



ON-HIGHWAY HEAVY-DUTY ENGINE MANUFACTURERS' RECOMMENDED OIL DRAIN INTERVALS



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Chevron has the heavy-duty motor oil needed to help you and your business go further. Delo® products with ISOSYN® Technology help:

- Provide Extended Service Protection
- Maximize Engine Durability
- Minimize Operating Costs

Use the recommendations in this guide to help identify heavy duty engine manufacturers' recommended oil drain intervals. Fully understanding your engine manufacturers recommendations can assist in better managing your drain interval maintenance schedule.

Engine Oil Performance Requirements:

- Major U.S. On-Highway Engine Manufacturers' recommend the following:
 - For ULSD all Manufacturers recommend API CJ-4 or API CI-4 Plus oils
 - 1.0% sulfated ash or less helping to maintain emission treatment system life
- Detroit Diesel now approves the use of SAE 10W-30 diesel engine oils that carry a DD 93K218 approval in both their newer and older series engines – reference DDC POWER GUARD OIL SPECIFICATION (PGOS) for DD-13, DD-15, DD-16, Series 60, Series 50, MBE 4000 and MBE 900 engines dated 9/10/12 or more current.
- Cummins allows for the following per TSB 101040:
 - Cummins ISX 15 EPA 13 engines maximum recommended oil drain interval has increased for this model year engine versus the Cummins ISX EPA 10 & EPA 07 series engines
 - 8,050 extra km (5,000 miles) for drain with use of any API CI-4 Plus oil meeting CES 20078
 - An additional 8,050 km (5,000 mile) drains for light and normal duty operations when using Cummins Premium Blue Engine Oil

Always follow OEM recommendations and utilize used oil analysis testing when extending oil drain intervals.

OEM recommendations contained in this brochure are per the references indicated and are the most recent we have at the time of publication (January 2016). These may change at any time. Check with each respective OEM for any information updates.

The Delo logo is displayed in white text on a blue background. The word "Delo" is written in a bold, sans-serif font, with a registered trademark symbol (®) to the upper right of the letter 'o'.

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PACCAR

(PACCAR Engine Specifications Sheets for PX-6, PX-8 & MX)



Engine Type	Severe*	Linehaul
EPA 13 MX**	40,000 km (25,000 miles) 800 hours	96,500 km (60,000 miles) (if idle time < 20%) 64,000 km (40,000 miles) (if idle time > 20%)
EPA 10 MX***	40,000 km (25,000 miles) 800 hours	96,500 km (60,000 miles) (if idle time < 20%) 64,000 km (40,000 miles) (if idle time > 20%)
EPA 13 MX 11**	40,000 km (25,000 miles) 800 hours	96,500 km (60,000 miles) (if idle time < 20%) 64,000 km (40,000 miles) (if idle time > 20%)
PX-8****	Check with PACCAR	24,000 km (15,000 miles) 500 hours
PX-6****	Check with PACCAR	24,000 km (15,000 miles) 500 hours

*Severe Duty - Vocational vehicle applications include: Agriculture, Concrete Mixers, Construction, Crane, Dumps, Emergency/Fire, Heavy Equipment, Loggers, Oil Field, Refuse, Pick up & Delivery, Snowplows, and Wrecker

**Use API CJ-4 products like Delo 400 LE SAE 15W-40 or Delo 400 XLE Synblend SAE 10W-30, Delo 400 SD SAE 15W-30, Delo 400 LE Synthetic SAE 5W-30 & Delo 400 LE Synthetic SAE 5W-40 – no ECU software change is required.

***Use SAE 15W-40 products like Delo 400 LE SAE 15W-40 or Delo 400 Multigrade SAE 15W-40. For use of SAE 10W-30 products like Delo 400 XLE Synblend SAE 10W-30 please ensure the engine has the latest RC6 ECU/ECM calibration update from PACCAR or your PACCAR OE Dealer.

