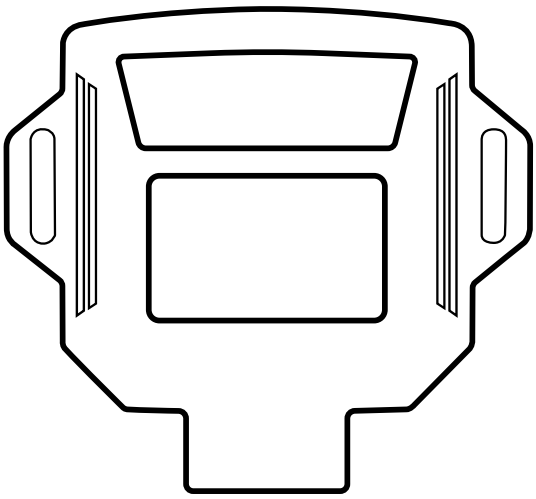
TRUCONTROL BY STILLEN 2



INLINE TUNING MODULE

VEHICLE APPLICATION

2021+ FORD F-150 3.5L POWERBOOST

2021+ FORD F-150 3.5L ECOBOOST

PART NUMBER

TCT202016 / TCT202020

HARNESS #: 5423

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>> SCOPE OF DELIVERY

- TruControl by STILLEN V2 Inline Tuning Module
- Wiring Harness
- Dummy Plug
- Mounting Hardware
- Installation Instructions
- Stickers

>> Preliminary Information

The TruControl by STILLEN V2 is specifically tuned and programmed for your vehicle. Due to normal production tolerances, actual performance results may vary and can be higher or lower than expected. Increased performance is also influenced by the vehicle's maintenance condition and mileage.

If excessive power output occurs—indicated by heavy soot formation, rough engine operation, engine misfires, or activation of the engine's emergency (limp) mode—a program change may be required (see page 7).

IMPORTANT: When changing the program, contact your dealer or the manufacturer.

>> GENERAL INSTRUCTIONS

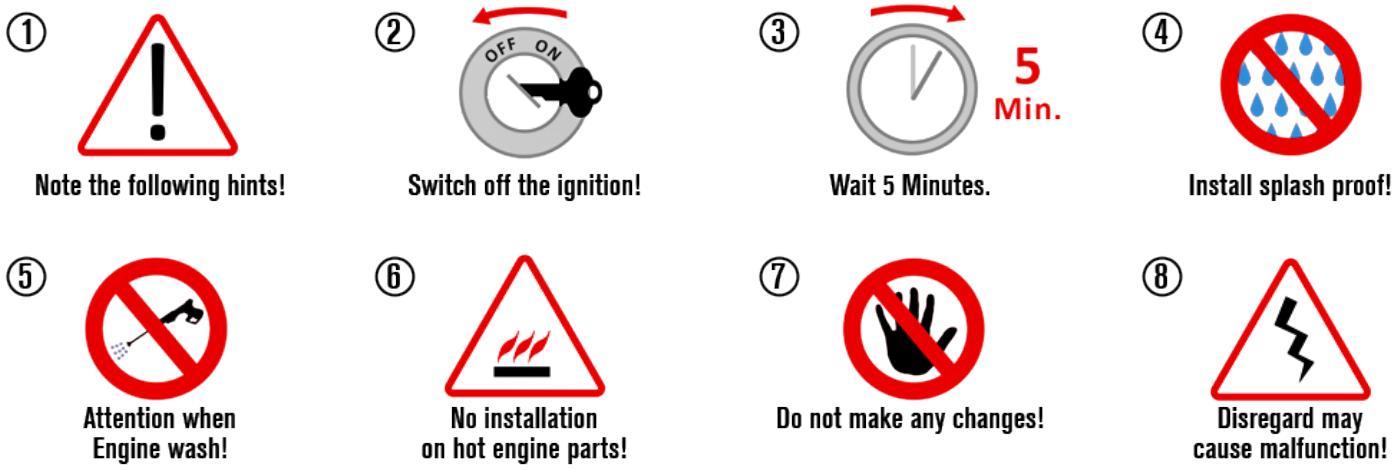
Read this installation guide carefully before beginning the installation to ensure you can take full advantage of the system's technical features. Do not start the installation until you have read and understood all instructions.

