable tie/saddle

Figure 4. Relocating and Securing Brake line

NOTE

Clutch cable and brake line may make contact as shown in Figure 3 and Figure 4. Contact between the cable and brake line could result in premature clutch wear (due to cable hanging up).

Relocating Oil Pressure Sending Unit

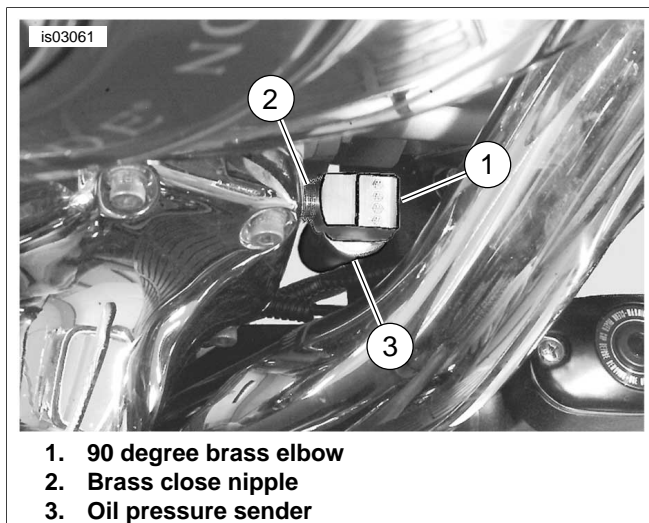
NOTE

On motorcycles equipped with oil pressure gauges, the oil pressure sender must be reoriented (downward) using a 90° elbow and close nipple.

NOTE

If motorcycle is not equipped with oil pressure gauge, proceed to "Master Cylinder Assembly/Rear Brake Pedal Modification".

1. Locate the latch on connector to oil pressure sender (next to lower right frame downtube). Raise latch on connector and gently pull to disconnect connector from oil pressure sender.
2. Remove the oil pressure sender using a 1-1/16 inch open end Crow Foot wrench (Snap-On FC34A).



1. 90 degree brass elbow
2. Brass close nipple
3. Oil pressure sender

Figure 5. Relocate Oil Pressure Sender

3. See Figure 19. Obtain the 90° brass elbow and brass close nipple from kit. Coat threads on nipple with PIPE SEALANT WITH TEFLON and install to 90° brass elbow. Install elbow into oil pressure sender threads and tighten

completely. Aim elbow so open threaded end faces downward and angled slightly toward oil filter base (See Figure 5).

4. Coat threads of oil pressure sender with PIPE SEALANT WITH TEFLON and thread into 90° brass elbow. Using a 1-1/16 inch open end Crow Foot, tighten to 96-120 in-lbs (11-14 Nm).

5. Install connector on oil pressure sender unit.

Master Cylinder/Rear Brake Pedal Assembly Modifications

NOTE

The existing rear master cylinder must be modified using components supplied in this kit to avoid contact between the sidecar frame and brake pedal. These points are covered in detail in the instruction sheet.

NOTE

This kit requires that the brake pedal be replaced with shorter brake pedal supplied in kit.

1. Refer to the applicable Touring model Service Manual and remove master cylinder/rear brake pedal assembly. Remove rear brake pedal from master cylinder assembly. Remove and save rubber pedal pad and cotter pin. Discard brake pedal and cotter pin.
2. Thoroughly clean exterior of master cylinder assembly with denatured alcohol.
3. Gently lift rubber boot from groove in plastic reservoir and slide boot off reservoir.
4. Grip boot end of reservoir with finger tips and with thumbs push on threaded end of cartridge body to remove cartridge body from reservoir. Use hand pressure only. Exercise care to keep cartridge body free of dirt and grease. Discard reservoir.
5. Carefully remove two O-rings from outside of cartridge body. Exercise caution to avoid scratching O-ring grooves.
6. See Figure 19. Obtain the new Reservoir Adapter with O-rings (45) from kit.

Lubricate O-rings with **D.O.T. 4 HYDRAULIC BRAKE FLUID** and carefully install in grooves on cartridge body.

7. Wipe bore of new reservoir adapter with **D.O.T. 4 HYDRAULIC BRAKE FLUID**.
8. Insert cartridge body into reservoir adapter indexing tab on adapter in slot on threaded end of cartridge. Use hand pressure only. Cartridge body is fully installed when adapter contacts large retaining ring.
9. Slide dust boot as necessary to seat lip in groove of reservoir adapter.
10. See Figure 19. Obtain new brake pedal (21) from kit. Install rubber pedal pad (removed from old brake pedal in Step 1 of this procedure). Follow instructions in Service Manual and using a new cotter pin, install brake pedal from kit to master cylinder assembly.

