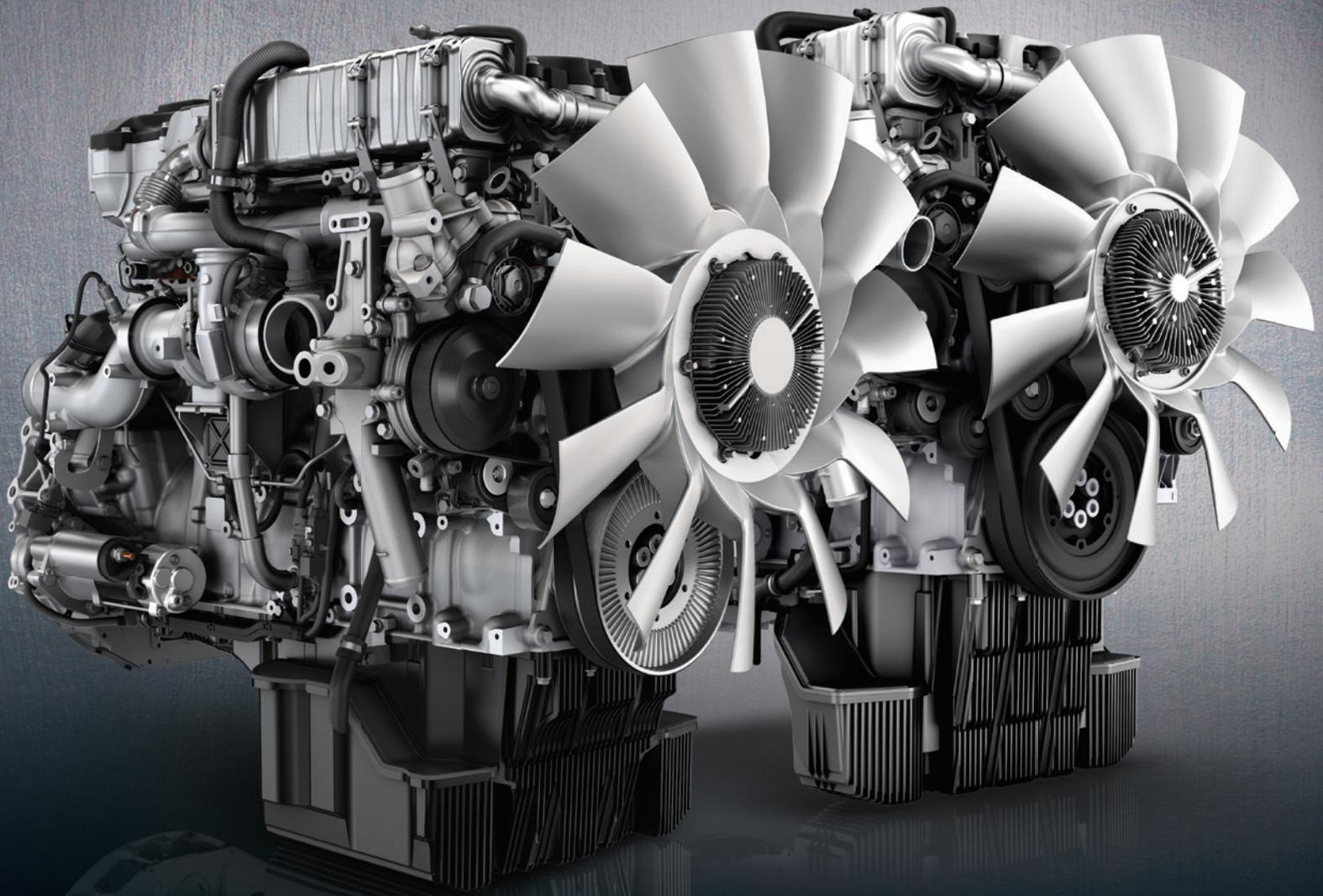


# DETROIT™ MID-RANGE ENGINES

DD5®

DD8®



**DETROIT™**  
DEMAND PERFORMANCE™

# THE MOST ADVANCED ENGINE TECHNOLOGIES ENGINEERED TODAY.

The Detroit™ DD5™ and DD8™ engines feature the latest in technology to go along with the know-how and quality you've come to expect from Detroit. From the sturdy design of the ribbed cast-iron block to the advanced common-rail fuel system, these engines deliver the reliability and performance you demand.

