

Note: The following instructions are for 8 cylinder 10R80 Automatic Transmission installations for 2018 and newer model years. Contact True Motorsports for other 10R80 configurations.

****IMPORTANT****

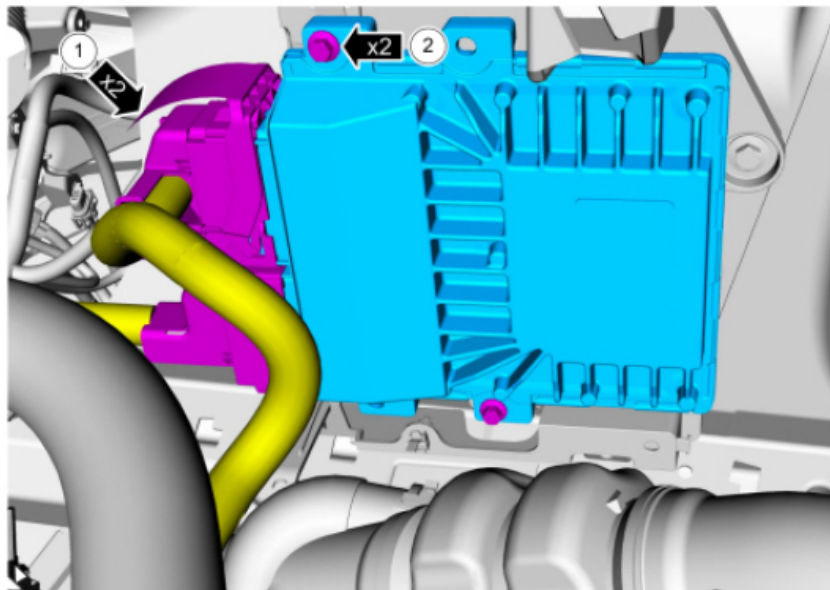
THE 10RSTAGER REQUIRES AN EXPERIENCED TUNER TO ADJUST THE VEHICLE TUNE TO ALLOW THIS DEVICE TO OPERATE WITHOUT CAUSING FAULT CODES. CONSULT TRUE MOTORSPORTS OR SELECT A TUNER THAT HAS EXPERIENCE WITH THE NEEDED TUNE CHANGES.

This manual will outline the wiring of the 10RStager. Ensure that each connection is a reliable connection that will not cause any intermittent behavior on the signals. For power connections to the 10RStager, ensure that the power source is a switched ignition source that powers up when you key on and that it has an appropriately sized fuse for the circuits connected. The 10RStager consumes less than 0.5 Amps during operation.

The 10RStager must be wired per the instructions outlined in this document and is designed to work for **first gear, second gear and third gear launch setups**. The 10RStager will not operate without interfacing to the transmission and brake pedal wiring. The brake pedal wiring must be wired to prevent accidental engagement of the transbrake. Note that the foot brake pedal must be engaged prior to pressing the Transbrake button to engage the Transbrake.

Perform the installation in the following order:

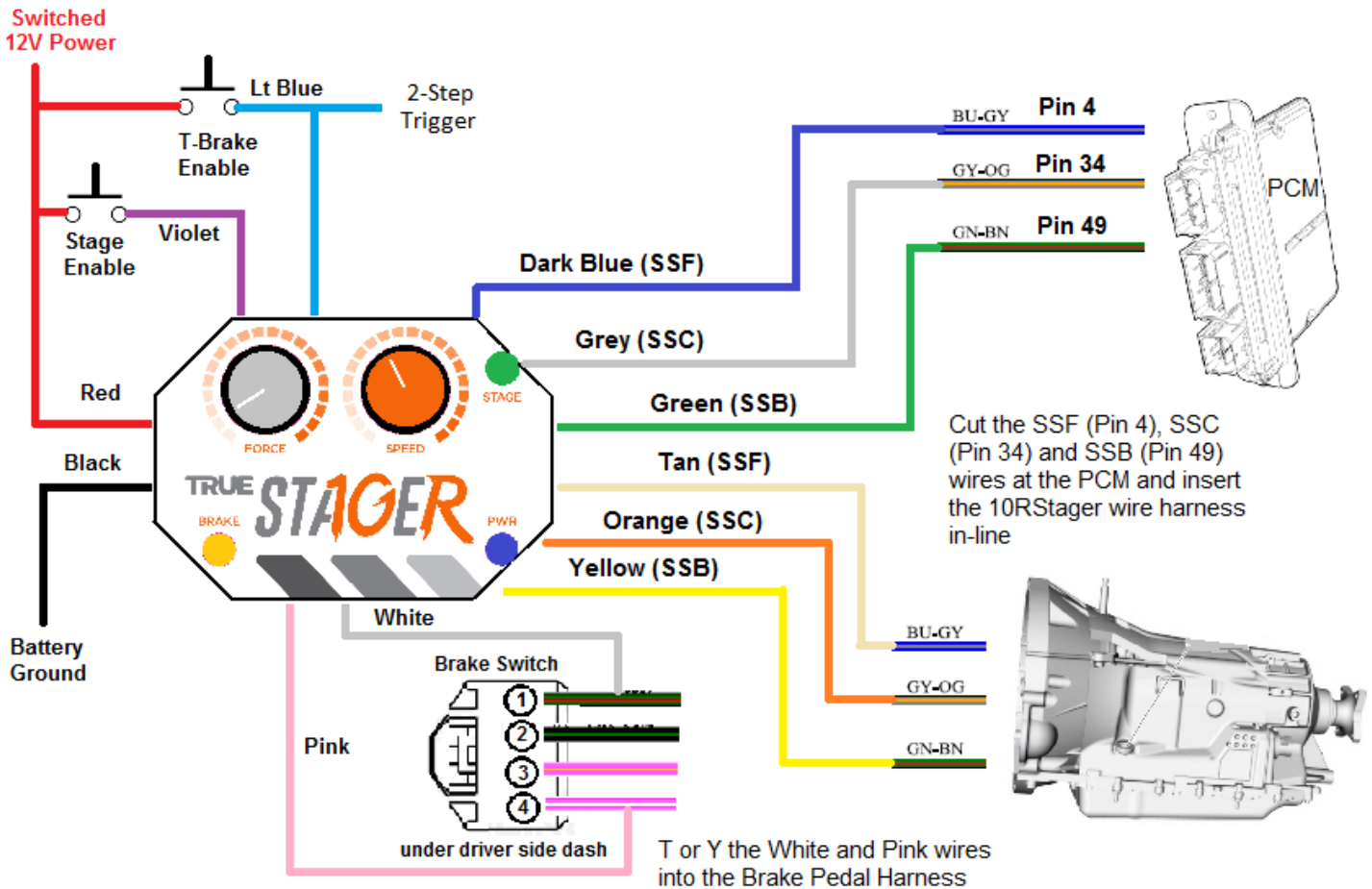
1. Turn the ignition off, open the hood **and disconnect the battery**. Locate the vehicle PCM (Powertrain Control Module). This should be under the hood near the front passenger side on most vehicles.



2. Locate and install the 10RStager control box in a location that is within the cab of the vehicle. Do not locate this device in the engine bay. Follow the wiring diagram instructions below and on the following pages. When wiring up this device, ensure that best practices are followed while wiring up the 10RStager. It is recommended that each connection be soldered and heat shrink applied.

- The instructions for wiring the 10RStager will be outlined on the following pages. The diagram shown on below page 2 should be used as an overall system wiring diagram. Follow the instructions outlined in steps 4-8 below, to wire the 10RStager per the following wiring diagrams:

FIRST, SECOND, and THIRD GEAR - 10R80 Wiring Diagram reference for the 10RStager



- Cut the SSF wire (Blue/Grey) and connect the Dark Blue Wire to the PCM side
- Cut the SSC wire (Grey/Orange) and connect the Grey Wire to the PCM side
- Cut the SSB wire (Green/Brown) and connect the Light Green Wire to the PCM side
- Connect the Pink Wire to the Brake Pedal Position Switch Signal wire (Violet/White)
- Connect the White Wire to the Brake Pedal Position Switch Power wire (Green/Red)
- Connect the Tan Wire to the SSF wire (Blue/Grey) that is connected to the 10R80
- Connect the Orange Wire to the SSC wire (Grey/Orange) that is connected to the 10R80
- Connect the Yellow Wire to the SSB wire (Green/Brown) that is connected to the 10R80