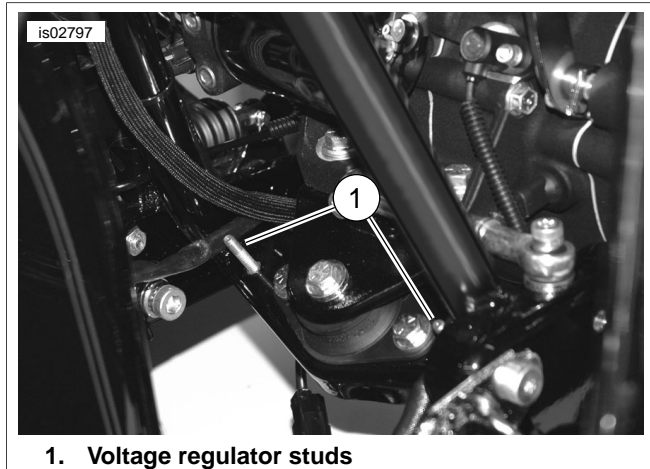
11. Set brake pedal/master cylinder assembly aside, it will be installed later.

Remove Voltage Regulator Mounting Studs

NOTE

The existing voltage regulator mounting studs on the frame must be modified using components supplied in this kit to improve servicing components after the sidecar is installed.

1. Refer to applicable Touring model Service Manual and follow instructions to remove the voltage regulator and electrical caddy plate.



1. Voltage regulator studs

Figure 6. Remove Voltage Regulator Studs

2. See Figure 6. Drive the original equipment voltage regulator studs out of the frame.

INSTALLATION

Install Upper Mount

1. See Figure 19. Obtain the rear half of upper clamp (7) from kit. Position the clamp at the rear of the frame downtubes. The mount is self-aligning and is located correctly when the grooves in the mount mate fully and cleanly with the frame tubes. Slide the clamp up or down on the frame tubes until it is correctly aligned.
2. See Figure 19. Obtain the front half of the upper clamp (6), bolt (12) and lockwasher (13) from kit. Place the front upper clamp in position and align with rear half. Secure the clamp halves to the frame tubes by tightening bolt to 50-60 ft-lbs (68-81 Nm).

Install Front Lower Mount

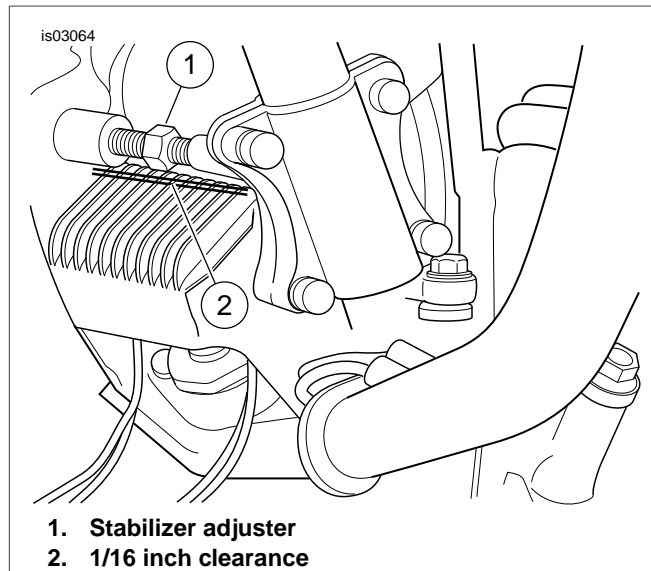
NOTE

When performing the following step, note that stabilizers are marked with "R" and "L" to indicate right and left respectively. The right stabilizer is equipped with right-hand threads; the left stabilizer is equipped with left-hand threads.

NOTE

When installing the front lower mount, it may be necessary to remove the oil filter to gain clearance for the lower mount during installation. The oil filter should be re-installed upon completion of the lower mount installation.

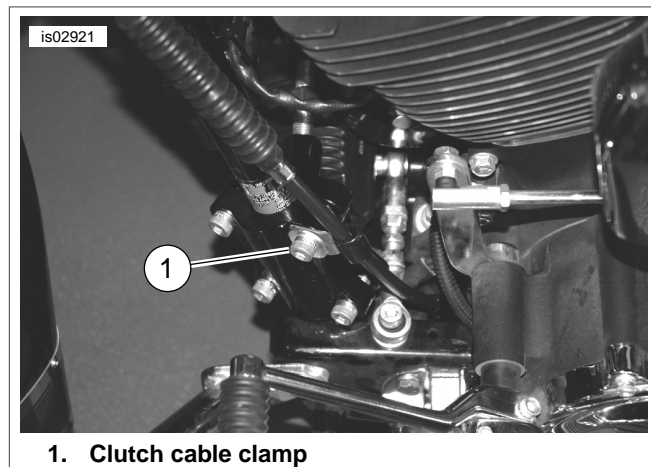
1. See Figure 19. Obtain the stabilizer adjuster (22), left stabilizer (4) and right stabilizer (3). Thread the stabilizer adjuster into the right and left stabilizers. The stabilizers are marked with an "R" and "L" to indicate right and left respectively. The right stabilizer has right hand threads - the left stabilizer, left hand threads.



