

2020-2023 Ford Explorer ST (TC298-B) Custom Features User Guide

Advanced Transbrake

Drive Mode Profiles

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HP Tuners' Advanced Transbrake

We are proud to introduce the world's first integrated ECM transbrake for the Ford 10R60 transmission found in your vehicle! Advanced Transbrake features new and exciting ways to leverage the existing power of OEM control strategies for Fuel, Spark, Rev Limit, and Torque.

HP Tuners' Drive Mode Profiles

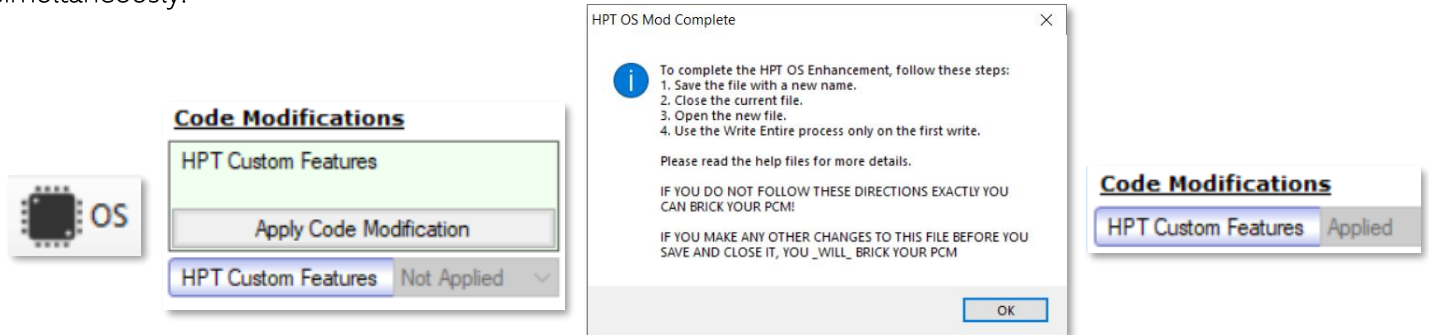
Additionally, we have added the latest in integrated ECM features for the Ford Explorer ST! This new feature allows direct mapping of an existing vehicle drive mode to new groups of tables called "Profiles". For this application we offer 5 profiles (0-4) that link control of a small subset of tables to shape power curves inside of a single calibration!

These features have been designed to work seamlessly with your vehicle as if they were included from the factory.

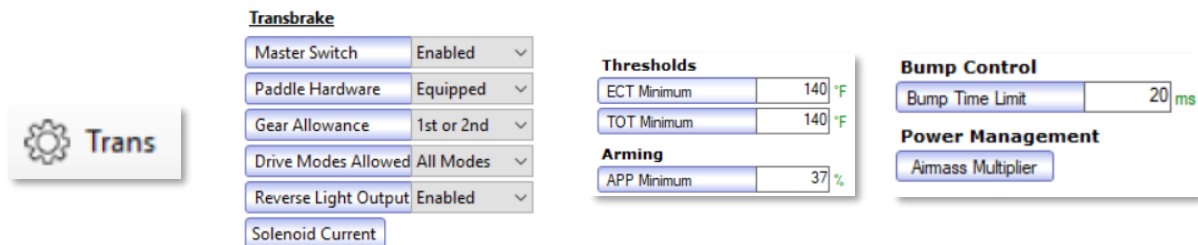
Follow below for simple instructions to configure these features within your calibration and learn how to utilize their interfaces.

Preparing the ECM

Step 1: Apply the Operating System (OS) “HPT Custom Features” code modification, save as new, close, and reload your HPT calibration. This will apply the Transbrake and Drive Mode Profiles features simultaneously!



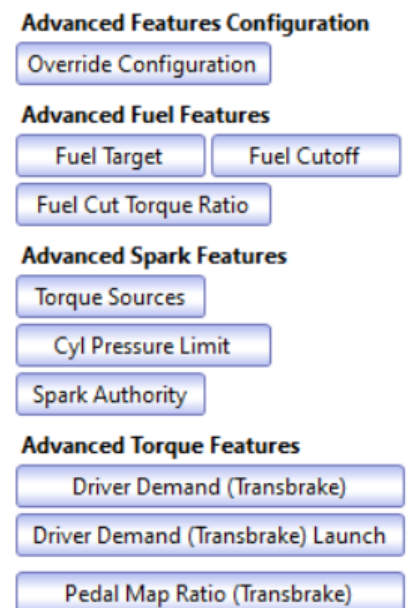
Step 2: Configure the Transbrake basic settings.



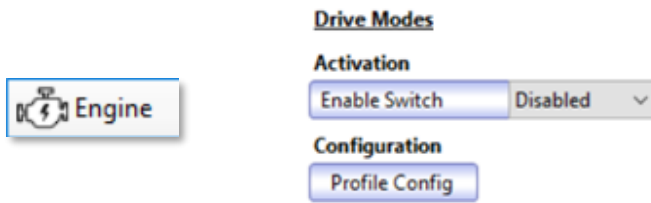
Step 3: Enable and Calibrate Advanced Transbrake features as desired.