Developed using a clean sheet design, these engines were built from the bottom up to work with today's emission components to deliver unprecedented reliability of aftertreatment systems. This has allowed Detroit to cut down on the number of manual regens that disrupt your day.

With our industry-leading maintenance intervals and our innovative Detroit™ Connect Virtual Technician™ remote diagnostic service, the DD5 and DD8 were designed to help you maximize uptime. So you can turn productivity into profitability.

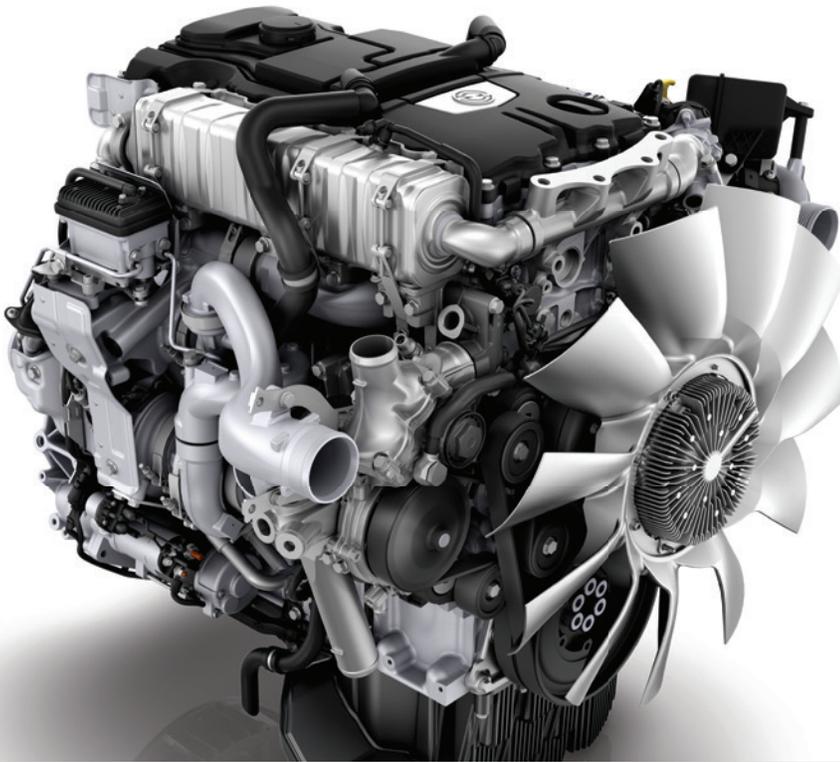


 **DETROIT** **DD8**

## PRODUCTIVITY

The fuel-efficient design of these engines make the most out of every gallon. Using an advanced high-pressure common-rail fuel system, each injection event is optimized to minimize fuel consumption. Piston and cylinder designs reduce friction and provide optimal combustion. All that work fine-tuning combustion means lower emissions, less engine noise and vibration, and less time wasted stopping at the pump. Everything, right down to the advanced cooling system that decreases fan on-time, was designed to minimize fuel consumption.

Increased fuel economy equates to more than just money saved on fuel. The less diesel and DEF consumed means the aftertreatment system does not have as much to process, leading to fewer regens and improved reliability. From the cylinder to the tail pipe, the DD5 and DD8 engines improve operational costs.



# TECHNOLOGY

## VARIABLE CAM PHASING

Achieve maximum uptime with variable cam phasing, an exclusive propriety engine advancement for efficient aftertreatment system performance. At low engine speeds the exhaust timing can adjust and open the exhaust valves earlier in the operating cycle. This causes warmer exhaust to be directed into the aftertreatment system.

