

# Maintenance Guidelines

E108

---

## PACCAR MX-13 Maintenance Guidelines

---

Prolonged periods of low idle RPMs and high idle times at low ambient temperatures, and low coolant temperature levels can cause engine issues and damage to the after-treatment system (See the PACCAR MX-13 Engine Operator's Manual).

In regards to overall best practices related to the MX engine, PACCAR recommends the following:

- Recommended range for Engine Idle Shutdown Timer (EIST) to be Active would be between 25°F and 75°F. Prolonged periods of idle on the cold side between 25°F and 35°F (current low-end EIST setting) within this temperature range may not provide significant comfort benefits to the drivers in light of the bunk heater installed on some vehicles. This is especially true considering idling at colder ambient temperatures as noted in the next bullet.
- If a truck must be idled in cold ambient temperatures, increase the engine RPM to 1,000 RPM to warm up the cab. Once warm, decrease the RPM down to 850 RPM or as necessary to maintain a coolant temperature of at least 150°F. This increase in engine RPM generates heat and prevents components from becoming clogged with soot.
- If an MX Engine has been idling long enough for the DPF warning lamp to illuminate, perform a stationary regen prior to driving. To the extent that drivers can be comfortable utilizing the bunk heaters, idling at low ambient temperatures should be discouraged.
- Many fleets have differing opinions on Auxiliary Power Units (APUs). Since an APU can reduce a fleet's largest expense (fuel consumption) and reduces idle times (improves engine longevity and up-time), a cost/benefit analysis should be completed.
- A good way to eliminate premature cold start and cranking faults or failures is to turn the key to the ON position and allow for the system to complete its checks before starting. Depending on the truck application the driver will hear anywhere from four to six clicks (this is the ABS system doing its key-on checks) and the system has finished when you hear the air compressor pop-off valve spurt a quick shot of air.
- As a best practice, fill the Diesel Exhaust Fluid (DEF) tank before it gets below 25 percent. At 25 percent, the engine is calibrated to start hitting the DEF torque reductions because the system is trying to protect itself before running dry on DEF. The same idea relates to the fuel system but a good rule of thumb is to try and always re-fill before ever hitting the "E" (for Empty) as this will help prevent the system from running dry.
- Stay Current on all MX Engine Updates.

**The following are service interval recommendations. Please note that unless stated, the intervals are recommended for both EPA2010 and EPA2013 PACCAR MX-13 engines.**

### Engine Oil Intervals and Specification

- The oil change interval in the MX engine operator's manual is 40,000 miles for linehaul applications with over 20 percent idle time. It also notes that 1,200 engine hours is also an oil change interval. If excessive idle times lead to 1,200 engine hours prior to reaching 40,000 miles, change the oil at that time.
- EPA2013 Common Rail Engine – SAE 10W30 API CJ-4 (Synthetic Blend as factory fill).
- EPA2010 (non-common rail engine) - SAE 15W40 API CJ-4. 10W30 can be used in EPA2010 MX engines IF the engine is on software level of Engine Service Bulletin E070 or greater.

---

## PACCAR MX-13 Maintenance Guidelines

---

### Fuel Filters (if fuel quality is unknown)

- Replace twice as often as the engine oil, both primary and secondary filters.


### DEF Filter in the DEF pump module (if DEF quality is unknown)

- Replace every 100,000 miles (160,000 km) or 1 year – Old style (white in color).
- Replace every 200,000 miles (320,000 km) with the new pleated paper DEF filter. This filter provides a longer service interval that is also able for retrofit onto EPA2010 MX engines.

### Check the Following Items

- Valve Adjustment - There is an initial valve adjustment of 40,000 miles that should be performed, then every 160,000 miles.
- DPF – Clean – 200,000 miles.
- EGR Cooler – Clean at 80,000 miles on EPA2010 only.
- Hydrocarbon Doser (HC) – Clean – annually.
- DEF Doser Nozzle – Clean annually by running a DAVIE forced regen.
- Inspect / clean at 80,000 F802 Boost Pressure Sensor / could be packed with soot.
- Inspect / clean at 80,000 F826 Before Turbine Sensor / could be packed with soot.
- Inspect / clean at 80,000 F751 EGR Pressure Sensor / could be packed with soot.
- Inspect / clean at 80,000 F804 Air Intake Sensor / could be packed with soot.
- Inspect / clean at 80,000 F837 DPF Differential Pressure Sensor / could be packed with soot.

The following information was taken directly from the PACCAR MX-13 Engine Operator's Manual:

	CAUTION
Do not operate the engine at low idle for long periods of time when the coolant temperature is below the normal operating range. This could result in the following:	
<ul style="list-style-type: none"><li>• Fuel dilution of the lubricating oil</li><li>• Carbon buildup in the cylinder</li><li>• Sticking of the valves in the cylinder head</li><li>• Reduced performance</li><li>• Damage to aftertreatment components</li></ul>	