



ROADSMITH

TRIKE CONVERSIONS BY

THE TRIKE SHOP



Please thoroughly review the instructions before and during installation. Keep in mind that this product was designed to be installed by trained dealer technicians. If you are a do-it-yourselfer, be patient, trust your common sense, and if necessary call your dealer or contact The Trike Shop at 800-331-0705 if you run into any problems you cannot solve.

APPLICATION: Trike conversion kit for 2004-2008 Harley-Davidson Sportster XL1200/XL883

PRODUCT: HDSS

VERSION: 1

GENERAL NOTES: Please don't attempt any shortcuts

DRIVE BELT CAUTION!

- DO NOT TWIST, KINK, OR OTHERWISE DAMAGE THE BELT DURING INSTALLATION
- DAMAGING THE BELT DURING INSTALLATION WILL DRASTICALLY SHORTEN ITS SERVICE LIFE!

LUGGAGE RACK/BACKREST INSTALLATIONS:

- If your bike is equipped with a luggage rack/backrest, the kit MUST be ordered as such. The difference in the kit is the body is cut larger to accommodate the bracket system that holds those items.
- If you purchased an unpainted kit, the body can come marked for both if requested.

These instructions refer to diagrams and pictures which are located in the latter pages.

These instructions assume you are installing a body painted from the factory. If not, you are required to install the weather-strip and carpeting onto the conversion body. The hardware kits accommodate either a painted or unpainted body. Please call if any questions.

For torque specifications not listed, please follow SAE standards.
Unless otherwise noted, use medium strength Loctite on all bolts.

1. REMOVE THE SEAT AND SIDE COVERS
 - a. Save
2. REMOVE THE MUFFLERS- (PIC #1)
 - a. Save the two clamps
 - b. Discard the mufflers
 - c. Leave the header pipes connected to the motor
3. REMOVE THE FRONT SPROCKET COVER FASTENERS
 - a. Save all hardware
4. REMOVE THE EXHAUST CROSSOVER/HANGER
 - a. Discard it and the mounting hardware (PIC #2)
 - i. Note: temporarily remove the brake actuator rod to remove the exhaust crossover
 - ii. Note: remove the exhaust crossover/hanger from under the sprocket cover

- iii. Note: replace the brake actuator rod (loc-tite)
5. REMOVE THE FRONT SPROCKET COVER
 - a. Save it
6. REMOVE THE PASSENGER FOOTPEGS
 - a. Save just the pegs
7. REMOVE THE PASSENGER FOOTPEG BRACKETS (PIC #3)
 - a. Discard them and the hardware (including the brake hose clamp)
8. DISCONNECT THE REAR BRAKE HOSE FROM THE CALIPER & SWINGARM
 - a. Discard the banjo bolt and washers and clamp assembly (PIC #4)
9. REMOVE THE REAR WHEEL/SWINGARM/BELT ASSEMBLY (PIC #5)
 - a. Remove the two upper shock bolts & covers- discard
 - b. Remove the two swingarm pivot bolts – save them (PIC #6)
 - c. Remove the assembly from the bike
 - d. Remove the wheel from the swingarm
 - i. Remove the sprocket, save it
 - ii. Discard the rest (including the sprocket fastening bolts and washers)
10. REMOVE THE REAR BRAKE MASTER CYLINDER
 - a. Save the banjo bolt and two sealing washers, save the pivot pin and clip
 - b. Discard the rest
11. INSTALL THE PROVIDED MASTER CYLINDER ASSEMBLY (PIC #7)
(hardware bag #6)
 - a. Use the stock banjo bolt and sealing washers, use the stock pin and clip
12. REMOVE THE TAILLIGHT AND LICENSE PLATE BRACKET
 - a. Discard them and the rear fender brace
13. REMOVE THE REAR TURN SIGNALS
 - a. Remove the bezels to aid in removing the turn signals
 - b. Save the bezels and related hardware for re-installation (PIC #8)
 - c. Discard the rest (PIC #9)
14. MARK AND CUT THE REAR FENDER (PIC #10)
(hardware bag #11)
 - a. Install the push on trim to the edge of the fender (PIC #11)
15. REMOVE THE CONVERSION BODY FROM THE CHASSIS:
 - a. Discard the hardware
 - b. If the kit was ordered with the reverse option
 - i. Raise the reverse lever
 - ii. Un-snap and open the Velcro seam on the reverse boot
 - iii. Lift the body forward and up to clear the reverse lever

