

TORP controller

Traction Control

For Ultra Bee stock bikes using wheel speed sensors with a TORP controller.

What Traction Control does

The system compares front and rear wheel speed. When excessive slip is detected, controller torque is reduced to help the tire regain available grip.

Traction Control is designed to help the bike use available grip more effectively. It does not create grip on its own. If the surface has no traction, the system cannot manufacture traction physically; it can only reduce torque to help the tire reconnect with the grip that already exists.

Where to find it in the app

Settings screen → PERIPHERALS → Traction Control

Open the Settings screen, tap the PERIPHERALS button at the bottom, then scroll to the Traction Control section to access calibration. Make sure to tap the ON button.

SETUP

Requirements

What you need before enabling Traction Control

Requirement	Details
Bike	Ultra Bee stock bike
Sensors	Front and rear wheel speed sensors installed and working correctly
Controller firmware	Firmware version 1.16, or more
Mobile app	Latest TORP app version

Calibration

- Perform calibration before using Traction Control for the first time.
- Repeat calibration after changing tire size, tire model, or tire pressure.
- Repeat calibration whenever you suspect wheel-speed interpretation is no longer accurate.

Activation and status

- Hold the **ASR button** for 2 seconds to activate TC. **Double-click to cycle** A1, A2 and A3.
- The green **ASR** sign lights on the stock Ultra Bee display when Traction Control is active.
- The TORP app and TORP display show **TC1**, **TC2** or **TC3** - the active label blinks during Traction Control intervention.

Traction Control Modes

Three levels - each determines how aggressively the system reacts to wheel slip

Mode	Response level	Typical behavior	Adjustment options
TC3	Most conservative	Reacts to smaller slip values and intervenes earlier. Best when you want the strongest assistance and the earliest correction.	Adjustable: Motor Current Max and Strength (see below)
TC2	Medium	Mainly targets stronger slip events. Does not react as early to small slip compared with TC3.	No fine adjustment
TC1	Least conservative	Targets only major, aggressive slips. Small slip events are allowed to happen without early intervention.	No fine adjustment

Important Notes

- **Traction Control cannot create grip.** It only helps you use existing grip more efficiently by reducing torque when slip becomes excessive.
- **Wheelies are not possible while riding in Traction Control mode.** Lifting the front wheel changes the wheel-speed relationship, so the system interprets this as rear-wheel slip and reacts accordingly.
- **Correct sensor data is essential.** If wheel speed information is incorrect, Traction Control performance will be reduced or inconsistent.

Recommended Setup Sequence

1. Confirm the bike is an Ultra Bee stock bike with functional wheel speed sensors.
2. Update the controller to firmware 1.16 and install the latest TORP app.
3. Open Settings screen → PERIPHERALS → Traction Control and configure the desired mode in the app.
4. Run calibration before first use.
5. Recalibrate after any tire or pressure change.
6. Start with TC3 if you want the earliest and strongest intervention.

General Settings - All TC Modes

Shared parameters that apply to TC1, TC2 and TC3

Gearing

Applies to all traction control levels (TC1-TC3)

HOW IT WORKS

Adjusts how aggressively traction control limits motor current based on your drivetrain setup, including motor KV, sprocket ratio, and the bike's torque-versus-speed character.

GUIDANCE

Use LOW for high-torque, low-speed setups. Use HIGH for high-speed, lower-torque setups. MEDIUM is a practical starting point when you are unsure.

Traction Sensitivity

Applies to all traction control levels (TC1-TC3)

HOW IT WORKS

Determines how easily traction control is triggered. Higher sensitivity allows the system to react sooner; lower sensitivity requires more obvious slip before intervention starts.

GUIDANCE

Increase it when you want earlier intervention. Reduce it if you are riding an off-road tire, if tire pressure is inconsistent, or if the system activates unnecessarily. If set too low, traction control may not respond when it should.

Level 3 Adjustable Settings

These settings only affect TC3 mode - they have no effect when TC1 or TC2 is active.

Motor Current Max

TC3 setting only	
HOW IT WORKS	Sets the maximum motor current that TC3 can still allow while traction control is intervening. In practical terms, it influences how much drive remains available after the controller starts reducing torque to manage slip.
GUIDANCE	A lower value makes intervention feel stronger and smoother because available drive is reduced further. A higher value keeps more drive available during intervention and can feel less restrictive. Change it in small steps.

Strength

TC3 setting only	
HOW IT WORKS	Controls how assertively TC3 reacts when slip is detected. Higher Strength means the system tolerates less slip and applies a firmer correction; lower Strength allows more slip and gives a softer response.
GUIDANCE	Raise Strength when you want earlier, stronger correction. Lower it when you want a more permissive feel. Tune it together with Motor Current Max because both settings affect how TC3 feels during intervention.

Which parameters affect which level

Mode	Adjustable parameters
TC3	Motor Current Max · Strength · Gearing · Traction Sensitivity
TC2	Gearing · Traction Sensitivity
TC1	Gearing · Traction Sensitivity

Bike too eager to intervene? First reduce Traction Sensitivity and verify tire pressure consistency. If the drivetrain is geared for torque and low speed, start with LOW Gearing. If it is geared for higher road speed and lower wheel torque, start with HIGH Gearing.

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