

1.5L I-4 TURBO, LSD

EFFICIENT TURBO POWER

The Ecotec 1.5L Turbocharged LSD engine improves upon GM's small engine modular architecture by providing even greater performance and refinement over the previous versions. Horsepower has increased to 175 hp (vs LYX-170hp) while torque remains at an impressive 203 lb-ft of torque. Hardware enhancements including a higher-pressure fuel system (35MPa from 20MPa), enhanced piston design with PVD coating, and precise intake phaser positioning helps optimize efficiency and contribute to overall performance.



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STATE-OF-THE-ART TECHNOLOGIES

Lightweight, High-Pressure Casted Aluminum Cylinder Block

- High-pressure casting produces a more dimensionally accurate block requiring fewer machining operations than conventional sand-cast blocks.
- Aluminum bedplate enhances strength and helps minimize vibrations.
- Bay-to-bay breathing design minimizes crankcase windage via channels between the bulkheads and where the block and bedplate meet.

Integrated DOHC Cylinder Head and Exhaust Manifold

- Fully integrated aluminum cylinder head/exhaust manifold helps reduce weight.
- Cylinder head features a water-cooled exhaust manifold one-piece design helps optimize engine warmups.
- Increased durability by eliminating gasket sealing around the exhaust ports.
- Cam cover assembly incorporates the oil control valves for the cam phasers and camshaft position sensors. This unique combination improves packaging in the engine and reduces complexity of the cylinder head.

Turbocharger System

- Single-stage, single-scroll unit with an intercooler and pressure activated wastegate.
- Low-inertia turbocharger helps provide strong power at low rpm for a quick throttle response.
- Turbo is mounted close to engine exhaust outlet to help turbine “spool up” quicker and faster “light off” of the exhaust catalyst for responsive driver to pedal inputs.

Two-Stage Variable Flow Oiling System

- Crankshaft driven, variable displacement oil pump matches oil supply to the engine load.
- Provides oil flow volume for piston cooling oil jets to minimize piston temperatures which helps optimize performance.
- Provides oil-to-cam phasers via separate bores in cylinder block and head.
- Oil pump assembly is located inside the oil pan which helps reduce noise from the front cover area and minimizes the potential for pump cavitation noise.

Noise/Vibration Refinements

- Inverted-tooth camshaft drive chain helps minimize sound levels.
- Two-piece oil pan has an aluminum upper section with an integrated lower, stamped steel sump oil pan which helps reduce noise compared to all aluminum oil pans.
- The front-end accessory drive features an overriding alternator coupler to remove the effect of crankshaft oscillations. In addition to noise refinement benefits, this also allows a reduction in tensioning force to reduce friction levels and improve efficiency.

ADDITIONAL FEATURES

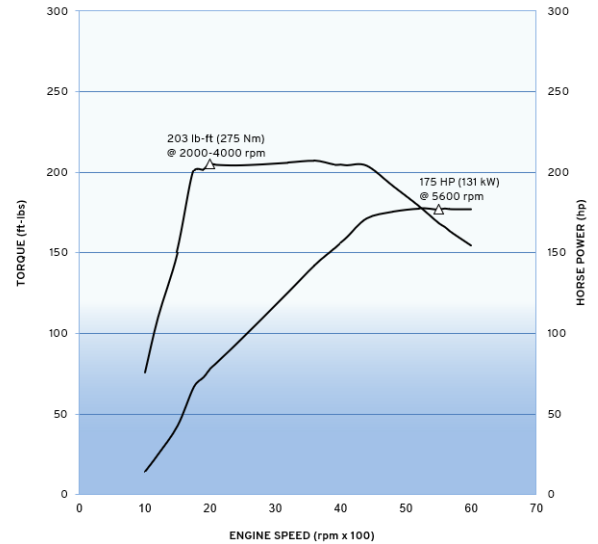
- Variable Valve Timing (VVT)
- Low friction, PVD coated piston rings
- Extended life spark plugs
- Extended life coolant
- Electronic throttle control
- Spin-on oil filter

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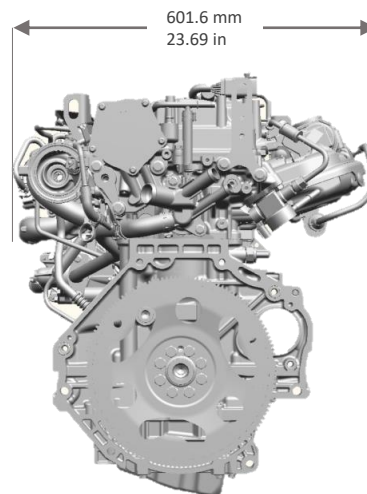
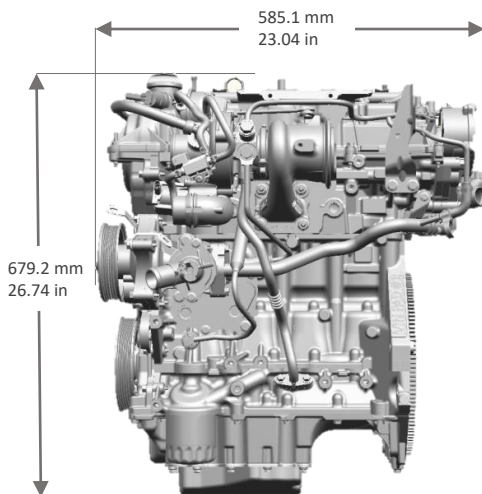
SPECIFICATIONS

Type:	1.5L I-4
Displacement:	1490cc
Engine orientation:	Transverse
Compression ratio:	10.0:1
Valve configuration:	Dual overhead cam
Vales per cylinder:	Four
Assembly site:	Toluca, Mexico
Valve lifters:	Hydraulic roller finger follower
Firing order:	1-3-4-2
Bore x stroke:	74.0 x 86.6mm
Fuel type:	Regular unleaded
Horsepower:	175 hp (131 kW) @ 5600 rpm*
Torque:	203 lb-ft (275 Nm) at 2000-4000 rpm*
	*GM tested per SAE J1349
	Actual power levels may vary depending on OEM calibration and application
Maximum engine speed:	6500 RPM
Emissions control:	Evaporative system, catalytic converters (split volume common can), positive crankcase ventilation
Block:	Cast aluminum
Cylinder head:	Cast aluminum
Intake manifold:	Composite
Exhaust manifold:	Integrated into cylinder head
Main bearing caps material:	Iron inserts cast into bedplate
Crankshaft:	Steel
Camshaft:	Assembled steel
Connecting rod:	Forged powdered metal
Turbo Charger:	Single-stage, Single-scroll

2023 1.5L I-4 Turbo LSD
GM Tested Per SAE J1349



2023 Chevrolet Equinox



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