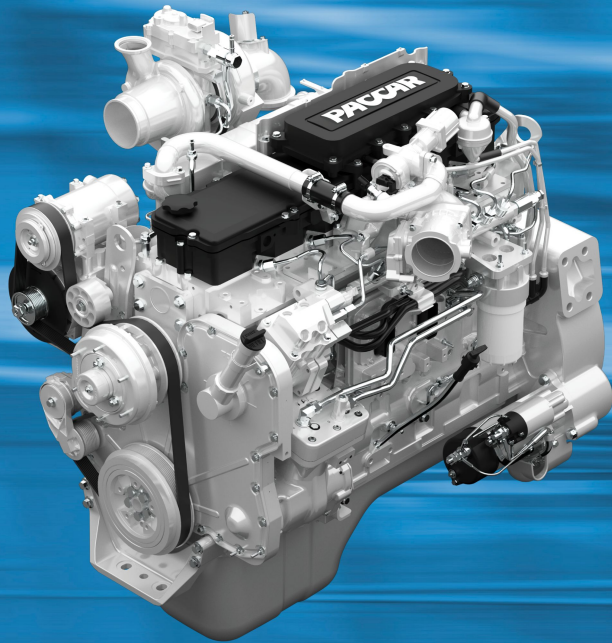


PACCAR PX-9



Operator's Manual

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

Important Reference Numbers

Fill in the part name and number in the blank spaces provided below. This will give you a reference whenever service or maintenance is required.

Part Name	Number
Engine Model (See Engine Identification on page 6-3.)	
Engine Serial Number (ESN) (See Engine Identification on page 6-3.)	
Oil Type (See Lubricating Oil Recommendations and Specifications on page 5-26.)	
Filter Part Numbers:	
Air Cleaner Element	
Lubricating Oil (See Lubricating Oil Recommendations and Specifications on page 5-26.)	
Fuel (Use ultra-low sulfur diesel fuel only) (See Acceptable Types of Fuels on page 5-22.)	
Coolant (See Coolant Recommendations and Specifications on page 5-31.)	
Belt Part Numbers:	

Check Engine Lamp Turns On



The Check Engine Lamp turns on when a problem exists, but the vehicle can still be safely driven. Vehicle should be serviced to correct the problem but the situation should not be considered an emergency.

Engine is Overheating



CAUTION

The cooling system may overheat if the engine coolant is at the minimum level. A sudden loss of coolant, caused by a split hose or broken hose clamp could also lead to an overheat condition. Always inspect to ensure hoses and clamps are not cracked, worn, or loose. Failure to comply may result in equipment or property damage.



NOTE

The system may also temporarily overheat during severe operating conditions such as:

- Climbing a hill on a hot day.
- Stopping after high-speed/high-load driving.
- Debris blocking air flow through the cooling module (radiator).

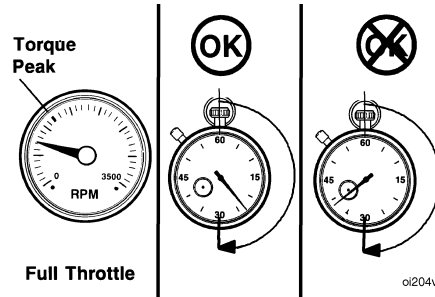
If the engine coolant temperature warning lamp comes on and the audible alarm sounds showing an overheat condition, or if you have any other reason to suspect the engine may be overheating, **DO NOT TURN OFF THE ENGINE** unless a low water warning device indicates a loss of coolant. Follow these steps:

1. Reduce engine speed or stop. When stopped, place the transmission in neutral and set the parking brake. See the vehicle operator's manual for instructions on transmission shifting and parking brake information.
2. Check to ensure that the oil pressure gauge reads normal.
3. Increase the engine speed to about one-half of full operating speed, or 1,100 to 1,200 rpm, maximum for 2-3 minutes.

i NOTE
It is recommended that the diesel exhaust fluid tank be filled completely full of diesel exhaust fluid in order to correct any fault conditions.

