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Service Information Bulletin

SUBJECT	DATE
EPA10 and GHG14 Diesel Oxidation Catalyst Face Cleaning	February 2015

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	EPA10 and GHG14 Diesel Oxidation Catalyst Face Cleaning	Updated procedure to include GHG14 information.



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2 EPA10 and GHG14 Diesel Oxidation Catalyst Face Cleaning

The Diesel Oxidation Catalyst (DOC) Face Plug Cleaning service routine can be run to unclog the front face of the Diesel Oxidation Catalysts. It can be used on a 1-Box™ emissions package or Two-box option.

Before performing this service routine, the cause of the DOC plugging should be found and corrected. Typical items that can cause this are vehicle duty cycles that are stop-and-go, have excessive idle time, have stationary PTO operation, or have a hardware issue with the engine or vehicle. Perform the "ATD Checklist" to review these items and correct them before running this service routine.

The following engine conditions must be met before this routine can be performed:

- Engine is at base idle speed

NOTE: You **MUST** use DiagnosticLink 8.0 with Service Pack 1 (or higher) to run the service routine.

Engine software requirements are:

- EPA10: MCM software 7.7.1.47 (or higher) and ACM software 8.7.0.105 (or higher). Corresponding CPC software is R22 (or higher).
- GHG14: MCM software 4.7.0.0 (or higher) and ACM software 5.57.0.0 (or higher). Corresponding CPC software is R34 (or higher). For DT12 units, TCM software NAMT070700 (or higher).

NOTICE: Do not run the service routine if the DOC inlet pressure is greater than 20 kPa (2.9 psi). If the pressure is above that, replace the DOC/SCR module (1-box) or DOC (Two-box option). This is to protect the engine and turbocharger from excessive exhaust temperatures.

This service routine will run for approximately 4 hours and 45 minutes. You **MUST** remain with the vehicle for the entire procedure.

If possible and safe to do so, warm up the engine to operating temperature before running the service routine.

To improve the chances of a successful procedure, engine load needs to be as low as possible. Turn off all unnecessary accessories in the truck such as the air conditioner, extra lighting, PTO, etc. Note that setting the HVAC system on Defrost typically turns on the air conditioner, so turn off the HVAC system or select a different setting.

Check as follows:



WARNING: PERSONAL INJURY

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

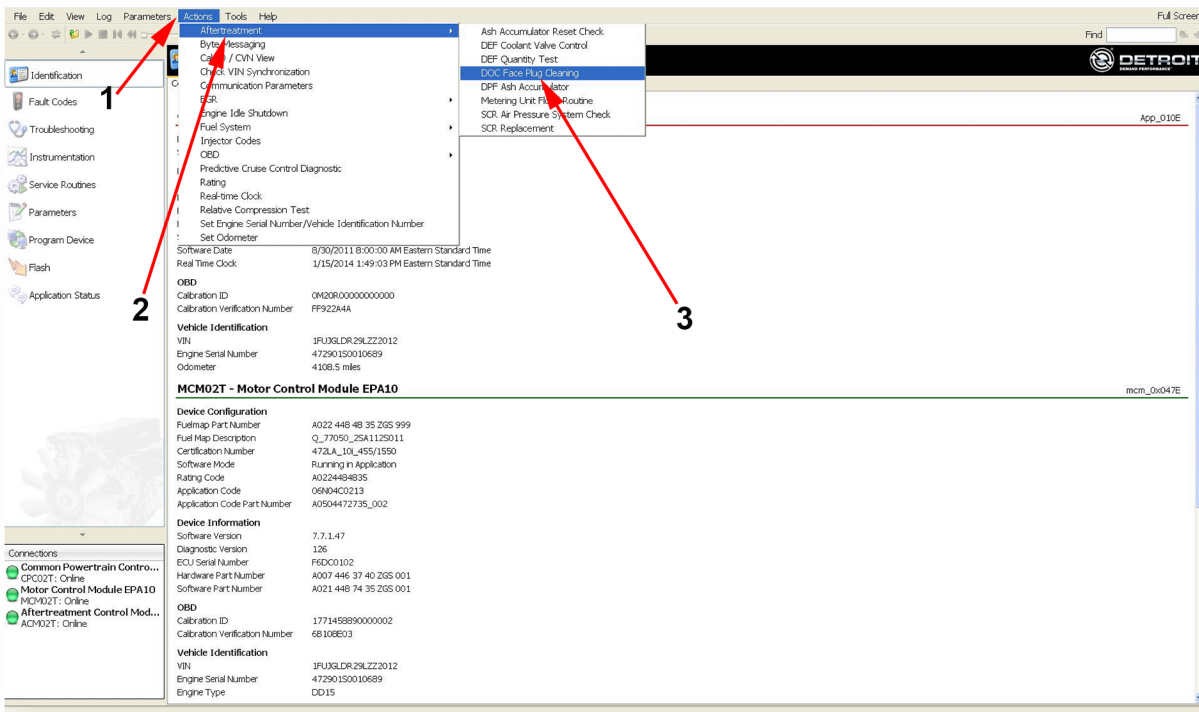
- Always start and operate an engine in a well ventilated area.
- If operating an engine in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system or emission control system.



