

BIODIESEL AND THE U.S. DIESEL VEHICLE MARKET: 2016









A Strong Future For Diesel Vehicles In the U.S.

With 37 new clean diesel car, truck and SUV models available now in the 2016 model year, and the potential for nearly 40 more models to enter the market in the near future, the outlook for diesel technology in the United States remains strong. Add to that the more than 25 other automotive brands supplying hundreds of diesel engines models and over 120 different diesel vehicle models for the Medium- and Heavy-Duty truck, bus and RV markets, and the future looks even brighter.

The Diesel Technology Forum notes that, despite the disappointing Volkswagen emissions situation in late 2015 that has temporarily suspended certain VW, Audi and Porsche diesel models from sales in 2016, **Diesel technology remains a key strategy in the lineup of transportation solutions for the future.** Diesel engines remain the undisputed primary power source for medium and heavy heavy-duty on and off road vehicles, rail and marine applications, industrial, agriculture and construction applications. In fact, over 90 percent of heavy duty trucks are powered by diesel engines. Additionally, aided by low fuel prices and strong consumer demand, sales of diesel pickup trucks and SUVs continue to climb in these number one selling vehicle segments in the U.S.

Biodiesel is a Key Differentiator for Diesel to Compete in a Low-Carbon, Alternative Fuel Future

Consumers and fleets are finding great value in the diesel powertrain option due to its proven fuel economy, power and performance, as well as the ability to seamlessly use clean, renewable biodiesel blends in their existing diesel vehicles and equipment. In addition, because diesel engines deliver up to 40 percent better real-world fuel economy than their gasoline counterparts, more and more automakers are turning to diesel vehicle platforms to help them meet the aggressive new U.S. Corporate Average Fuel Economy (CAFE) standards, which mandate a fleet average of 54.5 MPG by 2025.

Biodiesel is the first commercial-scale fuel produced across the U.S. to meet the EPA's definition as an Advanced Biofuel – meaning the EPA has determined that biodiesel reduces greenhouse gas emissions by more than 50 percent when compared with petroleum diesel. In addition, as a low carbon Advanced Biofuel included in the Renewable Fuels Standard, Biodiesel is an effective policy solution to reduce CO2 emissions in the transportation sector, supporting the U.S. commitment to reduce CO2 emissions by 26 percent by 2025. As **100 gallons of biodiesel = 1 metric ton reduction in CO2 emissions relative to diesel**, increasing biodiesel production by 350 million gallons per year would provide CO2 reduction in 2025 of 56 million metric tons. Nothing else can bring this displacement of fossil carbon to the heavy duty transportation sector.

OEM Support for Biodiesel Continues to Grow

The U.S. biodiesel industry has invested over twenty years of research and development activity to provide the highest quality biodiesel fuel, fit for purpose and OEM-approved for use in their diesel engines and equipment. With widespread support across all diesel applications, the biodiesel industry is perfectly positioned to deliver even more cleaner burning biodiesel into the marketplace.

All major OEMs selling diesel equipment in the U.S. support at least B5 and lower blends, provided they are made with biodiesel meeting ASTM D 6751. In addition, more than 78 percent of the diesel vehicles coming off production lines today are approved for use with B20. In the GVW Class 5-8 vehicles that account for 92 percent of on-road diesel fuel use, nearly 90 percent of the medium- and heavy-duty truck OEMs support the use of B20 biodiesel blends. For more information and a complete listing of OEM position statements on biodiesel, visit http://biodiesel.org/using-biodiesel/oem-information.

The following pages contain a comprehensive listing by manufacturer of all of the currently announced diesel vehicle models available now or coming soon in the U.S., including, if published, their diesel engine specifications, emissions control technologies, and current biodiesel blend approval levels.

NOTF:

- Information was current at the time of this publication in March 2016.
- Check with the manufacturer or your local dealer to confirm model listings and availability.
- Vehicle specifications for 2016 diesel models were obtained from information available on manufacturers' websites and product literature follow links to their official company sites. Additional details can be found at www.edmunds.com.
- Fuel economy information can be found on the vehicle manufacturers' websites, or for vehicles of GVW >8,500 it can be calculated by visiting www.Intellichoice.com. Actual fuel economy may vary, depending upon vehicle options chosen and driving behavior.
- Additional information on Powertrain, Torque and Horsepower ratings has been supplied by vehicle manufacturers.
- Information on future diesel models has been provided by manufacturer contacts and/or other media and industry sources and may be subject to change.
- Stay tuned to the National Biodiesel Board website at <u>www.biodiesel.org/using-biodiesel/oem-information</u> for more details on these and other diesel models which may be on their way to the U.S. market soon.



Cars, Trucks and SUVs:

2016 BMW 328d

DIESEL MODEL	EMISSIONS CONTROL
2.0L TwinPower Turbo 4-Cylinder	- BMW Advanced Diesel reduces
180 hp @ 4,000 rpm	nitrogen oxides in the diesel
280 ftlbs. torque @ 1,750 rpm	emissions by injecting diesel exhaust
0-60 mph: 7.4 sec.	fluid-reducing agent into the exhaust
Fuel Economy (mpg)	system. A chemical reaction takes
City – 32	place inside the catalytic converter
Highway – 45	that minimizes nitrogen oxides.
Combined – 36	



Also available in 328d xDrive Sedan and 328d xDrive Sports Wagon

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Approved for B5 Biodiesel Blends