Refer to Engine Aftertreatment Systems Operator's Manual for additional information.

Engine Operating Range General Information



⚠ CAUTION
Operating the engine at full throttle below peak torque will shorten engine life to overhaul, can cause serious engine damage, and is considered engine abuse. Do not operate the engine at full throttle operation below peak torque rpm for more than 30 seconds. Failure to comply may result in equipment or property damage.

PACCAR engines are designed to operate at full throttle under momentary conditions down to peak torque engine speed. This is consistent with recommended operating practices.

DRIVING INSTRUCTIONS

General Information 4-3

Normal Starting Procedure 4-4

Cold Weather Starting 4-9

Starting Procedure After Extended Shutdown or Oil
Change 4-9

Operating the Engine 4-10

Cold Weather 4-13

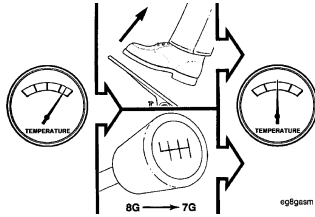
Engine Shutdown 4-15

Electromagnetic Interference (EMI) 4-15

Tips for Operation on Level and Dry Pavement 4-17

Tips for Operation on Grades with Dry Pavement 4-18

Tips for Operation on Slick Roads 4-20



If an overheating condition starts to occur, reduce the power output of the engine by releasing the accelerator pedal or shifting the transmission to a lower gear, or both, until the temperature returns to the normal operating range. If the engine temperature does not return to normal, shut off the engine, and refer to Troubleshooting Symptoms, or contact a PACCAR Authorized Repair Location.

i	NOTE
<p>If the engine coolant temperature warning lamp comes on and the audible alarm sounds showing an overheat condition, or if you have any other reason to suspect the engine may be overheating, DO NOT TURN OFF THE ENGINE unless a low water warning device indicates a loss of coolant. Follow these steps:</p>	

1. Reduce engine speed or stop. When stopped, place the transmission in neutral and set the parking brake. See the vehicle operator's manual for instructions on transmission shifting and parking brake information.
2. Check to ensure that the oil pressure gauge reads normal.
3. Increase the engine speed to about one-half of full operating speed, or 1,100 to 1,200 rpm, maximum for 2-3 minutes.

4. Return the engine speed to normal idle after two or three minutes.
5. Monitor the engine temperature. After the temperature returns to normal, allow the engine to idle 3-5 minutes before shutting it off. This allows the engine to cool gradually and uniformly.
6. If the overheating came from severe operating conditions, the temperature should have cooled by this time.
7. Check the sight gauge (glass level indicator) on the side of the coolant expansion tank.

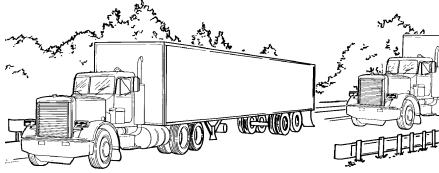
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

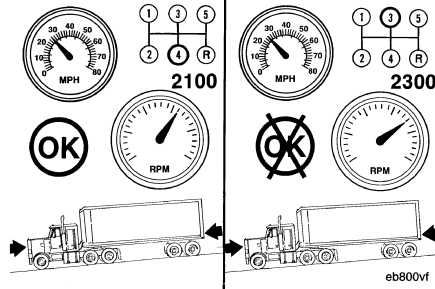


eb800bc

WARNING!

Do not operate the engine brake when driving/operating your vehicle bobtail or with a loaded or unloaded trailer on road surfaces with poor traction (wet, icy, or snow covered roads) or in heavy traffic. Braking caused by the normal operation of the engine brake could cause you to lose control of the vehicle resulting in an injury accident. Failure to comply may result in death, personal injury, equipment or property damage.

When driving on slick roads, start with the ON/OFF switch in the "OFF" position and the two-position selector switch in the "LOW" position.



eb800vf

If your tractor is equipped with a twin-screw rear axle, position the power divider switch in the unlocked position.

