



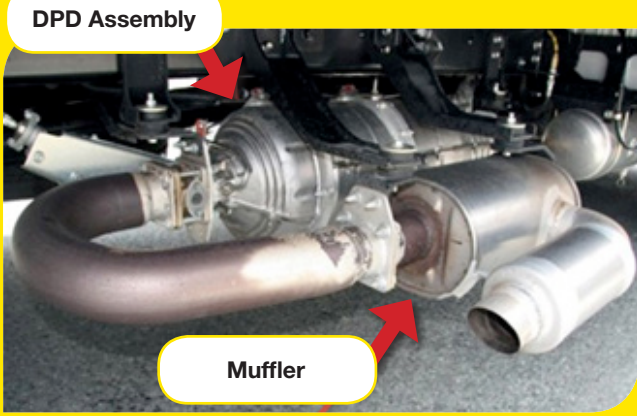
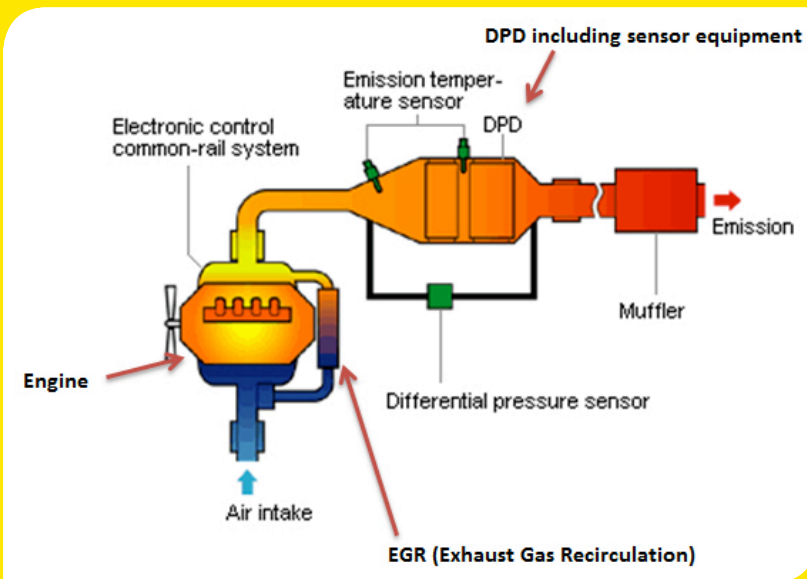
REAL Torque

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Contact maintenance for any questions on 0800 80 80 69

Diesel Particulate Diffuser (DPD) Systems

This issue of Real Torque is going to revisit DPD systems (also known as DPF systems). These are a type of emission control system that is very common on newer trucks.



The DPD system measures the pressure difference between the inlet and the outlet of the filter to work out how "full" the filter is. When it gets to a desired difference in pressure, or when the vehicle has travelled a pre-set mileage, the system will request a DPD regeneration. DPD regeneration, also known as a DPD Burn, occurs when extra fuel is added. The exhaust brake will also come on increasing the back pressure in the system. This dramatically increases the heat in the DPD filter to burn out the trapped harmful emissions.



The DPD system is part of the exhaust system and is focused around the DPD filter (called a diffuser) which is similar to a catalytic converter found on cars. It is full of a honeycomb metal which traps harmful emissions.



Some dashboard displays have a Particulate Matter bar graph which shows how "full" the DPD system is. As the bars increase, the DPD becomes closer to requiring regeneration. Other models have the orange warning light to alert when the DPD is requiring regeneration.





Once the DPD has done many burns, a standard DPD regeneration will no longer be capable of removing enough emission. The filter will become blocked and need a manual clean out (removal of filter and washing out). In some cases, the Filter will have to be replaced entirely. This can happen when the vehicle has been used in a low speed application where the heat generated is not as high as on a highway application. This is also possible if the service agent does not use the correct low ash engine oil.

Partially Blocked DPD Filter



DPD Regeneration Process

There are two options to carry out normal regeneration.

▶ **Auto:** this happens while the truck is in normal operation.

Auto will occur as it suggests- automatically. This could be while driving or anytime during usual operation.

The driver will notice a green lamp on the dash indicating AUTO REGEN. Also The idle revs may also increase. It is important the driver does not stop the engine when the green light is ON.

▶ **Manual:** this is when the truck requests the operator to perform the regeneration.

Manual is when an orange light comes on and this is when the operator needs to activate a regeneration. Reasons the vehicle may request a manual regeneration could be if there has been interruptions in the auto regeneration process, or the vehicle does low speed work where the heat is not great enough. Manual regeneration is when the trouble can occur if the operator forgets to or neglects to carry out the regeneration.

Performing a manual regeneration

- ▶ If you notice the orange DPD warning light (similar to above) comes on the dash and is flashing.
- ▶ Pull over at nearest safe spot.
- ▶ Check for possible debris near exhaust. Exhausts get very hot (approx. 800 degrees C!) so make sure there is no long grass etc.
- ▶ Ensure transmission is in neutral, handbrake is on.
- ▶ Press DPD/DPF button and light will stop flashing, stay on solid.
- ▶ The engine idle will increase while regeneration is carried out. Regeneration may take up to 20mins. Do not shut down engine. Do not leave vehicle unattended.
- ▶ When regeneration is completed, idle will return to normal and the warning light will go off.



Green lamp or AUTO REGEN turns ON: Under automatic regeneration control. Continue driving as normal, Idle speed may increase. Do not turn the engine off while light is on.



Orange lamp or MANUAL REGEN turns ON.



Orange lamp slow flash, or PUSH DPD SWITCH: Manual regeneration required with 50km. Driver to pull over, selected neutral, press DPD button, DPD light will stop flashing, idle will get faster, regeneration will take approx 20 minutes. Do not turn the engine off while this is happening.



Orange lamp fast flash or PUSH DPD SWITCH: Manual regeneration required NOW! If this is not done immediately, the engine warning light will come on the vehicle will go into limp mode and will require a technician.

Tips and tricks

- ▶ It is very important the correct low ash engine oil with 10w-40 rating is used at servicing. We recommend the correct OEM dealer to be used for servicing.
- ▶ When a vehicle returns from hire, check the PM level on the dash and if it is high then have this attended to before the next hire.
- ▶ If regeneration is in progress, allow it to complete – don't shut down the engine!
- ▶ If the orange DPD warning light is slowly flashing - you have 50km to get the regeneration sorted out. Pull over when it is safe and carry the procedure out. Please see the separate attachment for these instructions.
- ▶ Frequent DPD regenerations will see an increase in engine oil level due to extra fuel injection after normal injection. The oil will dilute and may need changing earlier than normal. You will see an X on the dipstick if oil level is above this it requires changing.
- ▶ If the operator feels the truck is requesting regenerations too frequently please contact the OEM dealer or Maintenance team to discuss.



TR Tips

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