

Introduction

The Thermo King diesel particulate filter (DPF) is designed to capture diesel particulate matter or soot emitted from the exhaust of the TriPac's APU diesel engine. The particulate matter retained in the DPF is then cleaned by the regeneration process.

The DPF system features include:

- **On-board Diagnostic System** that interfaces with the TriPac controls to operate and monitor the DPF system to assure peak operating efficiency.
- **Exhaust Monitor** to alert the driver of the operating status or if a fault has been detected with the DPF system.
- **DPF Regeneration Switch** to allow the driver to manually initiate the regeneration cleaning process of the DPF system while driving.

When to Regenerate

The DPF Status light located on the Exhaust Monitor and the amber light on the Regeneration Switch will illuminate a steady glow to alert the driver when it is time to initiate a regeneration.

Before initiating a regeneration, see important note below.

When the DPF Status light is illuminated, the APU can still be operated for approximately 10-15 hours, however a regeneration should be initiated at the drivers earliest convenience.

After approximately 10-15 hours of operating the APU with the steady lights illuminated, the APU will shut down, set a fault code and will not operate again until a regeneration is performed.

IMPORTANT: The DPF system operates using electrical voltage supplied by the truck's alternator system. Due to the large current draw required by the DPF, the regeneration process should only be initiated during daytime hours while the truck is expected to be operating at highway speeds (above 1150 rpm) for a minimum of one hour. Do not operate the DPF while the truck is stopped, idling or moving slowly in traffic. If this occurs, the regeneration process may automatically be cancelled.

The TriPac APU will be disabled when the DPF is in the regeneration mode or if the DPF regeneration switch is in the OFF position.

Indicator Light System

DPF Fault (RED) and **DPF Status (AMBER)** indicator lights are used to display the status of the DPF system. These lights not only help the driver determine when to initiate the regeneration, but also identify any problems that may have been detected by the on-board diagnostic system. The DPF Fault and DPF Status lights are both displayed on the Exhaust Monitor, while only a single amber light is displayed on the Regeneration Switch.

- **Steady DPF Status** - indicates a DPF regeneration is needed.
- **Flashing DPF Status** - indicates a regeneration is in process
- **Flashing DPF Fault** - indicates that a system fault has been detected by the on-board diagnostic system. Additionally, the fault code will be retained for diagnostic and maintenance purposes.

See **System Fault Indicator and Fault Codes Section** for more details.



DPF Fault and DPF Status Lights on Exhaust Monitor



Amber Indicator Light on Regeneration Switch

Indicator Light Quick Reference Chart

INDICATOR LIGHT STATUS	STATUS and ACTION REQUIRED
NO LIGHT	Status - TriPac is ready to operate Action - None
STEADY DPF STATUS (AMBER)	Status -Regeneration Required Action - Initiate Regeneration - Push and hold the top of the TriPac DPF REGEN switch for 5 seconds (until the amber light starts flashing). A regeneration should only be initiated when the truck is operating during the daytime hours at highway speeds (above 1150 rpm) for a minimum of one hour. See IMPORTANT note in the Introduction Section.
FLASHING DPF STATUS (AMBER)	Status - Regeneration In Process Action - None
FLASHING DPF FAULT (RED)	Status - Indicates a system fault has been detected by the on-board diagnostic system. Action - See System Fault Indicator and Fault Codes Section.

No Indicator Light

The DPF system has not detected any need to initiate a regeneration and the TriPac can be operated as usual when no indicator light is displayed.

Flashing DPF Fault (Red) Indicator Light

A flashing red DPF Fault light indicates a system fault has been detected by the on-board diagnostic system. Additionally, the flashing red light is used for diagnostic and maintenance purposes.

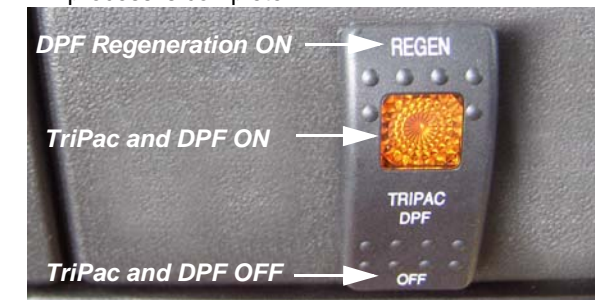
See **System Fault Indicator and Fault Codes Section**.

