
APPLICATION: Trike conversion kit for Harley-Davidson Softail motorcycles
PRODUCT: HDST
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!

This kit is designed to fit stock Softail motorcycles of the years 1997 thru 2008. If your motorcycle does not have the correct style turn signals, you must purchase them from a local HD dealer. Below are the part numbers and quantity necessary.

(2)	#68713-94A	LAMP ASSEMBLY
(4)	#73191-96	CONTACT SOCKET
(2)	#73152-96BK	SOCKET HOUSING
(4)	#2692WB	SCREW

These instructions are specific for Tour body installations.

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 tail lights, wiring, weatherstrip, carpeting, etc. on the conversion body. The hardware kits accommodate either a painted or unpainted body.

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

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1. CHECK THE ENTIRE MOTORCYCLE FOR PROPER OPERATION AND/OR FLAWS BEFORE STARTING THIS CONVERSION PROCESS
2. DISCONNECT THE BATTERY
3. HOW THE HDST CONVERSION CHASSIS IS SHIPPED TO YOU
 - a. See (Pic. #1)
 - b. Double check the parts list against what you received in the shipping crate.
4. REMOVE THE FOLLOWING ITEMS FROM THE MOTORCYCLE
 - a. Seat: (save)
 - b. Passenger footrests: (discard)
 - c. Exhaust system: (discard)
 - d. Rear wheel and brake caliper: (discard)
 - i. Save the banjo bolt & sealing washers
 - ii. Leave the rubber brake hose on the bike (remove it from the clips on the swing arm)
 - e. Swing arm assembly and shocks: (discard)
Save the stock pivot shaft and spacers
(on 1999 and earlier bikes, discard the pivot bolt assemblies)
 - f. Tail light assembly:
 - i. Save the lens
 - ii. Discard the base
 - g. Turn signals: (save)
 - i. Remove the turn signals from the cross bar
 - ii. Save the turn signals and the Allen screws
 - iii. Discard the cross bar
 - h. Tail light extension harness: (discard)
 - i. Unplug it and remove it from underneath the fender
5. CUTTING THE REAR FENDER
 - a. Mark and cut the rear fender:
 - i. Starting at the top of the fender opening radius, pull tape (keeping it level) around the corner of the fender to intersect the top corner of the tail light opening
 - ii. Cut the fender along your line to the tail light opening - leave the tail light mounting tab.
 - iii. De-burr the edge and install the push on rubber trim from the kit (See pic #2)
 - iv. The fender cut is not critical. The trike body completely covers it

6. CHANGE THE BELT

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 - a. Using your HD service manual as a guide, replace the stock belt with the Gates belt provided in the kit. Listed below are some common torque specifications.
 - b. **NOTE:** on 1999 and earlier bikes, a 1/2" offset kit must be installed when changing the belt

Primary cover screws	7-9 (ft-lb)
Primary chain-case to engine and trans bolts	18-21 (ft-lb)
Compensating sprocket nut	150-165 (ft-lb)
Clutch hub nut	70-80 (ft-lb)

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Primary chain slack (cold)	5/8" - 7/8"
Belt tension	10 lbs force with 1/4" - 3/8" deflection

7. REMOVE THE CONVERSION BODY FROM THE CHASSIS:
 - a. Discard the mounting hardware
 - b. If the kit was ordered with the reverse option
 - i. Raise the reverse lever
 - ii. Lift the body forward and up to clear the reverse lever

8. REMOVE THE PARTS SHOWN (Pic #3) from the trike chassis (trailer hitch/body mount and sway bar)
 - a. Note the location of the hardware for re-assembly
 - b. If the kit was ordered with the reverse option, remove the reverse lever/bracket assembly from the frame and swingarm and set it aside for re-installation later.
 - i. Save the (2) 5/16" X 1" reverse lever mounting bracket bolts and lock nuts
 - ii. Remove the reverse cable assembly from the swing arm by removing the "L" shaped rear cable anchor from the swingarm (Allen head screw (save) (keep track of (save) the alignment pin located between the rear cable anchor and the swingarm for re-installation later)

The reverse cable assembly is already adjusted when you receive it. Only minor adjustment may be necessary after final assembly. Minor adjustments can be made by turning the knob on the end of the reverse lever.