2016 BMW 535d

DIESEL MODEL	EMISSIONS CONTROL
3.0L TwinPower Turbo 6-Cylinder	- BMW Advanced Diesel reduces
255 hp @ 4,000 rpm	nitrogen oxides by injecting diesel
413 ftlbs. torque @ 1,500 rpm	exhaust fluid-reducing agent into the
0-60 mph: 5.5 sec.	exhaust system. A chemical reaction
Fuel Economy (mpg)	occurs inside the catalytic converter
City – 26	that minimizes nitrogen oxides.
Highway – 38	- Latest-generation common rail
Combined – 30	direct injection.
Approved for B5 Biodiesel Blends	



Also available in 535d xDrive Sedan

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2016 BMW X3 xDrive28d

DIESEL MODEL	EMISSIONS CONTROL
2.0L TwinPower Turbo 4-Cylinder	- BMW Advanced Diesel reduces
180 hp @ 4,000 rpm	nitrogen oxides in the diesel
280 ftlbs. torque @ 1,750 rpm	emissions by injecting diesel exhaust
0-60 mph: 7.8 sec.	fluid-reducing agent into the exhaust
Fuel Economy (mpg)	system. A chemical reaction takes
City – 27	place inside the catalytic converter
Highway – 34	that minimizes nitrogen oxides.
Combined – 30	





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2016 BMW X5 xDrive35d

DIESEL MODEL	EMISSIONS CONTROL
3.0L TwinPower Turbo 6-Cylinder	- BMW Advanced Diesel reduces
255 hp @ 4,000 rpm	nitrogen oxides in the diesel
413 ftlbs. torque @ 1,500 rpm	emissions by injecting diesel exhaust
0-60 mph: 6.5 sec.	fluid-reducing agent into the exhaust
Fuel Economy (mpg)	system. A chemical reaction takes
City – 24	place inside the catalytic converter
Highway – 31	that minimizes nitrogen oxides.
Combined – 27	



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Approved for B5 Biodiesel Blends

FIAT CHRYSLER AUTOMOBILES (FCA) US

2016 Ram ProMaster

DIESEL MODEL	EMISSIONS CONTROL
3.0L EcoDiesel I-4	- High-efficiency Exhaust Gas
174 hp	Recirculation (EGR) cooler with
295 ftlbs. torque	after-treatment system
Fuel Economy (mpg)*	- Selective Catalytic Reduction (SCR)
Approved for up to B20 Biodiesel Blands	

Approved for up to B20 Biodiesel Blends

Eligible for NBB Member discount on purchase or lease under FCA Affiliate Rewards Program



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2016 Ram 1500 EcoDiesel

DIESEL MODEL	EMISSIONS CONTROL
3.0L EcoDiesel V6	- Equipped with a diesel oxidation
240 hp	catalyst, diesel particulate filter and
420 ftlbs. torque	selective catalyst reduction so it is
0-60 mph: N/A	emissions compliant in all 50 states.
Fuel Economy (mpg)	
City – 2WD 20, 4WD 19	
Highway – 2WD 28, 4WD 27	
Combined – 2WD 23, 4WD 22	

Approved for up to B20 Biodiesel Blends

Eligible for NBB Member discount on purchase or lease under FCA Affiliate Rewards Program



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* Note: The U.S. EPA does not rate vehicles with a gross vehicle weight over 8,500 lbs. for fuel economy. Fuel economy estimates from www.intellichoice.com have been provided when available.



FIAT CHRYSLER AUTOMOBILES (FCA) US (cont.)

2016 Ram 2500 HD

DIESEL MODEL	EMISSIONS CONTROL
6.7L Cummins® Turbo Diesel I-6	- SCR after treatment that uses diesel
370 hp	exhaust fluid (DEF)
800 ft-lbs.torque @ 1,500 rpm	
Fuel Economy (mpg)*	

Approved for B20 Biodiesel Blends

Eligible for NBB Member discount on purchase or lease under FCA Affiliate Rewards Program



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2016 Ram 3500 HD

DIESEL MODEL	EMISSIONS CONTROL
6.7L Cummins® Turbo Diesel I-6	- SCR after treatment that uses diesel
385 hp	exhaust fluid (DEF)
900 ftlbs. torque	
Fuel Economy (mpg)*	
Approved for B20 Biodiesel Blends	

Approved for B20 Biodiesei Biends

Eligible for NBB Member discount on purchase or lease under FCA Affiliate Rewards Program



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2016 Jeep Grand Cherokee

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DIESEL MODEL	EMISSIONS CONTROL
3.0L EcoDiesel V6	- Multi-Jet II common rail fuel
240 hp @ 3,000 rpm	injection system
420 ftlbs. torque @ 1,500 rpm	- SCR after treatment that uses diesel
0-60 mph: N/A	exhaust fluid (DEF)
Fuel Economy (mpg)	- High-pressure-cooled EGR
City – 2WD 22, 4WD 21	- DPF
Highway – 2WD 30, 4WD 28	
Combined – 2WD 25, 4WD 24	

Approved for B20 Biodiesel Blends

Eligible for NBB Member Discount on purchase or lease under FCA Affiliate Rewards Program



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^{*} Note: The U.S. EPA does not rate vehicles with a gross vehicle weight over 8,500 lbs. for fuel economy. Fuel economy estimates from www.intellichoice.com have been provided when available.