1. Stabilizer adjuster
2. 1/16 inch clearance

Figure 7. Position Stabilizer Adjuster

2. See Figure 7. Place the stabilizer assembly between the frame downtubes from the backside and position the assembly so 1/16 inch clearance exists between assembly bottom and regulator. When clearance is correct, tighten the stabilizer adjuster just enough to hold the assembly in place.
3. See Figure 19. Obtain the lower front mount (2) and four bolts (15) from kit. Position the lower front mount on the right frame downtube opposite the right stabilizer and insert four bolts through mount and stabilizer. Finger tighten bolts.



1. Clutch cable clamp

Figure 8. Clutch Cable Clamp Location

4. See Figure 19. Obtain the backing plate (5), four bolts (47), flat washer (52) and clutch cable clamp (41) from kit. Install backing plate using four bolts, however use fourth bolt in upper right hand side with clamp and secure clutch cable in place as shown (See Figure 8). Tighten bolts finger tight.

NOTE

Check that clearance between lower front mount assembly and regulator is 1/16 inch and that clearance exists between backing plate and front alignment stabilizer.

NOTE

Do not raise lower front mount anymore than needed to obtain 1/16 inch clearance at regulator. Raising front mount higher will cause difficulty servicing oil filter.

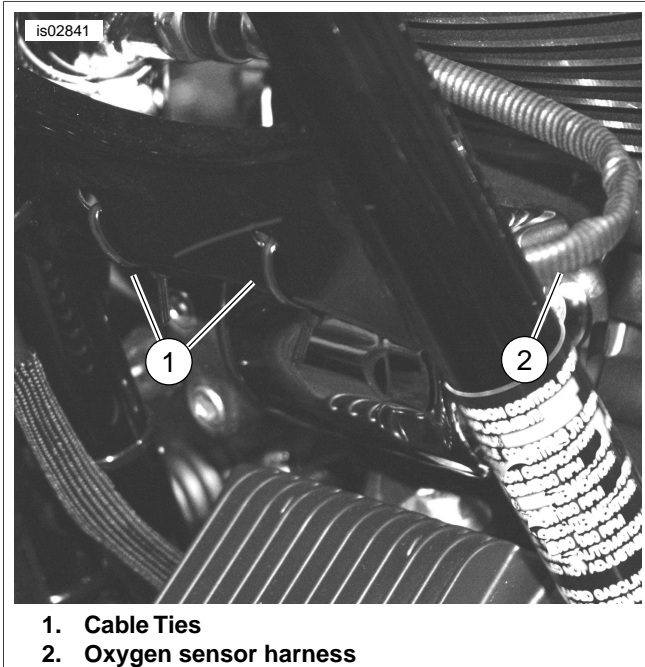
5. Move entire front mount assembly up if there is interference with front alignment stabilizer or less than 1/16 inch clearance at voltage regulator.

NOTE

Do not over-tighten stabilizer adjuster. Frame down tubes could be forced apart.

6. With a wrench, turn the stabilizer adjuster so the stabilizers press, not pull, firmly against the frame down tubes.
7. Tighten the eight backing plate to mount bolts to 35-40 ft-lbs (47.5-54.2 Nm).
8. See Figure 19. Refer to applicable Touring model Service Manual and follow instructions to install voltage regulator and electrical caddy plate using two hex head capscrews (42), flat washers (50) and lock nuts (46).
9. Tighten the screws to 70-100 in-lbs (7.9-11.3 Nm).

