

## Document Information

**Location:** Powertrain

**Topic:** Electric Wastegate Actuator Diagnosis and Adjustment

**Condition:** Intermittent/Permanent

### Diagnostic Trouble Codes:

P024300 - Wastegate actuator bank 1 error

P110900 - Wastegate 1 position learn fault

P024700 - Wastegate actuator bank 2 error

P110A00 - Wastegate 2 position learn fault

## Measure

In the event of an engine warning light and limp home message relating to DTC's concerning wastegate error or position learn fault on bank 1 or 2, please proceed to trace the wiring for the actuators to make sure there are no clashes/chafing. Please be thorough in this check.

Then check the integrity of the wiring between the TCU and wastegate actuators.

If the first checks confirm the wiring is ok, follow the steps below to check the wastegate actuators are adjusted correctly and how to adjust them if they are outside the tolerance specified.

### Electronic Wastegate Actuator Test

1. Install breakout box on TCU
2. Set up PicoScope to measure voltage on channel A and B at voltage range of 10V and time set to 20ms/div
3. Measure the wastegate position sensor voltages as follows:

Measurement 1 – RH Wastegate

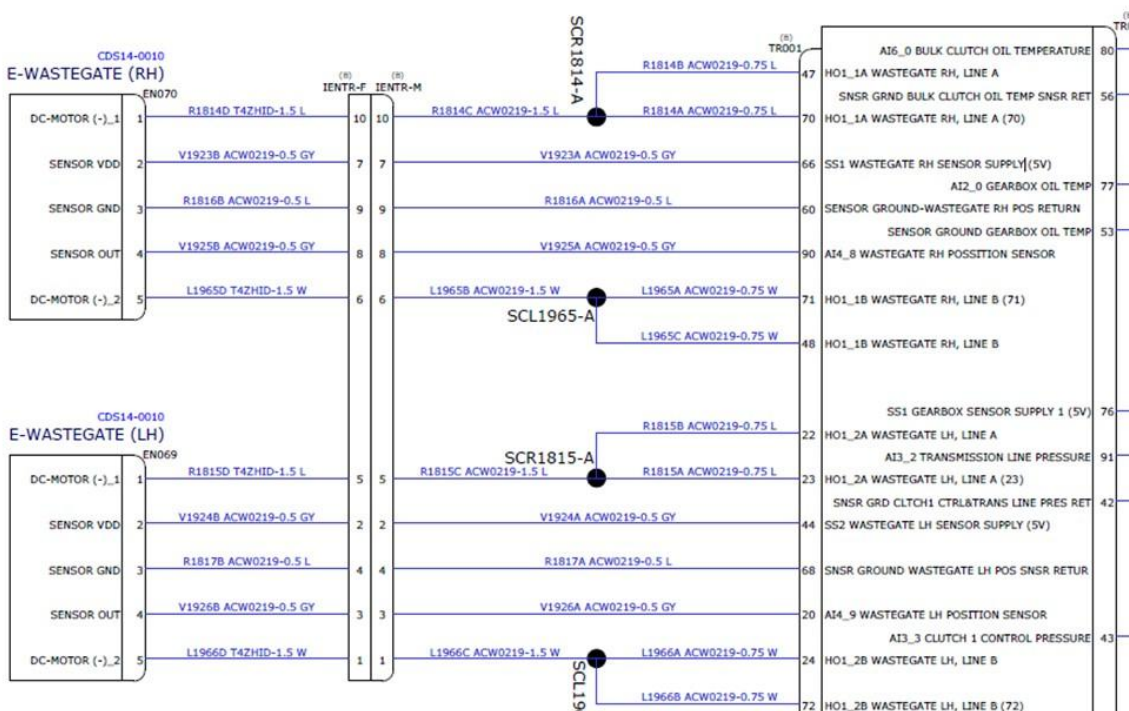
Channel A - Voltage

Wastegate RH position sensor – connector TR001 pin 90 to ground

Measurement 2 – LH Wastegate

Channel B - Voltage

Wastegate LH position sensor – connector TR001 pin 20 to ground



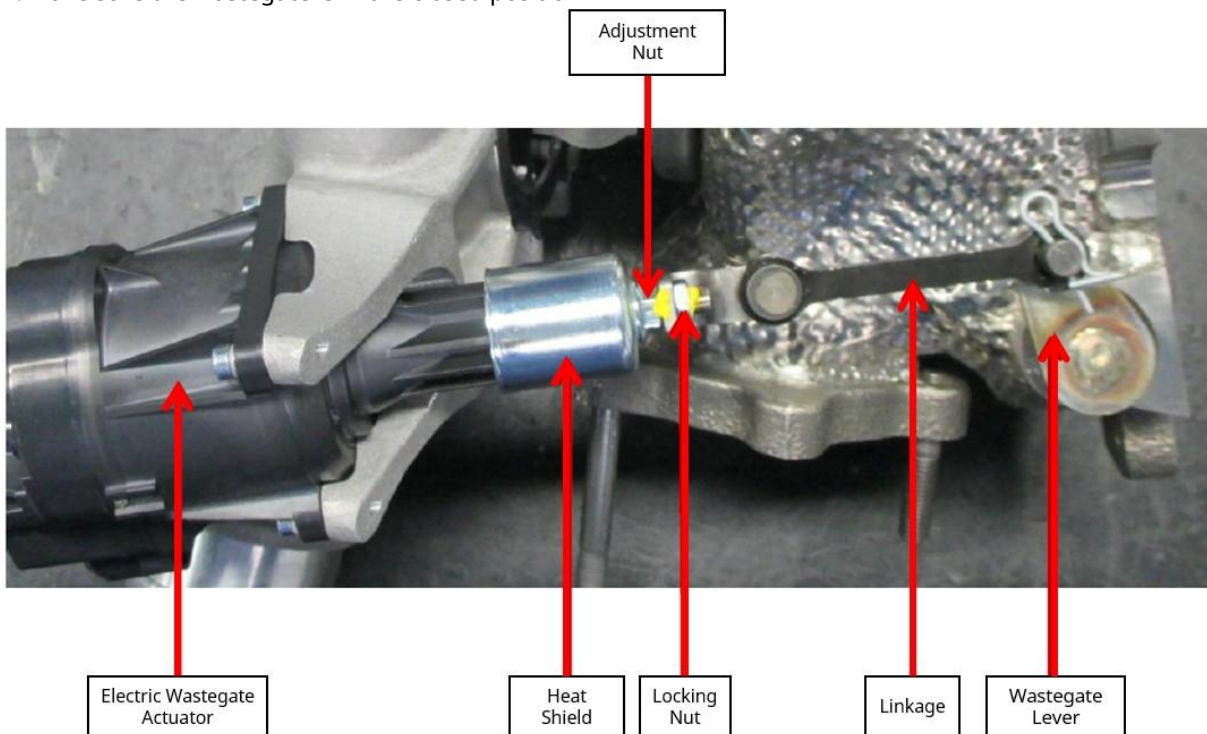
4. Connect MDS 2 to the vehicle and access TCU sequences