By following the instructions below, you can avoid premature termination of the product warranty and enjoy reliable performance for years to come.

(2) Never install the system while the ignition is on. Remove the ignition key.

(3) After switching off the ignition, wait at least 5 minutes until all electrical systems have fully powered down.

(4) If possible, install the module in a dry location within the engine compartment. Moisture and humidity contain minerals that can cause corrosion of electronic circuits. Secure the wiring harness and protect it from moisture.



(5) Before performing any engine wash, remove the entire tuning system.

(6) Do not mount the tuning system to engine components that may become hot. Never install the module directly on or near the engine or engine block. High temperatures can significantly reduce the lifespan of electronic components and may deform or melt certain plastic materials.

(7) Ensure that the wiring harness does not contact moving parts or sharp metal components to prevent wear or damage. Do not modify the wiring harness in any way (do not lengthen or shorten it).

(8) In the event of a system malfunction caused by failure to follow these instructions, the manufacturer assumes no liability and the product warranty may be void.

>> INSTALLATION

Locate the manifold absolute pressure sensor (1), boost pressure sensor (2), and camshaft position sensor (3). Disconnect each connector and install the adapter cable between the vehicle wiring harness and the sensor.

NOTE: UNABLE TO LOCATE THE SENSORS?

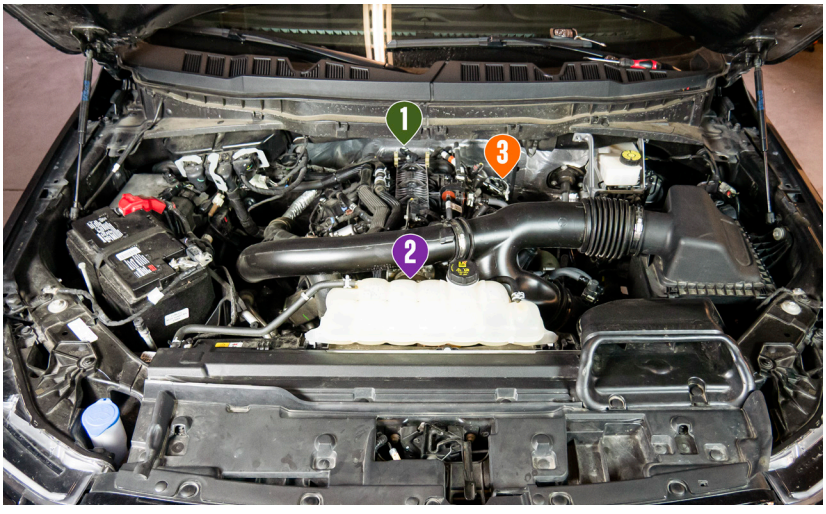
- The 4-pin Manifold Absolute Pressure Sensor (MAP) sensor (1) is located at the upper rear of the engine, just behind the engine cover.
- The Boost Pressure Sensor (2) uses a 3-pin connector and is located on the front of the engine
- The 3-pin Camshaft Position Sensor (3) is located in the upper right area of the engine.

Ensure that the adapter cable is connected only to the specified sensors. Do not connect the adapter cable to any other connectors. Refer to the following pages for an illustrated installation guide.

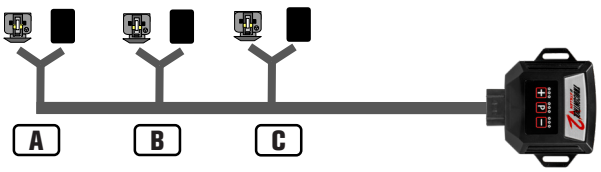
Route the adapter cable away from fuel injection lines and ABS control wiring. Maintain sufficient clearance from these components. Secure the wiring harness using cable ties.