Install Remote Master Cylinder Reservoir



1. Cable Ties
2. Oxygen sensor harness

Figure 9. Cut Oxygen Sensor Harness Cable Ties

1. See Figure 9. Cut the cable ties (1) holding front oxygen sensor connector to frame bracket.

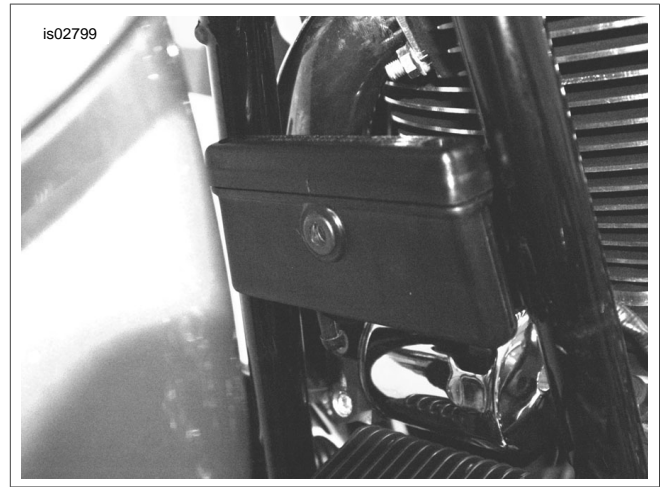


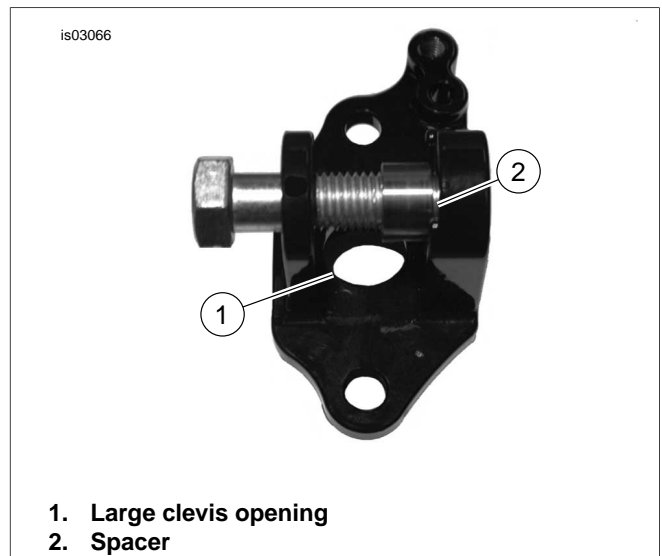
Figure 10. Brake Cylinder Reservoir

2. See Figure 19. Obtain remote reservoir (40), two flat washers (49), two lock washers (51) and two socket head screws (38) from kit. Orient reservoir on wheel side of frame downtubes and install to frame crossmember as shown. Tighten the reservoir mounting screws securely. Do not install hose at this time.

Installing Rear Mount

NOTE

See Figure 11. The rear mount requires only two bolts for installation. The clevis opening for installing the connector rod end (bearing) from sidecar frame has been made wider to allow access to the swingarm pivot shaft nut without removing the mount. Therefore, a spacer (See Figure 19, Item #37) is used with the connector rod end (bearing) when connecting the sidecar frame pivot mount to the rear mount.



1. Large clevis opening
2. Spacer

Figure 11. Rear Mount

1. If not already removed, remove right side cover and both saddlebags.
2. See Figure 19. Loosen and remove the screw with P-clamp (20) attaching rear brake line to right passenger footrest bracket. Retain screw and P-clamp to attach brake line to rear mount. Remove the bolt and lockwasher securing the

right passenger footrest bracket and remove the bracket with footrest.

- Remove the chrome plug from the right rear swing arm bracket.

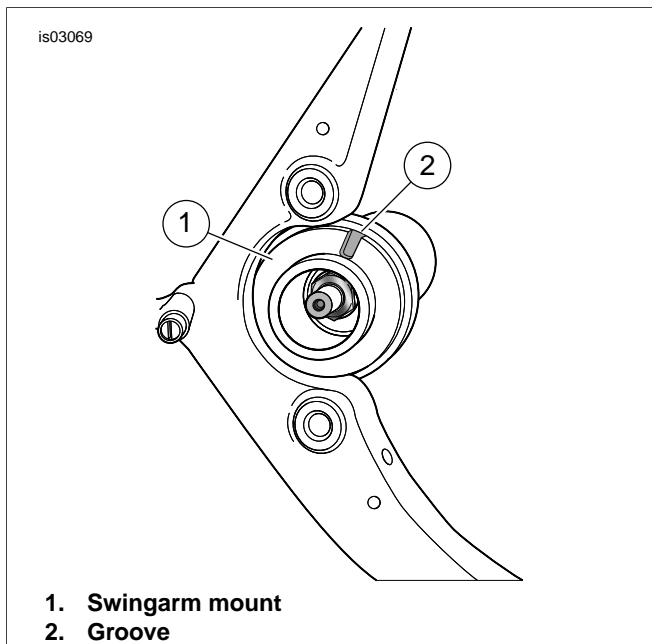


Figure 12. Swingarm Mount (2003 and later models)

- Remove the two bolts (w/lockwashers) to free the right rear swingarm bracket from frame and remove bracket. Save swingarm bracket for future installation and save bolts and lockwashers for installation of rear mount. See Figure 19 and Figure 13. Position the rear mount (1) over the two mounting holes and be certain roll pin enters the rubber mount's groove as shown in Figure 13.
- See Figure 12. Check the right pivot shaft rubber mount to be sure it is in place.