2016 Ford Transit

DIESEL MODEL	EMISSIONS CONTROL
3.2L I-5 PowerStroke Turbo I-5	- Manual Regen allows drivers to
185 hp @ 3,000 rpm	activate regeneration to burn off soot
350 ftlbs. torque @ 1,500 rpm	from exhaust gases trapped in diesel
Fuel Economy (mpg)*	particulate filter (DPF)
Approved for B20 Biodiesal Blands	

Approved for B20 Biodiesel Blends

Eligible for NBB Member Discount on purchase or lease under Ford X-Plan Partner Recognition Program



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2016 Ford Super Duty F250/F350/F450

DIESEL MODEL	EMISSIONS CONTROL
6.7L PowerStroke V8 Turbo	- Integrated EGR
440 hp @ 2,800 rpm	- SCR
860 ftlbs. torque @ 1,600 rpm	- DPF
Fuel Economy (mpg)*	- Virtually eliminates soot and
Approved for B20 Biodiesel Blends	greenhouse gases

Eligible for NBB Member Discount on purchase or lease under Ford X-Plan Partner Recognition Program



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GENERAL MOTORS

2016 Chevy Express 2500/3500 Cargo Van

DIESEL MODEL	EMISSIONS CONTROL
Duramax 6.6L Turbo Diesel V8	- EGR system with cooler bypass
260 hp @ 3,100 rpm	- SCR with urea injection
525 ftlbs. torque @ 1,600 rpm	- Extra injector mounted downstream
Fuel Economy (mpg)*	from the turbo to aid DPF
Approved for B20 Biodiesel Blends	regeneration
Eligible for NBB Member Discount on p	ourchase or lease under GM Supplier

Eligible for NBB Member Discount on purchase or lease under GM Supplier Discount Program



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^{*} Note: The U.S. EPA does not rate vehicles with a gross vehicle weight over 8,500 lbs. for fuel economy. Fuel economy estimates from www.intellichoice.com have been provided when available.

GENERAL MOTORS (cont.)

2016 Chevy Silverado 2500HD/3500HD

DIESEL MODEL	EMISSIONS CONTROL
Duramax 6.6L V8 Turbo Diesel	- EGR system with cooler bypass
397 hp @ 3,000 rpm	- SCR with urea injection
765 ftlbs. torque @ 1,600 rpm	- Extra injector mounted downstream
Fuel Economy (mpg)*	from the turbo to aid DPF
Approved for B20 Biodiesel Blends	regeneration
Fligible for NBB Member Discount on r	ourchase or lease under GM Supplier

Eligible for NBB Member Discount on purchase or lease under GM Supplier Discount Program



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2016 Chevy Colorado

DIESEL MODEL	EMISSIONS CONTROL
Duramax 2.8L I-4 Turbo Diesel	- Cooled EGR system
181 hp @ 3,400 rpm	
369 ftlbs. torque @ 2,000 rpm	
Fuel Economy (mpg)	
City - 2WD 22, 4WD 20	
11: 1 01A/D 24 41A/D 20	

Highway - 2WD 31, 4WD 29

Combined - 2WD 25, 4WD 23

Approved for B20 Biodiesel Blends

Eligible for NBB Member Discount on purchase or lease under GM Supplier Discount Program



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2016 GMC Savana 2500/3500 Cargo Van

DIESEL MODEL	EMISSIONS CONTROL
Duramax 6.6L Turbo Diesel V8	- EGR system with cooler bypass
260 hp @ 3,100 rpm	- SCR with urea injection
525 ftlbs. torque @ 1,600 rpm	- Extra injector mounted downstream
Fuel Economy (mpg)*	from the turbo to aid DPF
Approved for B20 Biodiesel Blends	regeneration

Eligible for NBB Member Discount on purchase or lease under GM Supplier Discount Program



Also available as passenger van.

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* Note: The U.S. EPA does not rate vehicles with a gross vehicle weight over 8,500 lbs. for fuel economy. Fuel economy estimates from www.intellichoice.com have been provided when available.



GENERAL MOTORS (cont.)

2016 GMC Sierra 2500 HD/3500 HD

DIESEL MODEL	EMISSIONS CONTROL
Duramax 6.6L Turbo Diesel V8	- EGR system with cooler bypass
397 hp @ 3,000 rpm	- SCR with urea injection
765 ftlbs. torque @ 1,600 rpm	- Extra injector mounted downstream
Fuel Economy (mpg)*	from the turbo to aid DPF
Approved for B20 Biodiesel Blends	regeneration
Eligible for NBB Member Discount on Discount Program	purchase or lease under GM Supplier



Sierra 3500 HD also available as chassis cab.

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2016 GMC Sierra Denali 2500 HD/3500 HD

DIESEL MODEL	EMISSIONS CONTROL
Duramax 6.6L Turbo Diesel V8	- EGR system with cooler bypass
397 hp @ 3,000 rpm	- SCR with urea injection
765 ftlbs. torque @ 1,600 rpm	- Extra injector mounted downstream
Fuel Economy (mpg)*	from the turbo to aid DPF
Approved for B20 Biodiesel Blends	regeneration
Eligible for NBB Member Discount on purchase or lease under GM Supplier Discount Program	



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2016 GMC Canyon

DIESEL MODEL	EMISSIONS CONTROL
Duramax 2.8L I-4 Turbo Diesel	- Cooled EGR system
181 hp @ 3,400 rpm	
369 ftlbs. torque @ 2,000 rpm	
Fuel Economy (mpg)	
City - 2WD 22, 4WD 20	
Highway - 2WD 31, 4WD 29	



Approved for B20 Biodiesel Blends

Eligible for NBB Member Discount on purchase or lease under GM Supplier Discount Program



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* Note: The U.S. EPA does not rate vehicles with a gross vehicle weight over 8,500 lbs. for fuel economy. Fuel economy estimates from www.intellichoice.com have been provided when available.



JAGUAR LAND ROVER

2016 Jaguar XE

DIESEL MODEL

2.0L Turbo Diesel Ingenium Engine

- SCR and cooled, low-pressure EGR

180 hp @ 4,000 rpm

318 ft.-lbs. torque @ 1,750 rpm

0 - 60 mph: 7.5 sec.

