



# TOLEDO FIRE & RESCUE DEPARTMENT



## D-2 Apparatus and Motor Vehicles

### Maintenance Manual

Date Revised: 08/18/2025

Last Modified: 08/26/2025 07:30

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### General Operations

If any TFRD apparatus fails to start, or experiences a mechanical breakdown, notify dispatch immediately. Dispatch will notify the Maintenance Bureau and the appropriate Battalion Chief.

If needed, Chief Officers will make provisions to pick up extra apparatus in storage at the shop. If the siren or emergency lights fail during response, Continue Code 2 and notify dispatch.

#### 1. If the engine stalls and fails to restart (not pumping)

- Notify Incident Command via radio; IC will notify dispatch and dispatch will notify the Maintenance Bureau.

#### **IF TEMPERATURE IS BELOW 32 DEGREES, ALSO DO THE FOLLOWING:**

- Open **all** drain valves.
- Remove **all** discharge and intake caps and adapters including both big ways.
- Open all discharge and intake valves.

#### 2. If engine stalls and will not restart (while pumping)

- Notify Incident Command and Attack crews via radio; IC will notify dispatch and dispatch will notify the Maintenance Bureau.
- Keep water flowing using hydrant pressure.

**NOTE: If lines off the engine are still in use, the first priority is to interior attack crews and**

**the fire. Continue flowing water from the hydrant to the nozzle using hydrant pressure allowing crews to withdraw if necessary.**

- Put pump in road gear.
- Open **all** drains and remove caps from **all** intake and discharge ports not in use.
- When you are no longer flowing water and are able to shut down, complete any steps listed above in item 1, for **“Temperatures below 32 degrees”** that have not been accomplished.

## **After Normal Business Hours**

Normal business hours of the shop are 0700 x 1500. There is a 2nd shift mechanic that is available from 1500 x 2300. If there is a need during that time, they can be reached at (419) 936-2804. After 2300 and on weekend if a mechanic is needed, the Battalion Chief will need to call Engage Toledo at (419) 936-2020. They will need to know your location and nature of the call. This will recall a mechanic and their supervisor to the shop or the location needed.

## **Diesel Emission Control**

All diesel engine powered vehicles in the TFRD fleet with a manufacture date of 2008 or later are equipped with Diesel Emission Control systems that include Diesel Particulate Filters (DPF). Vehicles manufactured in 2013 or later also utilize Diesel Exhaust Fluid (DEF) in combination with DPF. Both DPF and DEF are part of the diesel emission control systems, and require system monitoring of the DPF, and a daily level check of the DEF. All diesel vehicles added to the TFRD fleet will be equipped with both DPF and DEF systems.

Diesel Particulate Filters are part of the exhaust system and utilize the high temperature of the exhaust gases to more thoroughly burn off the products of combustion before they are released to the atmosphere. These filters periodically require a self-cleaning regeneration process, (Re-Gen). This is accomplished by activating the Re-Gen system switch, and allowing the vehicle to automatically go through cycles of high idle. Over a 15-30-minute period, sufficient heat will be developed for the system to clean the filter.

When the dashboard indicator alerts that a Re-Gen is needed, initiate a Re-Gen as soon as possible. The indicator will change from constant to flashing as the urgency increases.

***Re-Gen is disabled if the check engine light is on. Notify Fire Shop for instructions.***  
***Re-Gen is also disabled if engine temperature is less than 150 degrees.***

## Parked Re-Gen Process

On level ground, set the parking brake and activate the Re-Gen system. During a Re-Gen the exhaust output will be extremely hot. Adequate clearance for people and objects shall be maintained. Re-Gen **SHALL** be done outdoors, and the vehicle shall not be reconnected to the Plymovent system until the High Exhaust System Temperature (HEST) warning has returned to normal.

## Emergency Re-Gen Process

A flashing indicator *plus* an audible alarm requires an immediate on the spot Re-Gen. Notify dispatch of your location, initiate Re-Gen process and then update dispatch with the results of the Re-Gen. If the alarm still sounds after Re-Gen, or if the STOP immediately indicator is EVER activated, keep vehicle where it is, shut off engine, and notify the Fire Shop. In the event of an after-hours emergency shutdown, notify dispatch and your Battalion Chief.

## Diesel Exhaust Fluid

Referred to as DEF, it is atomized into the DPF system when the engine is running and is used to keep the particulate filter clean and require a Re-Gen less often. The level of the DEF **SHALL** be checked every morning as part of the 0700-vehicle inspection, and added as needed; maintaining a minimum  $\frac{1}{2}$  tank at all times. DEF is supplied to stations in 55-gallon drums.

Only notify the Shop ASAP when empty. The empty drum will be picked up by the vendor when they drop off the new container. It is the responsibility of the vehicle operators as well as the officers to familiarize themselves with these systems as they are introduced into the fleet. Vehicle specific instructions are posted on the driver's side visor and fully explained in the vehicles' manual.

## Medic Unit DEF Refill

Anytime a medic unit needs DEF, the crew shall stop by the shop to be filled. Once at the shop, pull in by the main overhead door and shut the rig off. Notify shop personnel of your need and they will fill the DEF tank. This should be done once the tank is  $\frac{1}{2}$  full. This is available during normal operating hours which are 0700 through 1500. We ask the medic units to do this so we may keep better tabs on their situation.

See Also:

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Last update: **08/26/2025 07:30**