  5. With the Pico log running, switch vehicle on to ignition state 5 and activate the wastegate using the MDS 2 TCU sequence – Wastegate Activation to open (0%) and close (100%) the wastegates checking the voltages match the spec accordingly
  6. The position sensor voltage reading should move accordingly with the movement of the wastegate actuator
- It is expected that the wastegate position sensor voltage should move between approximately 4.1V (closed) and 0.7V (open) during a calibration cycle.
7. Save the Pico log and attach to the TR for review

## Wastegate Adjustment

Where electronic wastegate adjustment is necessary, please read the voltage using a multimeter in the same pin locations you used to obtain the PicoScope reading for each wastegate.



1. Make sure the wastegate is in the closed position



2. Loosen locking nut
3. Adjust adjustment nut until 4.1V is achieved (anti-clockwise turn of adjustment nut to increase voltage, clockwise to lowervoltage)
4. When you are happy with the adjustment, tighten the locking nut
5. Using MDS 2 activate the wastegate to 100% and back to 0%
6. Making sure the wastegate is closed, recheck the voltage measurement to confirm it is still 4.1V
7. Repeat the process on the other bank if it was identified both banks require adjustment

Should you encounter any difficulties, or the concern persists post adjustment, please submit a TR and attach all testing and results completed.

## Parts Information

N/A

## Attachments

N/A

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