Connect the module to the adapter cable. Install the module in a location protected from heat and splash water.

>> INSTALLATION PRINCIPLE

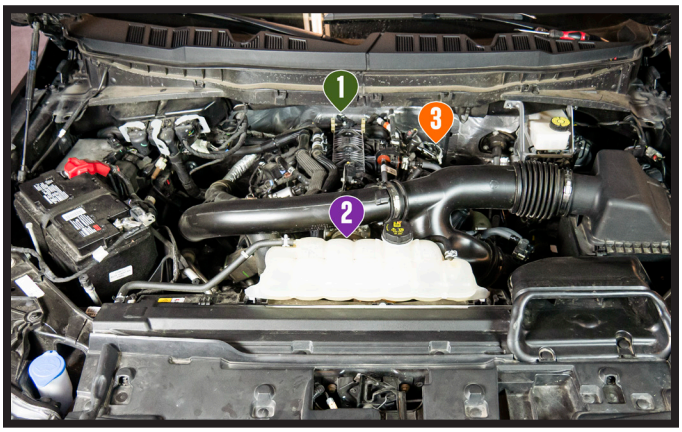


- A 1 Manifold Absolute Pressure Sensor
- B 2 Turbo Boost Pressure Sensor
- C 3 Camshaft Sensor



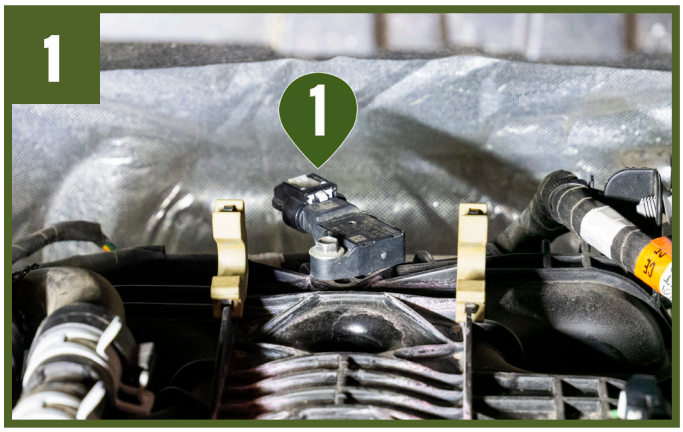
CABLE HARNESS STICKER:





Step 1 – Prepare the Vehicle

- Open the hood.
- Disconnect the negative (-) battery terminal.
- Remove the engine cover to access the engine sensors.



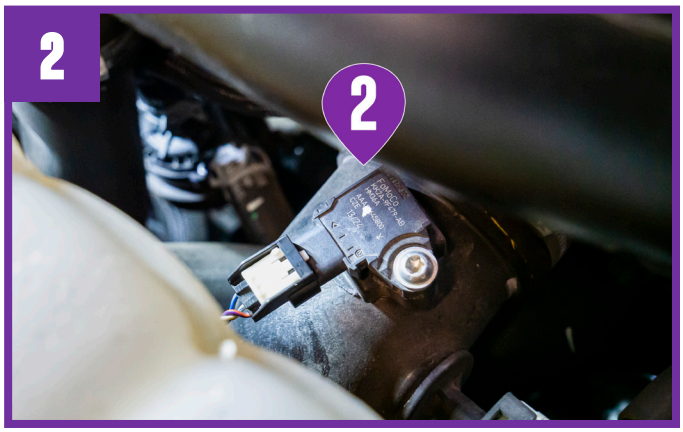
Step 2 – Connect the 1 Harness (MAP Sensor)

- Disconnect the factory connector from the Manifold Absolute Pressure (MAP) sensor.



Connect the 1 TruControl harness inline:

- Plug the vehicle's factory connector into the TruControl harness.
- Plug the remaining TruControl connector into the MAP sensor.