Note: The signal at the light blue wire can be used to initialize a 2-step or other devices. If a 2-step interface is needed, attach to the light blue wire after the Transbrake Enable button. If the 2-step interface requires a low signal input a relay may need to be used and the light blue wire connection can be used to trigger the relay.

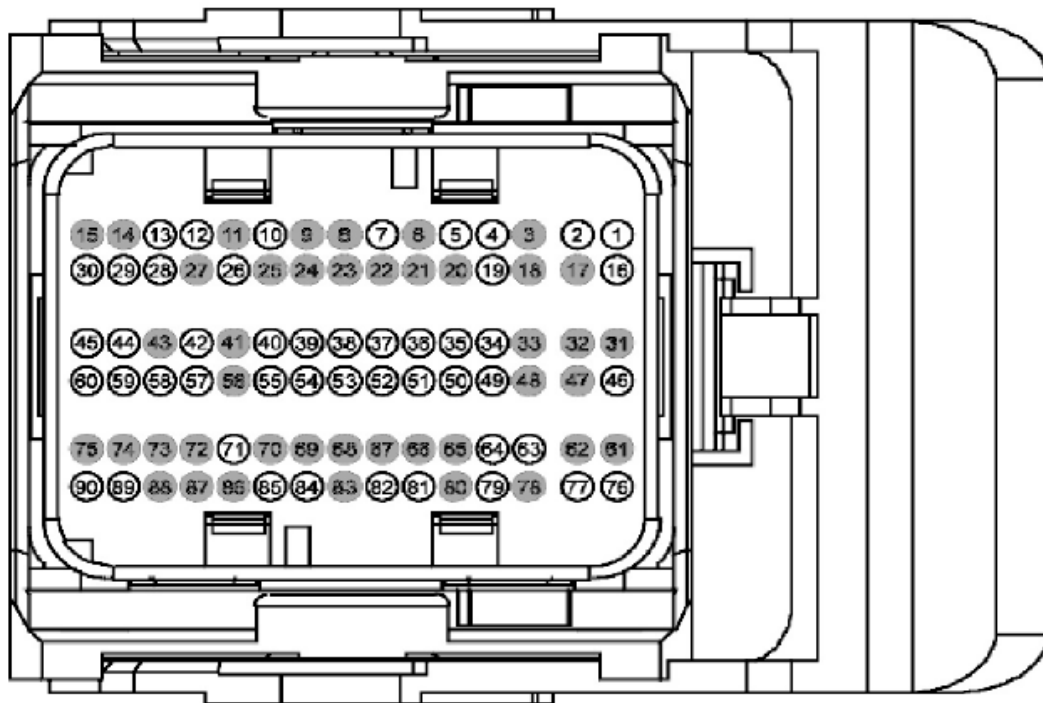
4. Locate the PCM which is located on the right side of the engine. Disconnect the **Top PCM** connector.
 NOTE: This PCM location may be different for F-150 and future vehicle models.

Connector:
C175T

Description
 POWERTRAIN CONTROL MODULE (PCM)