Increased effectiveness of the aftertreatment system allows for effective DPF regenerations, increasing your uptime with reliable operation of the aftertreatment system.

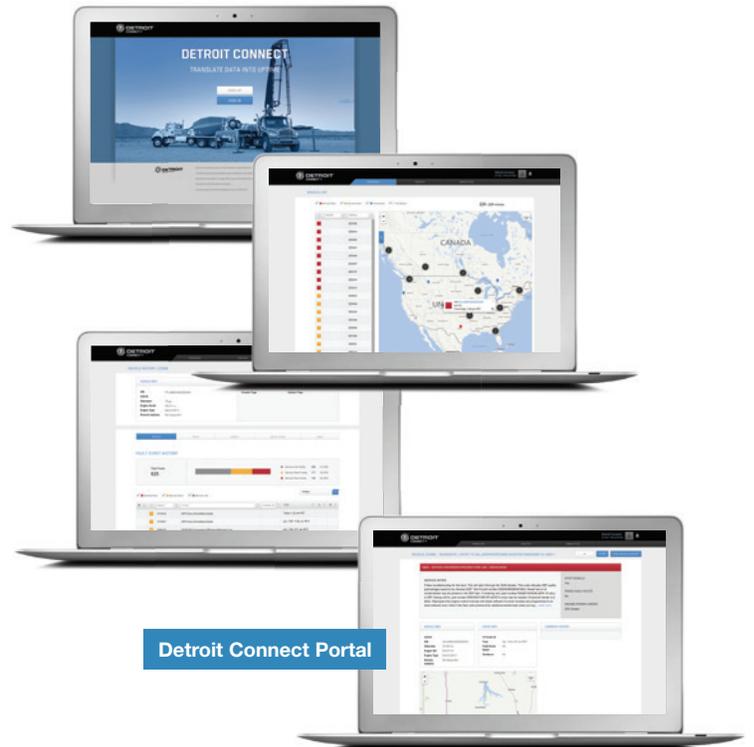
## DETROIT CONNECT VIRTUAL TECHNICIAN

Detroit™ Connect, a suite of connected vehicle services, is designed to improve your bottom line and comes standard with DD5 and DD8 engines. Detroit Connect provides tools to improve uptime, productivity, safety, and performance. These tools provide owners with information about their vehicle they can't get anywhere else to better manage their business operations.

The Detroit™ Connect Virtual Technician™ remote diagnostic service notifies you within minutes that your vehicle has experienced a fault event, the severity of the fault, and when, where and how to best fix the issue. Critical fault codes are further analyzed by our Detroit Customer Support Center (CSC) experts who will provide recommendations. You'll be able to make informed decisions so you only service your vehicles when needed. Complete fault event details can also be viewed via the Detroit Connect portal or mobile App.

## DUAL STAGE TURBO CHARGER

The DD5 and high rated DD8s use a Dual Stage Turbo Charger to deliver power and torque at low RPMs which gives them similar responsiveness to the heavy-duty Detroit engines.