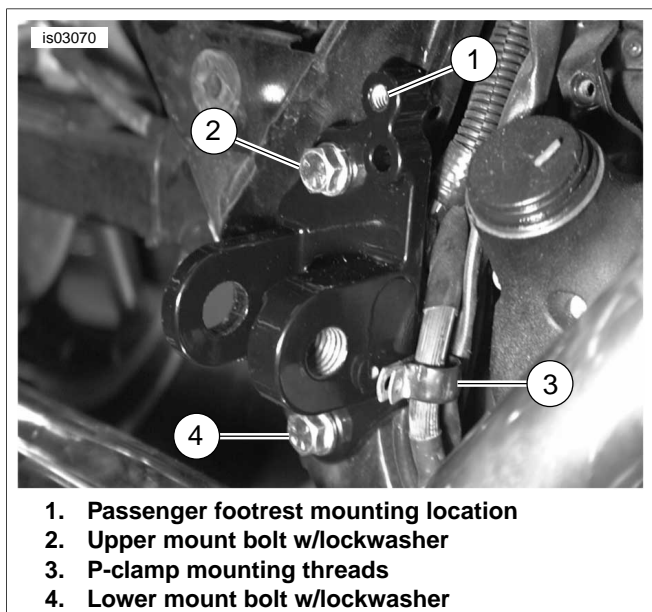


Figure 13. Install Rear Mount and Hardware

- See Figure 13. Install upper and lower rear mount bolts with lockwashers (removed in last step) to secure rear mount to frame. Tighten bolts to 34-42 ft-lbs (46-57 Nm).
- Using stock bolt and washer saved during removal of passenger footboard, install passenger footboard to threaded hole in upper portion of mount as shown. Tighten bolt to 15-18 ft-lbs (20.3-24.4 Nm).
- Obtain screw with P-clamp (20) removed in Step 2 of this procedure. Secure brake line to mount at threaded position shown. Tighten screw securely.

Attaching Steering Damper Bracket

NOTE

For the 3 tapped holes in the lower triple clamp, the steering damper bracket will have plastic plugs installed. Prior to performing Step 1, remove the plastic plugs.

- See Figure 19. Obtain the steering damper bracket (27), three screws (34) and three washers (35) from kit. Using the Illustration as a guide, install the steering damper bracket to lower triple clamp. Tighten the screws to 96-120 **in-lbs** (10.8-13.6 Nm).
- Refer to the Sidecar Service Manual for instructions for attaching and adjusting the steering damper.

Installing Tee Fitting to Frame Bracket

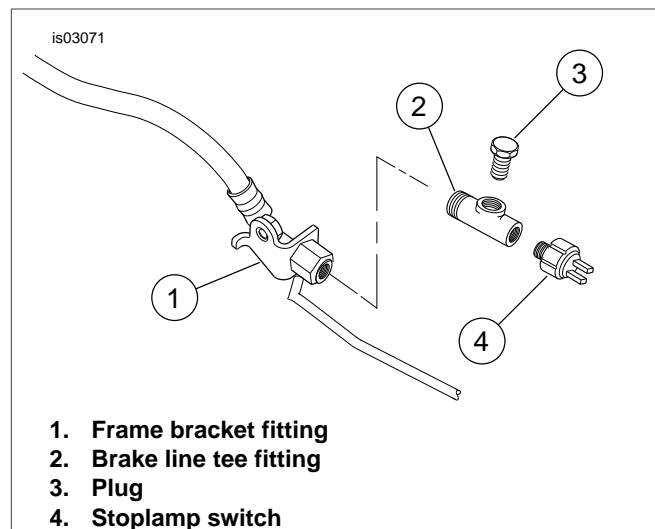


Figure 14. Modifying Brake Line Connection

- See Figure 14. Carefully remove stop lamp switch from existing fitting at frame bracket. Clean threads.
- See Figure 19. Obtain new brake line T-fitting (8) from kit. Coat male threads of fitting with Loctite Pipe Sealant with Teflon (Harley-Davidson part number 99818-97). Thread tee into frame bracket fitting and tighten so that right angle opening is vertical (facing upward).
- Coat threads of stoplight switch with Loctite Pipe Sealant with Teflon. Thread switch into end of tee.
- See Figure 19. Obtain plug (9) from kit and save. If sidecar is not being attached, install plug in the right angle opening. A union and plug is provided with the sidecar to plug the sidecar brake line.

5. Install the brake line from sidecar along rear mounting bracket, forward between rear mount and passenger footboard support.
6. Route brake line down to T-fitting and tighten.

Installing Pedal/Master Cylinder Assembly

⚠ WARNING

On 2002 and later motorcycles, the existing brake pedal must be replaced with the pedal supplied in this kit. Failure to replace the original brake pedal could result in contact between the sidecar frame and brake pedal, limiting pedal travel. This decrease of full brake pedal travel can result in loss of control and death or serious injury. (00485b)