16. See PIC #12: HDSS CHASSIS WITH REVERSE OPTION SHOWN (with body removed)

17. DIS-ASSEMBLE THE TRIKE CHASSIS

18. REMOVE THE PARTS SHOWN (PIC #13) from the trike chassis

- a. Note the location of the hardware for re-assembly
- b. If the kit was ordered with the reverse option, remove the reverse lever assembly from the frame
 - i. Save the (2) spacers, bolts and lock nuts
 - ii. The reverse lever/cable assembly stays with the swing arm for now

19. REMOVE THE SWING ARM ASSEMBLY FROM THE TRIKE CHASSIS (PIC #14)

- a. Discard the shipping hardware (PIC #15)
 - i. Thru-bolt and nuts
 - ii. Rubber hose
- b. If the kit was ordered with the reverse option
 - i. Remove the reverse lever and cable from the swingarm assembly now

The reverse-cable-assembly is pre-adjusted per diagram #A-100-652-SPORT.
Before disassembly, note the position of the hardware for later re-assembly.

- c. Disassemble the reverse cable-end to remove it from the swingarm
 - i. Remove the clevis, clevis lock nut, and the cable housing jam nut (PIC #14)
 - ii. Remove the left side reverse motor pivot block to separate the reverse motor assembly from the swing arm
 - iii. Remove the reverse motor assembly from the swing-arm
 - iv. Keep track of the wave washers (one on each end of the pivot shaft) (PIC #14)

20. SEPARATE THE FRONT AND REAR SWING ARM SECTION AS SHOWN (PIC #16)

21. INSTALL THE FRONT HALF OF THE TRIKE SHOP SWINGARM (PIC #17)

(For spacer orientation see diagram #a-100-661)

- a. Use the stock swingarm pivot bolts

22. REMOVE THE RIGHT SIDE SWAY BAR FASTENERS

- a. Save them

23. INSTALL THE BELT ON TO THE TRIKE CHASSIS (PIC # 18)

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24. REPLACE THE SWAY BAR FASTENERS - Do not tighten them yet .

25. INSTALL THE CHASSIS (PICS #19 & 20)

(Use hardware from bag #1)

- a. Start the lower front bolts first - (3/8" x 1")
 - i. Then the upper-rear-bolts - (1/2" x 1 1/4")
 - ii. Then the upper-front-bolts - (3/8" x 1")
 - iii. After they are all started, tighten them.

26. REPLACE THE FENDER STRUT BEZELS (PIC #8)

- a. Use the stock torx bolts and nuts

27. INSTALL THE STOCK BRAKE HOSE ON TO THE TRIKE CHASSIS BRAKE FITTING

(hardware bag #6)

- a. See PIC #21
- b. Use the banjo bolt and washers from the kit

28. BLEED THE BRAKES

- a. Use the top bleeders only

29. INSTALL THE REAR SWINGARM SECTION (PIC #22)

- a. Push the rear swing arm all the way forward.
- b. For now, only snug the nuts and cam bolt nuts enough so that there is no slop, yet the swing arm can still be adjusted. We will tighten everything later.