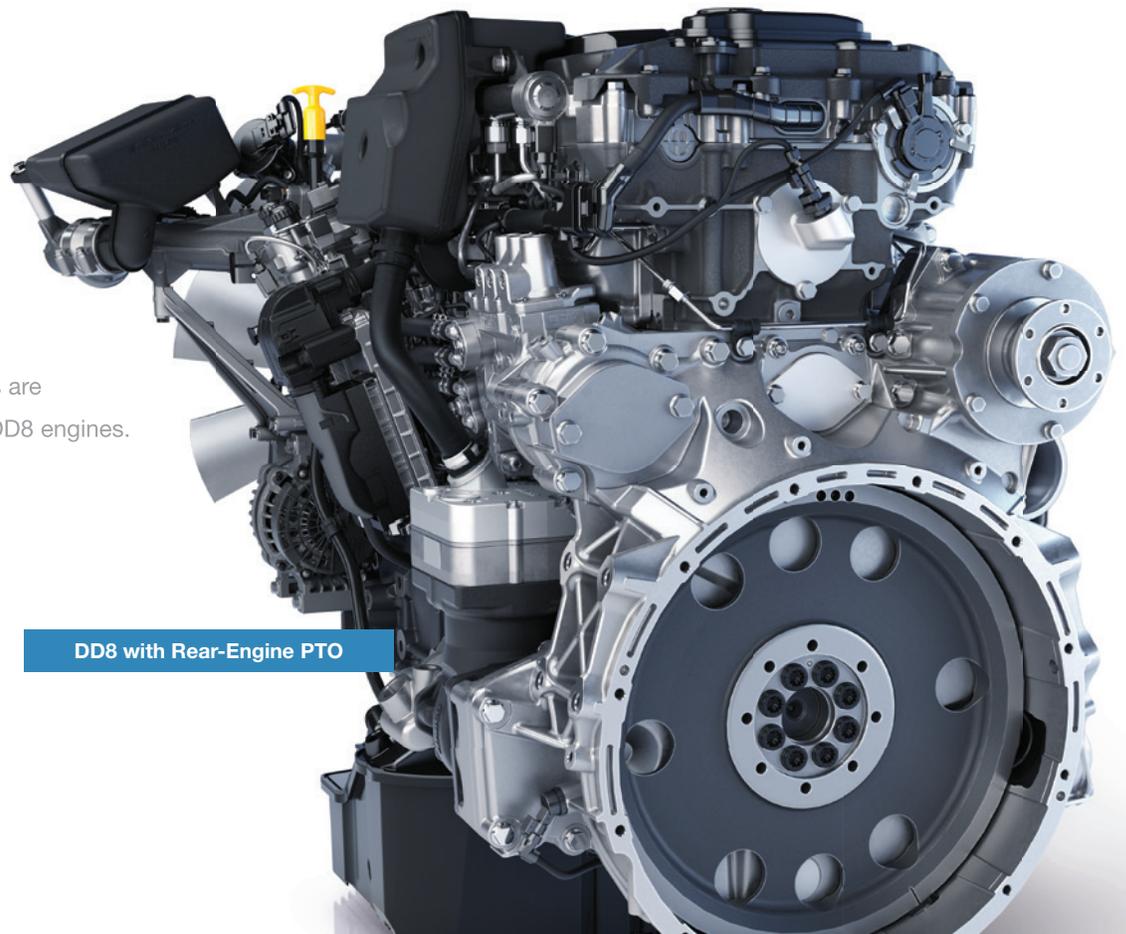
## POWER TAKE-OFF

The DD8 also offers PTO options for a variety of vocational work-truck applications. PTO provides power whether the vehicle is moving or stationary. The rear-engine PTO (REPTO) flange is an integral part of the flywheel housing, receives power through the gear train and does not depend on the transmission to receive its power. The DD8 is also available with front-engine PTO (FEPTO).

## PTOs ARE USED IN MANY APPLICATIONS

- Dump trucks
- Vacuum trucks
- Refuse trucks
- Snow plows
- Hydraulic cranes and boom trucks
- Other vocational markets

Transmission mounted PTOs are available with the DD5 and DD8 engines.



DD8 with Rear-Engine PTO

# TRUCK APPLICATIONS



## M2 106

The Freightliner M2 106 is designed to get any job done. With a GVWR of up to 66,000 pounds, this versatile medium-duty truck supports a wide range of bodies and chassis-mounted equipment, from dry vans to a concrete pump. The multiplex wiring system, clear frame rails, and a variety of exhaust packages help you get the configuration you need for the job at hand. The M2 106 is available with the new Detroit DD8 or DD5 engine, both available with the Detroit™ Connect suite of connected vehicle services to maximize uptime.



