



## Custom Dynamics® SMART TSM Installation Instructions

We thank you for purchasing the Custom Dynamics® SMART TSM. Our products utilize the latest technology and high quality components to ensure you the most reliable service. We offer one of the best warranty programs in the industry and we back our products with excellent customer support, if you have questions before or during installation of this product, please call Custom Dynamics® at 1(800) 382-1388.

**Part Numbers:** TSM-1 TSM-2 TSM-3 TSM-4

### Package Contents:

- SMART TSM (1)
- Instructions (1)

**Fits:** **TSM-1:** 2001-2003 Dyna models, 2000-2006 Touring models and 2004-2006 Sportster XL models. **Note: Does not fit 2000-2001 Touring models with Magneti Marelli EFT and 2002-2006 V-Rod models.**

**TSM-2:** 2004-2006 Dyna models and 2001-2006 Softail models.

**TSM-3:** 2007-2011 Dyna models, 2007-2010 Softail models and 2007-2017 V-Rod models.

**TSM-4:** 2008-2013 Touring models, 2009-2013 Trike models and 2007-2013 Sportster XL models.

**Note:** Carbureted model motorcycles guaranteed fitment only with OEM Ignition Modules.



Please read all Information below before Installation

**Warning:** Disconnect negative battery cable from battery; refer to owner's manual. Failure to do so may result in electrical shock, injury or fire. Secure negative battery cable away from positive side of battery and all other positive voltage sources on motorcycle.

**Safety First:** Always wear appropriate safety gear including safety glasses when performing any electrical work. It is highly recommended that safety glasses be worn throughout this installation process. Be sure motorcycle is on level surface, secure and cool.

### Compliance Information:

The TSM complies with the modules manufacturer's integrated requirements for RF Exposure. Le TSM est conforme aux exigences d'intégration du fabricant de modules en matière d'exposition aux RF.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generated, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### CE/UK

Custom Dynamics declares under its own responsibility that the following product(s) is (are) in compliance with the essential requirements under the Radio Equipment Directive 2014/53/EU and UK Radio Equipment Regulations 2017. Unauthorized changes or modifications to the equipment that are not approved by Custom Dynamics may violate EU and UK Radio Equipment Regulations, could void user's authority to operate the equipment and will void the warranty. Hereby, Custom Dynamics declares that these products comply with the essential requirements and other relevant provisions. The Declaration of Conformity is available upon requests.

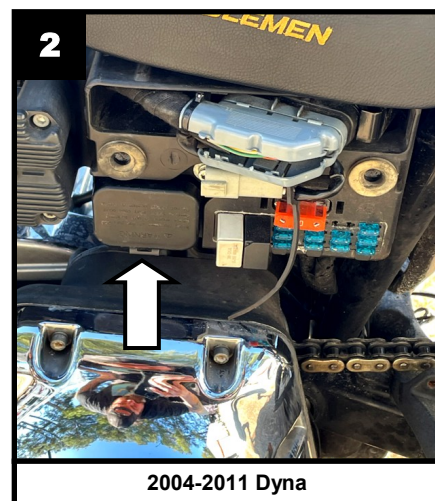
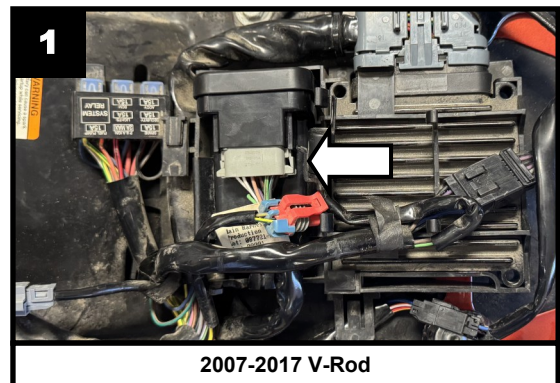
This equipment meets the health and human safety requirements of Art 3.1(a) of the Radio Equipment Directive, 2014/53/EU and UK Radio Equipment Regulations 2017.

### ACMA

This device complies with the applicable Radiocommunications and EMC requirements specified by the ACMA (Australian Communications and Media Authority).

### Installation Instructions:

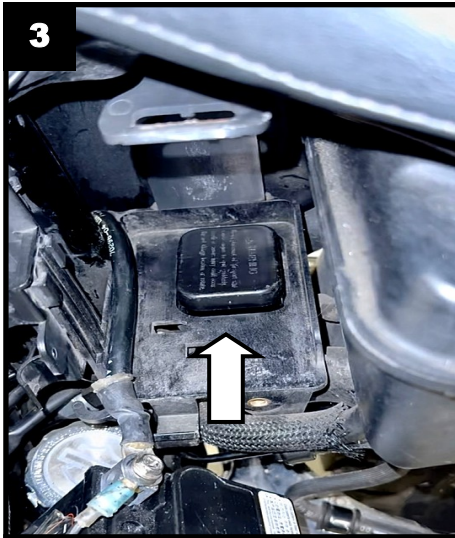
1. Disconnect the negative battery cable from the battery.
2. Locate the OEM TSM on motorcycle and unplug from the OEM harness. Shown in **Figures 1-7 on Pages 1 & 2.**