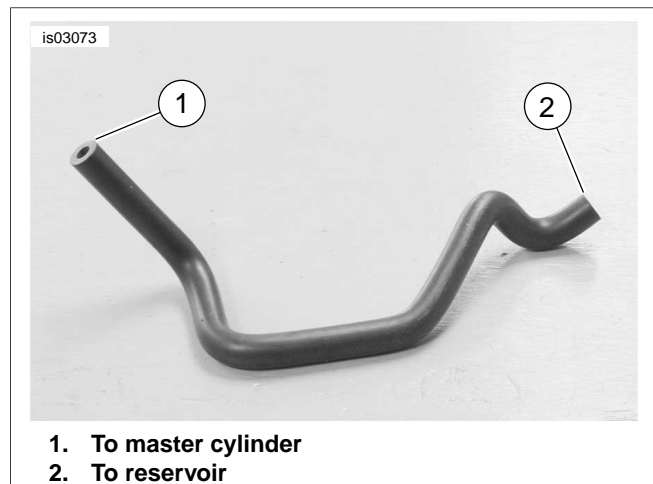


Figure 15. Reservoir-To-Master Cylinder Hose

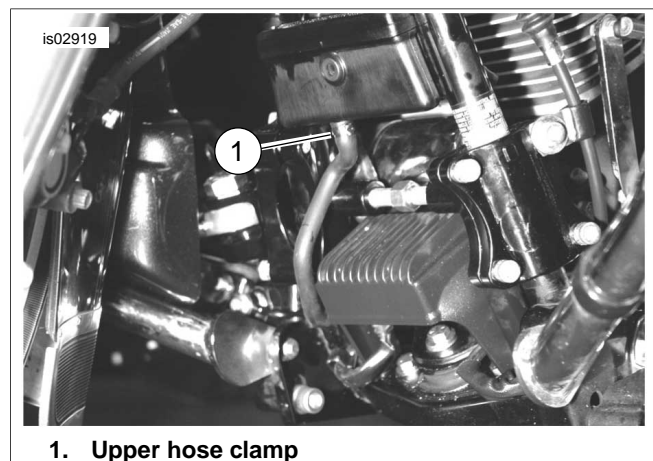


Figure 16. Routing Brake Reservoir Hose

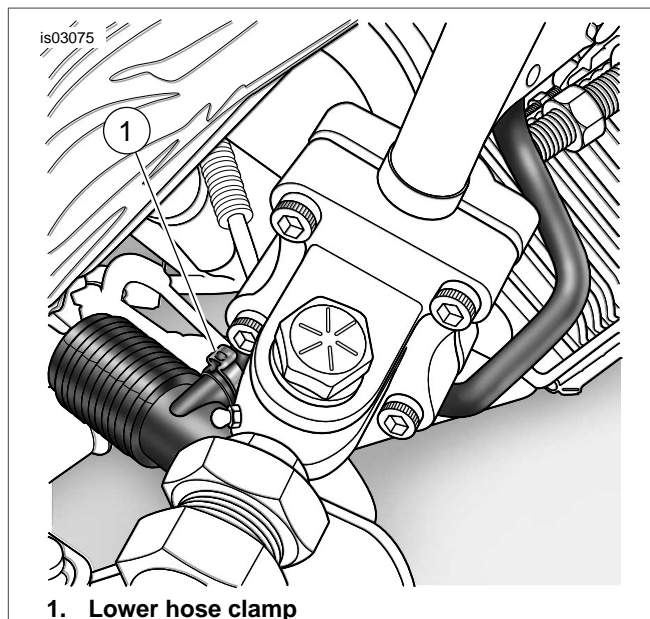


Figure 17. Brake Reservoir Hose at Master Cylinder

1. Refer to Touring model Service Manual and follow instructions to install the modified master cylinder and brake pedal assemblies. The fitting on the reservoir adapter must point inboard.

NOTE

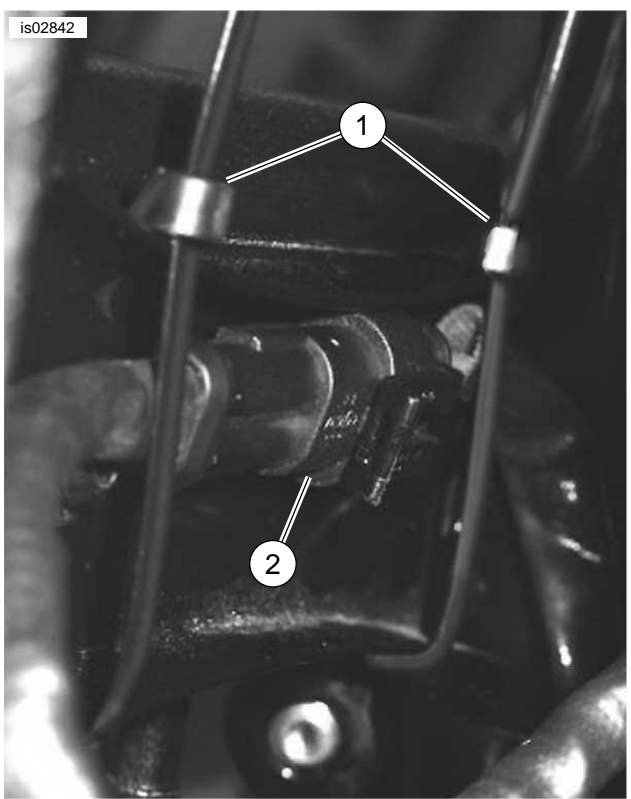
Do not use excessive force installing hose on reservoir adapter. The fitting on adapter may break off if excessive force is applied.

