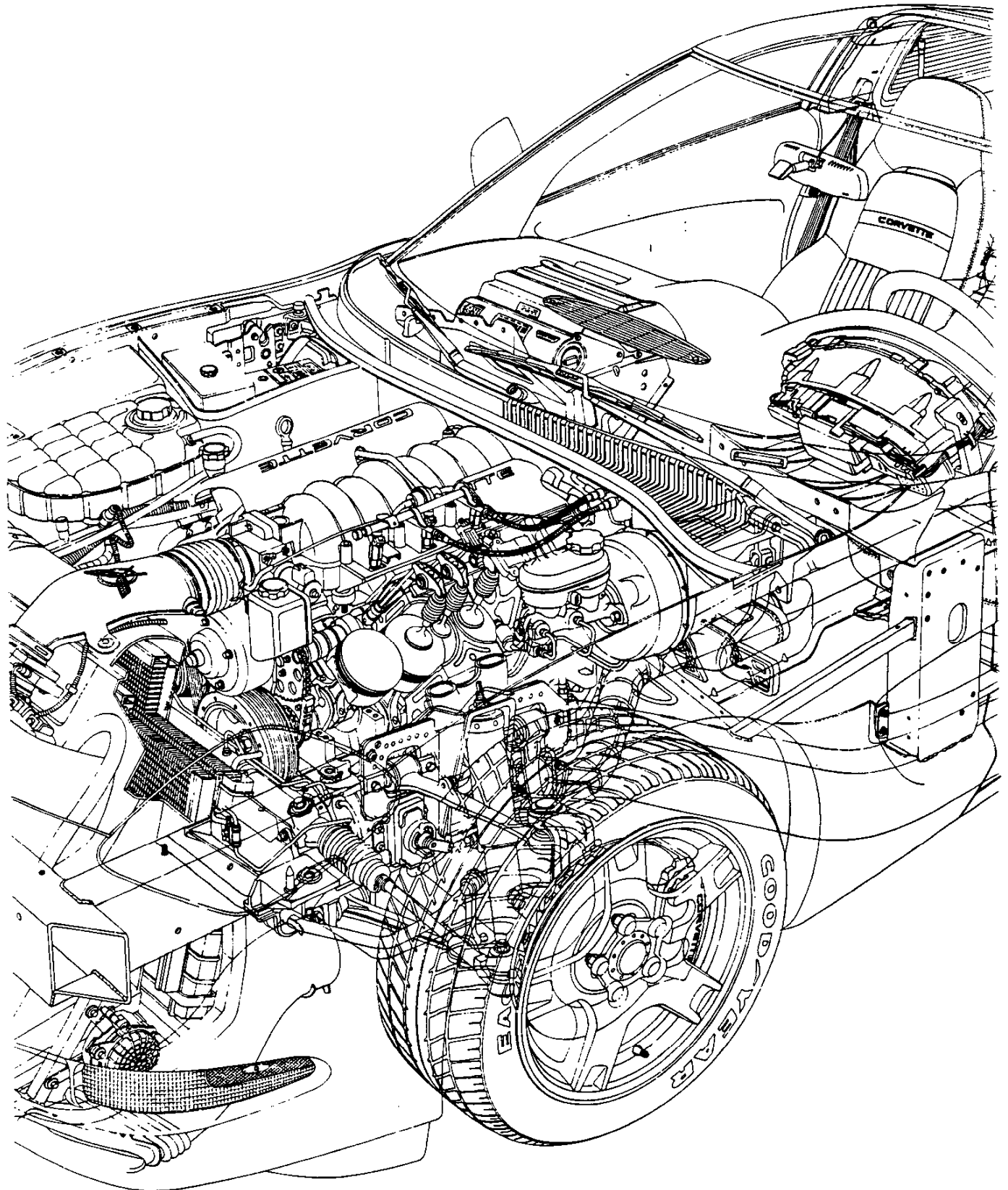






1997 CORVETTE

FIFTH GENERATION



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CORVETTE

CORVETTE EQUIPMENT SUMMARY

STANDARD INTERIOR FEATURES

1YY07

| | | |
|-------------------|---|---|
| AIR CONDITIONING: | MANUAL | S |
| DEFOGGERS: | REAR WINDOW | S |
| | SIDE WINDOWS | S |
| GLASS: | TINTED, SOLAR-BATCH | S |
| INSTRUMENTATION: | ELECTRONIC WHITE ANALOG GAGES AND MULTI-LANGUAGE
DRIVER INFORMATION CENTER | S |
| KEYLESS ENTRY: | PASSIVE/ACTIVE REMOTE | S |
| LIGHTING: | COURTESY, CARGO AREA, CONSOLE AND GLOVEBOX | S |
| LOCKS: | POWER DOOR | S |
| MONITOR: | TIRE PRESSURE | S |
| RADIO: | ELECTRONICALLY TUNED AM/FM STEREO RADIO W/SEEK-SCAN,
AUTOMATIC TONE CONTROL, DIGITAL CLOCK, STEREO
CASSETTE TAPE, THEFT LOCK, SPEED COMPENSATED VOLUME,
HIDDEN DIVERSITY ANTENNA AND BOSE SPEAKER SYSTEM | S |
| RESTRAINT SYSTEM: | DRIVER AND PASSENGER AIR BAGS | S |
| SCOTCHGARD: | FABRIC PROTECTOR ON FLOOR COVERING | S |
| SEAT: | DRIVER POWER | S |
| SPEED CONTROL: | ELECTRONIC WITH RESUME SPEED | S |
| WARNING LIGHT: | LOW OIL LEVEL | S |
| WARNING TONE: | HEADLAMPS-ON | S |
| WINDOWS: | POWER WITH DRIVER AND PASSENGER EXPRESS DOWN | S |

STANDARD EXTERIOR FEATURES

| | | |
|-------------------|---|---|
| ASR: | ACCELERATION SLIP REGULATION | S |
| BODY STRUCTURE: | UNIFRAME-DESIGN W/CORROSION-RESISTANT COATING | S |
| ENGINE ACCESS: | REAR OPENING HOOD W/UNDERHOOD LAMP | S |
| FUEL FILLER DOOR: | INTERIOR RELEASE | S |
| HATCH: | REAR, FRAMED GLASS W/INTERIOR AND REMOTE RELEASE | S |
| INDUCTION SYSTEM: | OUTSIDE AIR | S |
| INSULATION: | INSULATION PKG, ACOUSTIC | S |
| LAMPS: | DAYTIME RUNNING | S |
| PAINT: | BASE-COAT/CLEAR-COAT | S |
| PASS KEY II: | THEFT DETERRENT HORN ALARM SYSTEM | S |
| ROOF PANEL: | ONE-PIECE REMOVABLE, BODY COLOR | S |
| TIRES: | EXTENDED MOBILITY SPEED RATED EAGLE F-1 GS TIRES
P245/45ZR-17 FRONT
P275/40ZR-18 REAR | S |
| WIPERS: | INTERMITTENT W/INTEGRAL WASHER IN ARM | S |

STANDARD CHASSIS FEATURES

| | | |
|------------------|---|---|
| BRAKES: | HEAVY-DUTY 4-WHEEL ANTI-LOCK FRONT AND REAR DISC BRAKES | S |
| DIFFERENTIAL: | LIMITED SLIP | S |
| ENGINE: | 5.7 LITER SFI V8 ALUMINUM W/STEEL CYLINDER LINERS,
COMPOSITE INTAKE MANIFOLD, SEQUENTIAL-PORT FUEL INJECTION
(SFI), ELECTRONIC THROTTLE CONTROL, AND ROLLER VALVE LIFTERS | S |
| EXHAUST: | DUAL, LIFETIME STAINLESS STEEL | S |
| IGNITION SYSTEM: | DISTRIBUTORLESS OPTI-SPARK | S |
| SPRINGS: | TRANSVERSE FIBERGLASS LEAF AND FORGED ALUMINUM A-ARMS | S |
| STEERING: | SPEED SENSITIVE VARIABLE ASSIST | S |
| SUSPENSION: | INDEPENDENT FRONT AND REAR | S |
| TRANSMISSION: | 4-SPEED AUTO W/BRAKE TRANS SHIFT INTERLOCK | S |

**CORVETTE
TRIM DEFINITION & OPTION SUMMARY**

INTERIOR TRIM

| | | |
|------------------------|---|-------|
| CONSOLE: | INTEGRAL CUPHOLDER AND ASHTRAY | 1YY07 |
| MIRROR: | REARVIEW, DAY/NIGHT WITH READING LAMPS | S |
| SEATS: | LEATHER SEATING SURFACE BUCKETS WITH LATERAL SUPPORT
AND BACK ANGLE ADJUSTMENT | S |
| STEERING WHEEL: | TILT, SPORT, LEATHER WRAPPED MAGNESIUM | S |
| STORAGE: | LOCKABLE, CONSOLE & GLOVEBOX, THREE REAR COMPARTMENTS | S |
| VISORS: | COVERED LH AND RH WITH LIGHTED MIRRORS | S |

EXTERIOR TRIM

| | | |
|-------------------|---|---|
| BUMPERS: | 5-MPH | S |
| HEADLAMPS: | POWER-OPERATED RETRACTABLE HIGH OUTPUT HALOGEN | S |
| MIRRORS: | OUTSIDE FOLDING REARVIEW, DUAL ELECTRICALLY
ADJUSTABLE, HEATED | S |
| WHEELS: | ALUMINUM 17 X 8 1/2 FRONT, 5-SPOKE | S |
| | ALUMINUM 18 X 9 1/2 REAR, 5-SPOKE | S |

CORVETTE COUPE MODEL 1YY07

**MUST SPECIFY: ENGINE, TRANSMISSION, EMISSIONS
MUST ORDER 1SA -- NO DELETIONS ALLOWED**

Base Preferred Equipment Group (Refer Standard Summary Page)

1SA

ADDITIONAL OPTIONS

ACKNOWLEDGEMENTS

R8S Multiple Order Numbers

R8T Preliminary Invoice

CJ2 AIR CONDITIONING - Electronic Dual Zone

G92 AXLE: Performance Ratio (Reqs MX0 Trans)