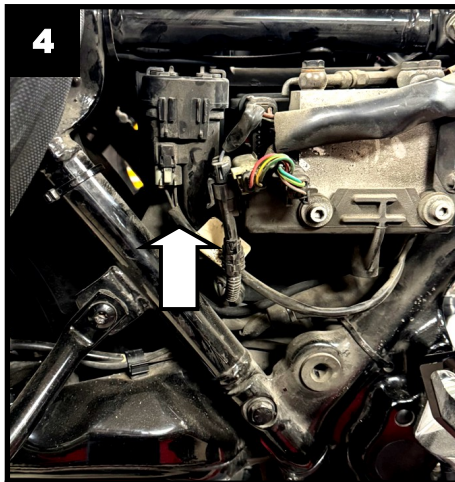
**Questions? Email:** [info@CustomDynamics.com](mailto:info@CustomDynamics.com) **or Call us at:** 1 (800) 382-1388 **M-TH 8:30AM-5:30PM / FR 9:30AM-5:30PM EST**

## Installation Instructions - Page 2

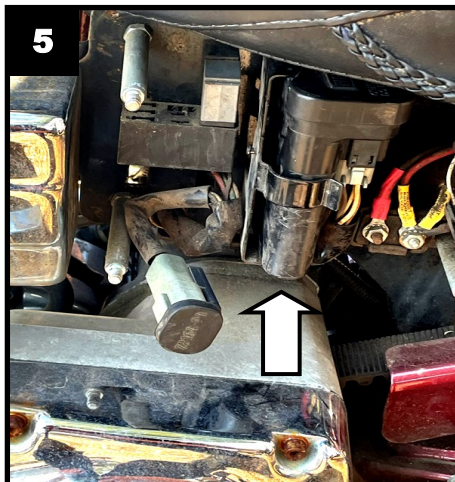
### Installation Continued:



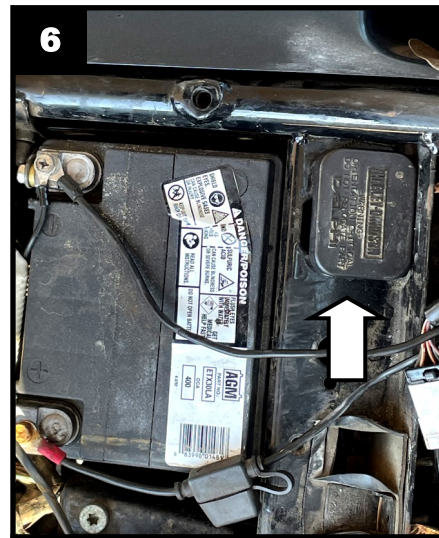
2004-2013 XL



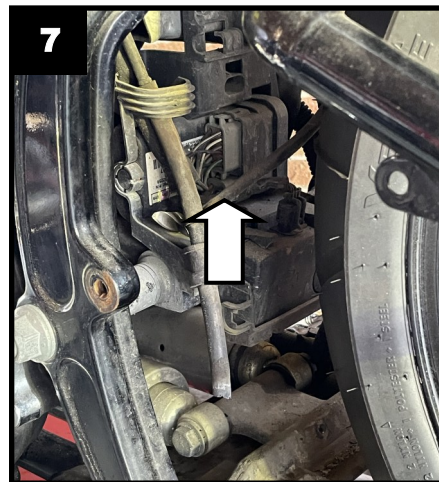
2009-2013 Touring



2001-2003 Dyna



2000-2008 Touring



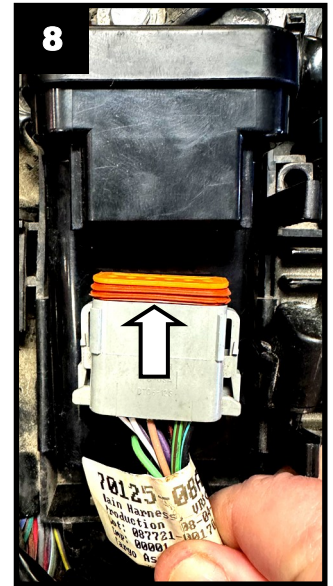
2001-2010 Softails



## Installation Instructions - Page 3

- Unplug and remove OEM TSM from OEM harness.
- Plug in the new Custom Dynamics® Smart TSM into the OEM harness, orient the two out side tabs facing out from the Smart TSM. **Note: Make sure orange rubber seal on harness connector is in the proper position, If seal is missing or worn replace (PN: 1010-020-1206 sold separately) or warranty will be voided. Shown in Figure 8.**
- Reconnect the negative battery cable to the battery.
- Follow the chart below to see if your model requires the Marrying Procedure for the ECM password learn. **Note: All years can use the Techno Research Centurion tool to Marry. Only 2007+ models can use the manual marrying procedure.**

| OEM Device Replaced   | Password Learn Required                  |
|---|--|
| TSM (Carb or EFI All years)                                 | No                                       |
| TSSM (Carb 2000-2006)                                       | No                                       |
| TSSM (EFI 2000-2006)  | Yes (Techno Research Centurion only)     |
| HFSM (EFI only 2007+)                                       | Yes (Techno Research or Manual Marrying) |
| <b>Note:</b> V-Rods (All years) require a password learn    |  |
| <b>Note:</b> ThunderMax ECM does not require password learn |  |