Step 3 – Connect the 2 Harness (Boost Pressure Sensor)

- Disconnect the factory connector from the Turbocharger Boost Pressure Sensor.



Connect the 2 TruControl harness inline:

- Plug the vehicle's factory connector into the TruControl harness.
- Plug the remaining TruControl connector into the Turbo Boost sensor.



Step 4 – Connect the 3 Harness (Camshaft Position Sensor)

- Disconnect the factory connector from the Camshaft Position Sensor.



Connect the 3 TruControl harness inline:

- Plug the vehicle's factory connector into the TruControl harness.
- Plug the remaining TruControl connector into the Camsahft sensor.



Step 5 – Secure the Wiring Harness

- Route the TruControl wiring harness safely through the engine bay.
- Use the provided zip ties to secure the harness.
- Keep the wiring harness away from hot and moving components.



Step 6 – Install the TruControl Module

- Connect the wiring harness to the TruControl by STILLEN V2 module.
- Securely mount the module in the engine bay using the provided hardware or zip ties , away from heat and moving parts.



Step 7 – Final Checks

- Double-check that all connectors are fully seated and secure.
- Reinstall the engine cover.
- Reconnect the negative (-) battery terminal.

>> CHANGING PROGRAMS

You have purchased a modern chiptuning system for your vehicle featuring TruControl by STILLEN multi-map technology, specifically designed for your vehicle and engine type. The device comes pre-configured at the factory and is ready to use.

TUNING PROGRAMS:

Your TruControl system includes three programs—Eco, Sport, and Race—which can be selected based on your driving style and performance needs. Use the 'P' selector to choose a program and the '+ / –' selectors to fine-tune settings. Alternative adjustments can also be made via the TruControl smartphone app.

REMARKS:

The system's factory settings are already tailored to your vehicle; no further adjustment is required.
The LEDs indicate an active tuning system and display the currently selected program.
If the LEDs are blinking, the keypad lock is active ***(see Fig. A)***.

SELECTING AN ALTERNATIVE PROGRAM:

Deactivate the keypad lock by pressing and holding the + and – buttons simultaneously for at least 5 seconds.
Important: Continue holding the buttons until all nine LEDs light up at the same time.

FIG. A

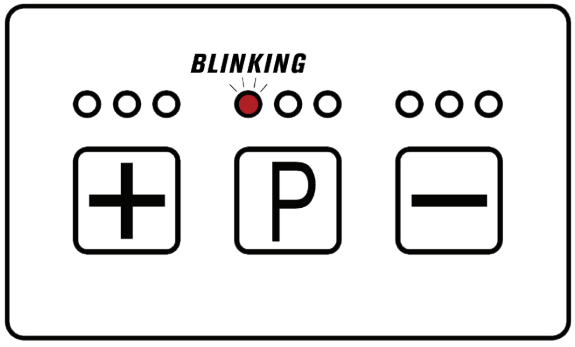
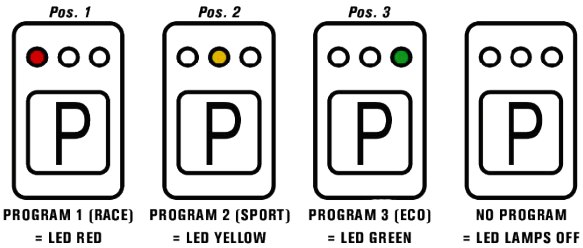


FIG. B



Activated Programs
The colored LEDs indicate the currently active program ***(see Fig. B)***:

Eco – The Eco program optimizes engine efficiency for fuel-saving driving.

Sport (Factory Setting) – The Sport program delivers full performance in all driving situations.

Race – The Race program maximizes engine performance for aggressive driving conditions.

Stock – Returns your vehicle to the factory default settings without any engine optimization. (No LEDs are lit when the keypad is deactivated; three colored LEDs are displayed when the keypad lock is active.)

