DD13™ FIRE AND EMERGENCY

FROM	FROM	DISPLACEMENT
450-500	1550-1650	12.8
Horsepower	lb-ft Torque	Liters

DETROIT DIESEL®

DEMAND PERFORMANCE℠

Pierce

DETROIT DIESEL DD13™ ENGINE IS EXCLUSIVE TO PIERCE® CUSTOM APPARATUS.

DETROIT DIESEL DD13™ ENGINE: DEMAND IT ALL.

Detroit Diesel has been the industry standard in the custom chassis fire truck business for more than three decades. Through the years, fire departments across the country have relied on our engines for their performance, reliability and superior pump controls. That's still true today. But when the Environmental Protection Agency's 2010 requirements grew more stringent to protect the environment, Detroit Diesel answered the call. Combining our long heritage of innovation with the vast resources of our parent company, Daimler, we produced a new line of engines that are the most advanced and environmentally friendly generation of Detroit Diesel engines ever built, including the DD13.

With an investment of billions of dollars, the work of the world's top engineers, countless laboratory tests and millions of real world customer miles, the DD13 engine is proven reliable where it really counts – in action.

Demand Economy

Smart, fuel-efficient design makes the most of every gallon

- Get up to 5% better fuel economy*
- Amplified Common Rail System (ACRS™) optimizes each injection event to minimize fuel consumption
- Advanced cooling system allows for decreased fan on time minimizing fuel consumption

*Compared to a DD13 EPA 2007 with comparable engine ratings and load weights.

Demand Serviceability

Lower your cost of ownership with easier serviceability

- Longest scheduled maintenance intervals in its class
- Oil, coolant and fuel filters are positioned above the frame rails for easier, faster and cleaner filter changes
- Maintenance-free crankcase breather

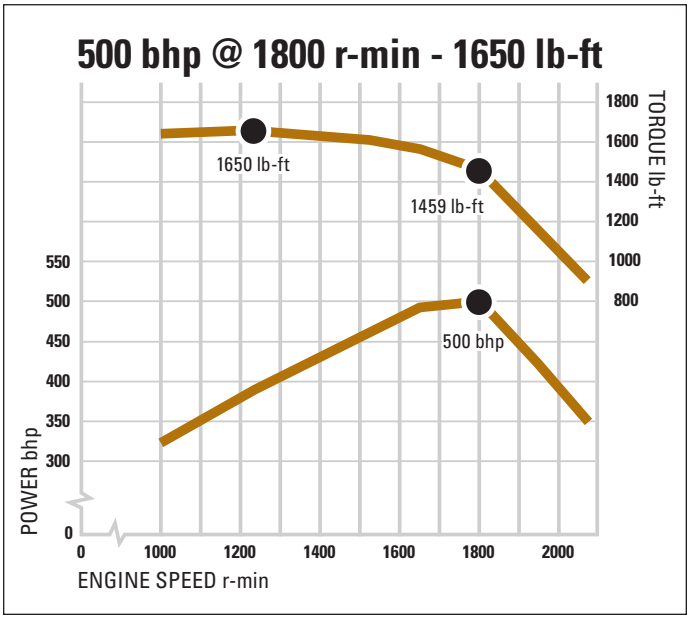
Demand Performance

Fire departments rely on the Detroit Diesel DD13's performance

- Three-stage integrated Jacobs® brake offers quieter engine braking and provides superior braking horsepower for extended service brake life
- Overall robust design provides B50 life of 1 million miles
- Sturdy rear gear train and ribbed cast iron block minimize noise vibration harshness (NVH)
- Waste-gated asymmetrical turbocharger has fewer moving parts (compared with VGT design)

DD13 SPECIFICATIONS FOR FIRE APPLICATION	
Configuration	Inline 6 Cylinder
Displacement	781 cu. in. (12.8 L)
Compression Ratio	17.3:1
Bore	5.20 in. (132 mm)
STROKE	6.15 in. (156 mm)
Weight (Dry)	2540 lb. (1152 kg)
Electronics	DDEC® 10
Oil Capacity	41.7 qt. (39.5 L)
Horsepower Range	450-500
Torque Range	1550-1650
Rear-Engine Power Take-Off	Optional

Horsepower and Torque Curve



Fire Commander II

Detroit Diesel pioneered electronic pump controls with the release of the first DDEC system. Since then, nobody has been able to match the precise control achieved with the Detroit Diesel Fire Commander. Taking advantage of the updated electronics in the DDEC system, the Fire Commander II puts even more control at your fingertips. The Fire Commander II also includes a pump inlet and discharge display, engine fault display, new buttons with a more exact feel and a hot exhaust display to alert the operator in the event of an active regeneration during pump operation. More control means you can focus on what matters most: fighting the fire.