30. FOR TRIKES WITH REVERSE (PIC # 23)

- a. Replace the motor assembly, but NOT the cable
- b. Make sure that the two wave washers are in place on the reverse pivot shaft

31. INSTALL THE REAR SPROCKET ON TO THE DIFFERENTIAL (PIC #s 24 & 25)

(All parts and hardware for this step are located in the differential shipping box)

- a. Use the five 7/16" x 1-1/4" grade 8 bolts and heavy flat washers provided (red loc-tite)
- b. **DO NOT USE THE STOCK FASTENERS!**
- c. After installing the sprocket, press the bearing on to the differential
 - i. **PRESS AGAINST THE INNER RACE ONLY- DO NOT DAMAGE THE SEAL OR THE BEARING**
 - ii. Press the bearing all the way to the shoulder
- d. Install the 6 bolt drive flange
 - i. The wave washer
 1. Then the snap ring.

32. INSTALL THE DIFFERENTIAL ASSEMBLY AND GUIDE THE BELT ON TO THE SPROCKET (PIC #26)

- a. The swing arm rails and bearing clamp blocks are match numbered (to identify mating parts)
- b. Insure that the bearings are flush with the shoulders on the swingarm rails

33. INSTALL THE CROSSBAR (PIC #27)

- a. Start the (4) 3/8" x 1" bolts and locknuts

34. INSTALL LEFT AND RIGHT SWING-ARM SUPPORT RODS (PIC #27)
- a. Raise the swing-arm to install the support rods on to the crossbar brackets
 - b. The top of the support rods go to the inside of the crossbar brackets
 - c. Tighten the crossbar bolts and all swing arm support rod bolts
 - d. Tighten the sway bar fasteners
 - i. Tighten the end link(s) first
 1. Then the bushing clamps
35. TIGHTEN THE BELT
- a. Using a 1" wrench on the hex crossbar, rotate the crossbar to the desired belt tension (*10 lbs force with 1/4" - 3/8" deflection*)
 - b. While holding tension on the hex crossbar
 - i. Tighten the (4) nuts on the rear swing-arm
 - ii. Tighten the bolts on the cams
 - iii. Tighten the left side swing-arm rail-to-hex crossbar center bolt
 - c. Rotate the sprocket a few times to check the belt tracking
 - i. Make sure the belt is not rubbing anything
36. INSTALL THE DRIVE AXLE ASSEMBLIES (PIC #28)
- a. Both axles and ends are the same (no inside, outside, etc.)
 - b. Using a cross pattern, tighten to 28+ ft-lb.
37. FOR TRIKES WITH REVERSE (PIC #29)
- a. Install the reverse lever/cable assembly onto the trike frame
 - b. Install the cable into the bracket under the left swing-arm rail
 - c. Replace all related hardware to its original position
 - d. If needed, refer to Diagram A-100-652-SPORT
 - e. Install the clevis onto the reverse motor assembly
 - f. Gently raise the reverse lever to engage the gear into the sprocket
 - i. Ensure the gears mesh
 - ii. Adjust the knob on the end of the lever so that just before the lever is fully extended, slight resistance is felt
 - g. When the adjustment procedure is complete
 - i. Tighten the jam nut on the clevis
 - ii. Install the cotter pin
 - iii. Install the spring (from the reverse bag)
 1. Put one end of the spring through the nut on the reverse motor assembly
 2. Install the other end of the spring onto the groove in the post on the swing-arm adjuster block
 3. Slightly close-up the hook of the spring around the post (PIC #30)
 - h. Install the reverse wiring
 - i. Remove the fuel tank to route wiring
 - i. Refer to Diagrams #A-100-577-C and Diagram #A-100-577-D
 - j. Replace the fuel tank
38. PLUG IN THE STOCK TAIL LIGHT EXTENSION HARNESS TO THE TAIL LIGHT CONVERTER - (PIC #31)

39. INSTALL THE BODY MOUNT/TRAILER HITCH ASSEMBLY (PIC #32)

- a. Install the front of the body-mount / trailer-hitch assembly first.
- b. Install the rear mounting bolts through the support arms, to the body-mount / trailer-hitch as shown and tighten all related bolts.

