DYNAGEN™

Thomson Actuator Calibration Procedure via TE410

Document Revision: 3.0

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Introduction

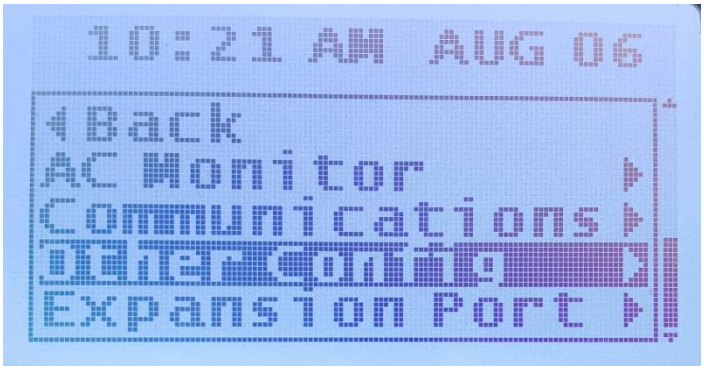
The Thomson actuator is used as a method for mechanical automatic speed control for various speeds desired, with full control through the TE410 controller. DynaGen's Engineers have coded and programmed new firmware available to the TE410 controller for uncomplicated access and satisfying results. The Thomson actuator was initiated to reduce customers from having to physically change the speed of their engines, and to decrease unnecessary travel to and from the area of the Engines.

Specifications

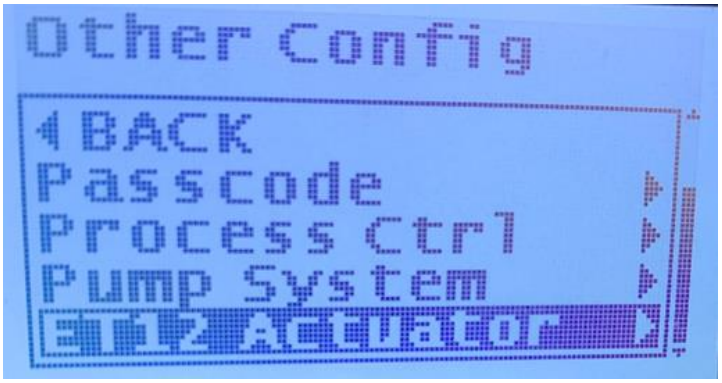
Specification	**Rating**
Voltage	12 VDC
Load	45 N (10 LBS)
Current	4 Amps
Stroke	50.8mm (2")

Navigating the Thomson Actuator

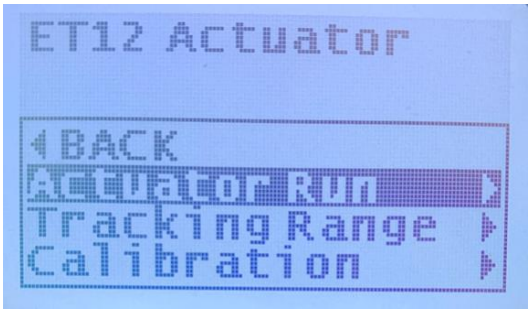
1. The first step is assuring that the speed of the engine matches the speed on the TE410 controller.
2. In OFF Mode Press the ENTER button, this will cause the controller to enter MENU mode.
3. Using the arrow DOWN button scroll down until Other Config appears, press ENTER.



4. In Other Config setting scroll down until ET12 Actuator appears, press ENTER.



5. Press ENTER to access Actuator Run, this will allow the user to DISABLE or ENABLE the Actuator.



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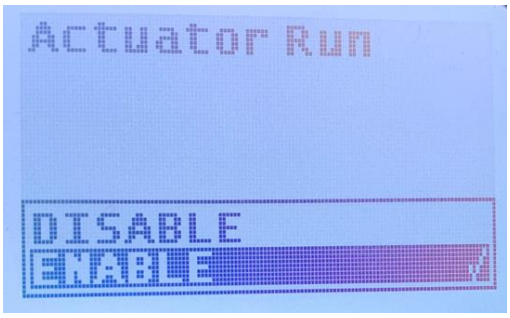
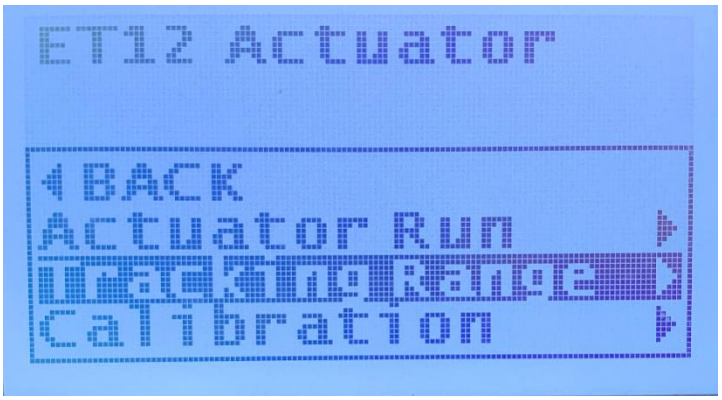


