



EVERY[™] ADVANTAGE.

ISX



FOR LINE-HAUL AND VOCATIONAL APPLICATIONS

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Every Advantage.

Every element of the ISX has been designed and manufactured to optimize reliability and fuel economy, lowering the cost of operation while maintaining superior performance. It features the proven cooled-EGR subsystem and VG Turbo. A Cummins Particulate Filter and a coalescing filter complete the totally integrated system.

Cummins ISX is designed for years of dependable service. The turbocharger is a good example. It has only one moving part in the hot exhaust stream, so it is more reliable and durable than competitive turbos. Put that together with patented mid-stop cylinder liners, heavy-duty components and Six Sigma design practices, and you've got an engine that can be depended on for years to come.



Ratings

ENGINE MODEL	ADVERTISED HP (KW)	PEAK TORQUE LB-FT (N•M) @ RPM
ISX 600	600 (447)	1850 (2508) @ 1200
ISX 550	550 (410)	1850 (2508) @ 1200
ISX 525	525 (392)	1850 (2508) @ 1200
ISX 500	500 (373)	1850 (2508) @ 1200
ISX 500	500 (373)	1650 (2237) @ 1200
ISX 485	485 (362)	1850 (2508) @ 1200
ISX 485	485 (362)	1650 (2237) @ 1200
ISX 450	450 (336)	1650 (2237) @ 1200
ISX 450	450 (336)	1550 (2102) @ 1200
ISX 425	425 (317)	1650 (2237) @ 1200
ISX 400	400 (298)	1450 (1966) @ 1200

SmartTorque Ratings

ISX 500 ST	500 (373)	1650/1850 (2237/2508) @ 1200
ISX 485 ST	485 (362)	1650/1850 (2237/2508) @ 1200
ISX 450 ST	450 (336)	1550/1750 (2102/2373) @ 1200
ISX 425 ST	425 (317)	1550/1750 (2102/2373) @ 1200
ISX 425 ST	425 (317)	1450/1650 (1966/2237) @ 1200
ISX 400 ST	400 (298)	1550/1750 (2102/2373) @ 1200
ISX 400 ST	400 (298)	1450/1650 (1966/2237) @ 1200
ISX 385 ST*	385 (287)	1450/1550 (1966/2102) @ 1200

Vocational Ratings

ISX 500V	500 (373)	1850 (2508) @ 1200
ISX 500V	500 (373)	1650 (2237) @ 1200
ISX 435V	435 (325)	1450 (1966) @ 1200

Additional ratings may be available. Check with your local Cummins distributor or dealer.

*Intebrate™ not available with this rating.

Specifications

ADVERTISED HORSEPOWER	385-600 HP	287-447 kW
PEAK TORQUE	1450-1850 LB-FT	1966-2508 N•M
GOVERNED SPEED	2000-2100 RPM	
CLUTCH ENGAGEMENT TORQUE	1000 LB-FT	1356 N•M
NUMBER OF CYLINDERS	6	
OIL SYSTEM CAPACITY	14 U.S. GALLONS	52.9 LITERS
SYSTEM WEIGHT	3,093 LB	1,403 KG
ENGINE (DRY)	3,021 LB	1,370 KG
AFTERTREATMENT*	72 LB	33 KG

*Increase over standard muffler.

Features And Benefits.

Cummins ISX has the highest fuel economy of any heavy-duty diesel engine in its class. It also continues to lead the industry in reliability and durability. Advanced features and benefits include:



- Cummins Particulate Filter – Fully integrated to deliver uncompromising performance, reliability. Cummins design allows regeneration even in adverse operating conditions. Reduces particulate matter more than 90%.
- Dual Overhead Camshafts – One camshaft drives high-pressure fuel injection for clean, responsive power. The second camshaft operates the intake and exhaust valves, with dedicated lobes for the integrated engine brake.
- Cummins Intebrake™ – Provides greater vehicle control and reduced service brake wear. Up to 600 braking hp.
- Fully Integrated Electronic Controls – A single ECM (Electronic Control Module) controls the engine and aftertreatment. Also coordinates interaction with the transmission, ABS, engine brake, cooling fan and more.
- Variable Geometry Turbocharger – Enhanced response and control with electric actuation for infinite adjustment, providing exact boost at any rpm. Sliding-nozzle design sets the industry standard for reliability, durability.
- Cooled Exhaust Gas Recirculation – Lowers combustion temperatures for reduced emissions and optimized mpg.
- Crankcase Ventilation System – Electronically managed for optimum efficiency. Does not add parasitic load or complexity to the engine. Coalescing filter is easily serviced, only needing replacement once a year or every 125,000 miles (200,000 km).
- High-Pressure Fuel Injection System – For cleaner, more complete combustion.
- SmartTorque Ratings – Deliver up to 200 lb-ft of extra torque in the top two gears for better fuel economy, fewer shifts and less driver fatigue.

Key Electronic Features.

- Load-Based Speed Control (LBSC) – Improves both fuel economy and driver satisfaction by matching engine performance to road and load conditions.
- Gear-Down Protection (GDP) – Improves fuel economy by encouraging the driver to operate in the top two gears.
- Idle Control – Electronic features control idle speed, idle time, engine shutdown and PTO utilization.
- Road Speed Governor and Cruise Control – Settings optimize both fuel economy and performance.

