Truck Maintenance and Operation
ISX15 (EPA 2010)

Quick Reference Guide

For ease of identification, important characteristics of this engine are:

- Single camshaft
- High Pressure Common Rail (HPCR) fuel system
- DPF and SCR
- Control Module for DEF dosing
- ECM 2250
- Exhaust Gas Recirculation system (EGR)

Maintenance Intervals

	X15 Severe Duty <5.5 mpg 15,000 mile interval	**X15 Normal Duty** 5.5 to 6.5 mpg 25,000 mile interval	**X15 Light Duty** >6.5 mpg 35,000 mile interval
	Miles / Hours / Months	**Miles / Hours / Months**	**Miles / Hours / Months**
Oil and filter:	15,000 / 500 / 6	25,000 / 500 / 6	35,000 / 500 / 6
Fuel filter:	30,000 / 800 / 6	30,000 / 800 / 6	40,000 / 800 / 6
Check DCA levels:	25,000 / 800 / 6	25,000 / 800 / 6	25,000 / 800 / 6
Coolant filter:	50,000 / 1,500 / 12	50,000 / 1,500 / 12	50,000 / 1,500 / 12
Crankcase filter:	125,000 / 3,000 / 12	125,000 / 3,000 / 12	125,000 / 3,000 / 12
DEF Dosing Injector:	150,000 / 4,500 / 12	150,000 / 4,500 / 12	150,000 / 4,500 / 12
DEF filter:	200,000 / 6,750 / 24	200,000 / 6,750 / 24	200,000 / 6,750 / 24
Particulate filter:	200,000 / 6,750 / 24	200,000 / 6,750 / 24	200,000 / 6,750 / 24
Valve adjustment:	500,000 / 10,000 / 60	500,000 / 10,000 / 60	500,000 / 10,000 / 60
Radiator cap:	Check for 15 lbs. psi at EVERY service interval		
Compatible with Extended Life Coolant:	Yes	Yes	Yes

Maintenance Information

Caution

- Never crack a high pressure fuel line with the engine running. With the engine stopped, relieve the pressure in high pressure rail only at the fuel pump inlet line fitting on the side of the rail.
- When changing the engine mounted fuel filter, never pre-fill by pouring fuel in the center hole (clean side). Recommended procedure is to install the filter dry and cycle the key switch on 3-4 times to allow the priming pump to fill the filter.
- If you have to pre-fill the filter, use the smaller outside holes (dirty side) and let the fuel flow through the filter media to provide clean, filtered fuel to the clean side.
- Synthetic or Semi-Synthetic oils may be beneficial for extreme arctic or extreme heat conditions but DO NOT EXTEND Oil Drain Intervals with synthetic or semi-synthetic oils.
- 10W-30 oils meeting Cummins specifications may be used in these engines.

Check the oil pressure indicators, temperature indicators, warning lights, and other gauges daily to make sure they are operational.

Check the oil pressure, coolant temperatures, DEF level, and other engine parameters daily via the OEM instrument panel or gauge cluster to make sure they are operational. Check the instrument panel regularly for any alarm messages. Take appropriate action to rectify the alarm condition or contact your nearest Cummins Distributor.

For best fuel economy and performance, take advantage of the following electronic engine features, setting the parameters to meet your needs:

- Road Speed Governor and Cruise Control
- Idle Control
- Load-Based Speed Control
- Gear Down Protection

For guidance in parameter settings:
http://cumminsengines.com/powerspec

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Lubricating Oil System

Specifications

Oil Pressure
At Idle (minimum allowable at 93°C [200°F] oil temperature)
103 kPa [15 psi]
At No-Load Governed Speed 241 to 276 kPa
[35 to 40 psi]

Oil Pressure Range
Cold Engine Up to 1034 kPa [150 psi]
Warm Engine 241 to 276 kPa [35 to 40 psi]