F45 CONTINUOUSLY VARIABLE REAL TIME DAMPING: Electronic

The Handling Package for Ultimate Driver Comfort and Control through the use of the Driver Adjustable Ride Control System. (Incls Std Suspension Components and Delphi Adjustable Ride Control System)(N/A Z51 Perf Handling Pkg)

EMISSIONS: (Refer Emission Requirements Tab Section)

FE9 Federal Emission Requirement

NG1 Massachusetts/New York Emission Requirement

YF5 California Emission Requirement

NB8 California Emission or NY/MA State Emission Override (Reqs FE9 Emission)

NC7 Federal Emission Override (Reqs YF5/NG1 Emission)

ENGINE:

LS1 GENIII 5.7 Liter V8

B34 FLOOR MATS: Front

T96 FOG LAMPS

D42 LUGGAGE SHADE AND PARCEL NET

B84 MOLDINGS: Body Side

AAB MEMORY PACKAGE: Remembers OSRV Mirrors, Radio, HVAC, and Driver Power Seat Settings (Reqs CJ2 Air Conditioning)

Z51 PERFORMANCE HANDLING PACKAGE: Performance Oriented Package For the Gymkhana/Autocross Enthusiast (Incls Stiffer Springs and Stabilizer Bars) (with MX0 Trans Reqs G92 Axle) (N/A F45 Continuously Variable Real Time Damping)

RADIO EQUIPMENT:

UNO Delco/Bose Music System. Electronically Tuned AM/FM Stereo Radio, w/Seek-Scan, Automatic Tone Control, Compact Disc Player, Digital Clock, Theft Lock, and Speed Compensated Volume

U1S Compact Disc Changer, Remote

ROOF:

C2L Roof Package Includes Standard Solid Panel and Blue Transparent Panel

CC3 Top, Blue Transparent (Incl'd w/C2L Roof Package)

SEATS:

AG2 Power, 6-Way Passenger

AR9 Leather Seating Surface, Bucket

AQ9 Adjustable Sport Leather Seating Surface, Bucket (Reqs AG2 Power Seat)

TRANSMISSION

MX0 4-Speed Automatic (Standard to Model)

MN6 6-Speed Manual

CORVETTE COUPE

COLOR AND TRIM SELECTION

PLEASE NOTE: Below are the interior trim color and exterior paint combinations *recommended* by Chevrolet. However, any available interior trim color may be ordered with one of these exterior colors if that particular combination is desired by the customer.

| Interior Trim Color | | Black | Lt Gray | Firethorn Red | |
|---------------------|-----------------------------------|-------------|---------|---------------|-----|
| MODEL | SEAT TYPE | ** SEAT OPT | | | |
| 1YY07 | Leather Bucket | AR9 | 193 | 923 | 943 |
| | * Leather Adjustable Sport Bucket | AQ9 | 193 | 923 | 943 |

*Reqs AG2 Power Seat

**Seat Option AR9 or AQ9 Must Be Specified

SOLID PAINT APPLICATION

| Exterior Paint Color | Color Code | Black | Lt Gray | Firethorn Red |
|-----------------------|------------|-------|---------|---------------|
| Black | 41U | x | x | x |
| Blue, Nassau (Met) | 23U | x | x | |
| Green, Fairway (Met) | 87U | x | x | |
| Red, Torch | 70U | x | x | |
| Red, Lt Carmine (Met) | 53U | x | x | x |
| Silver, Sebring (Met) | 13U | x | x | x |
| White, Arctic | 10U | x | x | x |

POWER TEAMS

| ENGINE OPTION CONDITION | AXLE RATIO | | |
|-------------------------|------------|------|------|
| | 2.73 | 3.15 | 3.42 |
| LS1 MX0 | Std | G92 | ---- |
| MN6 | ---- | ---- | Std |





1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

“Corvette is not a racing car in the accepted sense that a European car is a race car. Rather, we have built a sports car in the American tradition. It is intended to satisfy the American public’s conception of beauty, plus comfort, convenience and performance.”

Thomas Keating
Chevrolet General Manager
1955 Corvette Introduction

BRAND POSITIONING

Thomas Keating called Corvette “a sports car in the American tradition. It is intended to satisfy the American public’s conception of beauty, plus comfort, convenience and performance.” After more than 40 years in the making, Corvette continues the brand mission it began back in the 1950s. Today, Corvette’s brand identity and equity in the marketplace are among the strongest and most coveted in the automotive industry.

Today, Corvette is not just a sports car; it’s an icon. A symbol of achievement. It’s a brand with a mystique beyond that of a sports car, with a brand identity so

strong that manufacturers in other industries license its use in an attempt to capture the magic.

The fifth generation Corvette will reach beyond traditional Corvette buyers in terms of appeal. The new design meets the quality and ergonomic expectations of competitive owners, while providing performance and style that are unmistakably Corvette.

MODEL

The 1997 Corvette is available in one body style: Corvette Coupe – a two-door, two-seat hatchback coupe, with a removable roof panel.

COMPETITORS

Corvette competes in the high sport market segment – a small (less than one percent of the passenger car market) yet highly visible segment.

Corvette is the highest selling nameplate in the high sport segment, with sales of 21,560 in the 1996 model year, or 39 percent market segment share. Three models account for 73 percent of total sales in this segment. Several of Corvette’s competitors are exotic sports cars which sell fewer than 1,000 units per year.

Looking back through the filter of five decades, the market in which Corvette competes today may seem very different than it was back in the ‘50s. In fact, there are some surprising similarities.

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

In '53, two major competitors were Jaguar and Mercedes. Today, these two remain and continue to introduce new models while other European manufacturers such as Porsche and BMW have joined the fray. Back in the early '50s, there were no other serious American competitors. Some, like Ford Thunderbird, entered the market only to stray from the original ideal of a "personal sports car." Today there are few other American sports cars – possibly only one, depending upon how you define the genre.

Over the years, the market has seen its share of changes as well. MG roadsters and Triumph's TR-series – popular around the time of Corvette's introduction – have since disappeared from the American competitive landscape. Japanese carmakers, almost non-existent in the U.S. in the 1950s, have since entered the competition, and some have seen success (e.g., Nissan 300ZX). Others have tried and failed – models such as the Toyota MR2 and Mazda RX-7 are extinct. Reports indicate Nissan will discontinue selling the 300ZX in the U.S., after sales fell from 60,000 to just over 3,100 from 1986 to 1995.

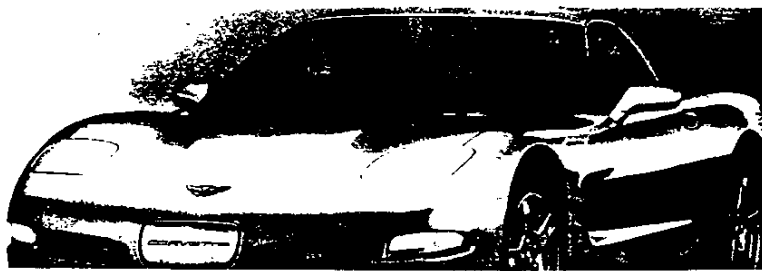
Corvette remains America's original, most enduring production sports car. Corvette's major competitors in the high sport market segment include:

- Acura NSX
- Dodge Viper
- Mitsubishi 300GT
- Porsche 911
- Toyota Supra

DEMOGRAPHICS

Corvette will be marketed to buyers in the high sport segment – both current Corvette owners and owners of competitive makes. Target buyer demographics include:

- Median household income: \$100,000
- Gender mix: 67 percent male/33 percent female
- College educated: 68 percent
- Married: 63 percent



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

1997 CORVETTE PRODUCT HIGHLIGHTS

The fifth generation 1997 Chevrolet Corvette excels in areas most important to Corvette buyers — performance, ride and handling, comfort, and quality.

According to Dave Hill, Corvette Vehicle Line Executive and Chief Engineer, “We examined our weak points, and turned them into strengths. Things that were good, we made great. Things that were great are now even better.”

The changes Hill is referring to are detailed on the following pages. In general, Corvette’s improvements include:

- **STRUCTURE.** Corvette’s underlying body structure has been redesigned, providing a firm foundation for Corvette’s suspension and other systems. The stiff structure enabled a host of benefits, including improved ride and handling, more interior room, refined ergonomics and improved overall quality.
- **RIDE AND HANDLING.** By stiffening Corvette’s underbody structure, engineers were able to radically reduce structural variation and movement. The increased stiffness is a bonus to suspension engineers, who in the past compensated for structural movement in their suspension designs. The result — engineers were able to improve ride

and handling characteristics on the '97 Corvette exclusively through suspension modifications.

- **POWER.** Corvette has always boasted legendary power. The '97 Corvette is no exception — the small block LS1 V8 features more horsepower and torque than the optional '96 LT4. In addition to more power, a long list of powertrain improvements helps improve fuel economy and durability while reducing hydrocarbon emissions. The first small block V8 engine with an all-aluminum block and a rear-mounted transmission are just two of the new highlights for '97.

- **COMFORT AND CONVENIENCE.** Engineers and designers addressed and refined every aspect of the Corvette that affected comfort and convenience. Everything from the instrumentation and seats to door openings and step-in height was reworked and improved for greater customer satisfaction.

According to Hill, the Corvette Team accomplished all of the above while maintaining the true meaning of “Genuine Chevrolet” in terms of value and safety.

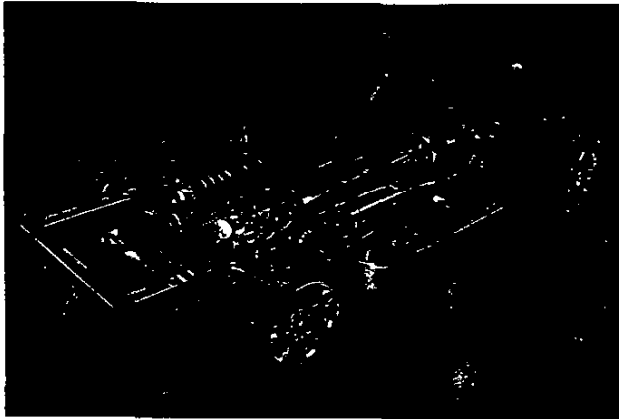
“You won’t find a car in Corvette’s price range that provides the same level of quality, power, ride, handling and refinement,” said Hill. “This fifth generation is the best in many, many ways.”