Tracking Range

The Tracking Range is programmed into the TE410 to act as a deadband. Setting the RPM on the Tracking Range allows the engine to proceed over and under the desired RPM. The actuator is calibrated to guide the engine speed back to the desired RPM in the Tracking Range, due to the load increasing or decreasing the RPM past the Tracking Range value.

In ET12 Actuator MENU directly below Actuator Run, Tracking Range is accessible.

- Press ENTER to enter the setting.
- Pressing the UP or DOWN button to select the desired RPM.
- Press ENTER to lock the RPM in place for the Tracking Range.



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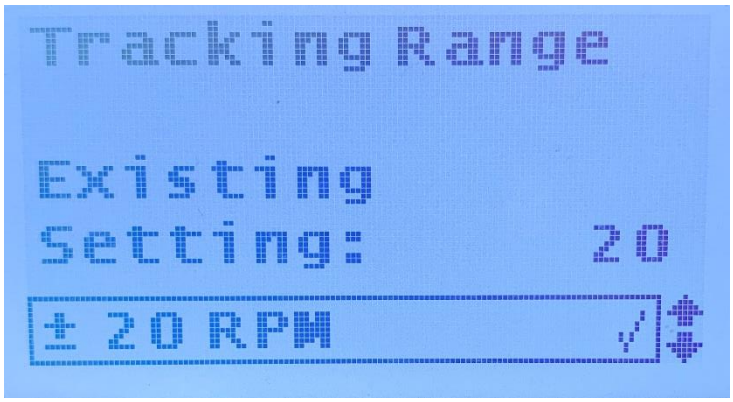
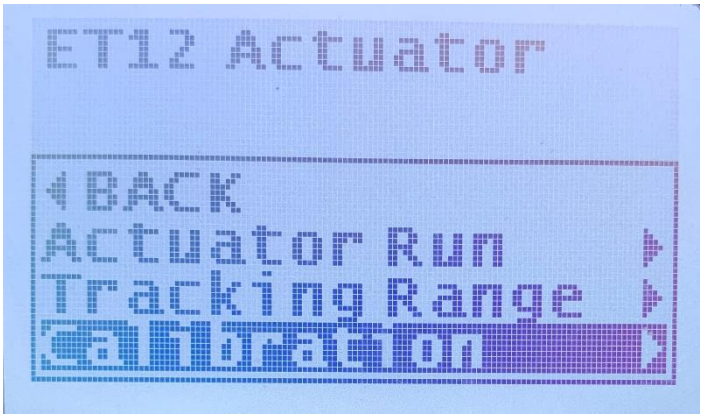


Calibration Procedure

Active Number:

Proceed to ET12 Actuator MENU, press ENTER on the Calibration menu. The controller will enter Calibration menu with three settings available – ACTIVE, ADJUST, and IDLE.

- Scroll down to Active, press ENTER to select the proper calibration number 2039.
- Hold the arrow DOWN button and stop at 2039.
- Press the ENTER button to lock the number in place. This will enable the actuator calibration, allowing the TE410 controller to posses full control of the Thomson actuator.