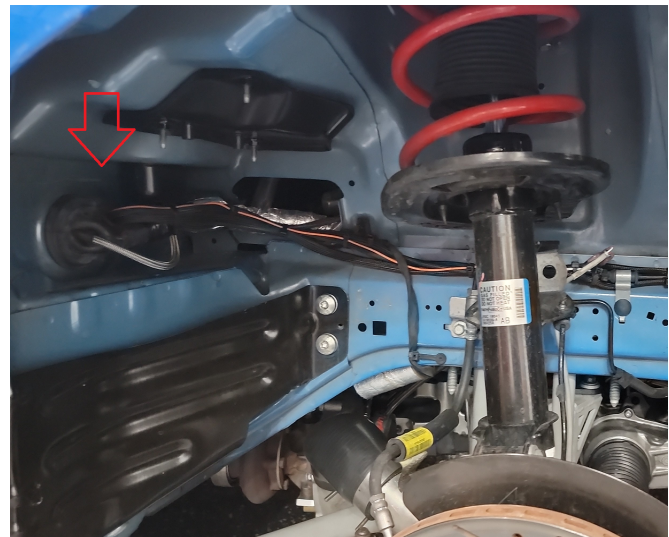
Color

Harness
 14B060/7C078

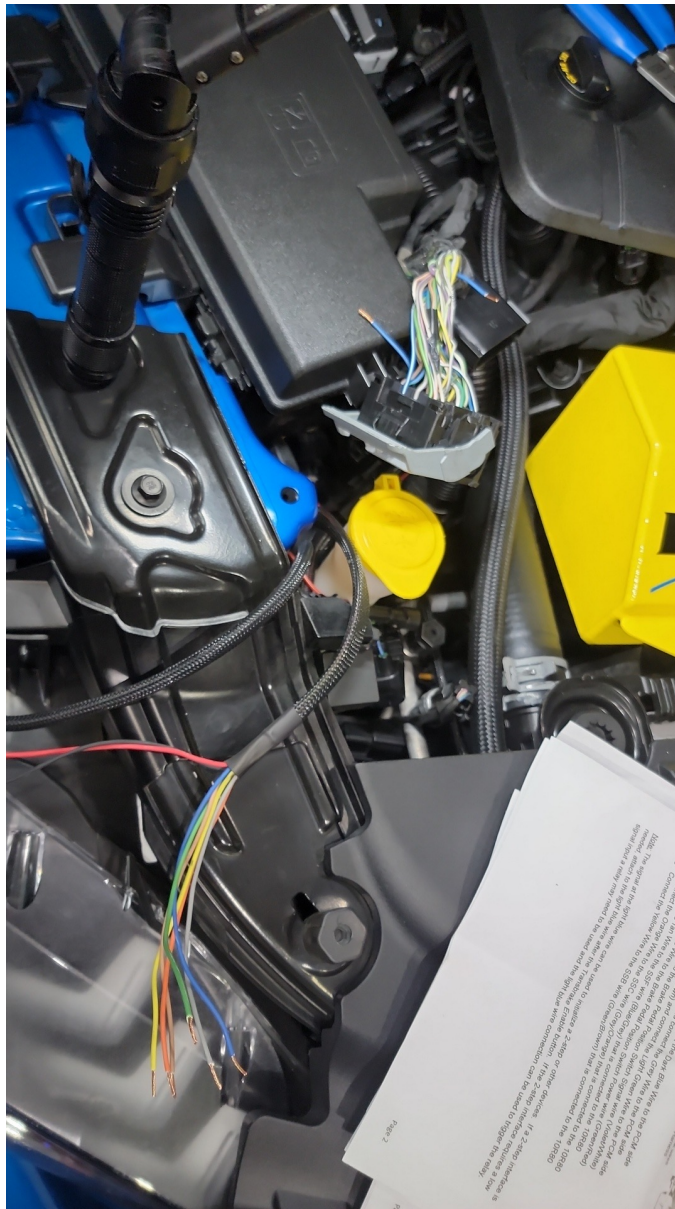


Run six wires with SSB, SSC and SSF as part of the naming convention out to the PCM/Transmission connector located in the engine compartment. Run through the passenger side firewall grommet.