**Note:** Check device definitions on Page 4 if unsure of OEM device configuration.

### Manual Password Learn Marrying Procedure:

- Turn ignition key **ON**.
- Verify Check Engine Light and Security Light illuminated and then turn off (**2000-2006 models no Security Light**). The Smart TSM enables starter relay.
- Attempt normal start one time, engine starts and stalls. Check Engine Light illuminates and stays on. ECM may set DTC P1009.
- Wait 10 seconds. Security Light will illuminate and stay on. Now in Marry mode for 10 minutes (**Do not cycle ignition switch or interrupt motorcycle power or Marrying process will be unsuccessful**).
- Wait until Security Light turns off. This takes **10 minutes**.
- Quickly (**within 2 seconds**) turn ignition key **OFF-ON**. ECM must not be allowed to shutdown.
- Wait until Security Light turns off. This takes **10 minutes**.
- Quickly (**within 2 seconds**) turn ignition key **OFF-ON**. ECM must not be allowed to shutdown.
- Wait until Security Light turns off. This takes **10 minutes**.
- Quickly (**within 2 seconds**) turn ignition key **OFF-ON**. ECM must not be allowed to shutdown.
- Turn ignition key **OFF**. Wait 15 seconds before turning ignition **ON**. Turn ignition switch **ON** and start engine to confirm successful Marrying procedure and clear trouble codes.
- If having trouble with the Manual Marrying procedure scan the QR Code below/click on Link or take to your local motorcycle repair shop for Marrying procedure using Techno Research Centurion Tool. If using Techno Research scan tool for Marrying procedure follow Techno Research Tool module replacement instructions for Marrying procedure.

Manual Password Learn Video



[Or Click Here](#)

Techno Research Centurion Marry Video



[Or Click Here](#)

- Test Custom Dynamics® SMART TSM for proper operation by turning on turn signals and starting the motorcycle.

# Installation Instructions - Page 4

## Operations Manual

### Self-Canceling Turn Function:

- Timed Cancellation: The total auto-cancel flash count (all flashes while the motorcycle was traveling above 7MPH in a straight line) is approximately 20.
- Bank Angle Cancellation: With the motorcycle traveling in a straight line, and signaling a turn, executing a turn that is at least 45° or greater will cancel after 2 seconds following a turn.

### Manual Cancellation Function:

- To stop the turn signals from flashing, briefly depress the turn signal switch a second time.
- When signaling to turn in one direction and the switch is depressed for the opposite turn signal, the first signal is canceled, and the opposite side begins flashing.

### Turn Signal Compatibility:

- Turn Signal Loading Threshold 0.240A - 6A.
- Short Circuit and Over Circuit Protection.

### Four-Way Hazard Operation:

- Activated and canceled by pressing both turn signal switches simultaneously with the ignition switch **On**.
- With key-**ON**, the hazards run until canceled.
- With key-**OFF**, the hazards run for 2-hours or until the battery voltage drops below 11V, whichever comes first.

### Bank Angle Sensor "Tip" Functionality:

- The motorcycle engine shuts down with the indicated motorcycle tilt at >45° Right or Left for 1 second or more. "Tip" displayed on odometer on 2004 and later models. Turn signals and starter function are disabled. Return the motorcycle to an upright position then cycle the ignition key **OFF-ON** to restart the motorcycle.

### Clutch/Neutral Interlock:

- 2007 and later models functions with OEM safety switches to prevent starting in gear without the clutch pulled (Clutch Switch and Neutral Switch).

### Security Lamp Operation:

- TSM will not have DTC's for diagnostics.
- On 2006 or earlier motorcycles, the Security Lamp will not illuminate.
- On 2007 or later motorcycles, the Security Lamp comes on for 4 seconds and then goes off after first powering up.
- Check Engine Light paired with ECM code DTC P1009 during start up if low system voltage is sensed.  
**Causes:** Low battery, faulty battery, faulty starter motor, faulty starter solenoid, faulty starter relay, voltage drops or breaks in the motorcycles wiring. Corroded, loose or faulty battery cables.

### Module Definitions:

- 01-06 TSM: Turn Signal Module without security.
- 01-06 TSSM: Turn Signal and Security Module with button fobs.
- 07+ TSM: Turn Signal Module without security.
- 07+ HFSM: Turn Signal and Security Module with proximity fob.