Remove your foot from the accelerator pedal to make sure the vehicle will maintain traction with the retarding power of the engine alone.

If the vehicle drive wheels begin to skid or if there is a fishtailing motion, do not activate the engine brakes.

If traction is maintained using the retarding power of the engine alone and more braking power is required, switch the two-position selector switch to the "LOW" position and activate the engine brakes by switching the ON/OFF switch to the "ON" position.

If the vehicle's drive wheels begin to skid or there is a fishtailing motion, switch the ON/OFF switch to the "OFF" position.

If traction is maintained when the engine brakes are activated and more braking power is required, move the two-position selector switch to the "HI" position.

- essential for freeze, overheat, and corrosion protection. The use of supplemental coolant additives (SCAs) is not recommended.*
- The lubricating oil and lubricating oil filter interval can be adjusted based on application, fuel consumption, gross vehicle weight, and idle time. See the Oil Drain Intervals table in this procedure.*
 - Service interval is every oil change or 24,000 km [15,000 mi], 500 hours, or 6 months, whichever occurs first. A heavy-duty year-round antifreeze that meets the chemical composition of GM6038M must be used. The change interval is 2 years or 385,000 km [240,000 mi], whichever occurs first. Antifreeze is essential for freeze, overheat, and corrosion protection. SCA is essential for liner pitting and scaling protection.*
 - If equipped with rubber type crankshaft vibration damper.*
 - Follow the manufacturers' recommended maintenance procedures for the starter, alternator, batteries, electrical components, engine brake, exhaust brake, charge-air cooler, radiator, air compressor, air cleaner, refrigerant compressor, and fan clutch.*
 - Reset valve lash, if needed, to nominal specifications. Refer to "General Engine Specifications" on page 5-14.*
 - The aftertreatment diesel particulate filter clean/replace interval is based on the use of lubricating oils that meet the Cummins Engineering Standard (C.E.S.) 20081 oil specification. If a non-low ash lubricating oil meeting the American Petroleum Institute (API) performance classification CI-4/SL and/or C.E.S. 20078 is used, the service intervals for the aftertreatment systems will be reduced to 241,000 km [150,000 mi] or 5000 hours.*
 - Replace the suction side and the pressure side fuel filters at the same time. It is recommended to replace the fuel filters at the same interval as the oil and oil filter are changed.*

Filter Specifications

General Information

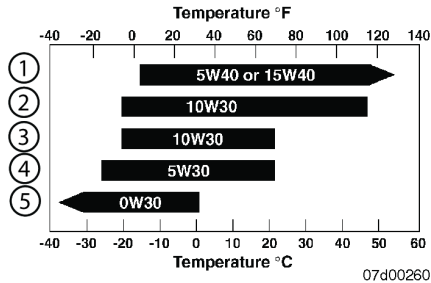
Fleetguard filters are standard on new PACCAR engines. PACCAR recommends their use.

Fleetguard products meet all PACCAR test standards to provide the quality filtration necessary to achieve the engine's design life. If other brands are substituted, the purchaser should ensure the filter specification meet or exceed the Fleetguard specifications.

PACCAR cannot be responsible for problems caused by non-genuine filters that do not meet PACCAR performance or durability requirements.

Filter Part Numbers	
Lubricating Oil Filter Fleetguard® Part Number	LF9009
Fuel Filter (secondary, pressure side) Fleetguard® Part Number (Square Drive Base)	FF63008
Fuel Filter (secondary, pressure side) Fleetguard® Part Number (Hex Drive Base)	FF63009
Fuel Filter (primary, suction side, with water-in-fuel sensor) Fleetguard® Part Number	FS1065
Crankcase Breather Element Fleetguard® Part Number	CV5060300
Aftertreatment DEF Dosing Unit Filter Part Number	2880298

i	NOTE
	An LF9009 lubricating oil filter must be used. A venturi type lubricating oil filter must be used in order to benefit from the bypass filtration section of the lubricating oil filter. Do not use an LF3000 lubricating oil filter. Engine durability will be reduced by using the wrong lubricating oil filter.