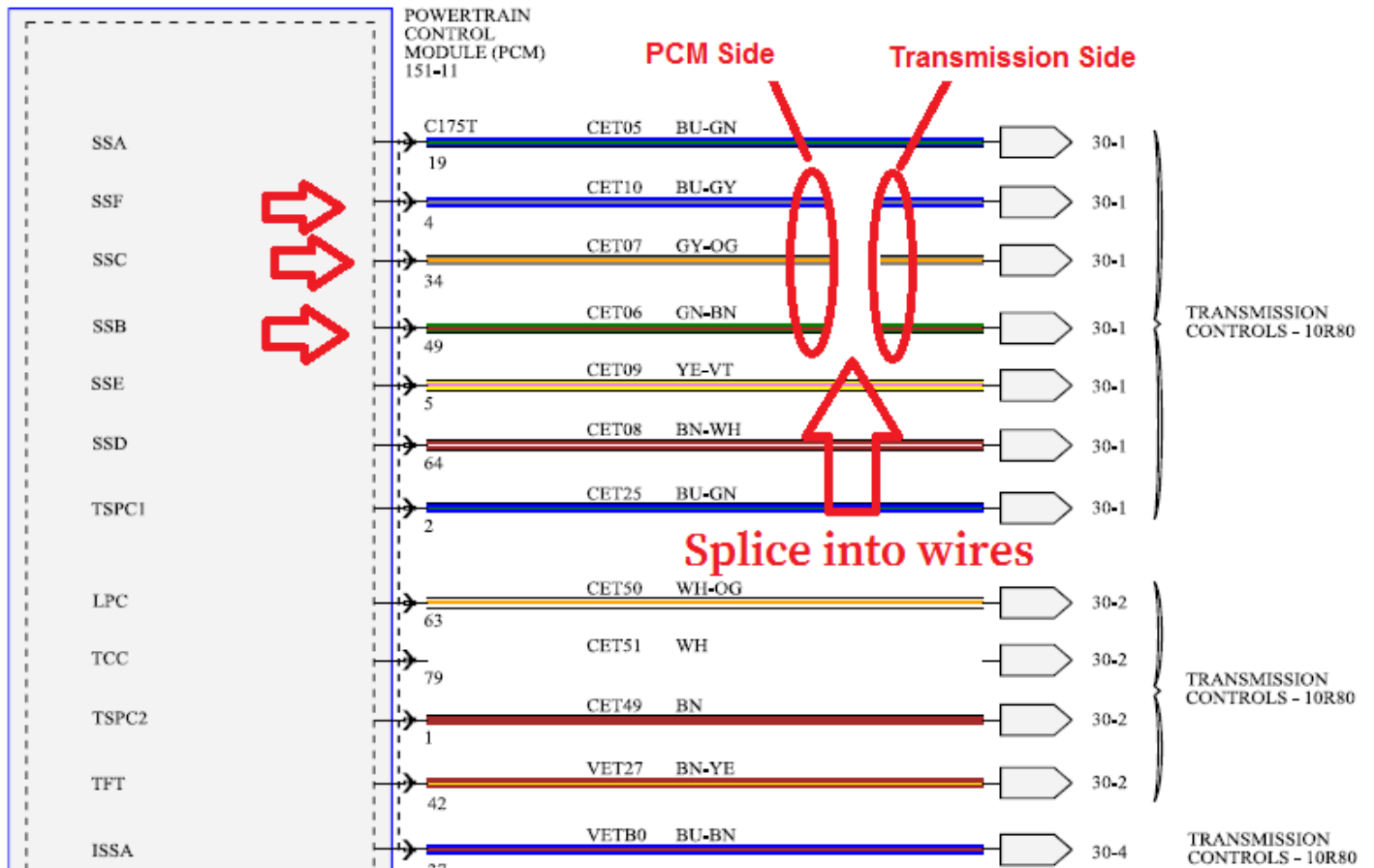
1	Tan 18AWG TXL	Trans SSF
2	Dark Green 18AWG TXL	PCM SSB
3	Yellow 18AWG TXL	Trans SSB
4	Grey 18AWG TXL	PCM SSC
5	Orange 18AWG TXL	Trans SSC
6	Dark Blue 18AWG TXL	PCM SSF
7	Pink 18AWG TXL	Brake Pin4
8	Black 18AWG TXL	GND
9	Red 18AWG TXL	+12V
10	Violet 18AWG TXL	Stage Button
11	Light Blue 18AWG TXL	Tranbrake Button
12	White 18AWG TXL	Brake Pin1
	9ft long flying lead	



