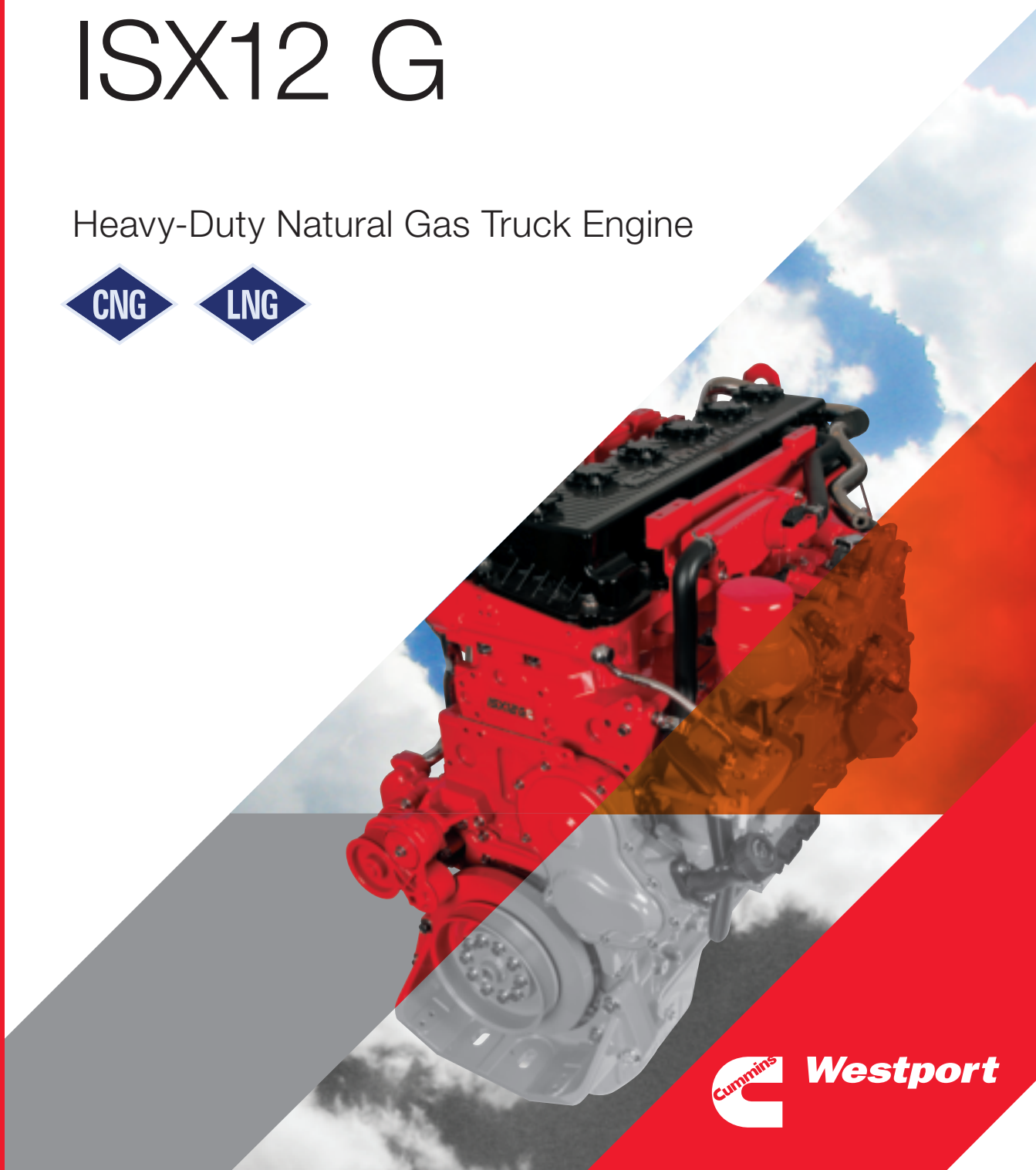
Cummins Westport

The Natural Choice

ISX12 G

Heavy-Duty Natural Gas Truck Engine

CNG LNG



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The Natural Choice. ISX12 G Heavy-Duty Natural Gas Truck Engine.

The Cummins Westport ISX12 G natural gas engine delivers the strong pulling power and heavy-duty durability required for line-haul and regional-haul truck/tractor, vocational, refuse and motorcoach applications. Ratings range from 320 hp to 400 hp (239-298 kW) with 1450 lb-ft (1966 N•m) of peak torque. The inherent efficiency of this engine, and an abundant supply of natural gas, reduces operating costs, and makes the ISX12 G the natural choice for your fleet.