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

STRUCTURE



CORVETTE'S STRUCTURE IS STIFFER FOR 1997, COMPARED WITH PREVIOUS MODELS.

The 1997 Corvette features the stiffest underbody structure in the car's history. Engineers went to great lengths to improve Corvette's structure, which is, in many ways, the key to a host of other improvements.

Design of the underlying structure began with a top customer imperative: Corvette must be "well built," which means improved quality, ride and handling, ergonomics and safety.

Corvette's structure reduces objectionable noises and steering wheel, floor and mirror vibrations by absorbing them before they reach the passenger compartment. The structure enhances the feeling of precision and quality from day one.

In addition, Corvette's stiff new structure actually helps improve ride and handling. In the past, engineers had to tune the suspension, in part, to accommodate the flexibility of the structure. With

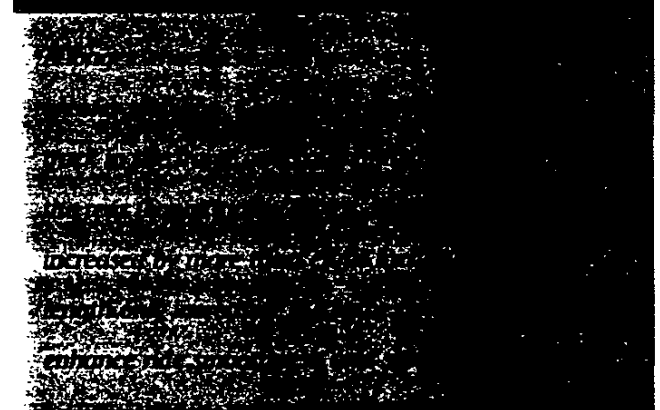
a more rigid structure, engineers were free to tune the suspension for incredible ride and handling.

Corvette's structure enables many of the "Space" improvements listed on pages 23 and 24. The structural design made it possible to create more room for people and cargo, create door openings that are easier to access and an improved angle of visibility through the windshield.

In terms of safety, Corvette's firm foundation helps absorb energy in the event of a collision, providing crashworthiness. Crush zones — built into the overall structure — help minimize impact intrusion into the passenger compartment, helping to protect the occupants.

In addition to all these new structural strengths, the real accomplishment was adding stiffness without adding weight. In fact, the new Corvette weighs 69 lbs. less than the 1996 model.

LONGER WHEELBASE, WIDER TRACK





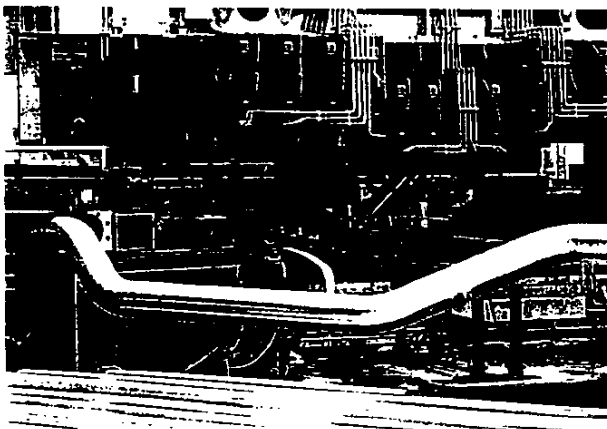
1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

STRUCTURAL FEATURES

Structural integrity is like the foundation of a house. It's the basis for everything that's built onto it. Following is a list of structural features, and how each contributes to Corvette's overall stiff structure:



HYDROFORMING PLANT, DETROIT, MICH. PHOTOGRAPH BY GUY A. LAWRENCE FOR GM. COURTESY OF GM. PHOTOGRAPH BY GUY A. LAWRENCE FOR GM. COURTESY OF GM.

- **FRAME.** Corvette features a full-length perimeter frame with side rails manufactured out of seamless tubular steel. These rails are joined by two bumper beams which are welded on, rather than bolted, for high strength. The rails are "hydroformed" – i.e., pressed into shape by a high-pressure hydraulic press developed by GM. Corvette's rails represent the largest single hydroformed parts being used in an automotive application. The rails are an improvement over traditional designs because they're seamless.

(Former Corvette rails were constructed of 14 individual pieces per side that were welded together.)

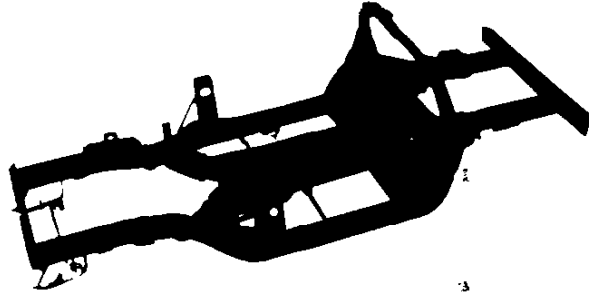
The rails are also more consistently stiff and strong, and they enable engineers and designers to use space inside the vehicle more efficiently. By putting a major structural member in the center of the car (see Closed Drivetrain Tunnel, page 10), the burden placed on the outboard rails is reduced. The Corvette Design Team took advantage of this construction to reduce the height of the side rails as they pass through the passenger compartment. The lower rail allowed a lower step-in height, and more comfortable access for the driver and passenger.

- **COCKPIT AND WINDSHIELD FRAME.** Corvette's cockpit is framed by a welded cage of aluminum castings and extrusions – a design that allows engineers to optimize mass and stiffness and reduce interior vibrations.
- **INSTRUMENT PANEL CROSS MEMBER.** This feature provides a firm foundation for the instrument panel resulting in reduced noise and vibration. A magnesium steering column support and magnesium-core steering wheel are lightweight and sturdy, reducing mass and steering wheel shake.

1997 CORVETTE

FIFTH GENERATION

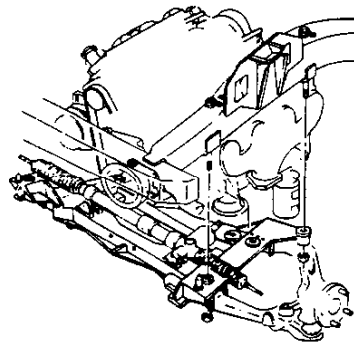
PRODUCT INFORMATION



1997 CORVETTE HYDROFORMED FRAME RAILS WITH BUMPER BEAM AND CLOSED DRIVETRAIN TUNNEL.

- **CLOSED DRIVETRAIN TUNNEL.** The drivetrain tunnel features long, straight surfaces that help create more interior room and contribute to overall rigidity. Since the transmission is located in the rear of the car, the wide flaring required for the bellhousing on a traditional front-mounted transmission was eliminated. A flaring would have intruded on interior space. Although typically open on the bottom, the tunnel on the '97 Corvette is closed by a bottom plate attached with 36 bolts, which adds to the overall solidity of the structure.
- **TWIN MID-SHIP-MOUNTED COMPOSITE FUEL TANKS.** Surrounded by the structure, the location of the fuel tanks helps lower the cargo floor — which minimizes fuel load effects on weight distribution — and helps reduce cargo liftover distance. Also, their location is designed to provide crashworthiness.

- **SANDWICH COMPOSITE FLOOR.** The floor is constructed using two layers of an aircraft type composite floor, sandwiched on either side of a balsa wood core. The balsa wood helps filter out noise and vibration, and contributes to the structure of the car. The balsa wood makes the floor 10 times stiffer than the use of composites alone. Numerous “high tech” synthetic fillers were tried, but none matched the stiffness, light weight and damping performance of natural balsa wood.



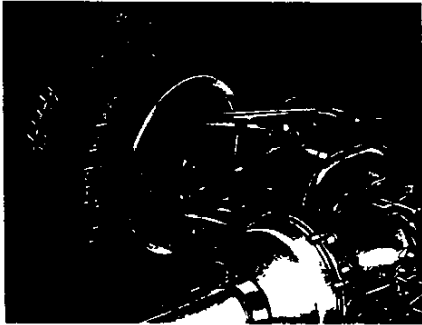
1997 CORVETTE CAST ALUMINUM CHASSIS CROSS MEMBER.

- **ONE-PIECE CAST ALUMINUM FRONT AND REAR CHASSIS CROSS MEMBERS.** These cross members are lightweight and sturdy. Their dimensional stability promotes consistent handling and suspension geometry from car to car.



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

SUSPENSION



THE 1997 CORVETTE
SUSPENSION PROVIDES
GREAT HANDLING AND
SMOOTH RIDE.

Suspension designers typically face a common paradox: Great handling comes at the expense of smooth boulevard ride, and vice versa. The end result is usually a compromise, to some degree, of one or the other.

Corvette engineers set out to do the seemingly impossible – enhance both ride and handling. The goal: Out-handle the competition, while providing a ride that rivals a touring car.

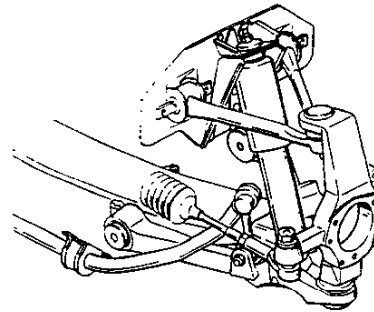
The key is suspension geometry: Location and configuration of suspension components is critical to performance. The new Corvette's suspension geometry is designed to allow ride and handling to work independently of one another.

Another key is Corvette's stiff structure. During competitive benchmarking, engineers attributed smooth ride to a stiffer chassis which tends to reduce squeaks and rattles.

The 1997 suspension design is exclusive to Corvette and brand new – no carryover parts were

used. Its custom design differs from some major competitors who use off-the-shelf parts.