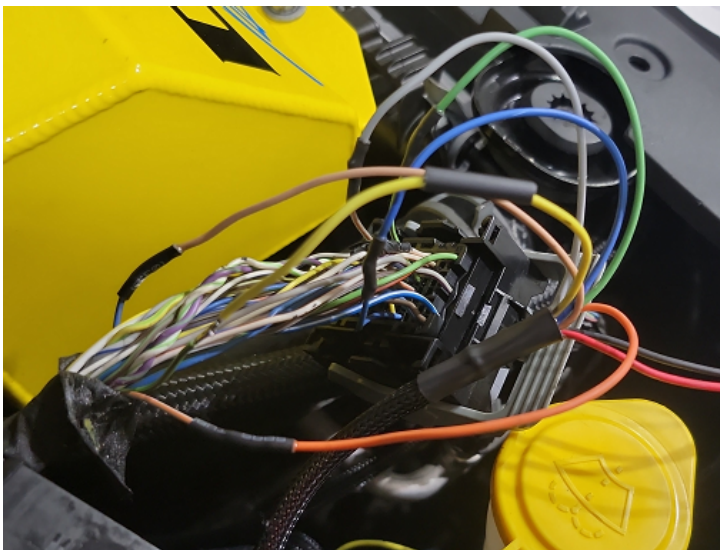
5. On the PCM connector, remove at least 6-8 inches of the black tape so that you can access the wires.



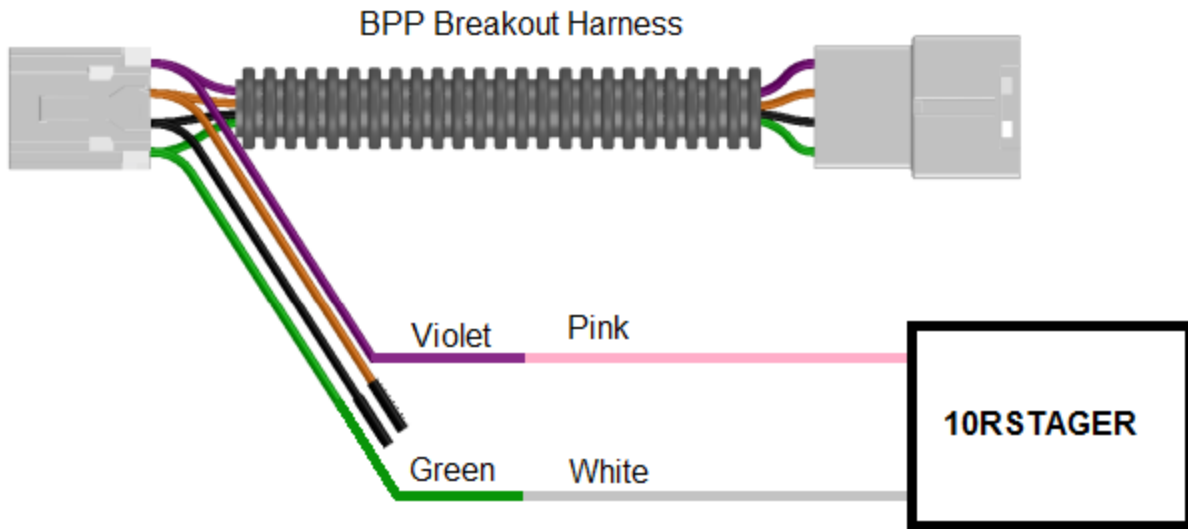
6. Identify the SSF, SSC, and SSB solenoid wires so that the 10RStager can be inserted into this interface.