Dedicated Factory-Built Natural Gas Engine.

The ISX12 G is a dedicated, factory-built natural gas engine that is based on the Cummins ISX12 diesel platform, and shares many of the same parts and components as its diesel counterpart. The ISX12 G meets current U.S. Environmental Protection Agency (EPA) and California Air Resources Board (ARB) emissions standards, and EPA greenhouse gas (GHG) and U.S. Department of Transportation (DOT) fuel consumption regulations.

The ISX12 G is the natural choice for line-haul, regional-haul and Less than Truckload (LTL) distribution operation trucks and tractors.

Five ratings from 320 hp to 400 hp (239-298 kW), combined with engine braking and manual, automatic and automated manual transmission capability, provide trucking customers with the performance to meet fleet requirements.

The ISX12 G is also a great choice for mixer, dump truck and refuse applications, with a high power-to-weight ratio and 700 lb-ft (949 N•m) of clutch engagement torque. Four refuse/vocational ratings, as well as Front-Engine Power Take-Off (FEPTO) and Rear-Engine Power Take-Off (REPTO) options, offer power and flexibility for a wide variety of vehicles.

Advanced Combustion Technology.

The ISX12 G features Cummins Westport's Stoichiometric cooled Exhaust Gas Recirculation (SEGR) combustion technology with spark ignition, leveraging Cummins proven EGR technology to create a high-performance, heavy-duty natural gas engine. The cooled-EGR system takes a measured quantity of exhaust gas and passes it through a cooler to reduce temperatures before mixing it with fuel and the incoming air charge to the cylinder. This results in improved power density and fuel economy versus traditional stoichiometric or lean-burn natural gas engines. This technology also enables the use of a Three-Way Catalyst (TWC) for emissions control.

Maintenance-Free Aftertreatment.

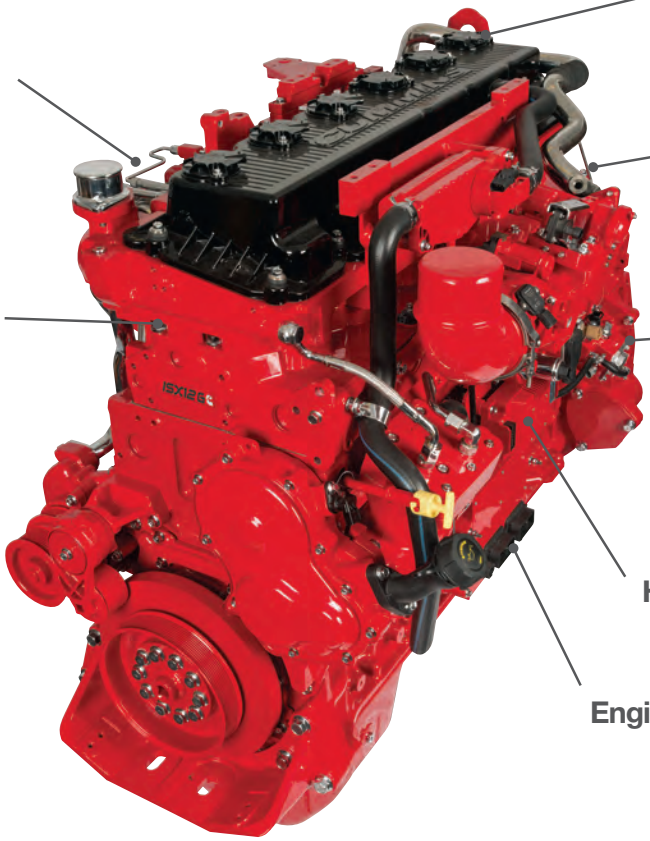
TWCs are effective, simple, passive devices packaged as part of the muffler. They provide consistent emissions-control performance without filter regeneration activity, are maintenance-free and can be mounted vertically or horizontally on the vehicle. The ISX12 G requires no active aftertreatment such as a Diesel Particulate Filter (DPF) or Selective Catalytic Reduction (SCR).

Natural Gas – The Fuel Choice Is Yours.