OVERALL SUSPENSION DESIGN



1997 CORVETTE
INDEPENDENT SUSPENSION

- **FULLY INDEPENDENT FOUR-WHEEL SHORT/LONG-ARM (SLA) SUSPENSION.** Corvette's suspension is similar to that used in many race cars and other high-performance cars. Unlike its predecessor, the '97 'Vette suspension is height adjustable at the factory for consistent ride and handling, car after car. Each car is custom-adjusted during production according to its specific option content and resultant mass. Thus, every Corvette off the line is equal in terms of excellent ride and handling.
- **CONTROL ARMS.** Forged aluminum front upper control arms, and cast aluminum front/rear lower and rear upper control arms feature strength with low mass.
- **SPRINGS.** Corvette uses an improved version of the transverse composite leaf spring, a new design with its own patent. Spring pads are located on the lower, longer arms at each corner. The springs run

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

from one side of the car to the other, and are attached to the chassis via rubber-isolated mounts.

Engineers mounted the springs at the chassis' most rigid points to better control springing forces.

Thanks to the stiff chassis, lower spring rates could be used to achieve great handling. Lower spring rates, in turn, help improve ride smoothness.

- **BUSHINGS.** Different bushings are used for the front and rear. Front bushings take the brunt of the cornering loads and are very stiff for better stability and predictability. Rear bushings are soft, helping the rear of the wishbone absorb the impact when going over bumps and potholes.
- **REAR INDEPENDENT SUSPENSION.** The rear suspension design has been improved. On the previous Corvette, half shafts played a dual role: They transferred power to the rear wheels and served as part of the suspension's upper control arms. For '97, actual upper control arms have been used for smoother, quieter ride and better control of rear suspension geometry. This also results in better handling because the suspension is attached directly to the body and allows the powertrain to be mounted "softly" for reduced noise and vibration.

'97 CORVETTE SUSPENSION OPTIONS

BASE: Fully independent front and rear suspension, coil-over shocks, and handling improvements. **Optional:** Z51 is the high-performance suspension system that offers Selective Real Time Damping, improved, using "fast shock" technology, to sense the road surface of each wheel and adjust the shock damping to control the vehicle's response to bumps.

Performance: Shocks are now able to provide a continuum of damping between soft and firm, instead of simply shifting between the two. The result is a softer ride than the base suspension in the Tour mode.

In the Performance mode, the system approaches a Z51 level of damping. The system automatically counteracts roll in turns, as well as lift and dive.

Z51: Z51 is designed for maximum performance. It features a stiffer chassis and thicker tracks. Z51 is available on all models.

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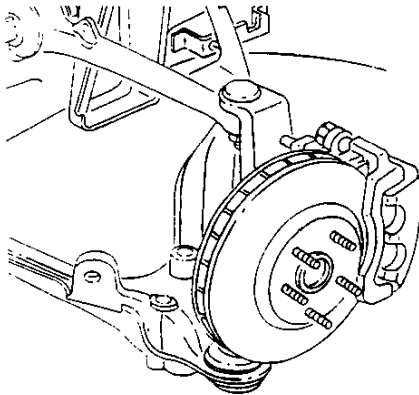
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1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

BRAKES



1997 Corvette brake system features include:

- **LARGER BRAKE ROTORS.** Corvette's larger brake rotors provide improved cooling characteristics. Front fascia brake cooling ducts further enhance braking performance and help reduce "fade."
- **FOUR-CHANNEL BOSCH ABS V ANTI-LOCK BRAKING SYSTEM.** Corvette's standard ABS incorporates Corvette's traction control system, which features control of wheel slip without throttle pedal disturbance for '97.
- **DUAL-PISTON FRONT BRAKES, SINGLE PISTON REAR.** Aluminum sliding-type brake calipers are corrosion-resistant, enhancing durability. Front calipers feature the "Corvette" name cast into the metal.
- **NEW BRAKE PEDAL.** Corvette features a cast aluminum racing-style brake pedal.

- **LESS NOISE.** Premium non-metallic brake linings reduce unwanted noises such as squeals and groans.
- **IMPROVED PERFORMANCE.** Corvette offers shorter stopping distances to keep step with increased handling performance available through the new chassis and suspension.

MAGNASTEER II STEERING SYSTEM

The '97 Corvette features the Magnasteer II Steering System as standard equipment. Magnasteer II is a variable effort rack-and-pinion steering system. The system features lower effort at low speeds for easier parking and maneuvering, and higher efforts at high speeds for positive road feel and stability. Magnasteer II is specifically designed to please the enthusiast with better tactile feel in high performance driving situations, as well as everyday driving.

The system has been revised and improved for the '97 Corvette. It was incorporated into the overall chassis design from the onset, which allowed engineers to tune the system for maximum effectiveness. Also, Magnasteer II features smooth transitions between high effort (high speed) and low effort (low speed) for a natural, in-command feel of the road.

The system features a power steering fluid pump and intermediate shaft, made of lightweight aluminum to reduce mass and resist corrosion.

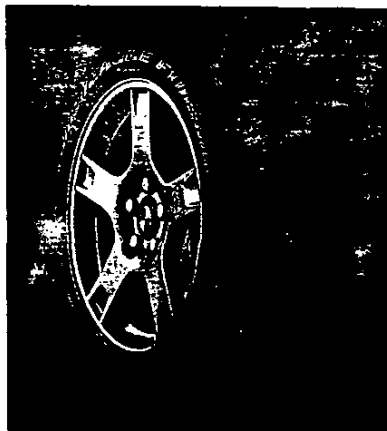
1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

TIRES

The 1997 Corvette features new Goodyear Eagle F1 GS Extended Mobility Tires (EMTs). These tires provide excellent performance, even at zero psi inflation. EMTs use self-supporting sidewalls. Should tires lose air pressure, the weight of the vehicle is supported by the EMT's reinforced sidewall, and the vehicle continues to roll. The system works so well, Corvette no longer needs a spare or a jack, which helps reduce vehicle mass and increase usable space.



CORVETTE'S GOODYEAR EAGLE F1 GS EXTENDED MOBILITY TIRES (EMTs) HAVE BEEN REDESIGNED FOR IMPROVED PERFORMANCE FOR 1997.

The real benefit of EMTs is security. In the event of a loss of tire pressure, the driver can get to a service station without stopping.

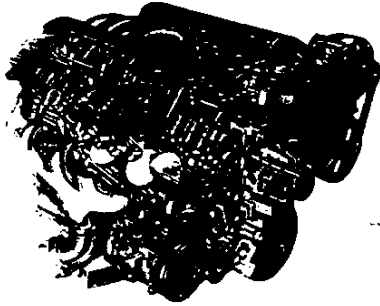
In fact, performance and ride with zero inflation is so similar to normal inflation that drivers need to be warned of lost tire pressure via Corvette's standard Tire Pressure Monitoring System. This system operates at speeds above 15 mph via battery-powered sensors inside each valve stem, which transmit information to the Driver Information Center. These sensors provide accurate readings within 1 psi, with altitude compensation. Information is transmitted via FM radio frequencies; however, more than 2 million sensor "identities" virtually eliminate interference between fifth-generation Corvettes in close proximity.

Corvette's EMTs for '97 provide all this while maintaining excellent tire performance in their normal, inflated state.



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

POWERTRAIN



THE LS1 5.7-LITER SMALL-BLOCK V8 ENGINE. FOR 1997, THE LS1 FEATURES THE FIRST ALL-ALUMINUM LOCK-ON A PRODUCTION SMALL-BLOCK.

Chevrolet has been producing legendary small block V8 engines since 1955. In many ways, the high performance-to-size ratio of the small block changed the way people thought about Chevrolet. Virtually overnight, the Chevrolet image shifted toward high performance.

Ed Cole was instrumental in bringing about the change. Cole, Chevrolet Chief Engineer in 1955, introduced a V8 engine to Corvette that was both lighter and larger (265 cubic inches) than Chevrolet's 235 cubic-inch in-line six cylinder. The small block, which outperformed the original six cylinder by 30 percent, was so popular it became standard equipment one year later in 1956. The following year, Cole and engineer Zora Arkus-Duntov ushered in yet another advancement which would change the course of Corvette history: Fuel injection.

The small block V8 has since become a Corvette mainstay. It has powered millions of cars, trucks, boats and industrial machinery, and has set an industry standard for performance.

Redesigning the small block V8 for 1997 has been described by GM Powertrain engineers as "a very exciting and emotional event." As engineers, redesigning the beloved engine from a clean sheet of paper was the chance of a lifetime.

The result is the new LS1 5.7-liter small block V8, with 345 horsepower and 350 lbs.-ft torque – more power than either available 1996 Corvette engine (see chart). Even more incredible – the new small block achieves its power numbers even within the confines of emissions and CAFE regulations. All this with reduced noise and vibration, and increased durability.

SMALL BLOCK V8 – '96 VERSUS '97

| | 1996 LT1 | 1996 LT4 | 1997 LS1 |
|---------------------------------------|-------------|-------------|-------------|
| Displacement (liters) | 5.7 | 5.7 | 5.7 |
| Horsepower (SAE net @ rpm) | 300 @ 5,000 | 330 @ 5,800 | 345 @ 5,600 |
| Torque (lbs.-ft. @ rpm) | 335 @ 3,800 | 340 @ 4,500 | 350 @ 4,400 |
| EPA Mileage w/Auto. Trans. (city/hwy) | 17/25 | - | 17/25* |
| EPA Mileage w/Man. Trans. (city/hwy) | - | 16/27 | 18/28* |

Preliminary – subject to change.

While engine features may have changed, the LS1 stays true to the small block heritage. The LS1 is a Chevy small block pushrod V8. In the end, engineers could find no substitute for the simplicity and raw power of the pushrod when it came to equipping the fifth generation Corvette.

The following pages contain a synopsis of 1997 Corvette powertrain features and benefits.

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

ALL-ALUMINUM ENGINE BLOCK

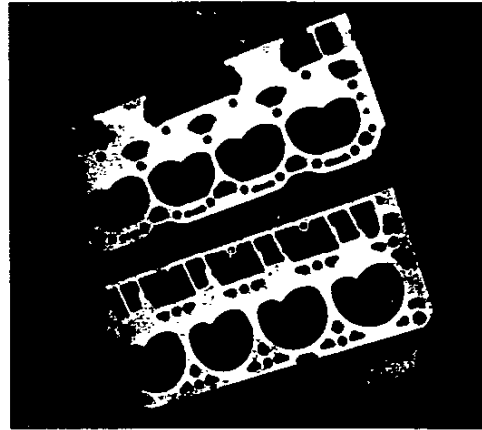
For the first time in Chevrolet's history, the small block V8 features an all aluminum engine block (formerly cast iron) with cast iron cast-in-place cylinder liners. The 1997 engine block is both lighter and stronger than the previous design.