Fuel Economy (mpg): TBA Biodiesel Approval Level: TBA



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2016 Land Rover Range Rover/Range Rover Sport

DIESEL MODEL	EMISSIONS CONTROL
3.0L Td6 Turbocharged Diesel	- SCR system uses diesel exhaust fluid
254 hp	to reduce NOx emissions
Torque: 443 lbft. @ 2,000 rpm	
0-60 mph: 7.4 sec./Sport - 7.1 sec.	
Fuel Economy (mpg)	
City - 22	

Highway - 29

Combined - 25

Biodiesel Approval Level: TBA



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2016 Mercedes-Benz Sprinter

DIESEL MODEL	EMISSIONS CONTROL
Turbo-charged I-4 or I-6 BlueTEC	- SCR
161 hp @ 3,800 rpm	- Achieves up to 90% lower emissions
265 ftlbs. torque @ 1,400 rpm	than an equivalent gas-powered
Fuel Economy (mpg)*	vehicle with Super Ultra-Low Emission
	Vehicle (SULEV) option for fleet
	customers.





Available in passenger, crew and cargo van models.

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2016 Mercedes-Benz E250 BlueTEC

DIESEL MODEL	EMISSIONS CONTROL
2.1L Twin-Turbo Diesel I-4	- BlueTEC clean diesel technology
195 hp @ 3,800 rpm	- AdBlue injected into the exhaust
369 ftlbs. torque @ 1,600 rpm	converts NOx emissions into harmless
0-60 mph: 7.9 sec.	nitrogen and oxygen
Fuel Economy (mpg)	
City – 28	
Highway – 42	
Combined – 33	

Approved for B5 Biodiesel Blends



2015 model shown

Also available in BlueTEC 4MATIC model.

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2016 Mercedes-Benz GL350 BlueTEC

DIESEL MODEL	EMISSIONS CONTROL
3.0L Turbo Diesel V6	- BlueTEC clean diesel technology
240 hp @ 3,600 rpm	- AdBlue injected into the exhaust
455 ftlbs. torque @ 1,600 rpm	converts NOx emissions into harmless
0-60 mph: 8.3 sec.	nitrogen and oxygen
Fuel Economy (mpg)	
City – 19	
Highway – 26	
Combined – 22	

Approved for B5 Biodiesel Blends



2015 model shown

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^{*} Note: The U.S. EPA does not rate vehicles with a gross vehicle weight over 8,500 lbs. for fuel economy. Fuel economy estimates from www.intellichoice.com have been provided when available.

2016 Mercedes-Benz GLE300d 4MATIC

DIESEL MODEL	EMISSIONS CONTROL
2.1L Twin Turbo Diesel I-4	- BlueTEC clean diesel technology
201 hp @ 3,800 rpm	- AdBlue injected into the exhaust
369 ftlbs. torque @ 1,600 rpm	converts NOx emissions into harmless
0-60 mph: 8.9 sec.	nitrogen and oxygen
Fuel Economy (mpg)	
City – 22	
Highway – 29	
Combined – 24	



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2017 Mercedes-Benz GLS350d 4MATIC

DIESEL MODEL	EMISSIONS CONTROL
V6 Diesel	- TBA
Horsepower: 255 hp	
Torque: 455 lb. ft.	
Fuel Economy (mpg)	
City – TBA	
Highway – TBA	
Combined – TBA	
Biodiesel Approval: TBA	



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2016 Nissan Titan XD

Approved for B5 Biodiesel Blends

DIESEL MODEL	EMISSIONS CONTROL
Cummins 5.0L V8 Turbo Diesel	- DPF
310 hp @ 3,200 rpm	- SCR
555 ftlbs. torque @ 1,600 rpm	
Fuel Economy (mpg)*	
Approved for B10 Biodiesel Blends	



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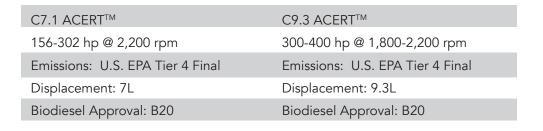
^{*} Note: The U.S. EPA does not rate vehicles with a gross vehicle weight over 8,500 lbs. for fuel economy. Fuel economy estimates from www.intellichoice.com have been provided when available.

Medium and Heavy-Duty Trucks:

CATERPILLAR

Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. It serves the resource, construction, energy and transportation industries.

A sample of its more than 500 engine options follows.



C13 ACERT™	C15 ACERT™
385-520 hp @ 1,800 - 2,100 rpm	475-580 hp @ 1,800-2,100 rpm
Emissions: U.S. EPA Tier 4 Final	Emissions: U.S. EPA Tier 4 Final
Displacement: 12.5L	Displacement: 15.2L
Biodiesel Approval: B20	Biodiesel Approval: B20

C18 ACERT™	EMISSIONS CONTROL:
575-700 hp @ 1,800-1,900 rpm	- Caterpillar Regeneration System (CRS)
Emissions: U.S. EPA Tier 4 Final	- Diesel Oxidation Catalyst (DOC)
Displacement: 18.1L	- Diesel Particulate Filter (DPF)
Biodiesel Approval: B20	- Selective Catalytic Reduction (SCR)
	- Diesel Exhaust Fluid (DEF)



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CUMMINS

Cummins is a global designer, manufacturer, distributor and servicer of engines and related technologies. Many manufacturers offer Cummins diesel engines in their medium- and heavy-duty trucks including Freightliner Custom Chassis, Thomas Built, Ram, Western Star, Peterbilt and more.