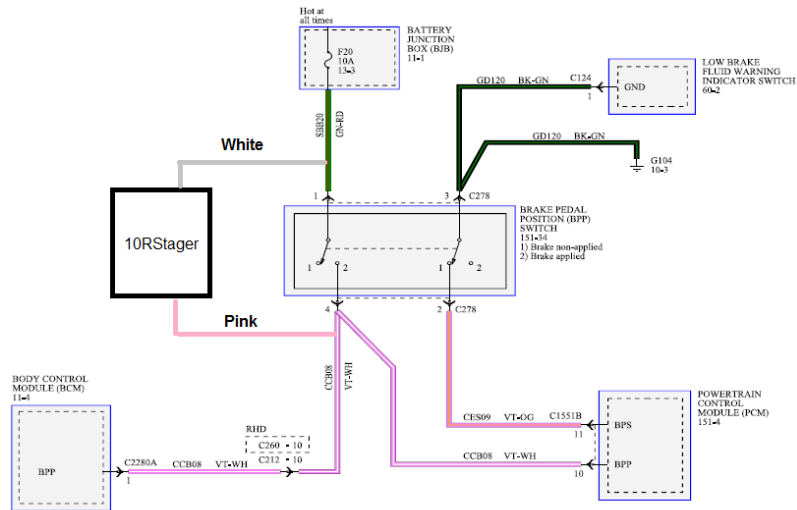
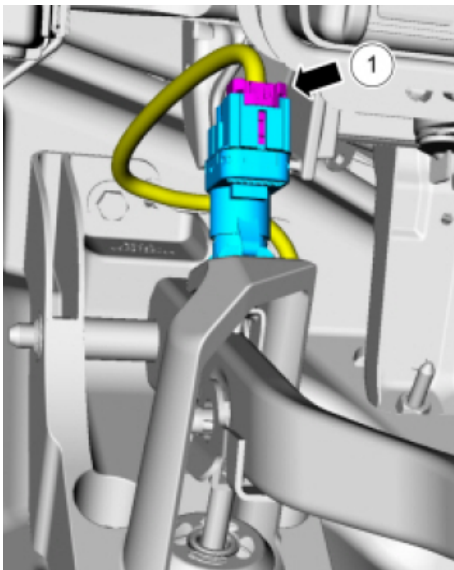
The SSB, SSC and SSF signals will pass through the 10RStager during normal operation. When the Transbrake is activated, the 10RStager will manipulate the solenoids to create a Transbrake.



7. Connect the Brake Pedal Position (BPP) Breakout Harness to the 10RStager Pink and White wires as shown below:.



Locate the Brake Pedal Position Switch above the brake pedal and disconnect the connector. Using the BPP Breakout harness, plug one end into the brake pedal connector and the other into the brake pedal harness.



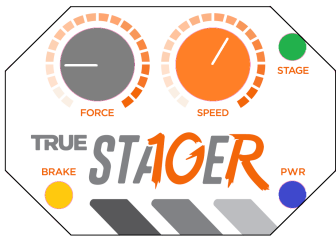
8. On the 10RStager wire harness, connect the Red power wire to a switched 12V power source so that it will only turn ON when Ignition Power is applied or when a dedicated switch is used. The 10RStager consumes less than 0.5 Amps of current while under maximum load. Connect the Black wire to a clean battery ground connection, as a poor chassis ground connection could damage the electronics or result in inadequate performance. The Tranbrake enable (Lt Blue) and Stage enable (Violet) buttons should be wired so that the 10RStager will see a high voltage when the buttons are depressed. Any 2-step interfaces should be connected to the Light Blue wire connection or the Pink Brake Pedal interface wire.

Refer to the Operators Manual on the following page for adjusting settings and tune modification requirements.

10RStager Operator's Manual

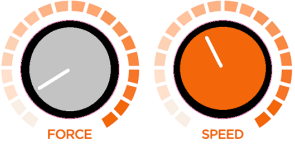
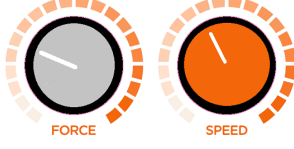
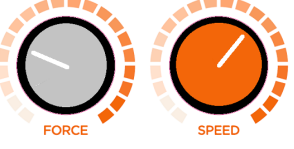
The 10RStager requires two input buttons for operation. Each input must be pulled above 10 volts to become active. The first input button will activate the Transbrake on the 10R80. The foot brake pedal on the vehicle must be depressed before the Transbrake will engage, as this is designed so that the Transbrake will not be accidentally depressed. Once the Transbrake has been enabled on the vehicle, the foot brake can be released. If the system is working, the brake lights will remain on while the Transbrake button is depressed.