Displacement remains 5.7 liters (approximately 345 cubic inches), though the geometry of the cylinders has changed, with a slightly smaller bore and longer stroke. The smaller bore provides more area between the cylinders for a very rigid, durable design, with ample room for cooling.



THE LS1 ENGINE'S DEEP SKIRT (LEFT, AS SEEN FROM THE BOTTOM) EXTENDS BELOW THE CENTERLINE OF THE CRANKSHAFT. THE 1996 LT4 ENGINE BLOCK IS SHOWN ON THE RIGHT.

The new block is made more rigid through a change in its overall shape. Typically, the block ends at the centerline of the crankshaft. The LS1 has a "deep skirt" which extends past the bearing caps. Bolts were added that tie the bearing caps directly into the engine block from the side. The deep skirt and additional bolts add up to less noise and vehicle harshness for the customer.



THE SMALL BLOCK V8'S TRADITIONAL FIVE-BOLT HEAD PATTERN (TOP) HAS BEEN CHANGED TO A FOUR-BOLT PATTERN FOR 1997 (BOTTOM).

Other features include:

- **FOUR-BOLT HEAD PATTERN.** The small block V8's traditional five-bolt head pattern gave way to a better idea – a four-bolt design. The four-bolt design helps eliminate distortion, and allows better engine sealing. And thanks to the "deep skirt" design, the LS1 uses longer head bolts, which fasten much deeper below the surface into the "backbone" of the engine. That means reduced stress and distortion at the top of the cylinders, which results in better sealing and lower tension oil rings, for less friction and enhanced fuel economy.
- **440 BORE CENTERS.** 440 bore centers – or, the 4.4" distance between bore centers – are a small block trait that goes back 40 years. That measurement remains the same for 1997 as it did in the beginning. "After all," says John Juriga, 1997 LS1 V8 Engine Project Manager, "some things are sacred."



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

PISTONS

Pistons have been redesigned to help meet emission compliance well into the future. For 1997, the top ring is closer to the top of the piston to reduce hydrocarbon emissions. Engineers also eased tension on the piston rings to reduce friction and improve fuel economy.

Lighter weight pistons and rods enabled engineers to tune the engine to higher rpm, achieving more power from the small block's 5.7-liter displacement.



1997 LS1 (LEFT) AND 1996 LT1 (RIGHT) PISTONS. THE LS1 PISTON HAS A TOP RING POSITIONED CLOSER TO THE TOP OF THE PISTON TO REDUCE HYDROCARBON EMISSIONS.

CYLINDER HEAD/INTAKE PORTS

In the '96 LT1 and LT4 engines, "Siamese" ports route air flow at different angles. With differently shaped ports for different cylinders, each port has its own air distribution characteristics.



INTAKE PORTS ON THE LS1 ENGINE ALLOW INCOMING AIR A STRAIGHT SHOT INTO THE COMBUSTION CHAMBER.

With the new LS1, each intake port is identical to the next. This design eliminates any harsh corners, and allows incoming air a straight shot into the chamber. It provides better breathing, thus enhancing performance and efficiency.

1997 CORVETTE LS1 COMPOSITE INTAKE MANIFOLD.

INTAKE MANIFOLD

The new LS1 manifold is made of a composite material which is strong, yet lighter than aluminum. The inside surface is very smooth, allowing air to glide through the manifold with less restriction and higher velocity.

The composite manifold also conducts less heat. Air into the engine isn't "heated air" and, thus, has a higher density. Higher density air means more power.

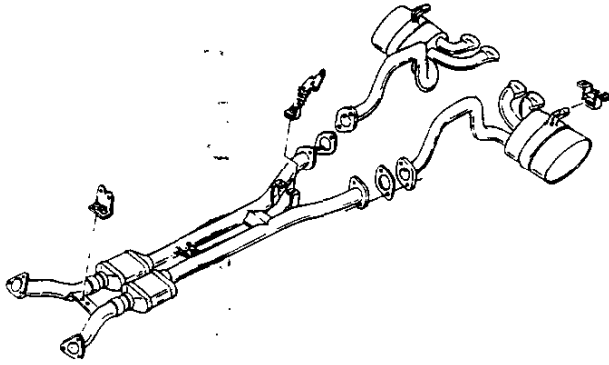


1997 CORVETTE

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PRODUCT INFORMATION

EXHAUST SYSTEM



1997 CORVETTE ALUMINIZED STAINLESS STEEL EXHAUST SYSTEM.

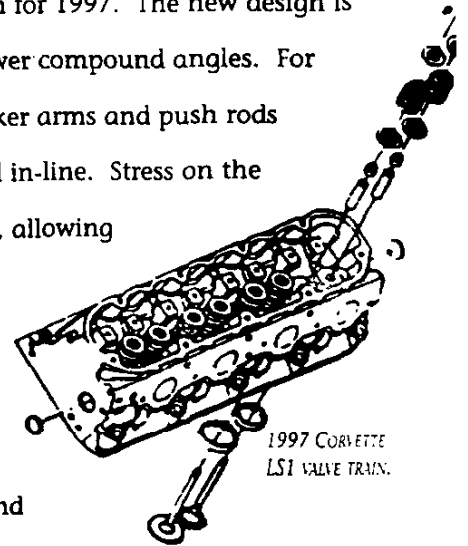
The '97 Corvette's exhaust system tackles a common challenge: Most harmful emissions are generated in the first few minutes after a "cold" engine is started. Emissions are reduced when the catalytic converter warms up from hot exhaust gasses. So, for 1997, Corvette engineers wanted to make sure hot exhaust gasses got to the catalytic converter sooner.

The new exhaust manifold is designed to provide increased performance and reduced cold-start emissions. Here's how: Formerly, exhaust manifolds were cast iron. Cast iron is very durable, but it dissipates heat, and helps cool down the exhaust gas. Corvette's new dual wall exhaust manifold uses two high-strength stainless steel walls with a layer of air between the inner and outer walls to act as an insulator. As a result, hotter gasses get to the converter more quickly, improving cold start emissions.

Corvette's exhaust system is aluminized stainless steel for longer life. Corvette features a true dual exhaust system with dual mufflers and quad exhaust outlets.

VALVE TRAIN

GM Powertrain engineers simplified the LS1's valve train design for 1997. The new design is simpler, using fewer compound angles. For 1997, valves, rocker arms and push rods are all positioned in-line. Stress on the valves is reduced, allowing engineers to use slimmer valve stem diameters, lighter springs and roller rocker arms, providing enhanced fuel economy, reduced friction and increased durability. The LS1's high rpm capability helps the engine attain its impressive horsepower and torque ratings while raising maximum fuel efficiency above that of the previous engine.



1997 CORVETTE LS1 VALVE TRAIN.



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

EXTENDED SUMP OIL PAN

The 1997 LS1's oil pan is an example of how engineers turned a challenge into an opportunity.

For '97, the Corvette oil pan had to have a low profile, enabling a low engine position and low hood. At the same time, engineers realized that the oil pan had to perform. Corvettes are known for their ability to handle aggressive maneuvers which,

in extreme cases, can cause the oil in the oil pan to evade the pick-up tube.



THE 1997 LS1 OIL PAN
FEATURES EXTENDED SUMPS ON BOTH
SIDES TO INCREASE OIL CAPACITY.

Corvette's redesigned oil pan answers both challenges. Engineers achieved a lower profile in overall packaging, thanks to the uniquely-shaped "extended sumps" on either side of the oil pan.

Coincidentally, the sumps help increase the engine's oil capacity. So, even around the harshest turns, there is a good supply of oil to the pickup tube. That means better performance and enhanced durability.

Other design enhancements include:

- **SEALING.** With traditional oil pans, curved surfaces created great challenges for engineers in terms of proper sealing. Along with the "deep skirt" design

of the engine comes a large, flat surface on which to attach the oil pan. This flat surface makes sealing easier, more effective and more durable.

- **STRUCTURE.** The flat surface where the oil pan mates with the engine block and a flat direct attachment to a one-piece full round bellhousing provide a significant improvement in structural rigidity. The LS1 oil pan, more rigid than its predecessor, serves as a structural member. As a result, the oil pan plays a key role in helping to reduce noise and vibration for the customer.
- **GEROTOR OIL PUMP.** A high-efficiency Gerotor oil pump, new for 1997, helps improve performance. Driven at the front of the crankshaft, the pump provides lower temperature oil delivery and better performance because of less parasitic power loss.

IGNITION SYSTEM

Corvette's new ignition system features an individual ignition coil for each cylinder. Coils are located near the spark plugs for high energy ignition, which provides better combustion, lower emissions and enhanced durability.



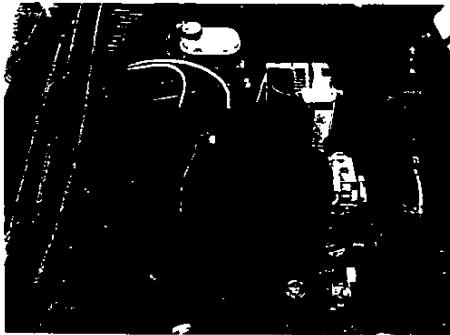
THE 1997 CORVETTE LS1 FEATURES AN INDIVIDUAL IGNITION COIL PER CYLINDER.

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

ENGINE COMPARTMENT PACKAGING



DESIGNERS AND ENGINEERS CREATED A CLEAN, UNCLUTTERED ENGINE COMPARTMENT FOR 1997.

In days gone by, you could open up the hood of most any car and see daylight from underneath. The relative simplicity of a vehicle's engine components gave designers fewer challenges in terms of engine compartment layout.

Today, the job is far more challenging. Corvette's engine compartment must house an incredible array of components and technologies that were unheard of 10, 20 or 30 years ago – from the technology that reduces and monitors emissions, to computers that adjust the temperature inside the cabin and continuously check the air pressure in the tires.