Cummins also produces diesel engines for off-highway, mining, rail and marine applications, as well as for power generation systems. A sample of some of their most popular engines follows here:

ISC8.3 (EPA 2010)
Horsepower: 260-350 hp
Peak Torque: 660-1,000 lbft.
Displacement: 8.3L
Biodiesel Approval: B20

(12 (EPA 2013)
orsepower: 310-425 hp
ak Torque: 1,150-1,650 lbft.
splacement: 12L
odiesel Approval: B20

ISX15 (EPA 2017)	EMISSIONS CONTROL:
Horsepower: 400-605 hp	- Cooled EGR, DPF, SCR catalyst,
Peak Torque: NA	DEF dosing in exhaust stream and
Displacement: 15L	single high-capacity electronic control
Biodiesel Approval: B20	module

DAIMLER TRUCKS

Daimler Trucks North America LLC, a Daimler company, is the largest heavyduty truck manufacturer in North America and a leading producer of mediumduty trucks and specialized commercial vehicles.

Headquartered in Portland, Oregon, Daimler Trucks North America manufactures, sells and services several commercial vehicle brands. Through the company's affiliates, Daimler Trucks is also a leading provider of heavy-and medium-duty diesel engines and other components. Daimler Trucks commercial vehicle brands include: Freightliner Trucks, Freightliner Custom Chassis, Thomas Built Buses and Western Star. The company's engine and components brand is Detroit of Detroit Diesel Corporation.



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Detroit

The Detroit brand is owned by Detroit Diesel Corporation, a leading manufacturer of heavy-duty diesel engines for the commercial truck market. The company offers a complete line of engines from 350 to 600 hp for the on-highway and vocational markets, which include the DD13, DD15 and DD16 engines, all with BlueTec SCR emissions technology. The company's line of Detroit Classic Engines includes the Series 60, MBE 4000, Series 50, MBE 900 and DD15TC. Engine specifications include:

DD13 (EPA 2010)	DD15/DD15TC (EPA 2010)
Horsepower: 350 – 470 hp	Horsepower: 455 – 505 hp
Torque: 1,250 – 1,650 lbft.	Torque: 1,550 – 1,750 lbft.
Displacement: 12.8L	Displacement: 14.8L
Biodiesel Approval: B5	Biodiesel Approval: B5

DD16 (EPA 2010)	EPA 2010 EMISSIONS CONTROL:
Horsepower: 475 – 600 hp	- BlueTec, SCR catalyst, DOC, DPF,
Torque: 1,850 – 2,050 lbft.	DEF injected in exhaust stream,
Displacement: 15.6L	DDEC® control module
Biodiesel Approval: B5	

SERIES 60* - up to 515 hp (EPA 2007)	EPA 2007 EMISSIONS CONTROL:
MBE 4000* - up to 450 hp (EPA 2007	- DPF
MBE 900* - up to 230 hp (EPA 2007)	- DOC
SERIES 50* - up to 350 hp (EGR)	

^{*} Series 60 approved for B20 biodiesel blends. MBE 4000, Series 50 and MBE 900 approved for B5 biodiesel blends.

Freightliner Trucks

Freightliner Trucks is a division of Daimler Trucks North America and is the leading heavy-duty truck manufacturer in North America. Freightliner specializes in producing Class 6 to 8 trucks. On-highway truck models include the Cascadia, Cascadia Evolution and Coronado. Medium-duty commercial models include the M2 106 and M2 112. Severe-duty models include the 108SD, 114SD and 122SD.

Freightliner trucks are equipped with the Detroit DD13¹, Detroit DD15/DD15 TC² and Detroit DD16³ diesel engines.



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^{1, 2, 3} See "Detroit" section for engine specs, emissions control systems and biodiesel approval.

Freightliner Custom Chassis

Freightliner Custom Chassis Corporation manufactures premium vehicle chassis for delivery vans, motor homes, school buses and commercial buses. Freightliner Chassis diesel models for motor homes include the XC and SL Series. The MT Series chassis is used in delivery vehicles. Bus chassis models include the MB, S2C and XB Series.

Freightliner Chassis models are available equipped with the following diesel engines: Detroit DD13 and Cummins ISB6.7, ISL9, ISL8.3, ISL8.9, ISX12 and ISX15.

Biodiesel Approval: B20 for models equipped with Cummins engines; B5 for models equipped with Detroit DD13 engine.



Thomas Built offers a full line of light- and medium-duty buses for schools, childcare centers, activity centers, transit applications and specialty markets. Thomas Built diesel models include: MinoTour, Saf-T-Liner C2, Saf-T-Liner EFX, Saf-T-Liner HDX, Transit-Liner C2, Transit-Liner EFX and Transit-Liner HDX. Thomas Built buses use GM 6.6L, Cummins ISB6.7 and Cummins ISL9 engines.

	GM 6.6L	Cummins ISB6.7	Cummins ISL9
MinoTour	X		
Saf-T-Liner Series		Χ	
Transit-Liner C2, EFX		Χ	
Saf-T-Liner HDX, Transit-Liner HDX		Χ	Χ

Biodiesel Approval: B20

Western Star

Western Star Truck builds heavy-duty custom trucks for long-haul and vocational applications. Western Star truck models include: 4700 Series, 4800 Series, 4900 Series, 5700 Series and 6900 Series.

Western Star trucks are available equipped with the following diesel engines: Detroit DD13¹, Detroit DD15/DD15 TC², Detroit DD16³, Detroit Series 60 Tier III⁴, Cummins ISL9⁵ and Cummins ISX15⁶ engines.

	DD13	DD15	DD16	Series 60	ISL9	ISX15
4700 Series	Х				Χ	
4800 Series	Χ					
4900 Series	Χ	Χ	Χ	Χ		Χ
5700 Series	Χ	Χ	X			
6900 Series	X		Χ	X		

1, 2, 3, 4 See "Detroit" section for engine specs, emissions control systems and biodiesel approval.