9. REMOVE THE SWING ARM ASSEMBLY FROM THE TRIKE CHASSIS (Pic #4)
 - a. Leave the two upper support arms attached to the swing arm rails

10. REMOVE THE DIFFERENTIAL ASSEMBLY
 - a. The swing arm rails and bearing clamp blocks are match numbered (to identify mating parts)
 - b. If the kit was ordered with the reverse option
 - i. Remove the reverse motor assembly from the swing-arm
 - ii. Remove the front return spring anchor from the adjuster block(leave the spring on the reverse motor bracket)
 - iii. Remove the right side reverse motor pivot block from the swing arm rail to separate the reverse motor assembly from the swing arm
 - iv. Keep track of the wave washers (one on each end of the pivot shaft) (Pic. #5)

11. REMOVE THE REAR CROSS BAR FROM THE CHASSIS (Pic. #6)
 - a. Note the location of the hardware for re-assembly

12. SEPARATE THE FRONT AND REAR SWING ARM SECTION AS SHOWN (Pic. #7)

13. TRIKE CHASSIS STRIPPED AND READY FOR INSTALL (PIC #8)

14. SLIP THE CHASSIS THROUGH THE BELT

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15. ATTACH THE TRIKE CHASSIS TO THE BIKE CHASSIS

Refer to diagram numbers- A-100-778, A-100-777, or A-100-591 for year specific swing arm pivot area frame mounting spacer layouts

Refer to diagram number A-100-779 for stock tire width specific upper frame mounting bracket orientation

Also refer to (PIC # 9 for 7" wide fender) OR (PIC #10 and diagram #A-100-780 for 9 1/2" wide fender)

Note: picture #10 has the fender removed for picture clarity- the fender must be in place before installing the upper frame mounting brackets.

16. CONNECT THE STOCK BRAKE LINE TO THE HEX FITTING ON THE TRIKE CHASSIS (Pic. #11)

17. BLEED THE REAR BRAKES

- a. Use the TOP bleeders only

18. INSTALL THE SWING-ARM FRONT SECTION (Pic #12)

Do not tighten the bolts yet

19. INSTALL THE REAR SECTION OF THE SWING ARM

- a. (See Pic. #13)
- b. Push the rear swing arm rails all the way forward.
- c. 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.

20. REPLACE THE CROSSBAR

- a. (See Pic. #14)
- b. Start the (4) 3/8" x 1" bolts and locknuts

21. INSTALL LEFT AND RIGHT SWING-ARM SUPPORT RODS

- a. (See Pic. #15)
- b. Raise the swing-arm to install the support rods
- c. Tighten the crossbar bolts and the swing arm support rod bolts
(The top of the support rods go to the outside of the crossbar brackets)
- d. Now tighten the two front swing arm mounting bolts

22. FOR TRIKES WITH REVERSE

- a. (See Pic. #16)
- b. Replace the motor assembly, but NOT the cable
- c. Make sure that the two wave washers are on the reverse pivot shaft on each end
- d. Replace the return spring anchor (with the spring attached to it) and the reverse motor bracket into the adjuster block.

23. INSTALL THE DIFFERENTIAL ASSEMBLY AND INSTALL THE BELT ON TO THE SPROCKET

- a. (See Pic. #17)

24. INSTALL THE SWAY BAR ASSEMBLY

- a. (See Pic. #18)
- b. Tighten the end links first
- c. Then the pivot bushings last

25. TIGHTEN THE BELT

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- a. (See Pic. #19) (you may notice that the photo is of an FLH installation- it does not matter as the procedure is identical)
- b. Tighten the two front swing arm mounting bolts
- c. Using a 1" wrench on the hex crossbar, rotate the crossbar to the desired belt tension
 - i. 10 lbs force with 1/4" - 3/8" deflection
- d. 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
- e. Rotate the sprocket a few times to check the belt tracking
 - i. Make sure the belt is not rubbing anything

26. INSTALL THE DRIVE AXLE ASSEMBLIES

- a. (See Pic. #20)
- b. Both axles and ends are the same, no inside, outside, etc.
- c. Using a cross pattern, tighten to 28+ ft-lb.

27. FOR TRIKES WITH REVERSE

- a. Install the reverse lever/cable assembly onto the trike frame (See Pic. #21)
(Please note that there are two sets of holes in the lever mounting plate: the two forward holes are for the "tour" body, the two rear holes are used for the "V" body)
- b. Replace the rear cable anchor (with the cable still attached) on to the swingarm bearing cap (See Pic. #22)(If you notice that the photo is of an FLH installation- it does not matter as the
- c. Be sure to replace the locating pin between the rear cable anchor and the swingarm bearing cap
- d. Install the clevis onto the reverse motor assembly. (See Pic #23) (If you notice that the photo is of an FLH installation- it does not matter as the procedure is identical)
- e. 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
- f. When the adjustment procedure is complete
 - i. Install the cotter pin
- g. Install the reverse wiring
 - i. Refer to Diagrams #A-100-577-A and Diagram #A-100-577-B

28. REPLACE THE BODY MOUNT/TRAILER HITCH ASSEMBLY

- a. (See Pic. #24)
- b. Install the front of the body-mount / trailer-hitch assembly first.
- c. Install the rear mounting bolts through the support arms, to the body-mount / trailer-hitch as shown and tighten all related bolts.