Steady Amber Indicator Light

A steady DPF Status (amber) indicator light illuminated on the Exhaust Monitor and the Regeneration Switch indicates the regeneration needs to be initiated by the driver.

To Initiate a DPF Regeneration:

- Turn the TriPac system on at HMI control panel.
- Select an operating mode (Cool, Fan, Heat) and verify STBY indicator is not on. The APU engine may start
- Start the truck (the APU engine will stop) and drive to the highway.
- Push and hold the top (REGEN) of the DPF Regeneration rocker switch for 5 seconds.
- The solid amber light will begin flashing on the Regeneration Switch and the Exhaust Monitor indicating the system is in the regeneration mode.
- After approximately 1 to 2 hours, the flashing amber lights will go out indicating the regeneration process is complete.



Three Position Regeneration Switch

Flashing DPF Status (Amber) Indicator Light

A flashing DPF Status (amber) indicator light illuminated on the Exhaust Monitor or the Regeneration Switch indicates the regeneration has been initiated by the driver and is currently in process.

Cancelling the DPF Regeneration

To cancel the regeneration process:

- Press the bottom (OFF) of the Regeneration rocker switch.
- The flashing amber light will go out, the regeneration process will stop and the HMI will display [Eng] code.
- The regeneration process should be initiated again at the drivers earliest convenience.

IMPORTANT: The TriPac will not operate with the REGEN switch in the off position.

System Fault Indicator

The HMI **System Fault** indicator light will glow when the DPF on-board diagnostic system detects an abnormal operating condition indicating a **SHUTDOWN** code.



System Fault Indicator Light

TriPac HMI Controller

Along with the HMI System Fault light, the red **DPF Fault** light will be illuminated on the Exhaust Monitor.

The on-board diagnostic system also uses the red DPF Fault light to produce the fault code/codes by utilizing a series of flashes for diagnostic and maintenance purposes.

For example: One flash, pause, followed by three flashes in rapid succession would be fault Code 13.

Two types of fault codes are used: Warning and Shutdown. Refer to the Fault Code chart for more details.



Red DPF Fault Indicator Light on Exhaust Monitor

Fault Codes

CODE	CODE TYPE	CODE DESCRIPTION
11	SHUTDOWN	Air Control Relay Input
12	SHUTDOWN	Air Control Relay Closed
13	WARNING	Air Control Relay Open
21	WARNING	Heater Contactor Input
22	SHUTDOWN	Heater Contactor Closed
23	WARNING	Heater Contactor Open
31	WARNING	Excessive High Ambient Air Temperature
32	WARNING	Excessive Low Ambient Air Temperature
33	WARNING	High Ambient Air Temperature
34	WARNING	Low Ambient Air Temperature
41	WARNING	Excessive High Back Pressure
42	WARNING	Excessive Low Back Pressure
43	SHUTDOWN	High Back Pressure
44	WARNING	Out of Range Low Back Pressure
45	WARNING	High Zero Back Pressure
46	WARNING	Low Zero Back Pressure
47	WARNING	Low Back Pressure
51	WARNING	Consecutive Rapid Filter Loading
52	SHUTDOWN	Maximum Time Reached Since Last Regeneration
53	WARNING	Maximum Low Voltage Aborted Regeneration
	SHUTDOWN	Maximum Regenerations Reached with Pressure Fault
61	WARNING	7A7X/SBY Relay Input
62	WARNING	8 Circuit Input
71	WARNING	High 5V Supply Voltage
72	WARNING	Low 5V Supply Voltage
73	WARNING	High System Voltage
74	WARNING	Low System Voltage

Clearing Fault Codes

To clear fault codes:

1. Record the Fault Code.
2. Turn the truck's ignition off.
3. Push and hold the top (REGEN) of the DPF Regeneration rocker switch for 2 seconds.
4. If APU shuts down due to [Eng] code, turn off the HMI main power to clear the code.
5. Turn the HMI back on and restart the APU.
6. If the APU fails to start, contact the nearest Thermo King Dealer for assistance.

NOTE: A regeneration should be initiated at the drivers earliest convenience.



TriPac™ EVOLUTION

Diesel Particulate Filter (DPF)

Driver's Guide and Operating Instructions

TK 55770-19-PC (Rev. 1, 07/14)