****Use SAE 15W-40 products only in these engine types like Delo 400 LE SAE 15W-40.

Detroit Diesel

(Detroit Diesel Service and Maintenance Intervals Bulletin)



Engine Type	Severe*	Short-Haul*	Long-Haul*
EPA 13/EPA 10 DD15**	40,000 km (25,000 miles) 640 hours	56,000 km (35,000 miles) 895 hours	80,000 km (50,000 miles) 1,280 hours
EPA 13/EPA 10 DD13**	40,000 km (25,000 miles) 640 hours	56,000 km (35,000 miles) 895 hours	80,000 km (50,000 miles) 1,280 hours
EPA 13/EPA 10 DD16**	40,000 km (25,000 miles) 640 hours	56,000 km (35,000 miles) 895 hours	80,000 km (50,000 miles) 1,280 hours
EPA 07 Series 60**	24,000 km (15,000 miles)	32,000 km (20,000 miles) 500 hours	48,000 km (30,000 miles)
EPA 07 MBE 4000**	16,000 km (10,000 miles)	24,000 km (15,000 miles)	48,000 km (30,000 miles)
EPA 07 MBE 900**	9,700 km (6,000 miles)	24,000 km (15,000 miles)	32,000 km (20,000 miles)










*Severe Duty is up to 48,000 km (30,000 miles) annually and for vehicles that average 2.1 kPL (5 mpg) or less; Short Haul is between 48,001 km and 96,600 km (30,001 and 60,000 miles) annually and average between 2.2 and 2.5 kPL (5.1 and 5.9 mpg); Long Haul is over 96,601 km (60,001 miles) annually and average greater than 2.5 kPL (6 mpg).

**Use engine oils approved against DD 93K218 – API CJ-4 oils like Delo® 400 LE SAE 15W-40 or Delo 400 XLE Synblend SAE 10W-30, Delo 400 SD SAE 15W-30, Delo 400 LE Synthetic SAE 5W-30 & Delo 400 LE Synthetic SAE 5W-40. When using Delo 400 XLE Synblend SAE 10W-30 with EPA 07 Detroit Diesel engines please install the MCM software 13.4.2.0 or higher update to run the lower viscosity engine oils – this is to ensure engine oil light doesn't come on for low idle and instigates an engine shutdown.

When using Delo 400 XLE Synblend SAE 10W-30 with EPA 10 Detroit Diesel engines please install MCM software 7.6.0.46 or higher update to run the lower viscosity engine oils – this is to ensure engine oil light doesn't come on for low idle and instigates an engine shutdown.

Cummins Diesel Engines***

(Cummins TSB101040 – Heavy Duty Product Oil Drain Intervals and CM2350 O&M Manual)

Engine Type	Severe*	Normal*	Light*
 EPA 13 ISX 15**	32,000 km (20,000 miles) – CES 20081 40,000 km (25,000 miles) – CES 20078	48,000 km (30,000 miles) – CES 20081 56,000 km (35,000 miles) – CES 20078	64,000 km (40,000 miles) – CES 20081 72,000 km (45,000 miles) – CES 20078
 EPA 10 ISX 15**	24,000 km (15,000 miles) – CES 20081 32,000 km (20,000 miles) – CES 20078	40,000 km (25,000 miles) – CES 20081 48,000 km (30,000 miles) – CES 20078	56,000 km (35,000 miles) – CES 20081 64,000 km (40,000 miles) – CES 20078
 EPA 13/EPA 10 ISX 11.9**	24,000 km (15,000 miles) – CES 20081 32,000 km (20,000 miles) – CES 20078	40,000 km (25,000 miles) – CES 20081 48,000 km (30,000 miles) – CES 20078	56,000 km (35,000 miles) – CES 20081 64,000 km (40,000 miles) – CES 20078
 EPA 13/EPA 10 ISL 9**	Check with Cummins	32,000 km (20,000 miles) 500 hours	Check with Cummins
 EPA 10 ISC 8.3**	Check with Cummins	32,000 km (20,000 miles) 500 hours	Check with Cummins
 EPA 13/EPA 10 ISB 6.7**	Check with Cummins	32,000 km (20,000 miles) 500 hours	Check with Cummins
 EPA 07 ISX**	24,000 km (15,000 miles) – CES 20081 32,000 km (20,000 miles) – CES 20078	40,000 km (25,000 miles) – CES 20081 48,000 km (30,000 miles) – CES 20078	56,000 km (35,000 miles) – CES 20081 64,000 km (40,000 miles) – CES 20078
 EPA 07 ISM**	24,000 km (15,000 miles) – CES 20081 32,000 km (20,000 miles) – CES 20078	40,000 km (25,000 miles) – CES 20081 48,000 km (30,000 miles) – CES 20078	56,000 km (35,000 miles) – CES 20081 64,000 km (40,000 miles) – CES 20078
 EPA 07 ISC**	Check with Cummins	24,000 km (15,000 miles) 500 hours	Check with Cummins



*Light Duty > 2.8 kPL (6.5 mpg) or < 31,750 kg (70,000 lbs) gross weight; Normal Duty = 2.3 to 2.8 kPL (5.5 to 6.5 mpg) or 36,000 kg (80,000 lbs) gross weight; Severe Duty < 2.3 kPL (5.5 mpg) or > 36,000 kg (80,000 lbs) gross weight.