FINE ADJUSTMENT OF PERFORMANCE LEVELS

- Engines can exhibit variations in stock performance that may require adjustment of the multi-maps.
  Important: Only adjust the multi-maps after consulting your authorized dealer.
- Use the + or – buttons to fine-tune each program to the specific characteristics of your vehicle. Colored LEDs indicate the selected performance level.
- All settings are automatically saved after 10 seconds, and the keypad lock will be re-activated.

>> CONNECTION SMARTPHONE APP

Your tuning system features a modern smartphone interface that allows you to control central functions of your tuning system via your smartphone. To pair your TruControl by STILLEN module with your smartphone, follow the steps below.

NOTE: Before pairing your TruControl V2 module to the app, please disconnect all active Bluetooth devices from your phone (headphones, speakers, smartwatches, vehicle connections, etc.).

This helps ensure a faster and smoother pairing process by preventing your phone from automatically connecting to other devices during setup.

Once pairing is complete, you can reconnect your Bluetooth devices as normal.

APPLE IPHONE

1. Download the “STILLEN TruControl” app for free from the Apple App Store.
2. Turn on the ignition to power the TruControl module. The LEDs will start blinking.
3. Deactivate the keypad lock by pressing and holding the + and – buttons for at least 5 seconds. Your module is now in pairing mode.
4. Open the STILLEN TruControl app and follow the on-screen instructions. If prompted for a PIN code, enter 000000.

ANDROID

1. Download the “STILLEN TruControl” app for free from the Google Play Store.
2. Turn on the ignition to power the TruControl module. The LEDs will start blinking.
3. Deactivate the keypad lock by pressing and holding the + and – buttons for at least 5 seconds. Your module is now in pairing mode.
4. Open the Bluetooth settings in your Android device.
5. The STILLEN TruControl module will appear as TruControl-xxxxxxx. Select it to pair. If prompted for a PIN code, enter 000000.

COMPATIBILITY

The STILLEN TruControl app requires iOS 18.6 or later and is compatible with iPhone XR and newer models, and Android smartphones with Android OS 8.0 or higher that support Bluetooth LE. We recommend using the latest operating system to ensure full Bluetooth LE compatibility. Features may vary depending on your smartphone and vehicle capabilities.

Your tuning system is equipped with a high-performance certified Bluetooth LE module for optimal connection quality. Avoid placing large metallic components (such as the engine block or turbos) between the module and the car interior, as these can reduce reception. Strong Bluetooth emitters in your environment may temporarily affect the connection or app functions, but they will not compromise the overall functionality of the tuning system.

LEGAL NOTICE

Using a smartphone while driving is prohibited in many countries. Always comply with applicable national laws. For safe use, we recommend placing your smartphone in a fixed mount before driving and pre-setting all necessary instruments.

>> ADDITIONAL SETTINGS

Additional features such as the Warm-Up Timer and Tuning Adjustments can be configured through the STILLEN TruControl smartphone app.

These settings are located in the Settings menu at the bottom of the app.

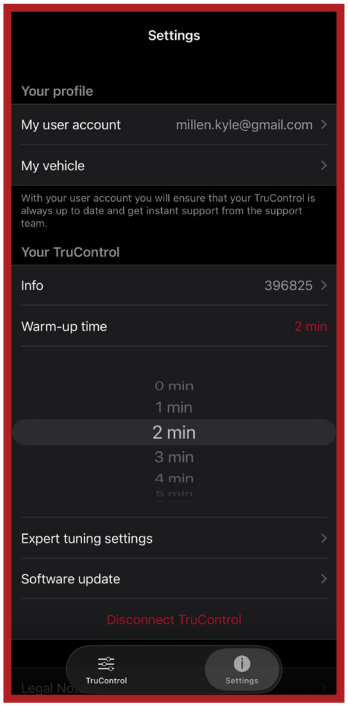
WARM-UP TIMER

The warm-up timer delays tuning activation until the engine has reached operating temperature.

To adjust the warm-up timer:

1. Open the TruControl app.
2. Tap Settings at the bottom of the app.
3. Select Warm-Up Timer.
4. Set the desired warm-up time.