WARNING: PERSONAL INJURY

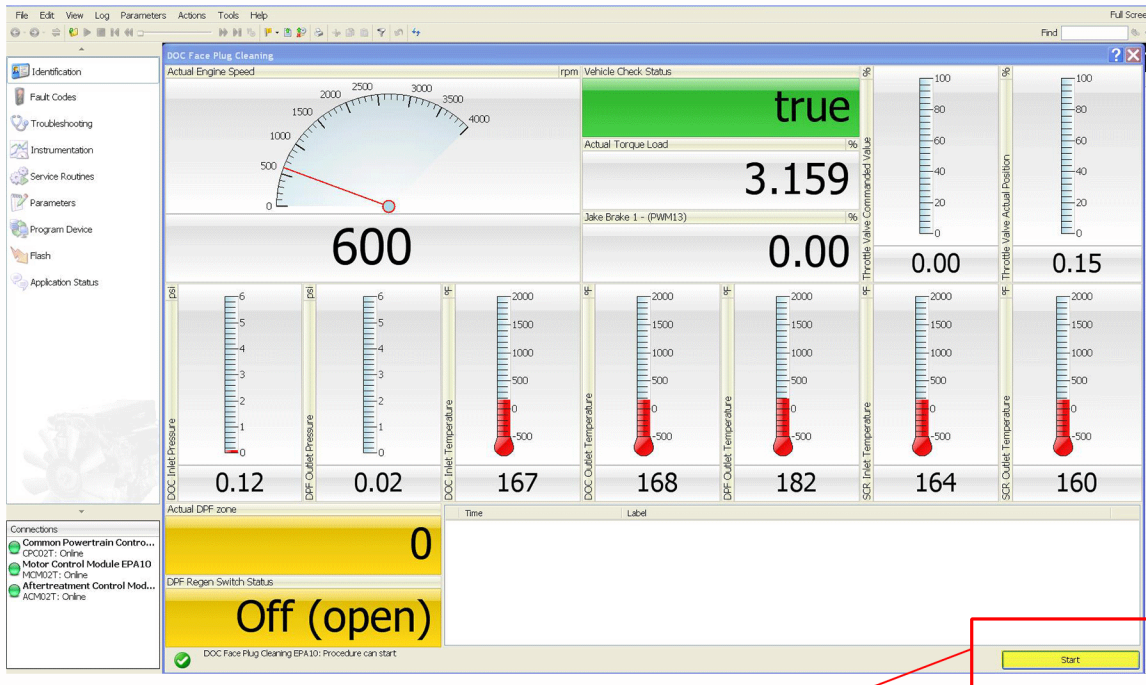
To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

1. Start the engine and allow it to idle at base (600 rpm) idle speed.
2. Connect DiagnosticLink 8.0 with Service Pack 1 (or higher).
3. Navigate to the Actions menu (1) / Aftertreatment (2) / DOC Face Plug Cleaning (3).