The fifth generation Corvette uses an integrated approach that simplifies and reduces the number of wiring harnesses and components needed to run the vehicle's systems. An added benefit . . . it looks good, too. Improvements for 1997 include:

- **POWERTRAIN CONTROL MODULE (PCM).** Corvette's PCM has more power than many home computers and is one of the industry's most sophisticated. The PCM is "multi-functional," controlling multiple systems that required more hardware and separate controllers in the past.
- **ELECTRONIC THROTTLE CONTROL (ETC).** The 1997 LS1 is GM's first gasoline engine with ETC. ETC allows engineers to tailor the vehicle's throttle progression to meet a vehicle's character. For Corvette, engineers tuned the throttle to match the sporty character of the car. ETC also integrates cruise control and traction control to a single controller. Gone is a bushel of hardware, improving underhood appearance and reducing mass. ETC works in conjunction with the traction control system in controlling wheel slip. Traction control is accomplished without any disturbance to throttle pedal feel.



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

DRIVETRAIN

One of the 1997 Corvette's most remarkable improvements can be found in the drivetrain. For 1997, Corvette features a rear-mounted transmission. The rear-mount configuration enabled engineers and designers to create more room for the driver and passenger.

Both Corvette transmissions have been revised to accommodate the new rear-mounted configuration:

- **HYDRA-MATIC 4-SPEED AUTOMATIC TRANSMISSION W/OVERDRIVE (4L60-E).** The standard 4-speed automatic features a two-piece case with a full bell-



■ CORVETTE FEATURES REAR-MOUNTED TRANSMISSIONS FOR 1997.

housing for increased stiffness. Electronic controls improve shift timing and smoothness when compared to a non-electronically controlled transmission. The transmission is filled with

Dexron™ III Transmission Fluid, which needs only periodic changing and replacement (5 years/150,000 miles under normal conditions. May vary with actual use. See Owner's Manual for restrictions.) It also includes the Brake/Transmission Shift Interlock feature, which prevents the driver from shifting out of "Park" without first depressing the brake pedal.

- **BORG WARNER 6-SPEED MANUAL TRANSMISSION W/OVERDRIVE 5TH AND 6TH GEAR (T56).**

The rear-mounted 6-speed manual transmission features a self-adjusting clutch system that provides lower effort, reduced wear. The skip-shift feature requires shifting between 1st and 4th gears, skipping second and third, under certain throttle conditions.

Other enhancements for 1997 include:

- **TORQUE TUBE.** An aluminum tube houses a metal composite prop shaft for reduced noise and enhanced durability.
- **GETRAG LIMITED SLIP REAR AXLE.** The limited-slip rear axle features an aluminum case with hydraulic rear mounting.

1997 CORVETTE

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STYLING

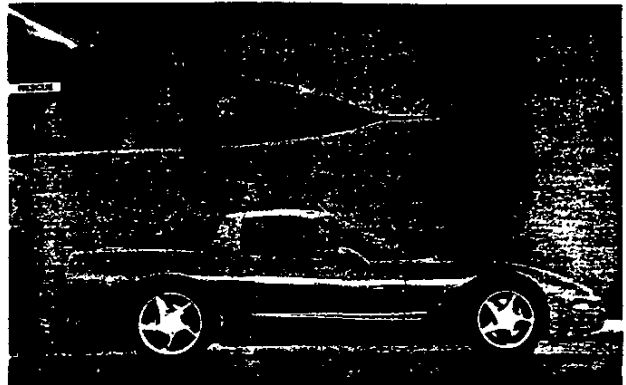
The exterior design of the 1997 Corvette is a synthesis of aesthetics and performance . . . passion and logic. Passion made the new 'Vette look like a Corvette. (See "Design Evolution" section for a thorough explanation of Corvette interior and exterior styling features.) Logic dictated improvements that allow the car to handle better, the doors to open more easily, better access to the interior and to a larger rear cargo area, as well as a hood that's easier to open.



THE 1997 CORVETTE FEATURES THE LOWEST COEFFICIENT OF DRAG OF ANY MASS-PRODUCED CAR IN NORTH AMERICA.

In wind tunnel testing, Corvette achieved a 0.29 CD – the lowest coefficient of drag of any mass-produced car in North America (except GM's own electric vehicle). Corvette's CD is lower than most Winston Cup competitors, and it's the best in the world among high-end sports cars. Following are exterior features that enhance both aesthetics, and performance:

- **BODY.** Body panels are constructed of flexible sheet-molded compound (SMC), which resists damage and corrosion. Fenders are reaction-injection molded, a very designer-friendly process that allowed stylists to incorporate dramatic air scoops on the sides which extend to the doors. Quarter panels are bolted, not bonded, to the structure to help minimize collision repair.



AS THIS PRE-PRODUCTION PROTOTYPE SHOWS, THE '97 CORVETTE HAS AN AGGRESSIVE, "FIGHTER" OR GTP-STYLE RACE CAR APPEARANCE. THE LONG HOOD/SHORT DECK DESIGN HAS BEEN THE HALLMARK OF THE CORVETTE SHAPE SINCE 1963. CONCEALED HEADLAMPS, AIR SCOOP ON THE FRONT QUARTER PANEL, AND QUAD REAR TAILLAMPS PROVIDE A LINK TO THE EARLY DAYS OF THE CORVETTE.

- **FASCIAS.** Both front and rear fascias have five-mph bumper systems – a feature not found on all other sports cars. Five-mph bumpers help lower repair and insurance costs.
- **REAR DECK.** Compared with its predecessor, the '97 Corvette is proportioned differently for high speed air flow management. A sharp edge along the back of the deck also enhances air flow.

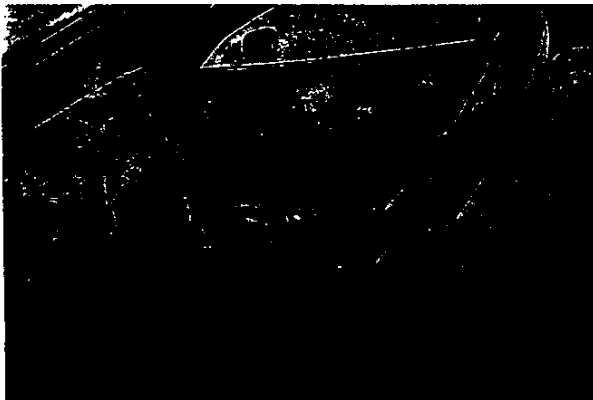


1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

SPACE

Corvette's interior spaces underwent many changes . . . some subtle, some incredible. The goal was to increase the user-friendliness of the interior. The end result is a Corvette, with improved roominess and refinement in almost every aspect of the car. (See "Design Evolution" section for background on how Chevrolet finalized Corvette's interior and exterior styling.)

SPATIAL IMPROVEMENTS



CORVETTE'S INTERIOR IS MORE COMFORTABLE AND MORE "USER FRIENDLY" FOR 1997.

| Dimension | Improvement ('97 vs. '96) |
|--------------------------------------|---------------------------|
| Head room (in.) | +1.3 |
| Leg room (in.) | +0.7 |
| Shoulder room (in.) | +1.4 |
| Driver footwell width (in.) | +3.1 |
| Passenger footwell width (in.) | +6.3 |
| Seat Travel (in.) | +0.5 |
| Cargo capacity (cu. ft.) | +12.4 |
| Trunk area reach-over distance (in.) | -13.8 |
| Door opening, top (in.) | +0.8 |
| Door opening, bottom (in.) | -3.7 |

- **HEAD, LEG AND SHOULDER ROOM HAVE BEEN INCREASED.**
- **WIDTH OF DRIVER'S FOOTWELL HAS BEEN INCREASED BY 3 INCHES**, which allows room for a real "dead pedal." Passengers also have more foot room than before.
- **SEAT TRAVEL HAS BEEN INCREASED** to accommodate a greater range of adults comfortably.

1997 CORVETTE

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- **A NEW, LARGER REAR CARGO AREA HAS 98 PERCENT MORE ROOM.** Usable space is maximized. The 1997 Corvette can hold two large bags of golf clubs in the rear cargo area. Reach-over distance has been shortened to make the trunk easier to access.



CORVETTE FEATURES MORE CARGO ROOM FOR 1997.



STEP OVER HEIGHT AT THE ROCKER PANELS HAS BEEN REDUCED FOR EASY ENTRY.

- **DOOR OPENING SIZE INCREASES FOR 1997.** Step-over height at the rockers has been reduced and roof height has been increased, making it much easier to get into and out of the new Corvette.



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

ERGONOMICS AND HUMAN FACTORS

The design of Corvette's interior is a study in refinement in areas where drivers and passengers interact with the car. The concept: Give the driver a greater feeling of control while making the interior more comfortable and more user friendly.

Perfecting the "human factors" enhances both the ownership experience and the safety of the vehicle. If drivers perform functions quickly, easily and intuitively, then human performance and driving pleasure are enhanced. Safety is enhanced when accident avoidance measures become simple, natural actions. Improved forward vision and larger interior and exterior rearview mirrors for increased rearward visibility also enhance Corvette's safety.

In addition, the look, feel and sound of the interior have all been refined for 1997.

Standard leather bucket seats with power driver's side seat adjuster have been designed for comfort and support. Inside, the driver and passenger are surrounded by door panels and window pillars with a new trim that is softer to the touch. Soft-touch controls add to a feeling of refinement.

Corvette's instrument panel features a redesigned, more robust construction. Heating/air conditioning controls and stereo hardware are attached directly to

an aluminum structural member, resulting in reduced shake and vibration.

As for interior noise reduction, designers and engineers first distinguished between "good" noise and "bad" noise. Corvette owners love the sound of intake, exhaust and precision machinery. However, there are objectionable noises that were reduced through improved sound insulation throughout. Even wiring harnesses within the instrument panel have been wrapped to prevent noise from entering the passenger compartment. Corvette's composite dual fuel cells are constructed with baffles which further reduce unwanted noise.

Corvette has always been a technical showpiece – one of the most advanced production sports cars in the world. The fifth generation Corvette is no exception. Sophisticated electronics provide Corvette drivers with safety, comfort and convenience.