Designed For Dependability. Every Day Of Every Year.

- Self-tensioning belt drive system drives both fan and alternator for reduced maintenance and increased belt life.
- Mid-stop cylinder liner minimizes oil consumption and increases durability.
- Single-piece Monotherm® piston is designed to handle the higher cylinder pressures in today's low-emissions ISX. A special phosphate coating successfully prevents corrosion.



PowerSpec.

PowerSpec is a downloadable software program that offers valuable information at no additional cost. Log on to www.powerspec.cummins.com to:

- Access Cummins electronic engine features and parameter descriptions and recommendations.
- Select and program feature and parameter settings.
- View gearing recommendations for specific engines and applications.
- Read and reset trip information and fault codes.

®Monotherm is a registered trademark of MAHLE, Inc.



ISX Maintenance Intervals.

DUTY*	LIGHT	NORMAL	SEVERE
OIL AND FILTER**	35,000 MI 56,000 KM	25,000 MI 40,000 KM	15,000 MI 24,000 KM
FUEL FILTER	25,000 MI 40,000 KM	25,000 MI 40,000 KM	25,000 MI 40,000 KM
COOLANT FILTER†	50,000 MI 80,000 KM	50,000 MI 80,000 KM	50,000 MI 80,000 KM
VALVE ADJUSTMENT	500,000 MI 800,000 KM	500,000 MI 800,000 KM	500,000 MI 800,000 KM
COALESCING FILTER	125,000 MI 200,000 KM	125,000 MI 200,000 KM	125,000 MI 200,000 KM
PARTICULATE FILTER CLEANING	200,000-400,000 MI (320,000-640,000 KM)		

*Light = > 6.7 mpg; Normal = 5.5 to 6.7 mpg; Severe = < 5.5 mpg

**Intervals using CJ-4 oil.

†With appropriate filter.

Recommended oil and oil filter change intervals for vocational applications are 15,000 miles (24,000 km), 400 hours or six months.

The Cummins Particulate Filter is designed to last the life of your engine. Regeneration is fully automated, with no driver action needed.

Gearing Recommendations.

A major factor in optimizing performance and fuel economy is vehicle gearing. Follow these simple recommendations to ensure gearing is properly selected.

On-Highway 80,000 lb (36,287 kg) Or Less:

- For maximum fuel economy or for vehicles intending to cruise greater than 65 mph, gear for an engine speed of 1450 rpm at 65 mph.
- In operations where performance is a primary concern or cruise speeds are typically below 65 mph, gear for an engine speed of 1550 rpm at the 65-mph checkpoint.
- Gearing combinations that produce an engine speed less than 1400 rpm at the vehicle's intended cruise speed should be avoided.

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

$$\text{rpm} = \frac{(65 \text{ mph}) (\text{top gear ratio}) (\text{axle ratio}) (\text{tire revs/mile})}{60}$$

Log on to www.powerspec.cummins.com for more gearing recommendations.

Vocational Trucks:

- Select a gearing combination that produces an engine speed between 1600-1900 rpm at the vehicle's intended cruise speed (mph).
- The gearing combination selected should deliver the minimum startability (shown below) when launching the vehicle in the lowest gear of the transmission.

Tractor/Trailer Combination:	20%
Straight Truck:	28%

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

$$\text{rpm} = \frac{(65 \text{ mph}) (\text{top gear ratio}) (\text{axle ratio}) (\text{tire revs/mile})}{60}$$

Log on to www.powerspec.cummins.com for more gearing recommendations.

Optional Equipment.

- Water-in-fuel sensor alerts the driver to contamination that could cause performance and durability problems.
- RoadRelay™ 4 is the most popular in-cab information system in the industry. It gives drivers real-time access to engine performance data along with maintenance reminders and engine protection advice.

QuickServe® Online.



The right information is priceless. Things change so rapidly today, you can't afford to take a chance on outdated information. Paper manuals and

CD-ROMs can't always keep pace with ever-changing parts and service information. You need the most current information – continuously updated – every minute of every day. The Internet is the answer. QuickServe Online is your complete reference for Cummins parts and service information on the Internet. For more information, contact your local Cummins distributor or log on to quickservice.cummins.com.



Warranty Coverage.

Cummins base engine coverage* is 2 years/250,000 miles (402,336 km) with major components coverage for 5 years/500,000 miles (804,672 km) and injector coverage for 2 years/125,000 miles (201,168 km).

*Covers defects in materials or factory workmanship.

Extended Coverage.

A variety of extended coverage plans are available for ISX engines in every application. Contact your local Cummins dealer or distributor for details.



Every Question. Answered.

- Service Network – Cummins engines are backed by nearly 3,500 authorized Cummins parts and service outlets in North America.
- Customer Assistance Center – Call the Cummins specialists for technical assistance and service locations at 1-800-DIESELS (1-800-343-7357).
- Cummins E-Mail – For online assistance with Cummins-related questions, click on the Contact Us link in the header at everytime.cummins.com.
- Cummins Web Site – For product literature or additional information, log on to everytime.cummins.com.
- Cummins Online Registration – Register all your Cummins engines quickly and easily at everytime.cummins.com to ensure quality parts and service for your engine.



Cummins is a pioneer in product improvement. Thus specifications may change without notice. Illustrations may include optional equipment.



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