The ISX12 G operates on 100 percent natural gas, which can be carried on the vehicle in either compressed or liquefied form (CNG or LNG, respectively). The ISX12 G can also run on renewable natural gas (RNG) made from biogas or landfill gas that has been upgraded to vehicle-fuel quality. To meet engine fuel requirements under a variety of load conditions, the engine requires the fuel storage system to provide at engine fuel pressure of rated conditons between 60 psi and 150 psi.

ISX12 G

Design Architecture.



Features And Benefits.

- Advanced Air Handling – Electronic control for precise air handling.
- Proven Wastegate Turbocharger – A small-frame, fixed-geometry, wastegate-style turbocharger is used. A water-cooled bearing housing adds durability.
- Engine Control Module (ECM) – Full-authority CM2180A ECM constantly monitors and controls engine sensors, fuel system and ignition system. Drive-by-wire throttle control. Provides OEM and end users with the ability to tailor performance of the engine to fit the vehicle's mission. Full interface capability to Cummins INSITE™ and Cummins QuickCheck diagnostic service tools.
- High-Energy Ignition System – Improved Ignition Control Module (ICM) provides better performance and longer service intervals, improved spark plug and coil durability and self-diagnostics. The ICM is controlled by the full-authority CM2180A ECM.
- Accessory Belt Drive System – Self-tensioning serpentine polyvee belt accessory drive system for water pump, engine-mounted fan hub and most alternators.
- Air Intake System – Charge-air cooling reduces emissions by lowering intake manifold air temperatures.
- High-Efficiency Lube Cooler – Lowers oil temperatures, for longer engine life.
- Crankshaft – The eight-counterweight, fully balanced, high-tensile-strength steel forging has induction-hardened fillets and journals, for outstanding durability.
- Optional Engine Braking – 240 hp (178 kW) at 2100 rpm.
- Transmission – Automatic, manual and automated manual options available.
- Front- and Rear-Engine Power Take-Off (FEPTO and REPTO) – Options provide additional torque, for a variety of vocational applications.

ISX12 G Ratings

Engine Model	Advertised hp (kW)	Peak Torque lb-ft (N•m) @ rpm	Governed Speed
Line-Haul Truck Applications			
ISX12 G 400	400 (298)	1450 (1966) @ 1200	2100 RPM
ISX12 G 385	385 (287)	1350 (1830) @ 1200	2100 RPM
ISX12 G 350	350 (261)	1450 (1966) @ 1200	2100 RPM
ISX12 G 330	330 (246)	1250 (1695) @ 1200	2100 RPM
ISX12 G 320	320 (239)	1150 (1559) @ 1200	2100 RPM
Refuse Truck Applications			
ISX12 G 350R	350 (261)	1350 (1830) @ 1200	2100 RPM
ISX12 G 350R	350 (261)	1450 (1966) @ 1200	2100 RPM
ISX12 G 330R	330 (246)	1250 (1695) @ 1200	2100 RPM
ISX12 G 320R	320 (239)	1150 (1559) @ 1200	2100 RPM
Motorcoach Applications			
ISX12 G 400	400 (298)	1450 (1966) @ 1200	2100 RPM

ISX12 G Specifications

Maximum Horsepower	400 HP	298 kW
Peak Torque	1450 LB-FT	1966 N•m
Governed Speed	2100 RPM	
Clutch Engagement Torque	700 LB-FT	949 N•m
Type	4-cycle, spark-ignited, in-line 6-cylinder, turbocharged, CAC	
Engine Displacement	726.2 CU IN	11.9 LITERS
Bore and Stroke	5.11 IN x 5.91 IN	130 MM x 150 MM
Operating Cycles	4	
Oil System Capacity	12 U.S. GALLONS	45.4 LITERS
Coolant Capacity	26.5 U.S. QUARTS	25.1 LITERS
System Voltage	12 V	
Net Weight (Dry)	2,650 LB	1,202 KG
Fuel Type	CNG/LNG/RNG	
Aftertreatment	Three-Way Catalyst (TWC)	

ISX12 G Maintenance Intervals

Maintenance Item	Miles/Kilometers	Hours	Months
Spin-On Fuel Filter		Daily Check	
Oil And Filter*^	25,000 MI 40,000 KM	500	6
Coolant Filter**	75,000 MI 120,000 KM	1,500	12
Spin-On Fuel Filter*	50,000 MI 80,000 KM	1,000	9
Spark Plugs*	75,000 MI 120,000 KM	1,500	12
Overhead Adjustment*	75,000 MI 120,000 KM	1,500	12
Engine Brake Adjustment	300,000 MI 480,000 KM	6,000	24
Standard Coolant	300,000 MI 480,000 KM	6,000	24
Air Cleaner/Element	Follow vehicle manufacturer's published recommendations		