To use the Stage button, the Transbrake button must be depressed and engaged prior to the Stage Button being depressed. Holding or tapping the Stage button while also holding the Transbrake button will enable the vehicle to creep forward slowly by momentarily disengaging the Transbrake. Use this Stage button to move from the Pre-stage to the Staging beams. The LED indicators on the front of the unit should be used to know the state of the inputs and the Transbrake state. When staging, the brake LED may pulse to let the user know that the smooth staging algorithm is engaged. When ready to launch, release the Transbrake button.



Below is a guide to assist you in finding the best settings for your vehicle.

Step 1: Start with the Force to the 7 o'clock position and Speed near the 10 o'clock position.

Step 1	Step 2	Step 3	Step 4
Set Speed to 11 o'clock and Force to 7 o'clock  Press and hold the Bump Button	If NO movement, increase the Force 1 click  Press and hold the Bump Button	If NO movement, set Speed to 2 o'clock.  Press and hold the Bump Button	If NO movement after Step 3, repeat Step 2 and Step 3 until movement is present. Use the Speed knob to fine tune the vehicle speed while staging

Speed = Vehicle creep speed

Force = Transbrake release power

NOTE: If the vehicle continues to roll forward after the bump, this is an indicator that your Transbrake is unable to grab and stop the vehicle from moving forward for the launch horsepower level. This could be an indicator of a worn clutch within the transmission or a trouble code. Consult a 10R80 Transmission expert to see if this Transbrake will hold at the power level that you are operating at or if something could be causing the code.

The 10RStager requires an experienced Tuner that can disable codes in the calibration.

Depending on your setup, other disabled codes may be required. Please consult with an experienced Tuner

The 10RStager is now equipped with Adaptive Bump and allows extra Force settings for increased Smooth Staging. The 10RStager has 12 settings and the Adaptive Bump provides access to pulse settings that are in-between each Force setting. In normal operation, the Force settings are 1, 2, 3, 4... And with the Adaptive feature, while set to a Force position of 1, a time delay offset of 1+a or 1+a+a can be achieved. If set to a Force position of 2, a time delay offset of 2+a or 2+a+a can be achieved. You can think of the value +a as about an extra 1 msec of time for each bump pulse.

There are two methods for activating this adaptive feature:

1. With the 10RStager Powered ON, press and hold the Bump Button. After approximately 4 seconds, the Bump LED will blink momentarily.
 - a. This single blink will increment the Force setting by a small amount (Force + a).
 - b. If the button is held down another 4 seconds longer, a second blink will increment the Force setting another small amount (Force + a + a).
 - c. The number of blinks will continue to tack on additional pulse time for the Force setting.
 - d. This additional time will remain loaded into volatile memory within the unit. If power is cycled, this adaptive time setting will be erased and the Bump Button would need to be held again to achieve the blinks.
2. In some instances while moving from the Pre-Stage to Stage beams, the bump settings may need to change dynamically. The required bump settings when the transmission is hot versus cold may be different. If this is the case, holding the bump button down will gradually increase the Force setting. In the event that the car will not bump forward, simply holding the bump button down until the car moves forward can be achievable with this Adaptive Bump feature. The bump increase will be similar to the previously explained increment amount (Force + a).

NOTE: If the vehicle continues to roll forward after the bump, this is an indicator that your Transbrake is unable to grab and stop the vehicle from moving forward for the launch horsepower level. This could be an indicator of a worn clutch within the transmission. A possible method to overcome this with the 10RStager settings is to set the Speed and Force to the lowest settings. Tap the bump button and see if the car moves. If not, only increase Force 1 position and retry. Continue to increase the Force until the car moves. This quick tap of the bump button will only send one pulse to disengage the brake and should allow the brake to grab and stop the momentum of the vehicle. If not, consult a 10R80 Transmission expert.

The 10RStager was developed and produced by:



Racing Electronics Imagined Designed and Manufactured in the Midwest

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