Note: All default calibration data for Advanced Features will be copied from the corresponding OEM tables where possible during application of the OS modification.

Note: By default, all basic and advanced features are disabled.



Step 4: Configure the Drive Mode Profiles basic settings.

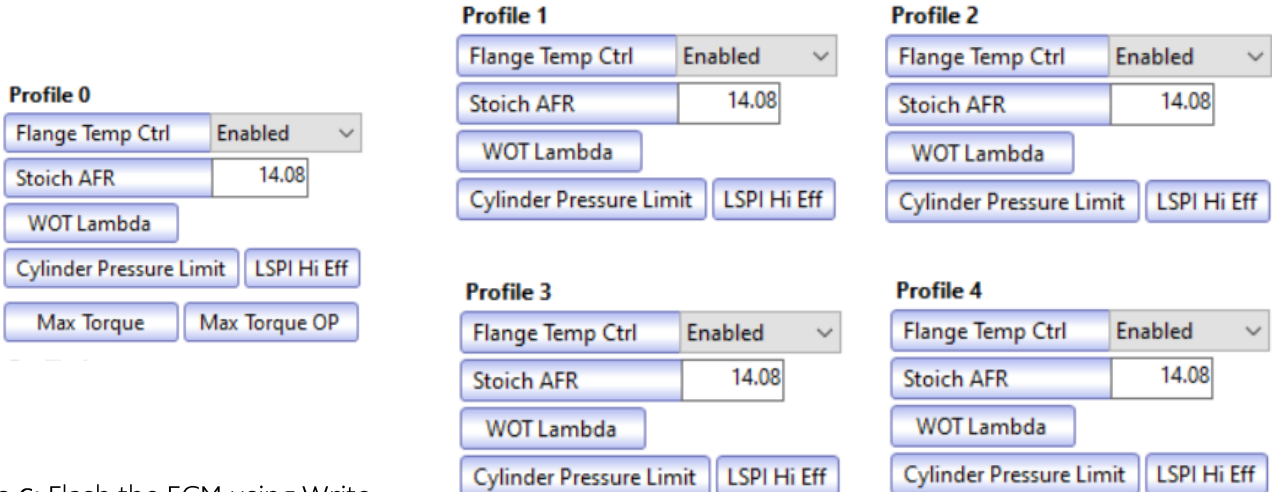


Step 5: Calibrate Drive Mode Profiles tables as desired.

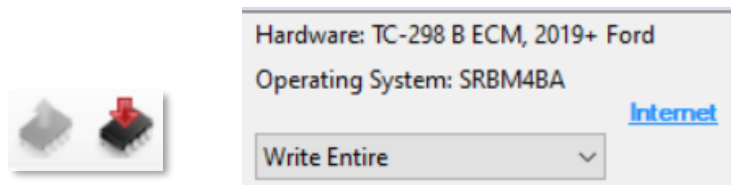
Note: All default calibration data for each profile will be copied from the corresponding OEM tables where possible during application of the OS modification.

Note: Due to the nature of this modification, Profile 0 contains unique Max Torque / Max Torque OP tables. Profiles 1-4 will use the existing tables found in the “Engine -> Torque Management -> General -> Maximum Torque” tab. Table 44182 will be ignored when this feature is enabled.

	Profile ID
00 Normal	0
01 Sport	1
02 Winter	2
03 Tow/Haul	3
04 Reverse	4
05 Grass	4
06 Unused	0
07 Sand	3
08 Mud	2
09 Rock Crawl	1
10 Dynamic	4
11 Hill Descent	2
12 Hill Descent Low	0
13 4x4 Low	0
14 Unused	0
15 Unused	0



Step 6: Flash the ECM using Write Entire.



Using the Transbrake

Step 1: Meet conditional staging requirements.

- Engine coolant and transmission oil temperatures are above minimum thresholds.
- Appropriate drive mode is selected, vehicle is stopped, cruise control is off, and in an allowed gear.

Step 2: Meet conditional activation requirements.

With paddle hardware	Without paddle hardware
Brake pedal is pressed and held	
Paddle up and paddle down are held	Cruise control set minus is held
Accelerator pedal position has breached arming threshold at least once (quick stab!)	

Step 3: Now that we are activated.

With paddle hardware	Without paddle hardware
Paddle down can be released	Cruise control set minus can be released
Brake pedal can be released	Brake pedal must remain held!