**CES 20081 refers to an API CJ-4 approved oil like Delo 400 LE SAE 15W-40.

***For any Cummins engine models with light or normal service duty; Cummins allows an additional 5,000 mile drains when using Cummins Premium Blue & Valvoline Premium Blue Extreme. Stamped steel oil pans have a primary and secondary sump, with a drain plug in each sump. Oil must be drained from both sumps during oil changes in order to meet the recommended service intervals.

Cummins Westport CNG/LNG Engines

(Information provided by Cummins Westport)

Engine Type	Service	Kilometres (Miles)	Hours	Months
 Cummins ISX 12G	Truck Application: Recommended Engine Oil Drain Interval	29,000 (18,000)	400	6
	Truck Spark Plug Change	108,600 (67,500)	Check with Cummins	Check with Cummins
 Cummins ISL G	Truck Application: Recommended Engine Oil Drain Interval	24,000 (15,000)	500	6
	Truck Spark Plug Change	72,000 (45,000)	Check with Cummins	Check with Cummins
	Bus Application: Recommended Engine Oil Drain Interval	12,000 (7,500)	500	6
	Bus Spark Plug Change	36,200 (22,500)	Check with Cummins	Check with Cummins







*CES 20085 approved engine oils are required with this CNG engine - Delo 400 NG is recommended against this specification

**CES 20085 or CES 20074 approved engine oils are required with this CNG engine type - Delo 400 NG is recommended for this engine type

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Volvo Trucks NA

(Volvo Trucks Service Bulletin 175-60 and Volvo Service at a Glance Poster)

Engine Type	Very Severe*	Severe*	Heavy*	Medium*
 EPA 13/ EPA 10 D16H**	24,000 km (15,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)	80,000 km (50,000 miles)
 EPA 13/ EPA 10 D13H**	16,000 km (10,000 miles)	40,000 km (25,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)
 EPA 13/ EPA 10 D11H**	16,000 km (10,000 miles)	40,000 km (25,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)
 EPA 07 D16F**	Check with Volvo	40,000 km (25,000 miles)	56,000 km (35,000 miles)	80,000 km (50,000 miles)
 EPA 07 D13F**	Check with Volvo	24,000 km (15,000 miles)	40,000 km (25,000 miles)	72,000 km (45,000 miles)
 EPA 07 D11F**	Check with Volvo	24,000 km (15,000 miles)	40,000 km (25,000 miles)	72,000 km (45,000 miles)







*Very Severe service is for fuel consumption of 1.6 kPL (3.7 mpg) or less; Severe service is for fuel consumption of 1.6 to 2.1 kPL (3.7 to 5 mpg); Heavy service is for fuel consumption of more than 2.1 to 2.5 kPL (5 to 6.0 mpg) and Medium service for fuel consumption greater than 2.5 kPL (6.0 mpg).

**Oil quality of Volvo VDS-4 and Mack EO-O Premium Plus required. Drain intervals for D16H and 16F are based on 52 litres (55 quart) sumps. For sumps that are 42 litres (44 quarts) follow the drain guidelines for the D13H or D13F engine models.

Chevron Delo 400 LE SAE 15W-40, Delo 400 XLE Synblend SAE 10W-30, Delo 400 SD SAE 15W-30, Delo 400 LE Synthetic SAE 5W-30 & Delo 400 LE Synthetic SAE 5W-40 approved for both Volvo VDS-4 and Mack EO-O Premium Plus.

