

2009 “LS3” 6.2L V-8 (LS3)

6.2L V-8 (LS3) CAR ENGINE

Carryover Features and benefits from 2008 model year

- New engine offering in the Pontiac G8 GXP
- Displacement increase to 6.2L from the 6.0L LS2
- Performance enhancement from base Corvette LS2
- SAE Certified Power & Torque
- Horsepower increase from 400 to 430. (Corvette)
- Torque increase from 400 to 424 lb.ft. (Corvette)
- Additional +6 Hp and +4 lb-ft increase with optional active exhaust system
- High flow cylinder heads
- Enhanced valvetrain
- Higher flow intake manifold with acoustic shell
- Larger bore block with structural improvements
- Pistons (high engine output design)
- High flow injectors
- Acoustic beauty cover

New engine offering in Pontiac G8 GXP

The “LS3” V-8 is now available in the Pontiac G8 GXP. SAE Certification test has just been completed and the numbers are in. 415 hp @ 5900 rpm and 415 lb-ft. of torque @4600 rpm. The “LS3” V-8 will be mated up with the Hydra-Matic 6L80 (MYC) six-speed automatic or the Tremec TR6060 six-speed manual transmission in this application

High Flow Cylinder Heads

The intake port shape size and shape have been modified to increase flow. The higher flow intake ports are similar to the L92 6.2L. Casting changes were made to increase the opening at the exhaust face to improve exhaust port flow. A new exhaust manifold opening is required to match the heads.

Enhanced valvetrain

The inlet rocker arm is offset 6 mm between the valve tip and rocker bolt/push rod to enable a more direct intake port. The intake valve diameter is increased from 50.8 to 55.0 mm. Hollow stem intake were implemented to enable the 6600 rpm capability (13% reduction in mass from LS2). The 40.4 mm diameter exhaust valves are carried over from L92. Carryover LS2 high load valve springs are also included for 6600 rpm capability. Intake lift increases from 13.25mm to 14.0mm. Exhaust lobes are carryover LS2. Camshaft timing is revised.

Higher flow intake manifold with acoustic shell

Intake ports revised to match cylinder head. The composite intake manifold is manufactured with a lost core process to improve runner to runner variation and to reduce flow losses. Acoustic foam is sandwiched between the outside top of the intake manifold and an additional “skull cap” acoustic shell to reduce radiated engine noise. Structural enhancements have been added to the manifold bosses.

Larger bore block with structural improvements

Casting and machining in the bulkheads was revised to improve block structure and to improve bay to bay breathing. The enhanced cylinder block is shared with the the 6.2L truck applications.

Pistons

A larger diameter piston design features design enhancements for the higher engine output.

High Flow Injectors

High flow 5.0 g/s injectors were used from the LS7 engine.

Acoustic / Beauty Cover

The beauty cover has a revised appearance and acoustic treatment

Overview

In 2008, General Motors Powertrain engineers added a performance kick to the Corvette base engine with introduction of the new LS3 6.2L engine which replaces the LS2, and this now carries over for the 2009 model year offerings. The 2009 6.2L LS3 V-8 with 430 Hp @ 5900 rpm and 424 lb.ft. torque @ 4600 rpm is the most powerful Corvette base engine ever and is SAE Certified.

The LS3 engineering team focused on design elements to increase flow efficiency in addition to the displacement increase to meet the performance enhancement. The bore was increased to a larger 103.25 mm diameter compared to the LS2 bore of 101.6. Engine stroke remains at 92.0mm. Intake flow efficiency was optimized by straightening out and optimizing the flow path from the intake manifold into the cylinder heads. A high flow efficiency induction system is borrowed from the Z06 application. The cylinder head exhaust ports have been modified to increase flow. Also now available in the Corvette with the LS3 is a butterfly valve in the exhaust system which opens at high exhaust flow levels and by-passes the "tri-flow" S-shaped path the exhaust gases normally follow. This reduces exhaust restriction, yet allows the Corvette LS3 to hum at a more muted burble during part-throttle operation. The LS3 also meets the more stringent Bin4 emission standards and again avoids the gas guzzler tax. The small block tradition of more for less continues.