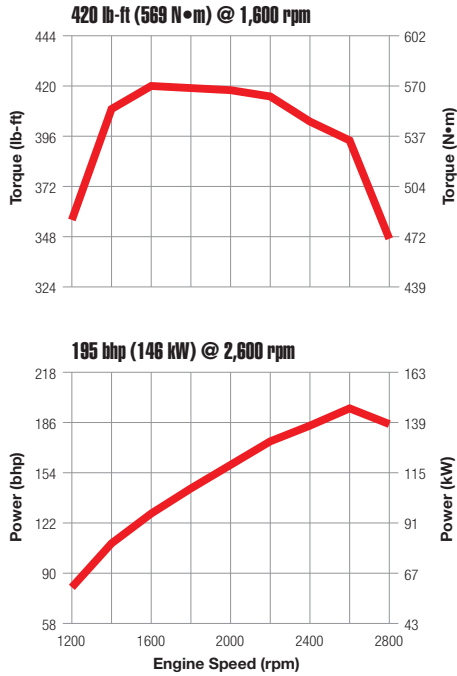


# EVERY ALTERNATIVE B LPG Plus

## Propane Engines For Truck And Bus



### Specifications

Maximum Horsepower	195 bhp	(146 kW)
Peak Torque	420 lb-ft	(569 N•m)
Governed Speed	2800 rpm	
Number Cylinders	6	
Engine Displacement	359 cu in	(5.9 L)
Bore & Stroke	4.02 x 4.72 in	(102 x 120 mm)
Operating Cycles	4	
Oil System Capacity	4.0 US gal	(15 L)
Coolant Capacity	10.5 US qts	(9.9 L)
System Voltage	12 V	
Net Weight with Std. Accessories, Dry	1,018 lb	(462 kg)

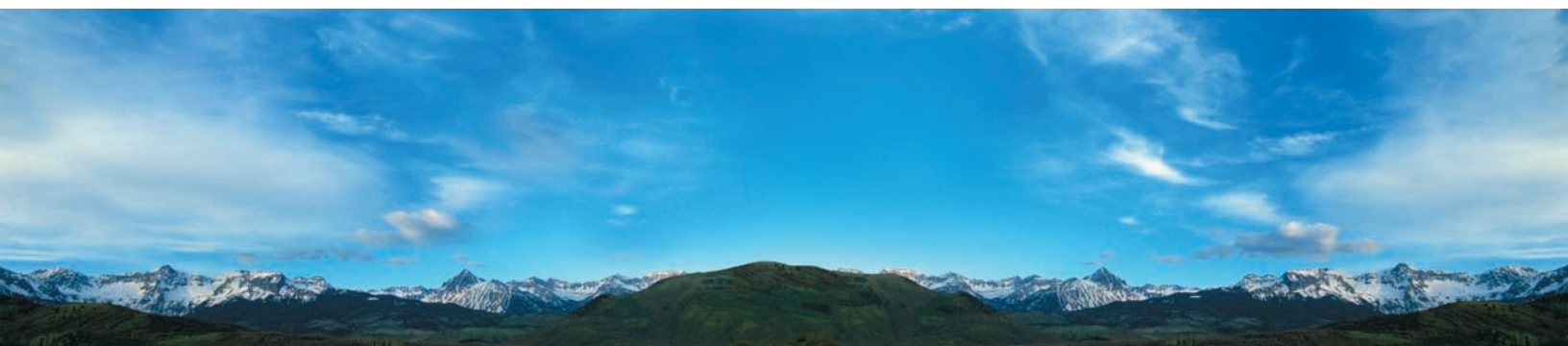
### Performance

Curves shown represent gross engine performance capabilities obtained and corrected in accordance with Cummins Standards. Standard conditions are: 29.36 in. Hg (99.14 kPa) barometric pressure, 500 ft. (152 m) altitude, 77°F (25°C) inlet air temperature, and liquid petroleum fuel at 104°F (39°C) inlet temperature and meeting Cummins specified recommendations (HD-10). At the time of engine shipment, performance will be within ± 5% at rated power and rated torque. For cold weather operation, a minimum of 40 psig to engine is required of vehicle fuel system.

### Emissions

B LPG Plus (with catalyst) is certified to:

- U.S. EPA 2007
- Produce as little as 1/10th of the particulate emissions of today's diesels



# EXPLORE EVERY ALTERNATIVE.

## B LPG PLUS

### DESIGN FEATURES

**Air/Fuel Regulation:** Cummins Closed-Loop Electronic Control System based on Cummins INTERACT™ system (CM556 ECM). Sensors for various engine parameters, exhaust backpressure, intake manifold temperature, fuel inlet pressure, knock detection, air-fuel ratio, and fuel mass flow. Electronically controlled turbocharger wastegate.

**Air Intake System:** Charge air cooling is utilized to reduce emissions by lowering intake manifold air temperatures.

**Accessory Belt Drive System:** Self-tensioning serpentine polyvee belt accessory drive system for water pump, engine-mounted fan hub, and most alternators. Gear driven air compressor with provision for gear-driven hydraulic pump.