Mack Trucks Inc

(Mack Trucks Service Bulletin 175-60 dated 5.2010 and Mack Trucks Service at a Glance Poster)

Engine Type	Very Severe*	Severe*	Heavy*	Medium*
 EPA 13/EPA 10 MP10**	24,000 km (15,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)	80,000 km (50,000 miles)
 EPA 13/EPA 10 MP8**	16,000 km (10,000 miles)	40,000 km (25,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)
 EPA 10 MP7**	16,000 km (10,000 miles)	40,000 km (25,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)
 EPA 07 MP10***	Check with Mack	56,000 km (35,000 miles)	72,000 km (45,000 miles)	80,000 km (50,000 miles)
 EPA 07 MP8***	Check with Mack	40,000 km (25,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)
 EPA 07 MP7***	Check with Mack	40,000 km (25,000 miles)	56,000 km (35,000 miles)	72,000 km (45,000 miles)

*Very Severe service is for fuel consumption of 1.6 kPL (3.7 mpg) or less; Severe service is for fuel consumption of 1.6 to 2.1 kPL (3.7 to 5 mpg); Heavy service is for fuel consumption of more than 2.1 to 2.5 kPL (5 to 6.0 mpg) and Medium service for fuel consumption greater than 2.5 kPL (6.0 mpg).

**Oil quality of Volvo VDS-4 and Mack EO-O Premium Plus required – like Delo 400 LE SAE 15W-40 or Delo 400 XLE Synblend SAE 10W-30. Drain intervals for MP10 are based on 55 quart sumps. For sumps that are 44 quarts follow the drain guidelines for the D13H or D13F engine models.







***Oil quality must meet both API CJ-4 and Mack EO-O Premium Plus – like Delo 400 LE SAE 15W-40 or Delo 400 XLE Synblend SAE 10W-30.

If idle time greater than 30%, use the next lower drain interval.

Chevron Delo 400 LE SAE 15W-40, Delo 400 XLE Synblend SAE 10W-30, Delo 400 SD SAE 15W-30, Delo 400 LE Synthetic SAE 5W-30 & Delo 400 LE Synthetic SAE 5W-40 approved for both Volvo VDS-4 and Mack EO-O Premium Plus.

Navistar

(MAXXFORCE® Engine Brochure Drain Recommendations)

Engine Type	Severe*	Moderate*	Light*
 EPA 10 MAXXFORCE® 13**	29,000 km (18,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)
 EPA 10 MAXXFORCE® 11**	29,000 km (18,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)
 EPA 10 MAXXFORCE® 10	Check with Navistar	Check with Navistar	24,000 km (15,000 miles)
 EPA 10 MAXXFORCE® 9	Check with Navistar	Check with Navistar	24,000 km (15,000 miles)
 EPA 10 MAXXFORCE® DT	Check with Navistar	Check with Navistar	24,000 km (15,000 miles)
 EPA 10 MAXXFORCE® 7	Check with Navistar	Check with Navistar	16,000 km (10,000 miles)







* Light > 2.8 kPL (6.5 mpg); Moderate = 2.8 to 2.1 kPL (6.5 to 5.0 mpg); Severe < 2.1 kPL (5.0 mpg).

**For Navistar EPA 10 MAXXFORCE 13 & 11 engines they require the use of a centrifuge type filter.

MAXXFORCE® is a registered trademark of Navistar.

Caterpillar – On-Highway

(Caterpillar Used Truck Engine Brochure – Oil Drain Recommendations – also reference SEBU 7695)

Engine Type	Severe	Normal	Light
 EPA 07 C15 ACERT®**	32,000 km (20,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)
 EPA 07 C13 ACERT®***	32,000 km (20,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)
 EPA 07 C11 ACERT®**	32,000 km (20,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)
 EPA 04 C15 ACERT®**	32,000 km (20,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)
 EPA 04 C13 ACERT®**	32,000 km (20,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)
 EPA 04 C11 ACERT®***	32,000 km (20,000 miles)	48,000 km (30,000 miles)	64,000 km (40,000 miles)

*C15 Standard (Deep) Sumps, Light Duty is > 2.8 kPL (6.5 mpg), Normal Duty is 2.3 to 2.8 kPL (5.5 to 6.5 mpg) and Severe is < 2.3 kPL (5.5 mpg).

**C13 Standard (Deep) Sumps, Light Duty is > 3 kPL (7 mpg), Normal Duty is 2.5 to 3 kPL (6 to 7 mpg) and Severe is < 2.5 kPL (6 mpg).

***C11 Standard (Deep) Sumps, Light Duty is > 3 kPL (7 mpg), Normal Duty is 2.5 to 3 kPL (6 to 7 mpg) and Severe is < 2.5 kPL (6 mpg).

Must Use ECF-3 engine oil quality for all US 07 compliant engines – like Delo 400 LE SAE 15W-40, Delo 400 XLE Synblend SAE 10W-30, Delo 400 SD SAE 15W-30, Delo 400 LE Synthetic SAE 5W-30 & Delo 400 LE Synthetic SAE 5W-40.

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