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^{5, 6} See "Cummins" section for engine specs, emissions control systems and biodiesel approval.

FIAT CHRYSLER AUTOMOBILES (FCA) US

2016 Ram Chassis Cab

DIESEL MODEL	EMISSIONS CONTROL:
6.7L Cummins Turbo Diesel I-6	- SCR catalyst
Horsepower: 325 hp	- DPF
Torque: 750 lb. ft.	- DEF
Biodiesel Approval: B20	



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FORD

2016 Chassis Cab

DIESEL MODEL	EMISSIONS CONTROL:	
6.7L Power Stroke V-8 Turbo	- Integrated EGR	
Horsepower: 300 hp @ 2,800 rpm	- SCR catalyst	
Torque: 660 lb. ft. @ 1,600 rpm	- DPF	
Biodiesel Approval: B20	- DEF	



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2016 Superduty F650/F750

ISSIONS CONTROL:
tegrated EGR
CR catalyst
PF
EF
)



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HINO

Owned by Toyota, Hino Trucks assembles, sells and services an environmentally friendly lineup of Class 5 to 7 commercial trucks. 2016 models include the following:

155/155DC: The Hino 155 and 155DC are Class 4, 14,500 GVW trucks powered by Hino's JO5E-TP 5L turbo diesel with 210 hp and 440 ft.-lbs. torque.

195/195 DC, 195h/195h DC: The Hino 195, 195 DC, 195h and 195h DC are Class 5, 19,500 GVW light-duty trucks. They are powered by a Hino J05E-TP 5L diesel engine that provides 210 hp with 440 ft.-lbs. torque.

238: The Hino 238 is a Class 6, 23,000 GVW medium-duty truck. It is powered by a Hino J08E-VC 8L diesel engine that provides 220 hp with 440 ft.-lbs. torque.

258LP/258ALP: The Hino 258LP and 258ALP are Class 6, 25,500 GVW medium-duty trucks powered by Hino's J08E-VC 8L, 6-cylinder in-line diesel engine. The 258LP engine provides 220 hp with 520 ft.-lbs. torque. The 258ALP model offers the same, as well as 260 hp and 660 ft.-lbs. torque.

268/268A: The Hino 268 and 268A are Class 6, 25,950 GVW medium-duty trucks powered by Hino's J08E-VC 8L, 6-cylinder in-line diesel engine that provides 220 hp with 520 ft.-lbs. torque. The 268A model also offers a version with 260 hp and 660 ft.-lbs. torque.

338: The Hino 338 is a Class 7, 33,000 GVW medium-duty truck powered by Hino's J08E-VB 8L, 6-cylinder in-line diesel engine that provides 260 hp with 660 ft.-lbs. torque.

Hino Engine Specs:

HINO J05E-TP:	HINO J08E-VC:	
Horsepower: 210 @ 2,500 rpm	Horsepower: 220 @ 2,500 rpm	
Torque: 440 lbft. @ 1,500 rpm	Torque: 520 lbft. @ 1,500 rpm	
Displacement: 5L	Displacement: 8L	
Biodiesel Approval: B20	Biodiesel Approval: B20	

HINO J08E-VB:	EMISSIONS CONTROL:	
Horsepower: 260 @ 2,500 rpm	- Cooled EGR	
Torque: 660 lbft. @ 1,500 rpm	- SCR system meets EPA 2010	
Displacement: 8L	standards	
Biodiesel Approval: B20		



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ISUZU

Isuzu Motors Limited is a major manufacturer of industrial diesel engines and low-cab-forward diesel-powered trucks. Isuzu engines are widely used in excavators, wheel loaders, fork trucks and skid steer loaders. Models include:

4H-SERIES	6H-SERIES
Horsepower: 188 @ 2,000 rpm	Horsepower: 282 @ 1,900 rpm
Torque: 521 lbft. @ 1,500 rpm	Torque: 854 lbft. @ 1,500 rpm
Displacement: 5.2L	Displacement: 7.8L
Biodiesel Approval: B20	Biodiesel Approval: B20
,	,

6U-SERIES	6W-SERIES		
Horsepower: 362 @ 2,000 rpm	Horsepower: 512 @ 1,800 rpm		
Torque: 1,090 lbft. @ 1,500 rpm	Torque: 1,709 lbft. @ 1,500 rpm		
Displacement: 9.8L	Displacement: 15.7L		
Biodiesel Approval: B20	Biodiesel Approval: B20		

Isuzu's diesel-powered vehicles include N-Series trucks and the Reach Van. N-Series trucks are available in the following models: NPR, NPR Eco-Max, NPR-HD, NPR-XD, NQR and NRR. The NPR, NPR Eco-Max and Reach Van are equipped with Isuzu's 3.0L 4JJ1-TC diesel engine, and the NPR-HD, NPR-XD, NQR, and NRR are equipped with the 5.2L 4HK1-TC. The engine specifications are as follows:

ISUZU 4JJ1-TC:	ISUZU 4HK1-TC:	
Horsepower: 150 hp @ 2,800 rpm	Horsepower: 215 hp @ 2,500 rpm	
Torque: 282 lbft. @ 1,600-2,800 rpm	Torque: 452 lbft. @ 1,850 rpm	
Displacement: 3.0L	Displacement: 5.2L	
Biodiesel Approval: B20	Biodiesel Approval: B20	

EMISSIONS CONTROL:

- SCR technology
- DEF injection



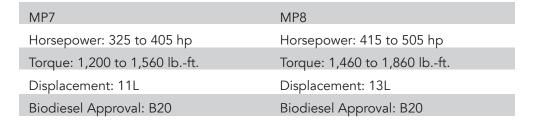
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MACK

Mack manufactures several lines of trucks designed for on-highway, construction, heavy haul and refuse work. Mack Pinnacle is the company's highway series. Titan is the company's heavy-haul series. Mack manufactures the Granite series of vocational trucks, the TerraPro series for the vocational and refuse industries, and the LR model for the refuse industry.