29. INSTALL THE EXHAUST SYSTEM (Pic #25)

- a. Softail kits require the use of a Samson #???? Dual exhaust system and dresser style mufflers
- b. Install the Samson exhaust system plus the supplied exhaust extension pipes. The extensions slip between the exhaust headers and the mufflers.(do not use the Samson exhaust hanger brackets)
- c. Install the provided muffler's hangers and rubber mounts into the openings on the body-mount / trailer-hitch assembly
- d. The mufflers should end up being parallel to each other
- e. Tighten clamps carefully and adjust pipes as needed

30. BODY PREPARATION

- a. Install the two provided tail light bases on to the trike body

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- i. (See Pic. #26)
 - ii. In test fitting the bases, you will notice that they may not sit flush with the body. To make them fit flush with the body, grind off the lower outside corners of the tail light bases
 - iii. After you are content with the fit, install the bases on to the body
 - b. After lightly bolting down the bases, drill a 3/16" hole through the bases and the body at the location shown in (Pic. #27)
 - i. Install the #8-32 stainless screws to draw down and hold the tail light bases
 - c. Install the turn signals using the stock fasteners
 - i. Make sure that the turn signals are square with the tail light lenses - adjust them as needed before tightening (adjusting the turn signals may require slight grinding of the mounting screw holes in the body)

31. TAIL-LIGHT WIRING HARNESS AND ASSOCIATED WIRING

- a. See Diagram #A-100-645 (REV A)
- b. Connect the wiring as shown
- c. Attach the harness to the tail light mounting bolt using the
 - i. 1/4" p-clamps and
 - ii. 1/4" locknuts from (Pic. #28)
- d. Attach the harness to the trunk walls (Pic. #28) using the
 - i. screws
 - ii. plastic cable clamps and
 - iii. nuts

32. RUBBER EDGE TRIM

- a. Install the push-on rubber edge trim on the inside opening of the body
- b. Thoroughly clean the edge before installing the trim
- c. The rubber trim has pre-applied glue in it
 - i. During installation, lightly tapping on the trim helps to break the membrane on the glue for better adhesion

33. INSTALL THE BODY - NO REVERSE

- a. Keeping track of the tail light wiring harness (tape it to the top of the body), and with the help of an assistant
 - i. Carefully set the body onto the chassis
 1. Roll the body forward to set on top of the front body mounts first
 - a. Then set the rear of the body on to the chassis.

34. INSTALL THE BODY – WITH REVERSE

- a. Raise the reverse lever, then
 1. Keeping track of the tail-light wiring harness (tape it to the top of the body) and with the help of an assistant
 - a. Roll the body forward over the extended reverse lever, guiding the lever through the hole in the body
 - i. Then down on to the front body mounts first, Then set the rear of the body on to the chassis

35. ROUTING THE TAIL-LIGHT HARNESS AND SECURING THE BODY

- a. Route the tail-light harness to keep it out of sight and protected from moving parts
- b. Plug in the harness to the mating plug on the fender
 - i. Check the function of all lights
 - ii. After checking the lights, double check the wiring harness routing, and zip tie it as needed

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- c. Install the front and rear body mount bolts through the pre-drilled holes in the body
 - i. The pre-drilled body mount holes should be very close - there should not be much adjustment needed
 - ii. Install the front bolts pointing up - install the rear bolts(in the trunk) pointing down
 - iii. Put the washers between the fastener and the fiberglass
 - iv. Before tightening the bolts
 1. check the body position
 - a. adjust if needed then
 - i. tighten all six body mount bolts
 - v. After bolting down the body, open and close the door
 1. Making sure that the door latches on the second detent of the latch
 2. Adjust the latch if needed
 3. A somewhat firm push on the door to make it latch is normal as over time the weather stripping will conform to its mating surface

36. REPLACE THE SEAT USING STOCK HARDWARE

37. INSTALL THE PROVIDED PASSENGER FOOTRESTS (See pic #s 29 & 30)

38. CHECK THE TORQUE ON THE LUG NUTS (70-75 FT LBS)

39. TEST DRIVE