



Performance Sport Trailers

BUSHTEC RECEIVER HITCH SYSTEM

For

2009-2010 HD Tri-Glide & Street Glide Trike

READ ALL INSTRUCTIONS BEFORE YOU START

ATTENTION INSTALLER: THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER!!!

HARLEY-DAVIDSON MOTOR COMPANY, HARLEY-DAVIDSON MOTORCYCLES AND/OR ANY AFFILIATE OR SUBSIDIARY HAS NEITHER APPROVED OR ENDORSED *Bushtec Products Corporation*, ITS PRODUCTS, TRAILERS OR HITCHES. USE OF A TRAILER OR TRAILER HITCH ON ANY MOTORCYCLE COULD VOID YOUR WARRANTY AND MAY INCREASE YOUR CHANCE OF INJURY OR DEATH IN AN ACCIDENT SITUATION.

Important information is distinguished by the following notations:

NOTE: Provides key information to make procedures easier and clearer.

CAUTION: INDICATES SPECIAL PROCEDURES THAT MUST BE FOLLOWED TO AVOID DAMAGE TO THE MOTORCYCLE, TRAILER OR ACCESSORIES.

WARNING: INDICATES SPECIAL PROCEDURES THAT MUST BE FOLLOWED TO AVOID SERIOUS INJURY AND/OR DEATH TO A MOTORCYCLE OPERATOR OR OTHERS.

WARNING: THE *BUSHTEC RECEIVER HITCH* SYSTEM FOR 2009-2010 TRI-GLIDE MODELS HAS BEEN EXCLUSIVELY DESIGNED FOR USE ONLY ON A STOCK H-D TRI-GLIDE OR STREET GLIDE TRIKE. IT WILL NOT WORK ON ANY OTHER MOTORCYCLE OR TRIKE. ANY MODIFICATION TO ANY PART OF THIS HITCH, INCLUDING BUT NOT LIMITED TO ALTERING THE SUPPLIED HARDWARE OR IMPROPER INSTALLATION COULD CAUSE INJURY OR DEATH AND IMMEDIATELY VOIDS ANY AND ALL WARRANTIES.

WARNING: INSTALLATION OF THIS HITCH SHOULD BE PERFORMED BY A QUALIFIED MECHANIC. THESE INSTALLATION PROCEDURES ARE ONLY A GUIDE AND SHOULD BE USED IN CONJUNCTION WITH THE FACTORY SERVICE MANUAL AND THE NECESSARY MECHANICAL SKILLS.

WARNING: THE END USER OF THIS PRODUCT ASSUMES ALL LIABILITY AND RESPONSIBILITIES THAT MAY ARISE DUE TO BUT NOT LIMITED TO,



NEGLIGENCE FROM IMPROPER INSTALLATION OR USE, INCLUDING OVERLOADING, EXCEEDING THE RECOMMENDED LOAD LIMITS AND IMPROPER MAINTENANCE.

WARNING: ALL HITCH HARDWARE SHOULD BE CHECKED PRIOR TO EACH USE. FAILURE TO DO SO COULD RESULT IN INJURY OR DEATH.

BUSHTEC RECEIVER HITCH SYSTEM
For 2009-2010 HD Tri-Glide & Street Glide Trike

CONTENTS:

- 1 Receiver Center Section (3/8-16 x 1" GR8HH Bolt & Jam Nut Installed)
- 1 Isolator Package with Plug-n-Play Subharness
- 1 1/2" Receiver Lock
- 1 Chrome Hitch Head w/ 1 7/8" Stainless Steel Ball & Safety Chain Bracket
Or
- 1 Chrome Bushtec Receiver Head w/ Stainless Steel Lock, 2 Keys & Cover
- 1 Instructions

HARDWARE:

- 4 5/16-18 x 1 1/2 inch GR8HH Bolt
- 4 5/16 inch Flat Washer

CAUTION: THESE STEPS MUST BE PERFORMED IN THE FOLLOWING ORDER:

HITCH INSTALLATION

1. Place motorcycle on level ground.
2. Remove seat.
3. Locate 4 Torx head bolts, 2 on each of the crossbraces under trunk, between mufflers. On 2010 models, these bolts have a tamper proof Torx head design which will require a special socket. The crossbraces support the trike trunk and body and run side to side, parallel to the rear axle of the trike. Remove the 4 Torx bolts and set aside.
4. Lift the receiver center section into place against underside of crossbraces and align 4 holes in center section with holes in crossbraces. Secure using 4 supplied 5/16-18 x 1 1/2 inch GR8 Hex Head Bolts and flat washers. Medium duty threadlock is recommended during installation of these bolts. Do not tighten. The end of the box tube with the tension bolt and receiver lock hole should face toward the rear of the motorcycle.
5. Square the center section to the motorcycle and tighten bolts.