All electronics are connected via an advanced, programmable multiplex wiring system that performs multiple tasks on a single wire. With 20 percent fewer wires, multiplexing increases reliability.

The following pages highlight Corvette's improved ergonomic features and human factors.

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

COMFORT AND CONVENIENCE

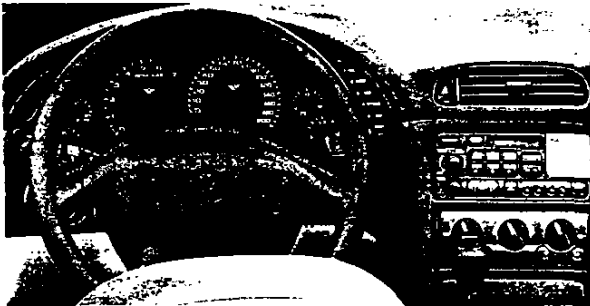
- **DRIVER INFORMATION CENTER.** Positioned below the gage cluster for easy readability, the display features 12 individual readouts in any of four different languages – English, French, German and Spanish. Also using this display, the driver can configure the full range of programmable settings, including entry, alarms, seating and lighting.
- **DOORS.** Doors are balanced so that they're easy to open and close. Door handles are larger and therefore easier to use. The doors are triple sealed against unwanted noise for quiet ride.
- **ENTERTAINMENT SYSTEM.** Corvette's new music system is the result of a collaborative effort between Bose® and Delco Electronics. This new system features the latest Delco Electronics AM/FM stereo receiver with cassette and new Bose electronics and speaker technologies – the same Bose technologies used in the new \$30 million Gulfstream V® business jet. Door speakers employ state-of-the-art, thin-profile, lightweight speaker technology. The door-mounted eight-inch woofers are 75 percent lighter and 50 percent thinner than conventional eight-inch speakers. Each woofer is designed to withstand 100 watts of continuous input power delivered by the smallest

amp of its kind in the industry (approximately the size of a deck of cards). The system also includes door-mounted hybrid 3-1/2 inch tweeter/mid-range speakers and rear quarter-panel mounted 6-1/2 inch tweeter/mid-range speakers. A Bose signal processing module manages the system's sound characteristics. The system's active equalizers (each with the acoustic resolution of a 32-band graphic equalizer per channel) are tuned specifically to the unique acoustic environment of the Corvette, providing more realistic and accurate vocal and instrumental tone than conventional graphic equalizers. The system features 252 watts, and integrated compression circuitry which eliminates audible distortion. The Delco AM/FM stereo has a "brain" that remembers the tone control settings for each station and recalls them when the station is selected. Antennas hidden in the windshield and rear window glass provide great reception even in crowded urban areas, and aren't subject to damage in car washes like traditional mast antennas. Also available are a stereo with Delco CD player (RPO UN0), and trunk-mounted Delco CD changer with a removable 12-disc cartridge (RPO U1S).



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

- **GRAB HANDLE.** A passenger side grab handle assists in entry, egress.
- **HATCH.** Corvette's rear hatch features a full frame with gas-assisted struts mounted in a vertical position for easier opening and closing.
- **HOOD.** Corvette's hood is much smaller and lighter than its predecessor's clamshell hood. The hood is assisted by pneumatic struts and is easier to open and close.
- **IGNITION.** The ignition switch is mounted on the instrument panel, making it easier to find.



The 1997 Corvette instrument panel takes a cue from earlier Corvettes, with individualized analog gages.

- **INSTRUMENTS.** The instrument panel is designed in the analog tradition of simple, easy-to-read gages. Today's I.P. is the end result of a 13-year evolution. It provides a good balance of utility and amenity – both digital (used for the Driver Information Center) and analog technologies are used, each where it makes the most sense. Corvette's new I.P. layout was designed to please both traditionalists, and competitive owners.
- **INSTRUMENT PANEL LIGHTING.** Two ultraviolet lights in the instrument panel illuminate graphics on the I.P. for very defined and dramatic lighting that's easy to read.
- **OPTIONAL DUAL-ZONE HVAC SYSTEM (RPO CJ2).** The system includes separate temperature controls for driver and passenger, providing increased comfort.
- **OPTIONAL MEMORY PACKAGE (RPO AAB).** This package allows drivers to customize up to 3 different settings for exterior mirrors, radio presets, climate control and driver's seat positions.
- **REMOVABLE TOP.** Corvette's removable top features a magnesium frame, which helps make the top lighter and much easier to remove and replace. Latches are simpler and easier to use. No special tool is required.
- **SIDE GLASS.** Side glass is 25 percent thicker, helping to reduce transmission of outside noise. Enhanced sealing helps to reduce wind noise.
- **STEERING WHEEL.** A four spoke wheel makes it easier to see the gages.

1997 CORVETTE

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- **STORAGE.** Storage areas have been improved. Corvette includes a cupholder and — for the first time since 1993 — a lockable, lighted glovebox. The center console has been redesigned to hold cassettes, CDs, portable phone, sunglasses, etc. The rear cargo area also includes two storage pockets and a large storage well in the center.
- **SWITCHES AND CONTROLS.** Seat adjustment switches are on the seat, instead of the console. Exit lights help occupants find lock buttons. Important ergonomic changes — such as moving the parking brake lever over to the center console — improve the “user-friendliness” of the interior. A new wiper control is mounted on the right of the steering column so the driver can use it while maintaining contact with the steering wheel.

SAFETY AND SECURITY

- **AIR BAGS.** Corvette features standard driver- and passenger-side air bags.
- **BRAKES.** Four-wheel anti-lock disc brakes are standard. Corvette’s brake rotors are larger for '97 for improved cooling characteristics. (See “Brakes,” page 13, for more details.)
- **BRAKE PEDAL.** A new cast aluminum racing-style brake pedal provides a positive feel.
- **DEALER DIAGNOSTICS.** Technicians can plug in and operate all functions controlled by electronics, making it easier to find and diagnose problems.
- **EXTERIOR MIRRORS.** New, larger exterior mirrors increase rearward visibility. A programmable “memory” option accommodates multiple drivers. Mirrors are fold-away for practicality and durability.
- **HEADLAMPS.** Headlamps are now 30 percent brighter. Even the interior of the headlamps underwent styling scrutiny and enhancements. Daytime running lamps are standard.



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

- **RAIN CHANNELS.** Rain channels on the roof help keep water from entering the passenger compartment, even during open-window driving in a light rain. Like the wipers, Corvette's rain water management system was developed to meet global requirements for high-speed driving.
- **REMOTE FUNCTION ACTUATION (RFA).** RFA boasts a new Secure Return feature that allows an approaching driver to turn on interior, back-up and turn signal lamps for a halo lighting effect. Also includes driver activated panic button on key fob, and programmable keyless entry.
- **SAFETY BELTS.** Driver and passenger lap/shoulder belts are standard. Safety belt buckles travel with the seats, so customers don't have to search for them.
- **SECURITY SYSTEM.** Corvette's standard security system monitors the doors and hatch. And, it's programmable. PASS-Key Theft Deterrent is also standard.
- **SIDE GUARD DOOR BEAMS.** Tubular side guard door beams help protect occupants in the event of a side impact collision. Energy-absorbing foam in the doors also enhances side impact protection.
- **STARTER SAVER AND BATTERY SAVER.** Since the new Corvette is so quiet at idle, drivers might inadvertently attempt to start the vehicle once it is already running. The starter saver feature prevents this from happening. With the battery saver, the vehicle's on-board computer monitors electrical loads, and shuts off lamps that are left on after a driver exits the vehicle.
- **VISIBILITY.** Corvette's downward vision angle has been increased for better visibility. The end result: Drivers can see more of the road in front of them (18 feet closer to the front bumper) than before.
- **WINDSHIELD.** The windshield is more than seven inches forward of the previous generation's design, improving visibility and enhancing the feeling of control.
- **WIPERS.** The wipers are tandem, versus a symmetrical wipe pattern, which provides increased coverage for better visibility. Corvette's wipers are capable of moving a larger volume of water off the windshield. The design goal: Provide a system that performs well at Autobahn speeds.

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

MANUFACTURING



NEW 1997 CORVETTE ON THE ASSEMBLY LINE AT THE BOWLING GREEN, KY, PLANT.

The Corvette Assembly Plant in Bowling Green, Ky., is one of the most advanced automotive production facilities in existence. Re-built exclusively for Corvettes, the Bowling Green facility uses the latest in computerized manufacturing techniques, including one of the finest paint processes of any GM assembly plant.

Corvette production moved to Bowling Green from St. Louis on June 1, 1981. Since then, the Bowling Green plant has made Corvette history twice – first on October 26, 1983, by producing the 750,000th Corvette, and again on July 2, 1992, by producing the one-millionth Corvette.

Corvette's manufacturing process has been refined to improve quality and consistency even further, car after car. Every major step of the process

was reviewed and revised as necessary, from the way parts are received at the plant to the way finished cars are shipped to dealers.

The 1997 Corvette is designed to compete in the global marketplace. Constantly refining the manufacturing process is a key to achieve quality levels that are competitive in the world market.

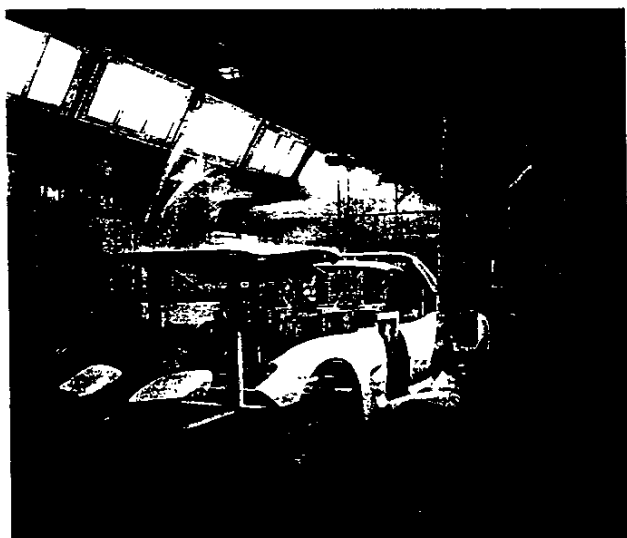
Corvette's assembly process includes:

- **REDUCED PART COUNT.** Corvette's build process has been simplified for 1997. Engineers reduced parts by 34 percent – today's Corvette requires 1,462 fewer parts than its predecessor.
- **HAND-CRAFTED BODY STRUCTURE.** Corvette's frame structure technology employs MIG (Metal Inert Gas) laser welding, performed by skilled craftspeople, instead of the robotic spot welding employed in most plants.
- **MODULAR CONSTRUCTION.** Major items are built off-line; complex sub-assemblies are built as single units away from the assembly line, which gives plant personnel better access to the subassembly, improving quality and simplifying the final build. This process is used for major subassemblies, such as the instrument cluster, dash, windshield, pedal assemblies and steering column. Powertrain, doors and chassis modules are assembled similarly.