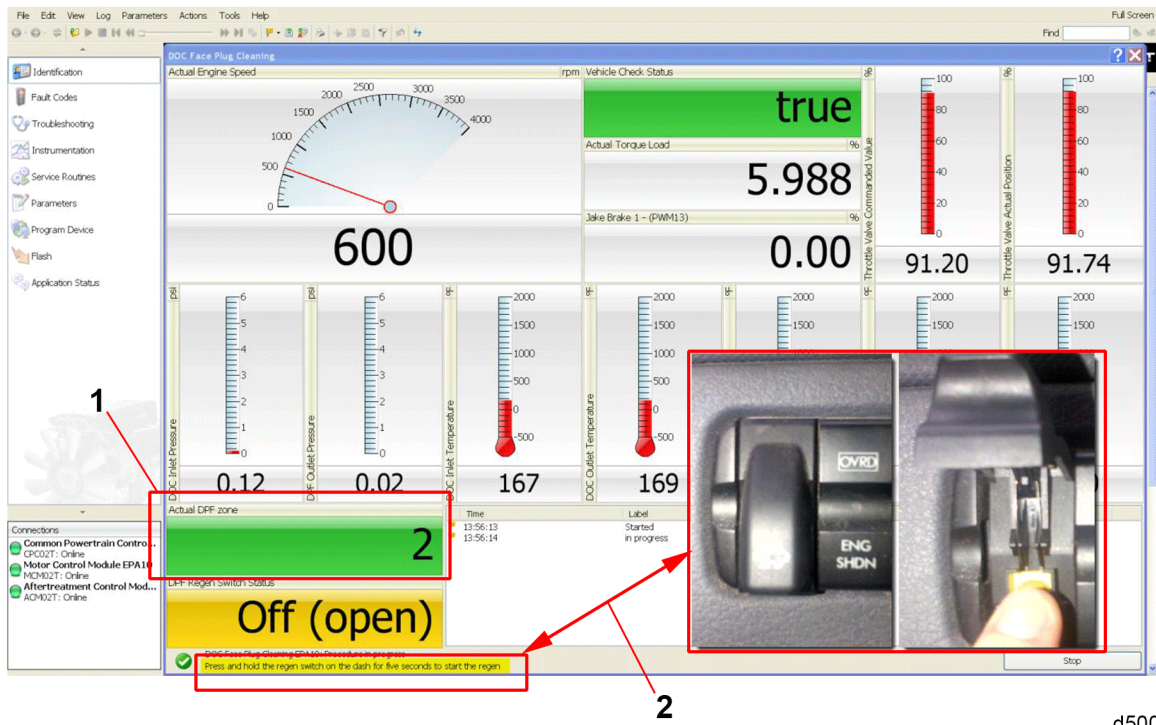
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4. Once the panel opens, click on the Start button (1) in the bottom right hand corner to start the routine.



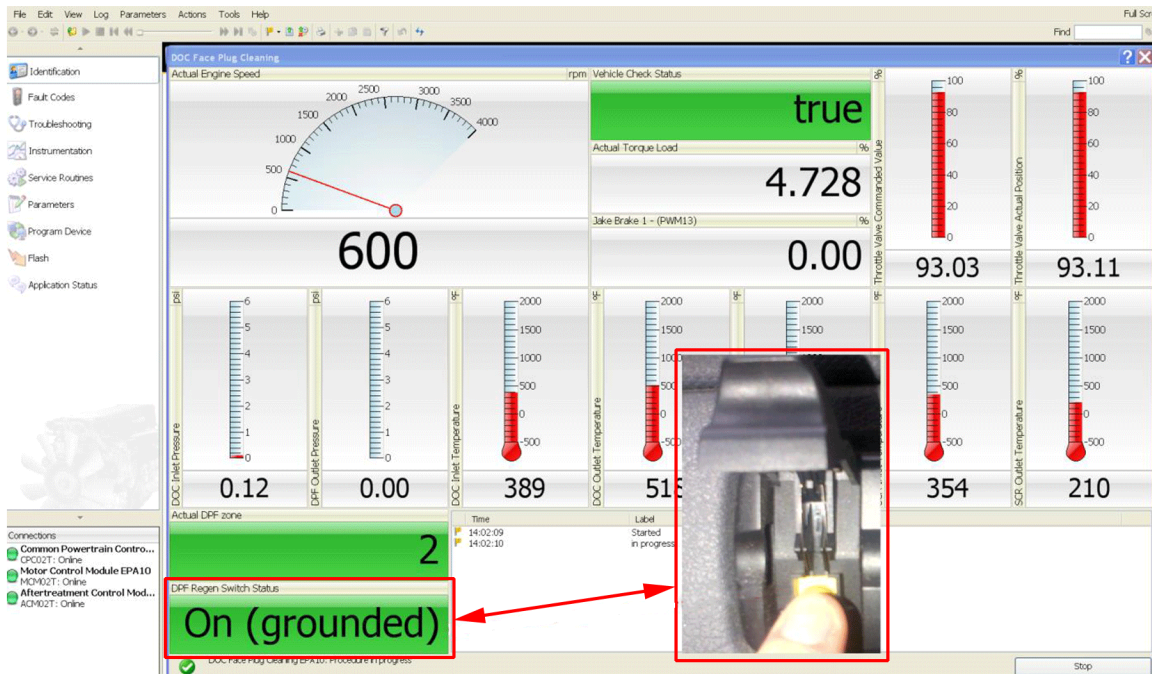
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5. Once the Start button is clicked 'On', the Actual DPF zone will shift in to zone 2 (1).