40. REPLACE THE STOCK BELT GUARD (PIC #33)

- a. Install the 1/8" spacer (from bag #3) on the bottom bolt between the between the belt guard and the transmission (this compensates for the discarded exhaust crossover bracket)

41. INSTALL THE TRIKE SHOP BELT GUARD AND LEFT SIDE COVER PLATE

- a. (PIC # 34 & 35)
- b. Install the two stand-off blocks on to the frame first, (using two 3/8" x 1 1/4" chrome button-head bolts and nyloc nuts) (from bag #8)
- c. Then install the belt guard (right side) and the cover plate (left side) (using four 1/4" x 1/2" chrome button-head bolts and chrome washers) (from bag #8)
- d. Make sure there is adequate space between the two belt guards to allow for engine movement

42. INSTALL THE EXHAUST SYSTEM (PIC #s 36-37-38) (hardware bag #4 & 2)

- a. Use the three new clamps and the two clamps from the stock mufflers
- b. Use the provided rubber isolators and hanger brackets
 - i. The raised portion of the rubber isolators belong in the up and forward position (PIC #39)
- c. Make sure that the mufflers stay centered and parallel when tightening the clamps.

43. INSTALL THE EXHAUST HEAT SHIELD (PIC#40)

- a. Use the three hose clamps (hardware bag #2)

44. INSTALL THE TAIL LIGHTS (hardware bag #7 & 9)

- a. Install the provided 5mm studs a few turns in to the tail lights
 - i. Use loc-tite (PIC #41)
 - ii. Install the lights – 5mm nuts and flat washers
 - iii. Attach the wiring to the trunk walls (PIC #42)
 1. Use 10-24 screws, nuts, and plastic "P" clamps,
- b. Note the plugs for the license plate light (PIC #43)
- c. Plug in the left and right tail light harnesses to the flat four plug as directed in diagram #A-100-654-SPORTSTER.
 - i. Be sure to pull the insulating caps over the connectors
 - ii. Fold the wires over and zip tie them to prevent them from coming unplugged (PIC #44)

45. IF ORDERED WITH THE REVERSE OPTION

- a. Install the reverse boot (PIC #45)
 - i. Use the four 1/4" x 1" bolts, washers, and nyloc nuts
 1. Tighten the top middle bolt first to draw down the boot

46. INSTALL THE EDGE TRIM (PIC #46)

- a. Be sure to clean the edge before installing the trim
- b. The edge trim has a bead of glue in it- after installing it, lightly tap on it to adhere it to the edge. (A hammer handle works well for this)

47. INSTALL THE BODY (hardware bag #10)

- a. If equipped with the reverse option, raise the reverse lever first, then guide the reverse lever through the hole in the body
 - i. Tip the rear of the body up, then set it down on the chassis (PIC #47)
 - ii. Before bolting the body down on the chassis, plug in the tail-light harness and check all tail light functions
- b. Zip tie the tail light harness to non moving frame parts
 - i. Make certain that the harness does not contact any moving parts
- c. Install the front body mount bolts (5/16"x 1 ¼")
 - i. Install the bolts up through the body mount bracket and the body's pre-drilled holes with the washers and nuts on top. Do not tighten them yet
 - ii. Check the body alignment, then drill the rear body mount holes (21/64")
 - iii. Install the rear bolts (5/16"x 1 ½") with washers down through the trunk floor (PIC #48)
 - iv. Install the remaining 5/16" x 1 ¼" body mount bolt in the outboard side of the parking brake lever mounting bracket (drill 21/64")
 - v. Tighten all body mount bolts

48. INSTALL THE PASSENGER FOOTPEG MOUNTING BRACKETS (PIC #49)
(hardware bag #5)

- a. Install the stock footpegs onto the mounting brackets using the provided pivot brackets

49. INSTALL THE SIDE COVERS

50. INSTALL THE SEAT

51. TORQUE REAR WHEELS

52. TEST DRIVE