Mack trucks are equipped with the company's MP Engines, which include the MP7, MP8 and MP10. The MP7 and MP8 are available in the Econodyne, MaxiCruise and Maxidyne engine families. The MP10 is available in the Maxicruise and Maxidyne engine families.



MP10	EMISSIONS CONTROL:
Horsepower: 515 to 605 hp	- Mack ClearTech™ SCR system on
Torque: 1,860 to 2,060 lbft.	entire MP engine platform, utilizing
Displacement: 16L	SCR catalyst, DEF and DPF in the
Biodiesel Approval: B20	exhaust system



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MITSUBISHI-FUSO

Mitsubishi-Fuso Trucks of America Inc. offers a full line of Canter Series commercial trucks, including: Canter FE 130, Canter FG 4x4, Canter FE 160, Canter FE 160 Crew Cab and Canter FE 180. The trucks run with a 4-cylinder turbo diesel engine that offers 161 hp at 3,400 rpm and 295 ft.-lbs. torque at 1,300 rpm.

Mitsubishi-Fuso utilizes BlueTec emissions control technology with DPF, SCR and DEF.

Biodiesel Approval: B5



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NAVISTAR

Navistar is a manufacturer of medium- to heavy-duty Class 4 to 8 trucks, buses, defense vehicles and engines. Navistar truck and bus brands include International Trucks and IC Bus. Navistar's engine lineup covers light, medium and heavy-duty diesel engines and features the N9, N10 and N13 models, as well as MAXXFORCE and Cummins engines.

N9	N10
Horsepower: 300 hp @ 2,000 rpm	Horsepower: 310 hp 2,000 rpm
Torque: 860 lb. ft. @ 1,200 rpm	Torque: 1,050 lb. ft. @ 1,200 rpm
Displacement: 9.3L	Displacement: 9.3L
Biodiesel Approval: B20	Biodiesel Approval: B20

N13	MAXXFORCE 7
Horsepower: 410 hp @ 1,700 rpm	Horsepower: 220 hp @ 2,600 rpm
Torque: 1,450 lb. ft. @ 1,000 rpm	Torque: 560 lb. ft. @ 1,400 rpm
Displacement: 12.4L	Displacement: 6.4L
Biodiesel Approval: B20	Biodiesel Approval: B20

MAXXFORCE DT	EMISSIONS CONTROL:
Horsepower: 215 hp @ 2,200 rpm	- EPA certified using SCR technology
Torque: 560 lb. ft. @ 1,300 rpm	
Displacement: 7.6L	

International Trucks

Biodiesel Approval: B20

International offers a wide range of medium-duty to heavy-duty Class 4 to Class 8 trucks with horsepower ratings from 300 hp to 600 hp. International Trucks models include: 9900i, DuraStar, LoneStar, PayStar, ProStar, TerraStar, TranStar, and WorkStar.

9900i: The 9900 is a Class 8, 52,000 - 60,000 GVW on-highway truck with up to 600 hp and 2,050 ft.-lbs. torque. The truck is available equipped with the Cummins ISX15 diesel engine¹.

DuraStar: DuraStar is a Class 6-7, 23,500 - 44,600 GVW work truck. It's available with a Navistar N9 diesel engine that offers up to 330 hp and 950 ft.-lbs. torque or a Cummins ISB6.7² diesel engine that offers up to 300 hp and 660 ft.-lbs. torque.



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^{1,2} See "Cummins" section for engine specs, emissions control systems and biodiesel approval.



International Trucks (cont.)

LoneStar: LoneStar is a Class 8, 52,350 - 60,600 GVW on-highway truck with up to 600 hp and 2,050 ft.-lbs. torque. The truck is available equipped with a Cummins ISX15³ diesel engine.

PayStar: PayStar is a Class 8, 52,350 - 80,000 GVW on-highway truck. The truck is available equipped with a heavy-duty Navistar N13 engine, which provides up to 475 hp and 1,700 ft.-lbs. torque, or a Cummins ISX15⁴ diesel engine, which provides up to 600 hp and 2,050 ft.-lbs. torque.

ProStar: ProStar is a Class 8, 30,000 – 60,000 GVW on-highway truck. It is available equipped with a heavy-duty Navistar N13 diesel engine that offers up to 450 hp and 1,700 ft.-lbs. torque, or with a Cummins ISX15⁵ engine that offers up to 550 hp and 1,850 ft.-lbs. torque.

TerraStar: The TerraStar is a Class 4-5, 16,000 – 19,500 GVW work truck with up to 300 hp and 660 ft.-lbs. torque. The truck is powered by the MaxxForce 7 diesel engine built for medium duty.

TranStar: TranStar is a Class 8, 32,000 – 54,000 GVW on-highway truck with up to 410 hp and 1,450 ft.-lbs. torque. The truck is available equipped with a heavy-duty Navistar N13 diesel engine.

WorkStar: WorkStar is a Class 7-8, 27,500 – 73,000 GVW truck available with up to 475 hp and 1,700 ft.-lbs. torque. The truck is available with a MaxxForce DT, Navistar N9, N10 or N13 diesel engine.