Normal Oil Temperature
200 to 245°F

Normal Coolant Temperature
180 to 220°F

Normal Coolant Temp when Fan Kicks on
210°F

Normal Coolant Temp
Engine Intake Manifold Temp when Fan Kicks on
200°F

Recommended Low Idle
600 RPM

Pressure Drop Across Oil Filter
Maximum Allowable (with 15W-40 oil at operating temperature)
172 kPa [25 psi]

Oil Filter Capacity of Standard Engine
Combination Full-Flow/Bypass Filter 2.2 liters [0.58 gal]
(Recommended oil filter is FleetGuard LF14000 NN or equivalent)

Oil Pan Drain
Fitting Size M27x2 STOR

Oil Pan Capacity- Stamped Steel (Standard)
High 45.4 liters [12 gal]
Low 37.9 liters [10 gal]

Oil Pan Capacity- Aluminum (Optional)
High 47.3 liters [12.5 gal] Wedge type cast
Low 43.5 liters [11.5 gal] Wedge type cast
High 43.5 liters [11.5 gal] Rear center sump
Low 35.96 liters [9.5 gal] Rear center sump

Oil Change Capacity (oil pan and filter filled to capacity)
Stamped Steel fill 43.5 liters [11.5 gal]
Aluminum (wedge type cast) fill 45.4 liters [12 gal]
Aluminum (rear center sump) fill 41.6 liters [11 gal]

Total Lubricating Oil System Capacity Including Filter and Residual
Stamped Steel and Aluminum 49.2 liters [13 gal]

Cooling System Information

General Information
Cummins Inc. recommends the use of fully-formulated antifreeze or coolant containing a precharge of supplemental coolant additive (SCA) for the ISX15 CM2250. The antifreeze or coolant **must** meet the specifications outlined in the Technology and Maintenance Council (TMC) Recommended Practice (RP) 329 (ethylene glycol) or Recommended Practice (RP) 330 (propylene glycol). The use of fully-formulated antifreeze or coolant significantly simplifies cooling system maintenance.

Fully-formulated antifreeze contains balanced amounts of antifreeze, SCA, and buffering compounds, but does **not** contain 50 percent water. Fully-formulated coolant contains balanced amounts of antifreeze, SCA, and buffering compounds already premixed 50/50 with deionized water. Alternative maintenance practices for cooling systems can be found in Cummins Coolant Requirements and Maintenance, Bulletin 3666132.

Diesel Exhaust Fluid Information

It is unlawful to tamper with or remove any component of the aftertreatment system. It is also unlawful to use a Diesel Exhaust Fluid (DEF) that does not meet the specifications provided or to operate the vehicle/equipment with no DEF. Cummins Inc. is not responsible for failures or damage resulting from what Cummins Inc. determines to be abuse or neglect.

In compliance with the regulatory agencies (EPA and CARB), the Cummins engine system incorporates on board diagnostics and electronic controls to monitor and ensure that tail pipe emissions requirements are met. A DEF lamp will notify the driver when the DEF tank level is running low and/or the quality of the DEF in the tank is not meeting specifications. Failure to promptly refill or replace DEF in the tank will trigger an inducement sequence, limiting engine torque and, eventually, vehicle speed to 5 mph.

For further details and discussion of DEF for Cummins engines, refer to Diesel Exhaust Fluid Specifications for Cummins Selective Catalytic Reduction Systems, Service Bulletin Number 4021566.

For engines using SCR operating in the United States and Canada, it is also strongly recommended that the DEF used be certified by the American Petroleum Institute (API). This would be indicated by a symbol on the container/dispensing system.

To ensure the correct DEF is used, Cummins Inc. recommends the use of Fleetguard® Diesel Exhaust Fluid. Fleetguard® carries different quantity options from small to bulk containers.

For complete maintenance recommendations and guidelines, refer to EPA 2010 X15 CM2250 Owners Manual, Bulletin 2883360 and EPA 2010 X15 CM2250 Operation and Maintenance Manual, Bulletin 2883361.

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