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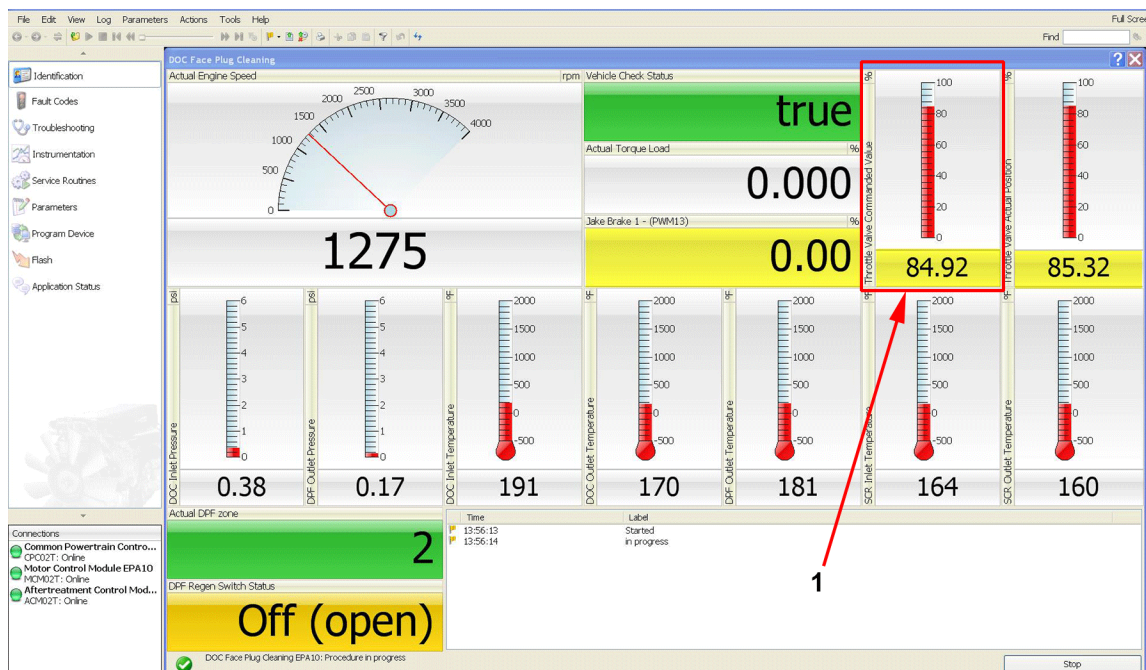
6. Read the dialog prompt message in the button left hand corner. Press and hold the regeneration dash switch located on the dash for five seconds (2). See figure above.
7. When the regeneration dash switch is depressed, the DPF Regen Switch Status Box will turn green.