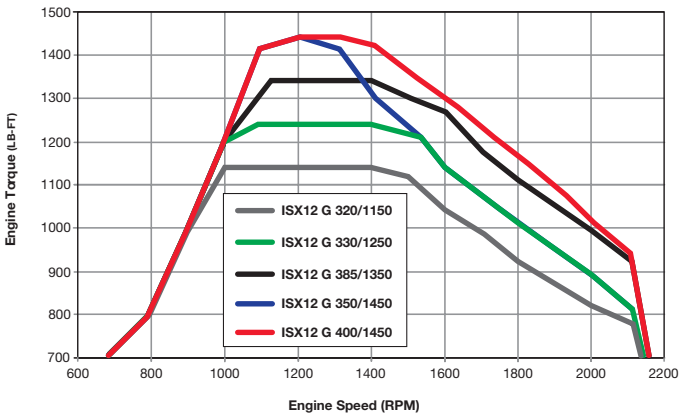
*Assuming normal duty cycle/based on 50 mph (80 kph) average speed. Spark plug interval and overhead adjustment must be reduced for slower speed applications.

**Do not charge if Supplemental Coolant Additive (SCA) above 3.

^Requires natural gas engine oil (CES20074).

- Intervals for normal duty – must be reduced for lower average speeds/duty cycles.
- Default interval is the hours stated. Interval is whichever comes first – hours, miles or months.
- Refer to Owners Manual for complete details on maintenance intervals.

ISX12 G Torque Curves.



With torque curves similar to those of the ISX12 diesel, within the 1150 lb-ft-to-1450 lb-ft (1559-1966 N•m) range, the ISX12 G offers comparable vehicle performance and drivability.

Gearing Recommendations.

For best reliability and durability, the recommended maximum gross vehicle weight (GVW) for the ISX12 G in line-haul applications is 80,000 lb (36,287 kg). Select gearing for fuel economy in line-haul and regional-haul applications where the engine operates at 1400 rpm to 1500 rpm at cruise speed. For vocational applications select gearing where engine operates at 1450 rpm to 1600 rpm at cruise speed.

Optimizing Performance With PowerSpec.

Cummins PowerSpec helps you find the ideal gearing specs for engine performance or fuel economy, making it possible to tailor the operation of Cummins Westport engines to fit every customer's application. PowerSpec can also read fault codes, and can be programmed to collect trip information for multiple drivers. PowerSpec works on every Cummins Westport engine, from the ISL G to the ISX12 G.

See cumminsengines.com/powerspec for more information.

Base Warranty.

The automotive base warranty for the Cummins Westport ISX12 G natural gas engine is the same as for the Cummins diesel base platform. Base warranty covers 2 years/250,000 miles (402,336 km) and 100 percent parts and labor on warrantable failures.*

*Warrantable failures are those due to defects in Cummins material or factory workmanship.

Extended Coverage.

For additional peace of mind, Cummins Westport offers a variety of extended coverage plans to meet every customer's need. For details on extended coverage options, contact your local Cummins distributor or Cummins Westport representative.

Better Customer Care.

Cummins Westport-powered vehicles are supported by Cummins service network. Cummins offers the largest service network in North America. Cummins-authorized technicians are fully trained on Cummins Westport natural gas engines, with ready access to Genuine Cummins parts and warranty support. For questions regarding your Cummins Westport engine, or for assistance in finding a repair facility in the United States or Canada, call Cummins Care at 1-800-DIESELS™ (1-800-343-7357).

Cummins Westport – The Natural Choice.

Cummins Westport Inc. designs, engineers and markets 6- to 12-liter spark-ignited natural gas engines for commercial transportation applications such as trucks and buses. Our dedicated 100 percent natural gas engines are manufactured by Cummins, and are available as a factory-direct option from leading truck and bus manufacturers.

To learn more about natural gas engines for transportation, and how natural gas can work for your fleet, visit the Cummins Westport Natural Gas Academy online. You'll find videos, information and resources about engines, OEM availability, fuel systems, refueling, maintenance and more: cumminswestport.com/natural-gas-academy

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