WIRING INSTALLATION

1. In preparation for electrical installation, remove module sitting on top of battery by pushing outward on tabs to front and rear of module, then slide module out of holder toward right side of bike. Lift and rotate to side. A wire tie can be used to secure the unit



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so that it does not move causing damage to paint and cannot contact battery while cover is removed. Remove two Torx bolts securing battery cover tray to frame behind battery. Slide tray forward to disengage from front tab and lift up to uncover battery. Set aside. Do not lift rear of tray upward at an angle as this will not allow tray to clear front tab- keep the bolt tabs against the frame at rear when sliding forward.

NOTE: When sliding tray forward, keep rear tabs against frame or low over battery until clear of front tab. Lifting on the rear of the tray can cause a bind making removal difficult.

2. Install bike side wiring harness at rear of trike with sufficient slack to allow trailer side harness to connect to bike side harness without bind when turning. Secure bike side harness to hitch center section and run harness along frame to ensure clearance on rear tires, shocks, axle and any other moving parts. Route up to underseat area.
3. Locate factory wire harness running rearward along left frame rail in underseat area and trace back to locate 8 pin plug securing harness module. Note there are two sets of plugs on the module, one set to the front and one set to the rear. Locate the 8 pin plug set forward of the module and disconnect. Install the provided subharness with matching 8 pin plugs between two halves of factory plug and reconnect (see photo- module location noted by red circle, with forward plug connection to left of circle, indicated by finger).



NOTE: Tri-Glide and Street Glide Trike models are equipped with an electrical module that converts separate turn signal and brake light functions into one signal for each side. The module is secured to the underside of the frame cross brace located under the passenger seat. The module is connected to the main harness and the taillight harness using 8 pin rectangular plugs on each side of the module. The subharness for the Electronic Relay Isolator must be connected to the forward set of plugs (closer to the battery). If connected to the rear set of plugs after the module, the input signal to the relay will be modified resulting in improper isolator output and trailer light functions.



4. Connect the 4 pin plug from the subharness to the 4 pin plug from the Electronic Relay Isolator package. Find a secure location for the relay that will not interfere with the seat installation or reinstallation of any factory components. There is normally sufficient space to accommodate the Relay forward of the battery under the rear of the gas tank, under the left side frame cover, or in the underseat area. Secure the module so that it cannot make contact with any moving parts or engine and transmission components.

CAUTION: DO NOT ALLOW ANY WIRES FROM THE RELAY OR HARNESS TO CONTACT ANY PART OF THE ENGINE, EXHAUST OR ANY MOVING PARTS. DAMAGE TO THE WIRING COULD RESULT.

5. Remove the fuse from the supplied fuse holder. Connect supplied in-line fuse holder to positive battery terminal using supplied ring terminal. Route red wire and connect to fuse holder using supplied blue crimp connector. Route black wire to negative terminal on battery and connect using supplied ring terminal.
6. Connect solid color output wires from Electronic Relay Isolator package to bike side harness running to rear of motorcycle, with color and functions corresponding as follows (please note that connections do NOT absolutely match color for color);

<u>RELAY OUTPUT</u>	<u>FUNCTION</u>	<u>BUSHTEC HARNESS</u>
Green	Tail lights	Green
Blue	Brake	Blue
Brown	Left Turn	Brown
Yellow	Right Turn	Yellow
Black	Ground	White
SEE BELOW	Interior Light	Black

It is normal Bushtec procedure to connect the black wire in the Bushtec harness with the green wire in the Bushtec harness to the green output wire from the relay.

If you are connecting a trailer other than a Bushtec to the relay, use the above chart for relay output colors and functions and cross reference with color code and function of your trailer wiring.

NOTE: If your trailer has a four wire electrical harness, a trailer light converter will be required in ADDITION to the Electronic Relay Isolator package and is not included with the hitch package.