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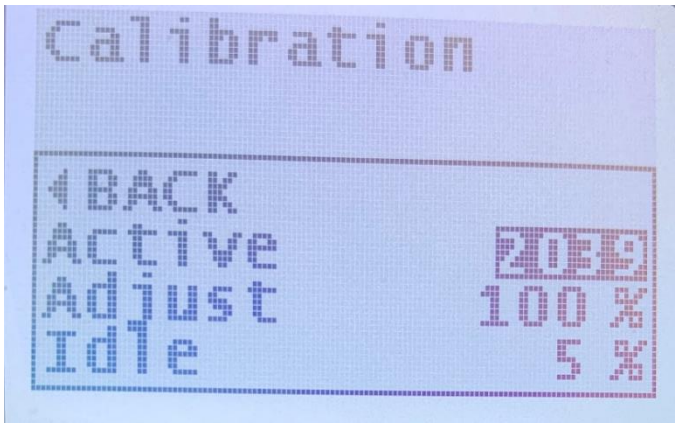
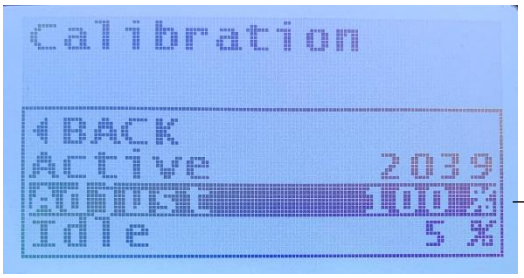
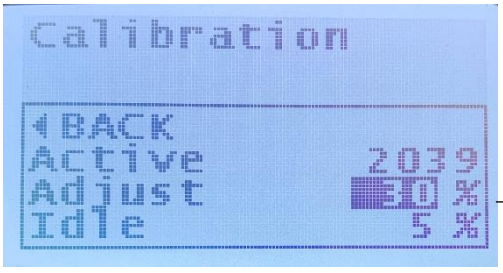


Adjust:

After the Active number 2039 is entered into the controller possessing full control of the Thomson actuator the user can proceed to the next step in the calibration process.

- Adjust is directly below the active number in Calibration menu, it is programmed in the firmware to be set at 100%. Setting a value to the adjust will precisely move the actuator to the desired location before start up. 100% is the maximum distance that the actuator can extend. Subtracting the percent of the adjust downward by values of one, it will cause the actuator to decline in exact decrements.



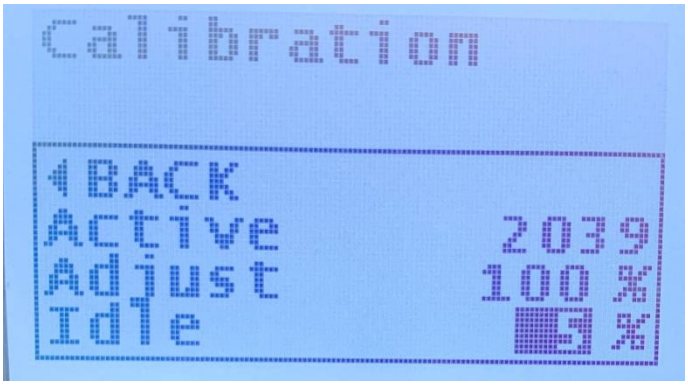


Idle:

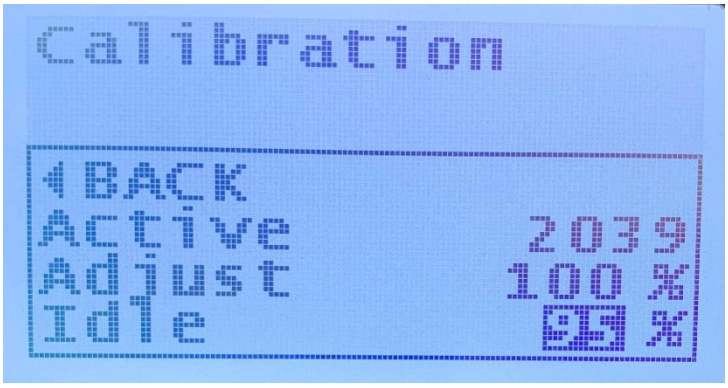
Directly below Adjust, Idle is available for entering a value. Idle percent is the small amount of the actuator stroke that is locked and can not proceed below or above the specific percentage. During this calibration procedure:

- press the ENTER button on Idle to enter a value. If the actuator is pushing then set the Idle value to 5%. If the actuator is pulling then set the Idle value to 95%.
- Adjust the throttle cable so that at 5% or 95% it approximately gives the user the Idle speed.

Push



Pull



Actuator Calibration Run

After each step from this document is complete the TE410 unit is ready for the Actuator Calibration Run.

- Hold the Off button to enter Off mode
- Press the Run button to start and run the engine.
- Adjust the connection rod to make the Idle speed on the engine match the controller display and setting for Idle speed.
- After the adjustment is complete hold the Enter/Scroll button to complete the Idle speed setup process.
- Once this is complete the Engine will shutdown.

Connection rod