## EconicSD

The innovative and modern Freightliner EconicSD™ refuse truck combines versatility, ergonomics and superior technology like virtually no other commercial vehicle. Its unique low-entry concept coupled with uncompromising quality provide just what you need: unparalleled safety, uptime and productivity, day in and day out. The EconicSD is available with the new DD8 engine.



## 108SD

The 108SD is a versatile Freightliner workhorse—packed with reliability and performance and ready for the toughest business challenges. The 108SD combines powerful, fuel-efficient engines, multiple power take-off (PTO) options, a chassis engineered for ease of upfit, and a weight-optimized design. This severe-duty truck takes toughness onto tight job sites and down narrow streets. The 108SD is extremely versatile, as well. Front engine, rear engine, and transmission PTO options allow flexibility for body hydraulic power needs. It offers integral front frame extensions in either 6" or 24" lengths. This gives a solid mounting point for hydraulic pumps, winches, hose reels, front stabilizers, and snow plows. The 108SD is available with the new Detroit DD8 engine.



## 114SD

The Freightliner Trucks 114SD is built for severe duty: packed with power and ready for work. With its 2500-square-inch windshield and contoured hood slope, the 114SD offers unmatched operator visibility, helping the driver keep an eye on obstacles at the job site. The 114SD has optimized mid-chassis packaging and a strategically mounted aftertreatment system. The chassis layout simplifies upfitting for truck equipment manufacturers. The 114SD also offers an incredible combination of durability and comfort. It's been through rigorous testing to ensure that it delivers performance and reliability in the most demanding situations. And the automotive-style interior is designed to keep operators safe and productive. Put simply, the 114SD sets the standard for engineered performance and productivity. The 114SD is available with the new Detroit DD8 engine.

# TECHNICAL SPECIFICATIONS



## PERFORMANCE

- Dual Overhead Cams and a High Pressure Common Fuel Rail maximizes combustion and saves fuel.
- Robust design for an impressive B10 life of 400,000 miles.
- Integrated engine brake option provides superior braking horsepower to extend service brake life.
- Sturdy rear gear train and ribbed cast-iron block minimize noise vibration harshness (NVH).

DD5 ENGINE POWER RATINGS	
200 HP @ 2200 RPM	560 lb-ft @ 1400 RPM
220 HP @ 2200 RPM	560 lb-ft @ 1400 RPM
240 HP @ 2200 RPM	660 lb-ft @ 1400 RPM

DD5 SPECIFICATIONS	
Configuration	Inline 4 Cylinder
Displacement	313 cu. in. (5.1 L)
Compression Ratio	17.6:1
Bore	4.33 in. (110 mm)
Stroke	5.3 in. (135 mm)
Weight (Dry)	1188 lb. (539 kg.)
Electronics	DDEC®
Service Fill (Oil & Filter Change)	18 qt. (17.5 L)
Horsepower Range	200-240
Torque Range	560-660

## POWER

- Usable power and torque reached at lower engine speeds—ideal for the demands of today’s mid-range applications.
- A simple fixed-geometry dual-stage turbo design provides performance and reliability, delivering power when you need it.





**DETROIT**

**DD8™**

## PERFORMANCE

- Dual Overhead Cams and a High Pressure Common Fuel Rail maximizes combustion and saves fuel.
- Robust design for an impressive B10 life of 400,000 miles.
- Integrated engine brake option provides superior braking horsepower to extend service brake life.
- Sturdy rear gear train and ribbed cast-iron block minimize noise vibration harshness (NVH).
- Rear Engine Power Take-Off (REPTO) and Front Engine Power Take-Off (FEPTO) capability provide the flexibility needed for a variety of vocational applications.

DD8 ENGINE POWER RATINGS	
260 HP @ 2200 RPM	660 lb-ft @ 1400 RPM
260 HP @ 2200 RPM	720 lb-ft @ 1400 RPM
280 HP @ 2200 RPM	800 lb-ft @ 1400 RPM
300 HP @ 2200 RPM	860 lb-ft @ 1400 RPM
330 HP @ 2200 RPM	1000 lb-ft @ 1400 RPM
350 HP @ 2200 RPM	1050 lb-ft @ 1400 RPM
375 HP* @ 2200 RPM	1050 lb-ft* @ 1400 RPM

\*Fire & Emergency and RV only.

