

Custom Dynamics® SMART TSM Installation Instructions



Part Number

TSM-1, TSM-2, TSM-3, TSM-4

Package Contents

SMART TSM (1)
Instructions (1)



Fitment

TSM-1: 2001-2003 Dyna models, 2000-2006 Touring models and 2004-2006 Sportster XL 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 models.

Note

Does not fit 2000-2001 Touring models with Magneti Marelli EFI and 2002-2006 V-Rod models. Carbureted model motorcycles guaranteed fitment only with OEM ignition modules.

Suggested Tools

Safety Glasses
CanDo International Moto Mini, Moto Pro or Moto Mini Pro (optional)
Techno Research Centurion (optional)

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.

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.

Questions? Email: Info@CustomDynamics.com or Call us at: 1(919)554-0949 M-TH 8:30AM-5:30PM, F 9:30AM-5:30PM EST

Installation Instructions Continued - 2

Compliance Information Continued

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

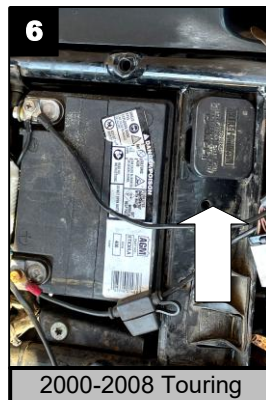
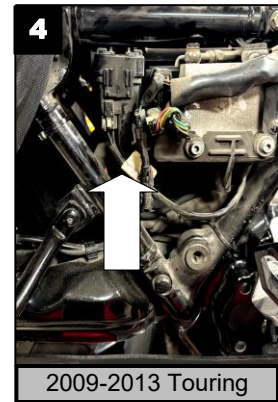
[Click Link for Install Video](#)

[Click Here](#)

Warning

Rider and passenger safety depend 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 qualified technician perform the installation. Improper installation of this kit could result in death or serious injury.

1. Disconnect the negative battery cable from the battery.
2. Remove all necessary parts to locate the OEM TSM on motorcycle and unplug from the OEM harness. Shown in **Figures 1-7**.



3. Unplug and remove OEM TSM from the OEM harness.
4. Plug the new Custom Dynamics® SMART TSM into the OEM harness, orient the two outside tabs facing out from the SMART TSM.

Note

Make sure orange rubber seal on the harness connector is in the proper position, if seal is missing or worn replace (**1010-020-1206 sold separately**) or warranty will be voided. Shown in **Figure 8**.

Questions? Email: Info@CustomDynamics.com or Call us at: 1(919)554-0949 M-TH 8:30AM-5:30PM, F 9:30AM-5:30PM EST

Installation Instructions Continued - 3

5. Reconnect the negative battery cable to the battery.
6. Follow the chart below to see if your model requires the marrying procedure for the ECM password learn.

Note

All years can use the CanDo International Moto Mini, Moto Pro, Moto Mini Pro Tool or Techno Research Centurion Tool to Marry. Only 2007+ (HFSM) models can use the manual marry procedure.

OEM Device Replaced	Password Learn Required
TSM (Carb or EFI All Years)	No (Still may require CanDo or Techno Research)
TSSM (Carb 2000-2006)	No (Still may require CanDo or Techno Research)
TSSM (EFI 2000-2006)	Yes (CanDo or Techno Research only)
HFSM (EFI only 2007+)	Yes (CanDo or Techno Research or Manual Marry)
V-Rods (all years) require a password learn	
Thunder Max ECM does not require password learn	

Note

Check Operations Manual section at Module Definitions (on Page 4) if unsure of OEM module 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.
- If having trouble with the Manual Marrying procedure click the Link for Manual or take to your local motorcycle repair shop for marrying procedure using the CanDo Moto Mini, Moto Pro, Moto Mini Pro Tool or Techno Research Centurion Tool. If using the CanDo Moto Mini, Moto Pro, Moto Mini Pro tool or Techno Research scan tool for marrying procedure click the Links CanDo or Techno below.

Technical Videos

Manual

CanDo

Techno

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

Questions? Email: Info@CustomDynamics.com or Call us at: 1(919)554-0949 M-TH 8:30AM-5:30PM, F 9:30AM-5:30PM EST

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.
- TIP function can be activated and read "TIP" in the odometer. **Causes:** Low battery, faulty battery, corroded, loose or faulty battery cables.
- 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.