Power Ratings

DD13 Engine Power Ratings	
450 HP @ 1800 RPM	1550 lb-ft @ 1200 RPM
500 HP @ 1800 RPM	1650 lb-ft @ 1200 RPM

Maintenance Intervals

Item	Mi/Hr†	Severe-Duty	Short-Haul	Long-Haul
Engine Oil and Filter Change*	Miles	25,000	35,000	50,000
	Hours	640	895	1,280
Fuel Filter Change	Miles	25,000	35,000	50,000
	Hours	640	895	1,280
Valve Lash Adjustment	Miles	Adjust at 100,000, at 500,000 and then every 500,000 thereafter.		
	Hours	Adjust at 2,565, at 12,825 and then every 12,825 thereafter.		
Diesel Particulate Filter	Miles	A "check engine light" will illuminate when ash requires removal. Normal DPF ash cleaning intervals are 300,000 to 400,000 miles.		
	Hours	A "check engine light" will illuminate when ash requires removal. Normal DPF ash cleaning intervals are 9,000 to 10,250 hours.		
DEF Pump Filter	Miles	150,000	175,000	250,000
	Hours	3,840	4,475	6,400

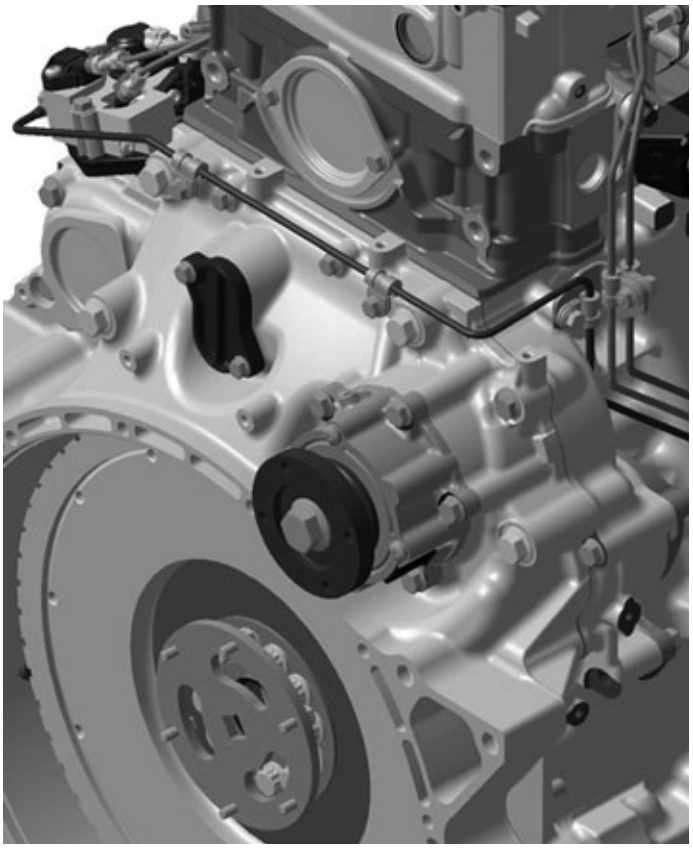
* Based on using Detroit Diesel's lube oil and oil analysis program. Severe-duty is up to 30,000 annual miles and a vehicle that averages less than 5 miles per gallon (mpg). Short-haul is between 30,000 and 60,000 annual miles and a vehicle that averages between 5.1 and 5.9 mpg. Long-haul is over 60,000 annual miles and a vehicle that averages greater than 6 mpg.

† Miles/Hours, whichever occurs first.

Fire Commander II Features:

- Default power up in pressure mode (can be changed to power up in RPM mode)
- Automatic regulation of pump discharge pressure
- Manual control of pressure or engine RPM settings
- Field programmable presets
- Diagnostic capabilities
- No variation in pressure or RPM when changing modes
- Automatically limit PSI increase when operating in RPM mode
- Recognition of "no water" condition with automatic response
- Interlock signal recognition and throttle-ready LED
- Return to engine idle with push of a button
- Accumulated engine and pump hours
- 2-year unlimited warranty

DD13 REAR ENGINE POWER TAKE-OFF (REPTO)



DD13 REPTO Features

- Drive ratio of 1.22
- Output torque capability 650 Nm drive flange (Spicer 1350)