## POWER

- Usable power and torque reached at lower engine speeds—ideal for the demands of today’s medium- and severe-duty trucks.
- A simple fixed-geometry dual-stage turbo design provides performance and reliability.



## DD8 SPECIFICATIONS

Configuration	Inline 6 Cylinder
Displacement	470 cu. in. (7.7 L)
Compression Ratio	17.6:1
Bore	4.33 in. (110 mm)
Stroke	5.3 in. (135 mm)
Weight (Dry)	1437-1468 lb. (652 -665 kg.)
Electronics	DDEC®
Service Fill (Oil & Filter Change)	26.9 qt. (25.5 L)
Horsepower Range	260-375
Torque Range	660-1050

# SERVICEABILITY

## GETTING YOUR ENGINE SERVICED QUICKLY AND EASILY CAN MAKE A POSITIVE IMPACT ON YOUR TOTAL COST OF OWNERSHIP.

Detroit mid-range engines can go up to 60,000 miles between oil drain, oil filter, and fuel filter changes. That's the longest scheduled maintenance interval in its class. And, better yet, it's easy to keep an eye on those important maintenance items such as the cartridge-style filters that are conveniently located above the frame rails, along with the oil fill. This makes it easy to replace the filters when it's time. Also, the fuel filter module has a new two-filter design for simplified serviceability.

When you need genuine parts and expert service, the Detroit support network will get you back on the road fast. In fact, you have access to our network of authorized service outlets, an award-winning technician training program, an extensive parts distribution network, and expert engine support from our technical support center. Detroit combines all this to give you the genuine parts and expert service you need to succeed.

### DD5 Maintenance Intervals

Item	Mi / km / Hr†	Severe Duty	Short-Haul	Long-Haul
Engine Oil and Filter Change*	Miles	35,000	45,000	50,000
	Kilometers	56,000	72,000	80,000
	Hours	1000	1500	1700
Fuel Filter Change	Miles	35,000	45,000	50,000
	Kilometers	56,000	72,000	80,000
	Hours	1000	1500	1700
Valve Lash Adjustment	Miles	70,000	90,000	100,000
	Kilometers	113,000	145,000	160,900
	Hours	2300	3000	3300
Diesel Particulate Filter	A check-engine light will illuminate when ash requires removal.			
DEF Pump Filter	Replace every 3 years or 300,000 miles (483,000 km) (10,000 hrs.)			

\* Maintenance intervals using Detroit Fluids Specification 93K222 (CK-4) or 93K223 (FA-4) Approved Oils. Severe duty averages less than 10 miles per gallon (mpg) and operates under severe conditions. Short-haul is up to 60,000 annual miles (96,000 kilometers) and averages between 10.1 and 11.9 mpg. Long-haul is over 60,000 annual miles (96,000 kilometers) and averages greater than 12.0 mpg.

† Miles/Kilometers or Hours, whichever occurs first.

## FACTORY-BACKED WARRANTY

Detroit engine owners enjoy comprehensive warranty coverage, including a fast, hassle-free process and expedited parts and service for critical downtime situations.

### Standard Warranty

Item	Warranty Limits (Whichever Occurs First)		Repair Charge (Paid by Owner)	
	Months	Miles / Kilometers	Parts	Labor
Engine	0-36	250,000	No Charge	No Charge
Aftertreatment System*	0-36	250,000	No Charge	No Charge
Accessories	0-24	0-100,000 mi 0-160,000 km	No Charge	No Charge

\*Diesel Oxidation Catalyst, Diesel Particulate Filter, SCR Catalyst, Aftertreatment Sensors, Aftertreatment Control Module, Def Pump, Aftertreatment Wiring Harness, Def Dosing Unit.