7. Install fuse into fuse holder.
8. Make sure that all wires are routed clear of moving or hot parts and secure to frame and or factory harness so there is sufficient clearance for reinstallation of seat and other components. Reinstall battery cover tray by sliding over front tab and align holes for



bolts to secure. Reinstall factory bolts and tighten until snug. Reinstall electrical module into tray and lock into place with tabs.

9. Check functions of output harness before continuing reassembly. Reinstall seat.

HITCH HEAD INSTALLATION AND TRAILER ATTACHMENT

1. Familiarize yourself with the lock operation per the manufacturer's instructions.
2. Loosen jam bolt so that end of bolt does not protrude into receiver box tube center section. Turn jam nut toward head of bolt.
3. Slide hitch head into the receiver tube on center section of hitch. Align hole in hitch head with hole in receiver tube and insert lock shackle. Secure with lock onto end of lock shackle. Using wrench, tighten jam bolt until snug and hitch head does not move. Lock in place with jam nut by tightening against receiver tube.

CAUTION: DO NOT OVERTIGHTEN. USE OF EXCESSIVE FORCE ON JAM BOLT CAN RESULT IN DAMAGE TO HITCH HEAD AND MOVEMENT OF HITCH HEAD.

4. (*BUSHTEC APPLICATION*) Before securing trailer to motorcycle, familiarize yourself with the operation of the Stainless Steel lock. The lock assembly has a large barrel style key. Align the blue dot on the key with the blue dot on the lock and insert the key. Hold the lock and turn the key ¼ turn clockwise to unlock. While holding the lock, turn ¼ turn counterclockwise to lock and release key.
5. Set the heim joint onto the hitch pin with the hole in the captured bearing over the pin. The body of the heim joint should be parallel to the hitch head. If the heim joint is rotated from square, the heim joint will not seat fully on the pin and the lock will not fully engage. To unlock the lock, align blue dot on key with blue dot on lock and insert key, then turn key ¼ turn clockwise. Place the lock over top the hitch pin and down against the heim joint. Hold the lock and turn the key to ¼ turn counterclockwise to lock, then remove key. Pull up on the lock to ensure lock is engaged on the hitch pin. Place the black rubber cover over the lock to keep keyway free from debris.

WARNING: THE KEY CAN BE REMOVED REGARDLESS OF WHETHER THE LOCK IS ENGAGED. CHECK TO ENSURE ENGAGEMENT BY PULLING UP ON THE LOCK.

6. Remove the dead plug from the end of the bike harness and plug the trailer in. If possible, the bike side harness should be run over top of the neck to avoid dragging or damage to the harness. Connect the safety chain clip to the catch on the underside of the hitch head, underneath the pin. **RE-CHECK ALL TRAILER CONNECTIONS!**
7. (*ALL OTHER APPLICATIONS*) With the hitch head installed into the receiver tube, install the ball onto the hitch head per the manufacturer's instructions.
8. With the shackle of the ball coupler in the open position, place the ball coupler down over the hitch ball. Secure the coupler latch. Check that the trailer coupler is adjusted properly, well lubricated and in working order.



WARNING: THE END USER ASSUMES ALL LIABILITY AND RESPONSIBILITY IN THE USE OF ANY TRAILER. PROPER USE, MAINTAINENCE, AND ANY AND ALL WARNINGS ASSOCIATED WITH TRAILERING ARE THE RESPONSIBILITIES OF THE RESPECTIVE TRAILER'S MANUFACTURER. BUSHTEC'S TOTAL LIABILITY WILL BE LIMITED TO THE INITIAL PURCHASE PRICE OF THIS PRODUCT OR REPLACEMENT OF THIS PRODUCT AT OUR DISCRETION.

9. Plug your trailer into the bike harness. Attach your safety chain to the connection points on the hitch center section plate. Use of a quick link is suggested to aid in safety chain connection and to reduce potential for damage to fender finish.

CHECK ALL TRAILER CONNECTION.

WARNING: DUE TO THE NATURE OF TOWING A TRAILER AND THE ENGINEERING INVOLVED WITH THIS HITCH OR ANY MOTORCYCLE HITCH, ALL HARDWARE MUST BE CHECKED BEFORE, DURING AND AFTER YOU TOW TO INSURE THE PROPER WORKING ORDER OF THIS PRODUCT!

TOWING CAPACITY - 350 LBS. MAXIMUM GVWR

TONGUE WEIGHT CAPACITY - 70 LBS. MAXIMUM

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