2. See Figure 19. Obtain hose (43) and two hose clamps (36) from kit. Route hose from master cylinder reservoir over stabilizer then back down under lower right front mount. See Figures 15, 16 and 17 for routing at master cylinder.
3. Install hose clamps as shown in Figures 16 and 17.
4. Refer to Touring model Service Manual. Fill reservoir with **D.O.T. 4 HYDRAULIC BRAKE FLUID**, and bleed rear brakes.
5. Install reservoir gasket, cover and screws. Tighten the reservoir cover to 6-8 **in-lbs** (0.7-0.9 Nm).

Install Exhaust System and All Other Items Removed To Allow Connection Kit Installation

Refer to Touring model Service Manual and install exhaust system. Also install side cover, saddlebags, lower left fairing and other parts/assemblies removed during kit installation.

is02842



1. Cable ties
2. Oxygen sensor connector

Figure 18. Secure Oxygen Sensor Connector

1. See Figure 18. Install two cable ties to retain front oxygen sensor connector to the rear of frame bracket.

NOTE

See Figure 19. Highlighted hardware, Items 10, 11, 14, 16, 17, 24, 25, 26, 28, 29, 30, 31, 32, 33 and 37 are used for attaching the sidecar to the motorcycle. See Sidecar Service Manual for installation procedures regarding the highlighted items.

Installing Right Passenger Footboard

Fasten the footboard to the rear mount assembly (Figure 19, Item 1) using the footboard attaching hardware. Adjust footboard to suit the passenger and install and tighten bolt to 15-18 ft-lbs (20.3-24.4 Nm).

Steering Damper Mounting Kit, Part Number 87142-83A

The contents of this kit are listed as item numbers 26 through 35 in Figure 19. To install the steering damper bracket, follow the procedure "Attaching Steering Damper Bracket" above. Installation of the remaining parts and adjustment is covered in the Sidecar Service Manual.

NOTE

The steering damper (25) and rod end (26) have M10 x 1.5 metric threads.

TLE Ultra Sidecar

The TLE-ULTRA SIDECAR utilizes the same attaching kit as the TLE sidecar. There are, however, additional wiring harnesses that need to be installed to connect the sidecar light harness and the radio. See instructions in the Sidecar Service Manual.

Wiring Harness Connections

NOTE

The sidecar harness is included with the sidecar and is not part of the connection kit.

See Sidecar Service Manual for wiring harness connection procedures.