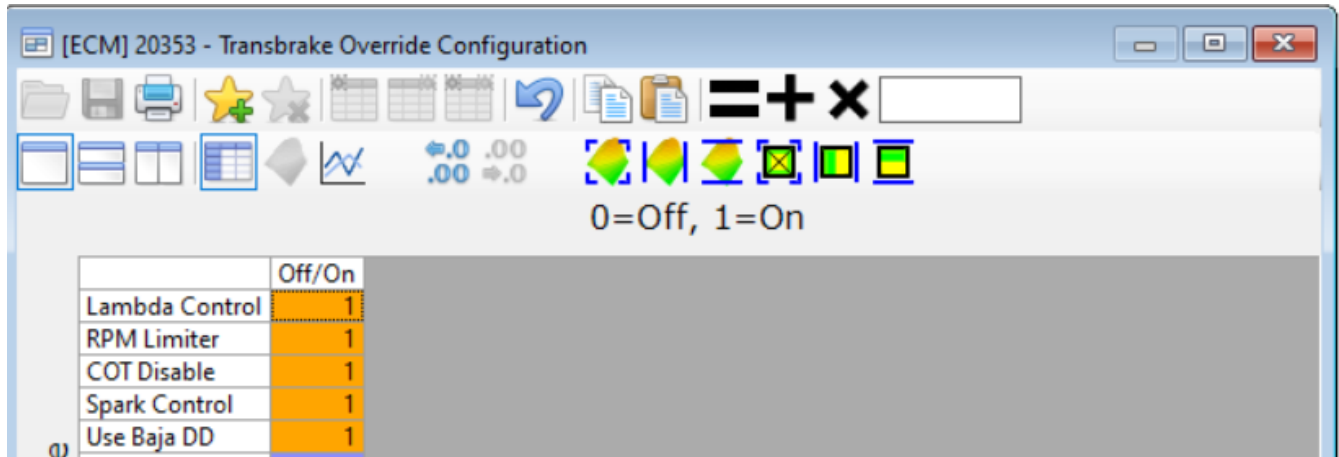
Step 4 (Optional): Deep Stage using Bump Control

With paddle hardware	Without paddle hardware
Tap paddle down	Tap cruise control set plus

Step 5: Launch!

With paddle hardware	Without paddle hardware
Apply desired amount of accelerator pedal	
Release paddle up	Release brake pedal

Advanced Transbrake Features



Configuration Example (All Features Enabled)

The HP Tuners' Advanced Transbrake features bring all-new exclusive functionality that leverages the existing power of OEM control strategies for Fuel, Spark, Rev Limit, and Torque during operation. These features can be individually enabled by editing the **Transbrake Override Configuration** table shown above.

These features are **only** used while Transbrake is active and will revert to their respective OEM tables when Transbrake is no longer active.

Lambda Control

- Use tables 20351 and 20358 dial in target lambda while transbrake is active.

RPM Limiter

- Use table 20347 to set an RPM limit while transbrake is active.

COT Disable

- This will disable COT enrichment from interfering while transbrake is active.

Spark Control

- Use tables 20348, 20350, and 20352 to limit spark while transbrake is active.

Use Baja DD

- This will enable the use of tables 20359, 20360, and 20361 while transbrake is active.
- These tables were previously associated with "Baja" mode, which are not typically used or enabled in OEM applications.

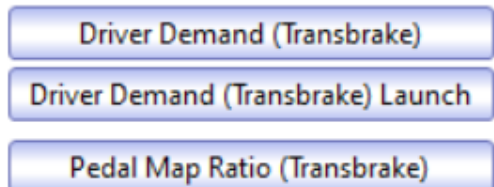
Advanced Fuel Features



Advanced Spark Features



Advanced Torque Features



Transbrake FAQs

Q: Is the transbrake abusive to the engine and transmission?

A: Yes, especially on high power applications. Use at your own risk!

Q: Can I use this feature with an aftermarket steering wheel?

A: Maybe. This feature requires the factory cruise control buttons to work properly.

Q: My vehicle doesn't have a drive mode selection switch; can I still use this feature?

A: Yes! Simply set the "Drive Modes Allowed" to "All Modes" instead of "Drag Only".

Q: When activating Bump Control, my car doesn't move. What should I do?

A: Try increasing the "Bump Time Limit" until the proper movement is achieved or increase throttle input.

Q: How can I tell if the transbrake is active?

A: Use VCM Scanner to monitor the "Transbrake Active" parameter. It will report a Yes/No status. Additionally, if **Reverse Light Output** is *Enabled* the lights will illuminate while the transbrake is activated.

Q: This seems like witchcraft, how does the transbrake work?

A: By applying specific clutches to lock gears together and prevent the output shaft from spinning.

Drive Mode Profiles FAQs

Q: I see several Drive Modes in the configuration table that I do not have access to on my vehicle, how can I use those?

A: Due to the nature of how Drive Modes are implemented by the OEM, certain modes will not be available to use in vehicle. These can be ignored in the configuration as they will never be used.

General FAQs

Q: I've tried everything, I just can't get this to work! Can you tell me what I'm doing wrong?

A: Yes! Contact us at <https://support.hptuners.com> to proceed with diagnosing the cause.

Q: Will this work in my (insert currently unsupported application here)?

A: We will be adding more applications based on demand and availability!