Once the timer has elapsed after engine start, the selected tuning program will activate automatically.



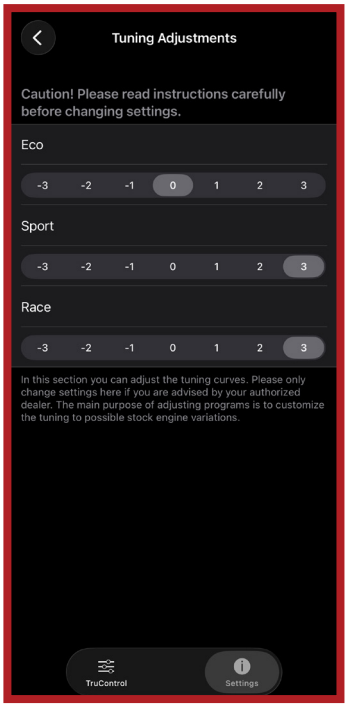
TUNING ADJUSTMENTS

Each tuning program (Eco, Sport, and Race) can be fine-tuned through the app.

To adjust tuning levels:

1. Open the TruControl app.
2. Tap Settings at the bottom of the app
3. Select Expert Tuning Settings.
4. Choose the desired program (Eco, Sport, or Race).
5. Adjust the tuning level between –3 and +3.

These adjustments allow you to tailor the system to your driving style and performance preference.



>> TROUBLESHOOTING

Symptom	Recommended Action
Issue: The engine does not start.	▪ Check all connected components. ▪ Ensure the adapter plugs are connected in the correct positions. ▪ Verify that no connector is improperly seated or twisted. ▪ Check whether the LEDs are functioning correctly (see chapter “Changing Programs”). If the issue persists: ▪ Remove the module and reinstall the enclosed dummy (bypass) plugs. ▪ Attempt to start the engine again. If the engine starts: The module may be defective. Please contact your authorized dealer or the manufacturer for assistance.
Issue: The engine does not run smoothly or is bucking.	▪ Check all connected components. ▪ Ensure the adapter plugs are connected in the correct positions. ▪ Verify whether the selected program has been changed (see chapter “Changing Programs”). If the issue persists: Contact your authorized dealer or the manufacturer for assistance.
Issue: The fail-safe program activates immediately. The Malfunction Indicator Light (MIL) flashes in the instrument cluster.	▪ Check all connected components. ▪ Ensure the adapter plugs are connected in the correct positions. ▪ Reduce the selected performance level by one or two steps (see chapter “Changing Programs”). If the issue persists: Contact your authorized dealer or the manufacturer for assistance.
Issue: The engine shows no additional performance.	▪ To achieve maximum benefit, use higher-octane fuel (91 or higher). ▪ Reduce the selected performance level by one or two steps (see chapter “Changing Programs”). If the issue persists: Contact your authorized dealer or the manufacturer for assistance.
Issue: The engine produces excessive soot.	▪ Check all connected components. ▪ Ensure the adapter plugs are connected in the correct positions. ▪ Reduce the selected performance level by one or two steps (see chapter “Changing Programs”). If the issue persists: Contact your authorized dealer or the manufacturer for assistance.
Issue: How can I restore the engine to its original performance?	▪ Press and hold the + and – buttons for three seconds. Your vehicle is now in factory configuration. or ▪ Follow these steps: 1. Turn off the ignition. 2. Wait until all electrical systems are completely powered down. 3. Remove the Performance Pack and all connected components, or use the included dummy (bypass) plug.

>> CONTACT

If you have questions during installation or need technical assistance, please contact STILLEN.

STILLEN
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Costa Mesa, CA 92626

WEBSITE:
stillen.com

PHONE:
(866) 250-5542

EMAIL:
sales@stillen.com

BEFORE CONTACTING SUPPORT

Please have the following information available:

- Vehicle year, make, and model
- Engine type
- Product part number or Order Number
- Description of the issue

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