



## FIX-N-FAX

Fleet Operations Bulletin

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### INTERNATIONAL TRUCK CORPORATION EXHAUST REGENERATION PROCESS


New vehicle emissions standards implemented in 2007 for diesel powered vehicles require specific maintenance procedures for "Exhaust Regeneration." It is essential for maintenance personnel and vehicle operators to understand and comply with the procedures described in the following "Fix N Fax."

During normal operation of an International fire engine or ECT equipped with a 2007 or later exhaust emissions system, particulates in the form of soot, are gathered in the Diesel Particulate Filter (DPF). The DPF is similar in appearance to a muffler and will be located in the same area as would the muffler. As the amount of soot reaches high levels in the DPF, an electronically controlled "regeneration process" is initiated. This process entails the addition of fuel injected into the DPF causing high exhaust temperatures (in excess of 1100°F) which in turn burn the soot that has been collected, thus eliminating harmful diesel particulates from entering the atmosphere.

The main causes of excessive soot build up are extended hours of "idling" and low engine temperatures. When exhaust temperatures are high enough, such as during highway driving operations, soot will be burned off without any system activation.

Generally the "regeneration process," if needed, will be automatically controlled when soot in the DPF reaches a level requiring regeneration. This "Automatic Regeneration" will be initiated during normal highway driving, requiring no action to be taken by the operator. Automatic regeneration occurs at speeds in excess of 17 mph and will cease at speeds below 17 mph.





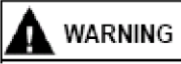

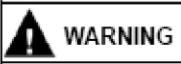

On rare occasions as the instrument warning lights and audible sounds indicate, the need for operator initiated "Parked Manual Regeneration" may be necessary.

**For the purpose of this "Fix N Fax," Parked Manual Regeneration should be performed only after the illuminated triangle  appears in the instrument cluster.**

**NOTE:** There should be several hours between each level of regeneration (see regeneration levels table on next page). If a level 1 warning initiates, there is no reason to cease operations immediately and initiate the required regeneration process. It is permissible to wait until favorable circumstances allow for the appropriate procedure to be performed.

**NOTE:** If a warning symbol and/or an audible alarm are activated upon start up, turn the ignition off and restart. If the symbol or alarm continues, perform **Automatic Regeneration** by operating the vehicle on the highway at highway speeds for 20 to 30 minutes. If warnings continue after regeneration has been performed, notify qualified maintenance personnel.

The following table of instrument cluster warning symbols alerts the operator to the necessary regenerations actions to be implemented.

Level	Indication	Audible Alarm	LCD Text Message (Units Built After June 2007)	Vehicle Conditions/Operation	Action Required
1	 Solid	None	For Info See Visor	Exhaust filter regeneration required.	Drive on highway at highway speeds OR start Parked Regeneration to prevent loss of power.
2	 Flashing	None	For Info See Visor	Exhaust filter is full.	Drive on highway at road speeds or pull vehicle safely off roadway and start Parked Regeneration to prevent loss of engine power.
3	 Flashing  Solid	An alarm will beep 5 times every minute while ignition is on.	Warn Engine	Exhaust filter is full. Engine performance is LIMITED.	 <b>WARNING</b> Pull vehicle safely off roadway and start Parked Regeneration to prevent engine stopping.
4	 Solid	An alarm will beep continuously while ignition is on.	Stop Engine	A serious engine problem has occurred. Exhaust filter may be overfull. Engine may SHUTDOWN soon.	 <b>WARNING</b> Pull vehicle safely off roadway, turn on flashers, place warning devices, and STOP ENGINE. DO NOT USE Parked Regeneration. Call for service.
 <b>NOTE:</b> If this dash indicator is present the exhaust system is HOT and regeneration is in progress.					

**NOTE:** A Level 1 indication may disappear or a Level 2 may revert to a Level 1 if the vehicle is driven on highway at highway speeds for an extended period. This process of Auto Regeneration of the exhaust filter is activated when the engine load is increased as a result of highway driving at highway speeds. If the exhaust filter Indicator does not reduce in level or disappear, Parked Regeneration must be performed.

## **WARNING**

Failure to perform Parked Regeneration when the exhaust filter Indicator is ON will cause the engine to lose power and eventually shutdown. When performing Parked Regeneration, make certain the vehicle is safely off the roadway and away from people or any flammable materials or structures, as the regeneration process will result in elevated exhaust temperatures.

Failure to follow these instructions may result in a loss of engine power, vehicle speed, and may cause an accident or fire resulting in property damage personal injury, or death.

### **Parked Regeneration Procedure**

Perform the following steps to initiate Parked Regeneration (cleaning) of the exhaust filter:

1. Park the vehicle safely off the roadway and away from flammable materials.
2. Before initiating parked regeneration (using the ON/PARKD REGEN switch), the following conditions must be in place:
  - a. Park brake must be set and wheels chocked
  - b. Transmission must be in Neutral (N)
  - c. Accelerator and foot brake pedals must not be depressed
  - d. Engine coolant temperature must be 170°F +
3. Hold the ON/PARKD REGEN switch in the "ON" position for 2 seconds to initiate the regeneration cycle. The engine speed will automatically ramp up to a preset RPM and the switch indicator will illuminate when the cycle is started. If the indicator is blinking, check to be sure that all conditions in step 2 have been met. Once started, the regeneration cycle will last approximately 45 minutes.

**NOTE: If any of the above conditions are altered during the Parked Regeneration process, regeneration will be halted and must be restarted.**

4. When the regeneration cycle is complete, the switch indicator will go off, the engine rpm will return to normal idle and all exhaust filter warning indicators will be off. The vehicle may now be driven normally.

**NOTE: In the event of an emergency situation where the vehicle must be moved after beginning Parked Regeneration, press the PARKD REGEN position of the ON/PARKD REGEN switch to cancel Parked Regeneration.**

**QUESTIONS:** The local Unit Fleet Manager can answer further questions regarding this procedure.