**Catalyst:** Required for all models. Engine is certified to U.S. EPA 2005 standard.

**Complete Rebuildability:** The cylinder block has multiple rebore capability. Service cylinder sleeves and valve guides are also available if needed.

**Control System:** Full Drive-by-wire. Cummins CM556 Electronic Control Module provides full monitoring of engine sensors and control of fuel system, and ignition system. Full interface capability to Cummins INSITE™ and QuickCheck diagnostic service tools. CM556 provides OEMs and end users with the ability to tailor performance of the engine to fit the vehicle mission. Electronic Features include:

- Operating capability on wider range of fuel quality - HD-5 and HD-10
- Road Speed Governing
- Accelerator Interlock
- SAE J1587/J1939 Datalinks
- Comprehensive Engine Diagnostics through INSITE™ or QuickCheck
- PTO Control
- Cruise Control
- Engine Protection System

**Crankshaft:** Induction-hardened, forged steel crankshaft provides maximum strength and multiple regrind capability for long-term cost savings. Crankshaft supported by seven main bearings for optimum durability.

**Cylinder Block:** Full skirted block increases rigidity and strength. The design provides superior durability, ring, and bearing wear.

**Parts Simplicity:** Enables most engine service and repair operations with common tools.

**Pistons:** For extended piston and ring life, a Ni-Resist insert is cast into the aluminum piston and carries the top piston ring.

**Turbocharger:** Holset turbocharger with water-cooled bearing housing and electronically controlled wastegate provides improved response and performance without sacrificing durability.

### WARRANTY (NORTH AMERICA)

**Base Engine Warranty** - 2 years, unlimited miles/kilometers.

**Emission Warranty** - 5 years or 100,000 miles (160,935 km), whichever comes first.

See your local Cummins or Cummins Westport representative for additional warranty information.

### APPLICATION AND GEARING CONSIDERATIONS

The B LPG Plus engine is an excellent choice for 14,000-30,000 lb. GCW/GVV short haul applications such as pickup and delivery vehicles, school and shuttle buses and on/off highway applications such as refuse trucks and dump trucks. The engine's broad power band provides excellent performance when matched to various manual and automatic transmissions.

The B LPG Plus will deliver optimum performance when operating in the 2400-2600 RPM speed range. Typical B LPG Plus overall gearing should be higher numerically than the equivalent diesel engine application. This makes good use of the higher governed engine speed and provides excellent startability and gradeability.

**For truck applications up to 30,000 lb. GCW/GVV:** Select a gearing combination (transmission ratio, tire revs/mile, drive axle ratio) that will result in approximately 2600-2800 rpm at 65 mph.

**For urban transit, shuttle, or school bus:** Select a gearing combination (transmission ratio, tire revs/mile, drive axle ratio) that will result in approximately 2800 rpm at the specified maximum vehicle speed.

The formula for determining engine speed (rpm) at the 65 mph checkpoint for a selected gearing combination is:

$$\text{rpm} = (65 \text{ mph}) (\text{trans ratio}) (\text{axle ratio}) (\text{tire revs/mile})$$

60

It is important to utilize actual gear ratio and tire rev/mile information in selecting gearing combinations. A qualified truck/bus sales person or a Cummins distributor can provide information on available transmission top gear and drive axle ratios in addition to the actual tire revs/mile for a specific tire to be used on the drive axle.

Note: Lower numeric (faster) axle ratios are sometimes considered to obtain higher maximum vehicle speeds and lower engine rpm at the vehicle's normal cruise speed. When considering these combinations, one should be aware that:

- (a) The increase in maximum vehicle speed will be minimal
- (b) The fuel economy benefit associated with lower cruise rpms is difficult to measure
- (c) Most importantly, vehicle grade climbing capability will be adversely affected resulting in increased gear shifts.

To understand the relative differences among various gearing combinations, one should consult an authorized Cummins representative and request a Vehicle Mission Simulation™ (VMS).

### CUSTOMER SUPPORT

**Service Network** - Cummins Westport engines are backed by nearly 4,500 Cummins authorized parts or service outlets worldwide with strategic locations in every state and province.

**Customer Assistance Center - 1-800-343-7357**

Cummins specialists provide technical assistance, service locator and product literature 24 hours/day, 365 days/year.

Europe : (44) 1327 886-464

Australia: 1800 351-004



**Westport**

Cummins Westport Inc.  
101 - 1750 West 75th Avenue  
Vancouver, B.C.  
Canada V6P 6G2  
604-718-8100

Internet: info@cumminswestport.com  
http://www.cumminswestport.com  
http://www.cummins.com

Printed in Canada. Bulletin 4103568 Rev. 01/09  
©2009 Cummins Westport Inc.

Cummins Westport has always been a pioneer in product improvement. Thus specifications may change without notice. Illustrations may include optional equipment.