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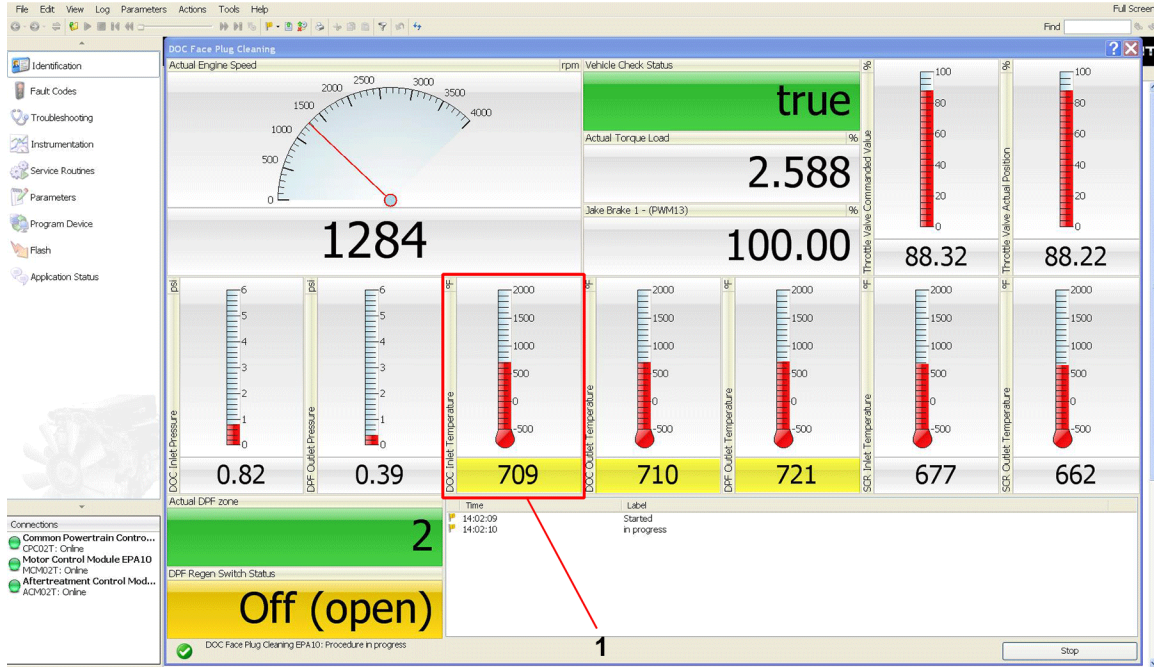
8. Once the switch has been depressed for five seconds, the engine rpm will ramp up to about 1275 rpm (EPA10) or 1250 rpm (GHG14).

9. The Intake Throttle Valve (ITV) (1) and Jake Brake 1 (PWM13) may begin cycling (temperature dependent) to raise DOC Inlet Temperature. This will cause engine rpm to fluctuate. The engine will run and sound abnormal during this transition point but this condition is **COMPLETELY NORMAL**.



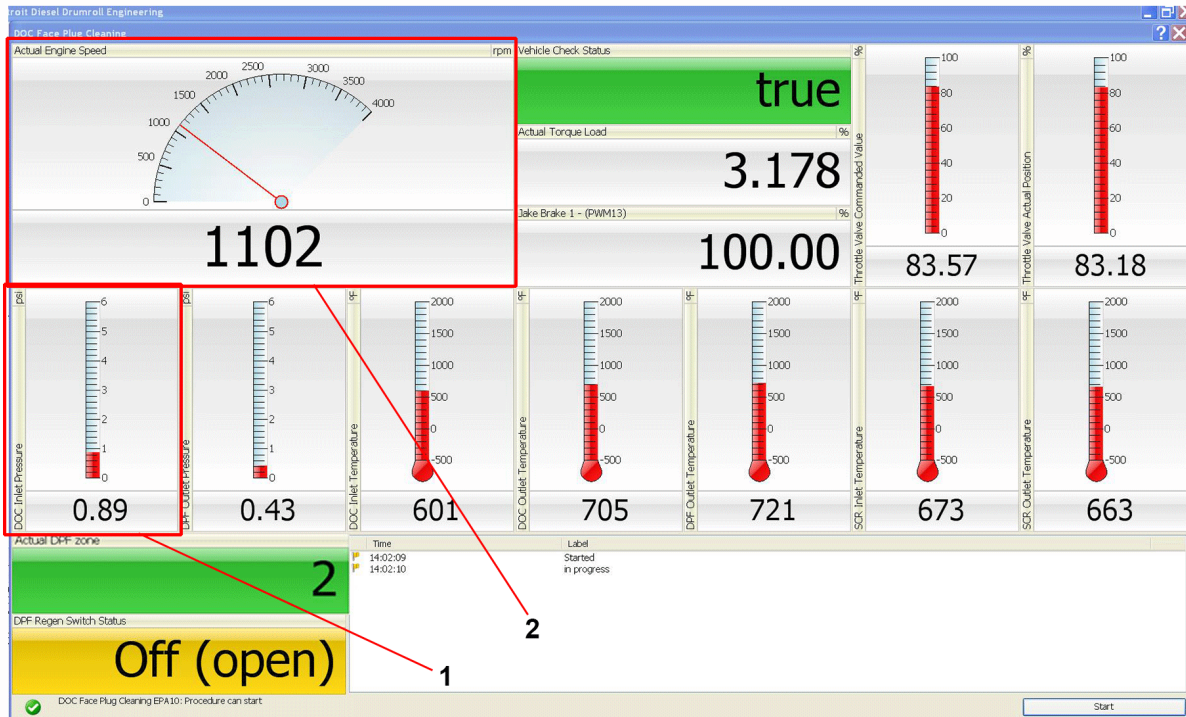
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10. After the engine warms up, the ITV should become steady. The Jake Brake 1 (PWM13) will be steady at 100%. Engine rpm should then become stable about 1275 rpm (EPA10) or 1250 rpm (GHG14).
11. Monitor DOC inlet temperature (1). The DOC inlet temperature should be greater than 400°C (750°F). Ambient temperature will have a large impact on DOC inlet temperature. If it is not above 400°C (750°F), block off part of the radiator. Be careful that coolant temperature does not go high enough to cause a Check Engine Light. If 400°C (750°F) DOC inlet temperature is not reached, the service routine will abort. See Figure below. Note the DOC inlet temperature (1) is too low in this picture.