SERVICE PARTS

is02796

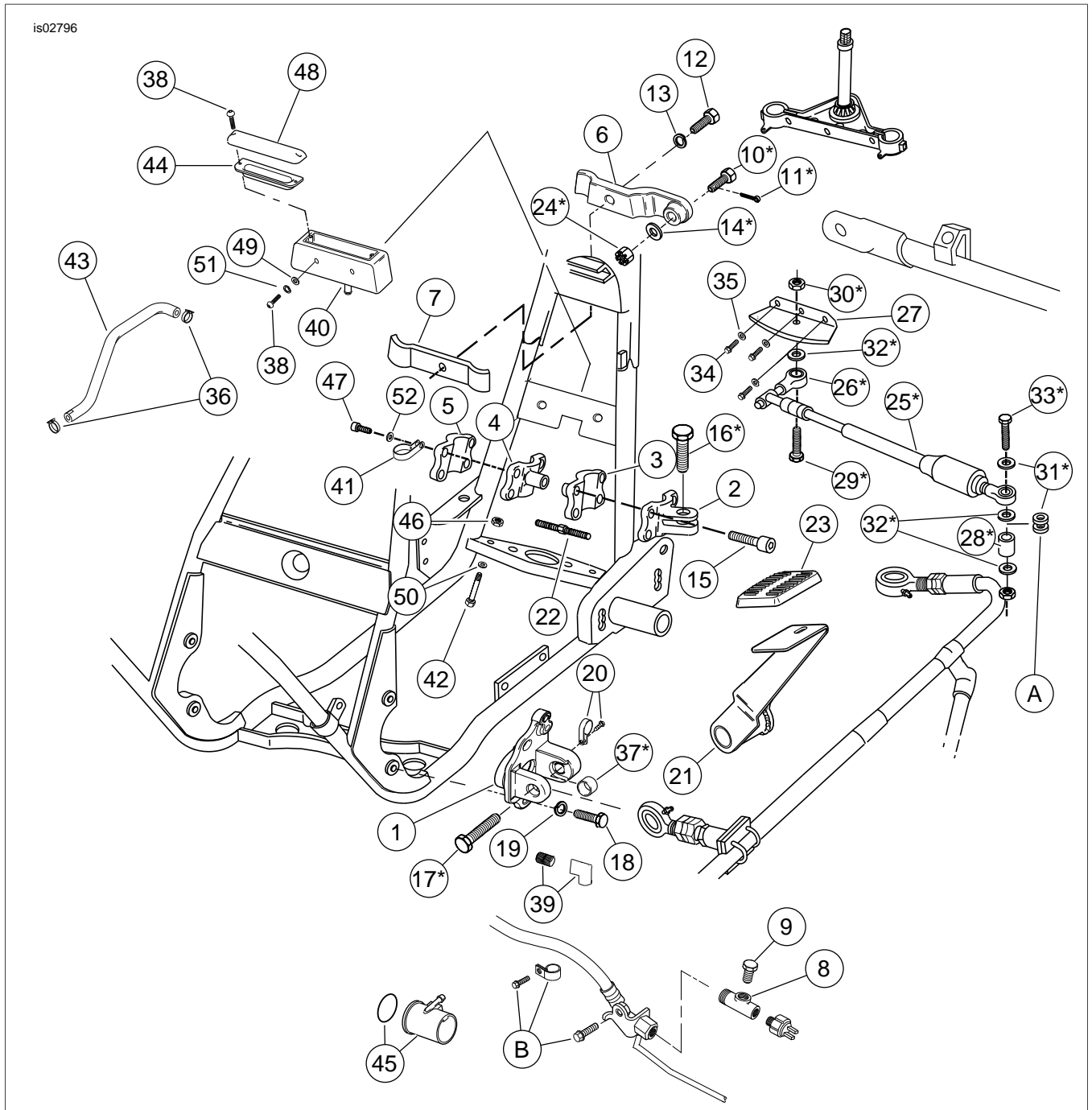


Figure 19. Service Parts: TLE Sidecar Installation Kits

Table 1. Service Parts Table: Side Car Mounting

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Rear mount kit, includes item 37	87126 -07	31*	Washer, flat, 3/8 inch I.D. (3)	6701
2	Lower front mount, right side	87122-07	32*	Washer, flat, 13/32 x 1-1/32 x 1/8 inch (3)	6519
3	Stabilizer, right side	87148-07	33*	Bolt, 3/8-16 x 2-3/4 inch	4420
4	Stabilizer, left side	87137-92	34	Screw (3)	3892
5	Plate, backing (left)	87123-83	35	Washer, 1/4 inch I.D. (5)	6703
6	Clamp, upper front kit	87131-99	36	Clamp, hose (2)	10038A
7	Clamp, upper rear	87132-92	37*	Spacer, rod end bearing	87181-02
8	Tee, brake line	87113-83	38	Screw (4)	2528
9	Plug, 3/8-24	42311-58	39	Kit, oil sender relocation (90° elbow & Close nipple)	26337-99A
10*	Bolt, with hole, 1/2-13 x 1-3/4 inch	3902A	40	Reservoir, brake fluid	41804-07
11*	Cotter pin	559	41	Clamp, clutch cable	42327-70
12	Bolt, 1/2-13 x 1-3/4 inch	4052	42	Screw, hex cap	3993
13	Washer, lock, 1/2 inch I.D.	7068	43	Hose, brake reservoir to master cylinder.	42365-02
14*	Washer, 17/32 x 1-1/2 x 9/64 inch	6723	44	Cover, reservoir gasket	42455-07
15	Bolt, 3/8-16 x 1-3/4 inch (4)	4357	45	Kit, brake reservoir adapter	42457-95
16*	Bolt, 3/4-10 x 2-1/4 inch	4151	46	Nut, flange (2)	7716
17*	Bolt, 3/4-10 x 2-3/4 inch	4045	47	Bolt, 3/8-16 x 1-1/2 inch (4)	4356
18	Bolt, 7/16-14 x 1-1/4 inch (stock part)	3782	48	Cover, reservoir	45057-07
19	Washer, lock, 7/16 I.D. (stock part)		49	Washer, flat #10 (2)	6716
20	P-clamp w/screw	Use stock	50	Washer, 1/4 inch I.D. (5)	6703
21	Assembly, brake pedal (use stock pad)	42407-87C	51	Washer, lock #10 (2)	7069
22	Stabilizer adjuster	87156-83	52	Washer, flat, 3/8 inch I.D.	6701
23	Brake pedal pad	Use stock pad			
24*	Locknut, 1/2-13	7843	Items in kit but not shown		
25*	Steering damper	87141-83		Cable, clutch control	38649-07
Steering damper mounting kit: Items 26 through 35		Not Sold Separately		Clamp	10036
26*	Rod end	87144-83		Strap, cable (3)	10006
27	Bracket	87143-83		O-ring (2), brake pedal pivot	11364
28*	Spacer (2)	59938-72	NOTE: Hardware items with (*) 10, 11, 14, 16, 17, 24, 25, 26, 28, 29, 30, 31, 32, 33, and 37 are used for attaching the sidecar to the motorcycle.		
29*	Bolt, 3/8-16 x 3/4 inch (2)	4720W			
30*	Locknut, 3/8-24 (2)	7601			