Biodiesel Approval: B20

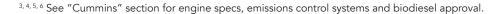
IC Bus

IC Bus manufacturers a wide range of buses for school, commercial and motor coach applications from 16,000 to 50,000 GVW. IC Buses include: AC Series; CE Series; HC Series; HC Series Bronze, Gold and Platinum; and RE Series.

IC Buses are equipped with the following diesel engines: MaxxForce 7, MaxxForce DT and Cummins ISB6.7⁶.

	MaxxForce 7	MaxxForce DT	Cummins ISB6.7	
AC Series	Χ			
CE Series			X	
HC Series		Χ		
HC Bronze, Gold, Platinum		X		
RE Series		X		

Biodiesel Approval: B20





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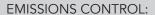


PACCAR

PACCAR designs and manufactures premium light-, medium- and heavy-duty trucks in the U.S. under the Kenworth and Peterbilt brands. PACCAR also manufactures PX-7 medium-duty engines, PX-9 medium- and heavy-duty engines, and MX-11 and MX-13 heavy-duty engines.

PX-7	PX-9
Horsepower: 200-360 hp	Horsepower: 260-450 hp
Torque: 520-800 lbft.	Torque: 720-1,250 lbft.
Displacement: 6.7L	Displacement: 8.9L
Biodiesel Approval: B20	Biodiesel Approval: B20

MX-11	MX-13
Horsepower 355-430 hp	Horsepower: 380-500 hp
Torque: 1,250–1,550 lbft.	Torque: 1,450-1,850 lbft.
Displacement: 10.8L	Displacement: 12.9L
Biodiesel Approval: B20	Biodiesel Approval: B20



- DPF, SCR

- DEF, AND EGR

Kenworth

Kenworth manufactures a wide range of Class 5 to 8 trucks. Kenworth truck models include the T170, T270, T370, T440, T470, C500, T800, W900, T660, T680, T880, K270 and K370. Kenworth trucks are available equipped with PACCAR diesel engines.

Biodiesel Approval: B20

Peterbilt

Peterbilt manufactures and sells aerodynamic and traditional on-highway, medium-duty, vocational and hybrid trucks. Peterbilt's on-highway trucks include models 579, 587 and 389. Medium-duty trucks include models 348, 337, 330, 325 and 220. Vocational trucks include models 567, 389, 367, 365, 348 and 320. Peterbilt diesel trucks are available equipped with PACCAR PX-7, PX-9, MX-11 and MX-13 diesel engines, as well as optional Cummins¹ ISL9, ISX12 and ISX15 diesel engines.

Biodiesel Approval: B20

¹ See "Cummins" section for engine specs, emissions control systems and biodiesel approval.





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REV RECREATION GROUP

REV Recreation Group is a collection of some of the world's most recognized recreational vehicle brands - American Coach, Fleetwood RV, Holiday Rambler and Monaco. Together, these companies manufacture a variety of diesel- and gas-powered RVs, as well as towable models.

American Coach

American Coach manufactures luxury motor coaches, including the Allegiance, Dream, Revolution, Tradition, Eagle and Heritage RV models. These models incorporate Freightliner Custom Chassis' Liberty Chassis design powered by Cummins ISL9, ISX12 and ISX15 diesel engines¹.

Fleetwood RV

Fleetwood RV is a leading manufacturer of Class A and Class C RVs. Class A diesel models include Discovery, Expedition, Pace Arrow LXE and Excursion. The Discovery features a Cummins ISL9² diesel engine with 380 hp. The Expedition, Pace Arrow LXE and Excursion feature a Cummins ISB 6.7L³ diesel engine with 300 to 360 hp.

Holiday Rambler

Class A diesel models under the Holiday Rambler brand include the Scepter, Endeavor and Ambassador. The Scepter features a Cummins ISL9 diesel engine with 450 hp. The Endeavor comes equipped with either a Cummins ISL9 engine at 380 hp or an ISB6.7 at 360 hp, and the Ambassador features a Cummins ISB6.7⁴ with 340 hp.

Monaco

Monaco, a leading manufacturer of premium motor coaches and towable RVs, produces the Dynasty and Diplomat diesel-powered models. The Dynasty features a Cummins ISX15 with 600 hp. The Diplomat will be offered as a 2016 model with a Cummins ISL9⁵ engine with 450 hp.

Biodiesel Approval: B20



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12,3,4,5 See "Cummins" section for engine specs, emissions control systems and biodiesel approval.



VOLVO

Volvo Trucks North America is a division of Volvo Truck Corporation, which manufactures a broad line of Class 8 trucks and tractors, both on-highway and vocational, under the Volvo brand. Volvo offers the VNM, VNL, VNX, VHD and VAH Series. VNM Series models include the 200, 430 and 630. VNL Series models include the 300, 430, 630, 670, 730 and 780. The VNX Series features the 300, 430 and 630 models. VHD Series models include the 200 Axle Back and Axle Forward, and the 430 Axle Back and Axle Forward. The VAH Series features the 200, 430 and 630 models. The Volvo line of diesel engines includes the D11, D13 and D16.

D11	D13
Horsepower: 355 to 405 hp	Horsepower: 375 to 500 hp
Torque: 1,250 to 1,550 lbft.	Torque: 1,450 to 1,850 lbft.
Displacement: 10.8L	Displacement: 12.8L
Biodiesel Approval: B20	Biodiesel Approval: B20

D16	EMISSIONS CONTROL:
Horsepower: 500 to 600 hp	- SCR allows for a passive regeneration
Torque: 1,650 to 2,050 lbft.	concept that uses NOx in place of
Displacement: 16.1L	diesel fuel to regenerate the soot,
Biodiesel Approval: B20	further reducing the cost of operation



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