### DD8 Maintenance Intervals

Item	Mi / km / Hr†	Severe Duty	Short-Haul	Long-Haul
Engine Oil and Filter Change*	Miles	45,000	55,000	60,000
	Kilometers	72,000	88,000	96,000
	Hours	1500	1800	2000
	Months	12	18	—
Fuel Filter Change	Miles	45,000	55,000	60,000
	Kilometers	72,000	88,000	96,000
	Hours	1500	1800	2000
	Months	12	18	—
Valve Lash Adjustment	Miles	90,000	110,000	120,000
	Kilometers	145,000	177,000	193,900
	Hours	3000	3600	4000
	Months	24	36	—
Diesel Particulate Filter	A check-engine light will illuminate when ash requires removal. Normal DPF ash clean interval is every:			
	Miles	150,000		
	Kilometers	241,000		
	Hours	5000		
DEF Pump Filter	Replace every 3 years or 500,000 miles (805,000 km) (10,000 hrs.)			

\* Maintenance intervals using Detroit Fluids Specification 93K222 (CK-4) or 93K223 (FA-4) approved oils. Severe duty averages less than 6.5 miles per gallon (mpg) and operates under severe conditions. Short-haul is up to 60,000 annual miles (96,000 kilometers) and averages between 6.5 and 8.5 mpg. Long-haul is over 60,000 annual miles (96,000 kilometers) and averages greater than 8.5 mpg.

† Miles/Kilometers or time, whichever occurs first.



## DETROIT GENUINE PARTS

Authorized Detroit service outlets are staffed by factory-trained technicians who exclusively use Detroit Genuine Parts. Our technicians, graduates of our award-winning training program, know your powertrain inside and out. They're the experts who make sure that, with normal maintenance at regular intervals, all components continue to perform at optimum power and efficiency for years to come. You can find expert technicians at hundreds of authorized Detroit service locations. Whether it's a new or remanufactured part, Detroit Genuine Parts precisely fit your engine, axles and transmission, giving you the performance, reliability and durability you count on from Detroit.

Detroit Genuine Parts are covered by a factory-backed nationwide warranty, so you never have to worry about unexpected repair costs.

## COMPLIANCE

The DD5 and DD8 are certified to GHG17 standards. They are On-Board Diagnostics (OBD) certified.

## EXTENDED SERVICE COVERAGE

Detroit engine extended service coverage (ESC) takes care of tomorrow's costs at today's pricing, extending your factory on-highway coverage for up to five years/500,000 miles, or seven years/250,000 miles for vocational coverage. So, whether you need your engine serviced three years from now, or a major repair right now, your engine ESC helps protect your investment.

From covering basic engine components to complete coverage, including aftertreatment, our ESC packages fit your needs and your budget by providing:

- Service at hundreds of Detroit authorized service locations
- Repairs performed by certified technicians
- Unmatched availability of Detroit Genuine Parts
- Coverage throughout the U.S. and Canada
- Availability to purchase without a late fee for up to 12 months, or for a nominal \$400 late fee between 13-18 months
- Ability to transfer coverage to subsequent owner, enhancing resale value

**UPTIME IS MONEY. THAT'S WHY  
SERVICEABILITY IS ESSENTIAL TO ACHIEVE  
A LOWER OVERALL COST OF OWNERSHIP.**



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## EMPOWERED BY DETROIT

Here at Detroit, we've built our reputation by building high-quality products that perform beyond expectations. Today, you'll find our engines in Freightliner and Western Star trucks on roads and at job sites around the globe.

The secret to our success goes beyond the engines we build. Our people and our continuous pursuit of innovation are powerful driving forces. Our engineering and manufacturing expertise are world class. Our service network is expansive and responsive. That's why we continue to grow and evolve. That's also why we now offer a full line of products: engines, axles, transmissions and advanced technologies. That's right. The company that makes the heart of the truck now gives you the arms, legs and backbone to go with it. So, if you demand it all, demand Detroit.

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