1. All Seasons
2. All Seasons
3. Winter Conditions
4. Winter Conditions
5. Arctic Conditions

While the preferred viscosity grade is 15W-40, lower viscosity multigrade oils can be used in colder climates. See the accompanying chart. Any viscosity grade lower than 15W-40 must still meet CES 20081.

Synthetic engine oils, API Group III and Group IV basestocks, are recommended for use in PACCAR

engines operating in ambient temperature conditions consistently below -25°C [-13°F]. Synthetic 0W-30 oils that meet the requirements of API Group III or Group IV basestocks, can be used in operations where the ambient temperature never exceeds 0°C [32°F]. Multiviscosity oils rated 0W-30 do not offer the same level of protection against fuel dilution as do higher multigrade oils. Higher cylinder wear can be experienced when using 0W-30 oils in high-load situations.

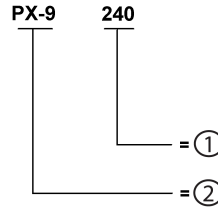
As these oils have directionally thinner oil films than 15W-40 oils, top-quality Fleetguard® filters must be used above 20°C [70°F]. Some oil suppliers might claim better fuel economy for these oils. PACCAR can neither approve nor disapprove any product not manufactured by PACCAR. These claims are between the customer and oil supplier. Obtain a commitment from the oil supplier that the oil will give

satisfactory performance in PACCAR engines or do not use the oil.

aftertreatment and vehicle inputs and outputs.

i	NOTE
The presence of an ECM dataplate depends on the manufacturing plant and the date the engine was manufactured. If an ECM dataplate was not installed by the manufacturing plant, calibration data can be found on the engine dataplate.	

PACCAR Engine Nomenclature



The PACCAR engine nomenclature provides the following information:

1. Horsepower Rating
2. Engine Model

Air Compressor

i	NOTE
Not all engines are equipped with an air compressor.	

The air compressor dataplate is typically located on the side of the air compressor. The dataplate contains the following information to assist in servicing or replacement:

- Part number
- Serial number
- Date code

miles [160,935 kilometers] or 6,250 hours from the date of delivery of the Engine to the first purchaser, whichever of the three occurs first. Before a claim for excessive oil consumption will be considered, Owner must submit adequate documentation to show that consumption exceeds PACCAR published standards.

Failures of belts and hoses supplied by PACCAR are not covered beyond the first year from the date of delivery of the Engine to the first purchaser.

PACCAR does not warranty antifreeze, lubricants, filters, filter elements, or any other part which is considered a maintenance item.

Parts used to repair a Warrantable Failure may be new parts, approved rebuilt parts, or repaired parts. PACCAR is not responsible for failures resulting from the use of parts not approved by PACCAR. A new or

approved rebuilt part used to repair a Warrantable Failure assumes the identity of the part it replaced and is entitled to the remaining coverage hereunder.

PACCAR is not responsible for damage or loss resulting from Engine horsepower/torque upgrades.

PACCAR reserves the right to interrogate Electronic Control Module (ECM) data for purposes of failure analysis.

PACCAR DOES NOT COVER WEAR OR WEAROUT OF COVERED PARTS.

THIS WARRANTY AND THE EMISSION WARRANTY SET FORTH HEREINAFTER ARE THE SOLE WARRANTIES MADE BY PACCAR IN REGARD TO THESE ENGINES.

THIS LIMITED WARRANTY IS THE SOLE WARRANTY MADE BY PACCAR AND THE SELLING DEALER. EXCEPT FOR THE ABOVE LIMITED WARRANTY, PACCAR AND THE SELLING DEALER MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED. PACCAR AND THE SELLING DEALER EXPRESSLY DISCLAIM ANY WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

PACCAR AND THE SELLING DEALER SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO: LOSS OF INCOME OR LOST PROFITS; ENGINE OR VEHICLE DOWNTIME; THIRD PARTY DAMAGE, INCLUDING DAMAGE OR LOSS TO OTHER ENGINES, VEHICLES OR PROPERTY,

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL