



Team Tips

SUBJECT: 2014-2016 Alarm Compatibility and Key Fob Diagnostics

This Team Tip is being released to provide dealers with an advanced understanding of Indian Motorcycle key fob operation, alarm compatibility, battery life expectations and troubleshooting.

NOTE: For basic information pertaining to Key Fob Operation, Programming and FAQs, refer to Indian Motorcycle Team Tip [I-13-09-01](#).

KEY FOB OVERVIEW

2014-2016 Indian Chief, Chieftain and Roadmaster motorcycles utilize a keyless ignition system (Key Fob) for vehicle startup and operation. The Key Fob acts as a two-way transmitter which provides an authentication signal to the Vehicle Control Module (VCM) located on the motorcycle. When the Key Fob is detected, the ignition system is enabled and the motorcycle becomes operational.

Two different Key Fobs are used on Indian motorcycles:

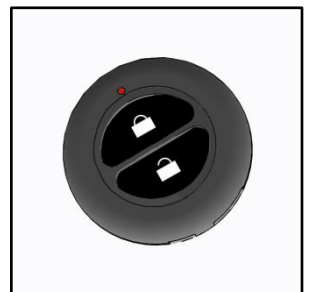
Basic (No Button)

- **Dark Horse, Chief and Vintage** models use a button-less Key Fob which authenticates the motorcycle for start-up and operation.



Multi-Function (Two Button)

- **Chieftain and Roadmaster** models equipped with electronically lockable storage utilize a multi-function Key Fob which, in addition to authentication, allows the user to remotely lock and unlock the saddlebags and/or trunk.
- 2016 models have an integrated Alarm / Immobilizer feature which is armed and disarmed using the Multi-Function Key Fob.



ALARM SYSTEM OVERVIEW

2016 Indian Motorcycles (all Full Size models) have incorporated an Alarm / Immobilizer feature which can be activated using the multi-function (two button) key fob. This feature can be used on Dark Horse, Chief and Vintage models if the multi-function key fob (**PN:4014121**) is purchased and paired with the VCM.

ALARM SYSTEM OPERATION

To Activate the Alarm:

- Press the LOCK button on the Key Fob 2 times.
- The horn will sound briefly to confirm that the alarm is activated.

To Deactivate the Alarm (Key Fob must be within range):

- Press the UNLOCK button on the Key Fob.
OR
- Press the power button on the console panel.
OR
- Press the starter button.
OR
- Press the LOCK / UNLOCK switch on the center console.
OR
- Move the motorcycle to the fully upright position from leaning on the sidestand. (The horn will sound repeatedly if the Key Fob is not detected within 5 seconds.)

ALARM COMPATIBILITY WITH OTHER MODEL YEARS

Previous model years (2014-2015) that do not have the incorporated Alarm System can be reflashed to include this feature. Verify that **Digital Wrench Version 3.7 – Update 10/07/15** has been installed on your PC or laptop and perform the **Vehicle Controllers Update** reflash, located under Special Tests.

IMPORTANT: Motorcycles that use a Basic (No Button) Key Fob must purchase the Multi-Function (Two Button) Key Fob in order to use the Alarm System.

KEY FOB BATTERY LIFE

Key fob battery life is approximately 1-2 years depending on fob type and usage patterns. **Battery changes recommended yearly.** Multi-Function (Two Button) Key Fob battery life will decrease with frequent use of the LOCK / UNLOCK buttons.

Low Battery Indicators:

- Decreased fob authentication range
- Horn honks 5 seconds after startup
- Security light stays illuminated for up to 20 seconds
- Both Battery Light and Security Light are illuminated

Key Fob performance can be affected by the following conditions:

- Close proximity of ferrous materials (e.g. money clip or pocket knife)
- Key Fob stuck to saddlebag speaker magnet
- Key Fob held in ferrous container (metal cup holder or glasses case)
- Cold temperatures (Key Fob should be kept above 45°F / 7°C)

Consumers should always be encouraged to memorize their PIN and understand how it is used to start the motorcycle should their Key Fob battery fail and a replacement battery is not readily available.

Key Fob Replacement Battery Part Number: 4014675 or CR2032 (or equivalent)

KEY FOB AUTHENTICATION

Four things must occur for the VCM to authenticate the Key Fob and enable the motorcycle for operation:

1. Motorcycle battery is sufficiently charged for normal vehicle operation.
2. Key Fob must be within range of VCM receiver (within **3 feet** of motorcycle)
3. Key Fob battery must have sufficient voltage (LOW Key Fob battery will illuminate the Security Light  and the Battery Indicator  on the instrument cluster)
4. Key Fob PIN is properly paired with motorcycle VCM (Digital Wrench)

Authentication Tell Tales

SUCCESSFUL:

- Security Light turns OFF
- Neutral Indicator illuminates (verify motorcycle is in Neutral by rolling back and forth)
- Motorcycle Starts / Runs

UNSUCCESSFUL:

- Electrical system shuts down after 20 seconds
- Security Light / Power Button flashes 2x's per second for 10 seconds
- Horn honks every 5 seconds after startup
- Motorcycle DOES NOT Start / Run

Reference the TROUBLESHOOTING GUIDE and FLOWCHART on pages 4-5 of this communication for detailed diagnostic workflow.

KEY FOB / AUTHENTICATION TROUBLESHOOTING GUIDE

1. Test Key Fob Battery (preliminary test)
 - a. **Two-Button Fob** – Press LOCK / UNLOCK button and verify that red LED illuminates.
 - b. **No-Button Fob** – Remove screw and pry fob apart to access button. Press button and verify that LED illuminates.
 - c. Measure fob battery voltage with DVOM. If voltage measures less than 3.0VDC, replace battery. Does LED illuminate?
YES – Proceed to STEP 2
NO – Replace Key Fob
2. Test Key Fob Range (indicates Key Fob battery condition)
 - a. Hold the Key Fob 8-12 inches from the motorcycle seat; press the POWER button to energize the electrical system.
 - b. Verify that Key Fob LED flashes within 1 second. Does it flash?
YES – Proceed to STEP 2c
NO – Replace Key Fob battery and retest. If LED still does not flash, proceed to STEP 3
 - c. Move the Key Fob away from the seat in 1 foot increments and verify that the LED flashes when the motorcycle is energized up to 2-3 feet. Does the range test pass?
YES – Perform STEPS 3a-3b. No further action required.
NO - Verify motorcycle battery voltage is at least 11.5VDC. If voltage is LOW, charge the battery. If voltage is acceptable, proceed to STEP 4.
NOTE: If key fob is suspect for decreased range, learn in new key fob and repeat STEP 2.

SPECIFICATION

Normal Range: Up to 2-3 feet
Cannot be closer than 8 inches

3. Verify Key Fob and VCM are paired
 - a. Connect motorcycle to Digital Wrench
 - b. Verify VCM software is up-to-date
 - c. Select the 'Special Tests' menu
 - d. Select 'Key Fob Maintenance'
 - e. Verify correct Key Fob ID is present
 - f. Click 'Write'
 - g. Repeat STEPS 2a-2b. Does Key Fob authenticate?
YES – No further action required
NO – Verify motorcycle battery voltage is at least 11.5VDC. If voltage is LOW, charge the battery. If voltage is acceptable, learn in a second known good key fob and repeat STEPS 2a-2b.
4. Test VCM Receiver Antenna
 - a. Inspect the 125 kHz 2-wire antenna (on top of VCM) using a DVOM. Pin 7 is Antenna OUT B; Pin 18 is Antenna OUT A.

SPECIFICATION

Capacitance: 3.4 nF ($\pm 2\%$)

- b. Check 433 MHz antenna (located at Signal Connector 2 – PIN 5). Verify that connector is properly seated in multiplug and connection to VCM is secure.
- c. Does antenna test within specification?
YES – Replace VCM
NO – Contact Indian Motorcycle Technical Service

KEY FOB / AUTHENTICATION TROUBLESHOOTING FLOWCHART