DD13 REPTO Advantages

- Enhanced durability due to integration into base engine structure
- Lighter, more cost effective REPTO system can be integrated due to rear geartrain design
- Significantly higher torque output capability than transmission mounted PTOs to power 1,500 gpm pumps – like the Pierce® PUC™
- Reduced installed weight due to aluminum flywheel housing versus cast iron design
- Provides power source for excellent pump and roll configurations

Standard Warranty

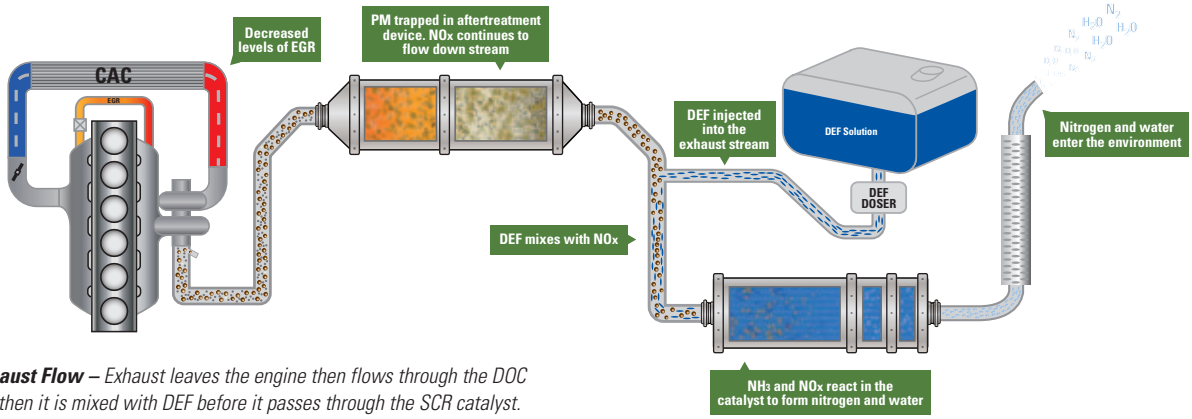
Item	Warranty Limits (Whichever Occurs First)		Repair Charge (Paid by Owner)	
	Months	Miles / Kilometers	Parts	Labor
Engine	0-60	0-100,000 mi 0-160,000 km	No charge	No charge
Injectors	0-24	0-100,000 mi 0-160,000 km	No charge	No charge
Fire Commander warranty is two year/unlimited mileage				

Detroit Diesel also offers extended warranty options for the DD13.
Please see your local sales outlet for details.

DD13: WITH SCR EMISSIONS TECHNOLOGY.

How SCR Emissions Technology Works

SCR is a complete emissions system that combines exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC) and selective catalytic reduction (SCR) to efficiently meet 2010 emissions standards. SCR treats the exhaust gases downstream of the engine instead of requiring complex changes under the hood. It does this by injecting a small amount of diesel exhaust fluid (DEF) into the exhaust stream which reacts with the NOx in the SCR catalyst, forming nitrogen and water. Lastly, the nitrogen and water, safe elements in the air we breathe, are released into environment.

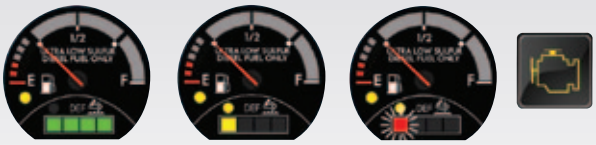


SCR Air/Exhaust Flow *– Exhaust leaves the engine then flows through the DOC and DPF, and then it is mixed with DEF before it passes through the SCR catalyst. Finally, it exits the tailpipe as nitrogen and water.*

Operating an SCR-Equipped Truck is Simple

There is one basic thing to keep in mind when operating an SCR-equipped truck: Watch the gauge to see when it's time for a refill.

The DEF Gauge is Integrated into the Diesel Fuel Gauge



The gauge indicates the level of DEF in the tank and has a series of alerts when the tank is running low. **Just watch the gauge. It's that simple!**

DEF Fill Options

DEF is stored on the truck in its own tank and is located in the body fender panel adjacent to the diesel fuel fill.

DEF FILL OPTIONS

HOME FILL	ROAD FILL
	• Truck stops • Engine distributors • Truck dealers • Local filling stations

ENGINE | DD13™ FIRE AND EMERGENCY | FROM 450-500 Horsepower | FROM 1550-1650 lb-ft Torque | DISPLACEMENT 12.8 Liters

DEMAND SUPPORT. ANYWHERE.

- Unmatched parts availability
- Factory-certified technicians
- Live technical support
- More than 800 authorized service outlets in North America

Demand support at DetroitDiesel.com.

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