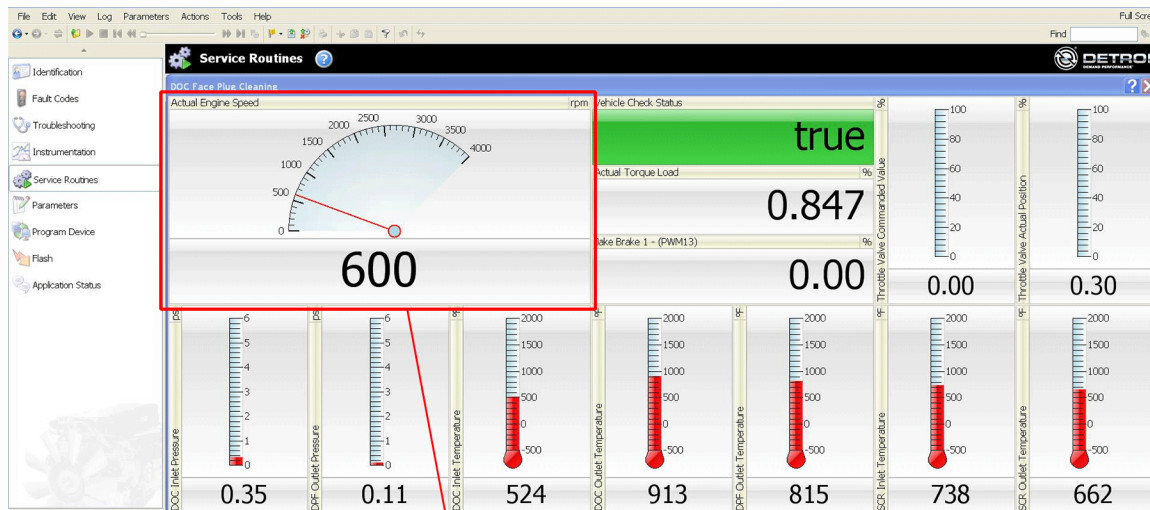
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- After four hours of run time, the engine rpm will ramp down to 1100 rpm (2) and a standard DPF Parked Regeneration will occur automatically. The Parked Regeneration process will take about 45 minutes.



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- If the DOC inlet pressure ((1) see above figure) is within the expected range, the routine will complete. If not, the service routine will abort.
- After the DPF Parked Regeneration has completed, the engine will ramp down to 600 rpm to cool down.
- The service routine is complete when actual engine speed is at 600 rpm (1).



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16. Examine the DPF Parked Regeneration portion of the log file. Confirm DOC inlet pressure has dropped from the previous level and is less than these approximate values.
- EPA10: 8 kPa (1.2 psi) for a 1-box or 13 kPa (1.9 psi) for a Two-box option.
 - GHG14 TC: 6 kPa (0.9 psi) for a 1-box or 13 kPa (1.9 psi) for a Two-box option.
 - GHG14 15AT: 7.5 kPa (1.1 psi) for a 1-box or 13 kPa (1.9 psi) for a Two-box option.
 - GHG14 13: 5kPa (0.7psi) for a 1box or 13 kPa (1.9 psi) for a Two-box option.

NOTE: A full DPF (end-of-life use) can replicate a plugged DOC (10kPa for a 1-box and 13kPa for a Two-box option). This may be an issue on higher mileage units.

17. Confirm the original complaint (noisy ATS, Check Engine Light, etc.) has been resolved.