1997 CORVETTE FIFTH GENERATION PRODUCT INFORMATION

■ **PAINT PROCESS.** Body panels remain off the car until late in the assembly process to assure a quality paint appearance. Painting is preceded by a high-tech cleaning in a “clean-room” atmosphere designed to remain dust and contaminant-free. A water-borne paint process is used to minimize environmental emissions and to provide a clear, clean appearance.



CORVETTE'S HIGH-TECH PAINT PROCESS RESULTS IN A DEEP, LUSTROUS, LONG-LASTING FINISH.

- **WATER TESTING.** Before leaving the plant, every Corvette is subjected to a rigorous water-test, which helps ensure each vehicle is free from leaks.
- **QUALITY CONTROL.** The body assembly process is continually monitored by sophisticated laser and photo technology to provide “real time” checks on dimensions, which allows the plant to make necessary adjustments before a vehicle leaves the assembly line. The result: Every Corvette off the line is consistent in quality.
- **HYDROFORMING.** GM is an industry leader in automotive hydroforming applications. Corvette's hydroformed frame rails represent the largest single hydroformed parts in the auto industry. GM developed the hydroforming press used to create the frame rails, which are formed at GM's Metal Fabrication Division Production Plant in Pontiac, Mich., and then shipped to Bowling Green.

1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

STANDARD AND OPTIONAL FEATURE SUMMARY

Powertrain

| | |
|--|---|
| 5.7-liter OHV/Pushrod V8 Engine (LS1) | S |
| 4-Speed Automatic Transmission, rear-mounted (MX0) | S |
| 6-Speed Manual Transmission, rear-mounted (MN6) | O |
| 2.73 Axle Ratio (Auto. Trans.) | S |
| 3.42 Axle Ratio (Man. Trans.) | O |
| 3.15 Performance Axle Ratio (Auto. Trans., G92) | O |
| Acceleration Slip Regulation | S |
| Battery Saver | S |
| Brake/Transmission Shift Interlock (Auto. Trans.) | S |
| Differential, Limited Slip | S |
| Electronic Throttle Control | S |
| Emissions, Federal (FE9) | S |
| Emissions, California (YF5) | O |
| Emissions, Massachusetts/NY (NG1) | O |
| California/Mass/NY Emissions Override (NB8) | O |
| Federal Emissions Override (NC7) | O |
| Exhaust, Aluminized Stainless Steel w/Quad Outlets | S |
| Fuel Tanks, Dual Mid-Ship | S |
| Starter Saver | S |
| Torque Tube, Aluminum | S |
| Transmission Mounts, Hydraulic | S |

Chassis

| | |
|--|---|
| Brakes, 4-Wheel Disc w/Anti-Lock | S |
| Steering, Magnetic Speed-Sensitive Variable Assist (Magnasteer II) | S |
| Suspension, Fully Independent Front and Rear | S |
| Suspension, Selective Real Time Damping (F45) | O |
| Suspension, Gymkhana High-Performance (Z51) | O |
| Tires, Goodyear Eagle F1GS Extended Mobility | S |
| Tires, Front - P245/45ZR-17 | S |
| Tires, Rear - P275/40ZR-18 | S |
| Wheels, Aluminum | S |

Exterior

| | |
|---|---|
| Crush Zones, Front and Rear | S |
| Daytime Running Lamps | S |
| Lamps, Underhood, Side Marker, L.E.D. CHMSL | S |
| Lamps, Fog (T96) | O |
| Floor, Composite w/Lightweight Balsa Wood Core | S |
| Frame, Perimeter Steel w/Aluminum Windshield Frame | S |
| Glass, Solar Tinted, Flush-Mounted Windshield | S |
| Headlamps, Retractable Halogen | S |
| Hood, Front Hinged | S |
| Mirrors, Heated Folding Exterior Rearview | S |
| Moldings, Color-Keyed Body Side (B84) | O |
| Paint, Base-Coat/Clear-Coat | S |
| Radio Antenna, Windshield/Rear Glass Mounted | S |
| Removable Roof Panel, Body Colored | S |
| Removable Roof Panel, Transparent (CC3) | O |
| Removable Roof Panels, Body Colored and Transparent (C2L) | O |
| Side Guard Door Beams | S |

S = Standard

O = Optional



1997 CORVETTE

FIFTH GENERATION

PRODUCT INFORMATION

Interior

| | |
|---|---|
| Air Bags, Driver and Passenger | S |
| Air Conditioning, Manually Operated | S |
| Air Conditioning w/Electronic Dual-Zone Temperature Control (CJ2) | O |
| Auxiliary Power Outlet | S |
| Console, Lockable w/Ashtray, Lighter | S |
| Cruise Control, Electronic | S |
| Cupholder | S |
| Defogger, Electric Rear Window | S |
| Defroster, Windshield and Side Window | S |
| Driver Information Center, Multilingual (English, French, German, Spanish) | S |
| Flash to Pass | S |
| Floor Mats (B34) | O |
| Glove Box, Lighted, Lockable | S |
| Instrumentation, Analog (Speedometer, Tachometer, Fuel, Voltmeter, Water Temperature and Oil Pressure Meters) | S |
| Knee Bolsters | S |
| Lamps – Console, Door Handle, Glove Box | S |
| Low Tire Pressure Warning System | S |
| Luggage Shade and Parcel Net (CJ2) | O |
| Memory Package – Settings for Driver's Seat, Exterior Mirrors, Radio Pre-Settings and Climate Control (AAB) | O |
| Mirror, Day/Night Rearview w/Integral Map Light | S |
| Oil Level Indicator | S |
| PASS -Key Theft-Deterrent System | S |
| Power Door Locks | S |
| Power Windows w/Driver and Passenger Express Down | S |
| Radio, Delco Premium AM/FM Stereo w/Cassette and Bose Speakers | S |
| Radio, Delco Premium AM/FM Stereo w/CD Player and Bose Speakers (UN0) | O |
| Remote CD Changer w/Removable 12-Disc Cartridge (U1S) | O |
| Remote Fuel Filler Door Release, Electric | S |
| Remote Function Actuation – Auto. Door Lock/Unlock, Panic Alarm, Hatch Release, Secure Return, Two Key Fobs | S |

| | |
|---|---|
| Remote Hatch Release | S |
| Remote Hood Release | S |
| Safety Belts, Driver and Passenger Lap/Shoulder | S |
| Scotchgard™ Fabric and Carpet Protector | S |
| Seating, Leather Buckets w/Power Driver's Seat Adjuster, Integral Head Restraints | S |
| Seating, Perforated Leather Sport Seats w/Power Lumbar, Side Bolsters, Integral Head Restraints (1L3) | O |
| Seating, Power Passenger (AG2) | O |
| Steering Column, Energy-Absorbing | S |
| Steering Column Lock, Electronic | S |
| Steering Wheel, Leather-Wrapped, Tilt | S |
| Tire Pressure Monitor | S |
| Wipers, Intermittent | S |

Exterior Colors

| Exterior Colors | Code |
|----------------------------|------|
| Nassau Blue | 23 |
| Fairway Green | 87 |
| Sebring Silver | 13 |
| Light Carmine Red Metallic | 53 |
| Arctic White | 10 |
| Black | 41 |
| Torch Red | 70 |

Interior Colors

| Interior Colors | Code |
|-----------------------|------|
| Black Leather | 193 |
| Light Gray Leather | 923 |
| Firethorn Red Leather | 943 |

S = Standard

O = Optional

1

2

3

4

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6

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8

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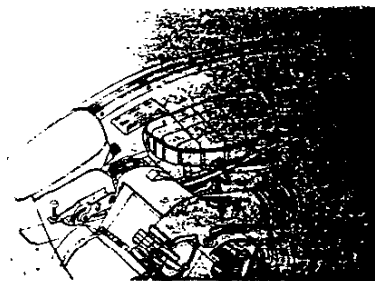
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1997 CORVETTE

FIFTH GENERATION

SPECIFICATIONS

1997 CORVETTE SPECIFICATIONS

General

| | |
|--|--------------------------|
| Model No. | 1YY07 |
| Body Style | 2-Door Hatchback Coupe |
| Base Price | TBD |
| Passenger Capacity | 2 |
| EPA Vehicle Class | Two-Seater |
| Primary Structure | Unitized Steel |
| Body Material | Fiberglass |
| Weight Distribution (percent front/rear) | 51.4 / 48.6 ¹ |
| Assembly Plant | Bowling Green, Kentucky |

Restraints

| | Left | Right |
|--------------|--------------|--------------|
| Air Bag | Std. | Std. |
| Safety Belts | Lap/Shoulder | Lap/Shoulder |

Suspension – Front

| | |
|--|--|
| Type | ■ Short/long arm double wishbone front suspension |
| | ■ Forged aluminum upper control arm, cast aluminum lower control arm |
| | ■ Transverse-mounted composite leaf springs |
| | ■ Monotube shock absorbers ² |
| | ■ Lubed-for-life ball joints |
| | ■ Individual wheel height adjusters |
| Stabilizer bar diam., Base – 19 mm; F45 – 19 mm; Z51 – 21.7 mm | |
| Shock absorber diam., Base – 36 mm; F45 – 28 mm; Z51 – 45 mm | |

Suspension – Rear

| | |
|--|--|
| Type | ■ Short/long arm double wishbone rear suspension |
| | ■ Cast aluminum upper and lower control arm |
| | ■ Transverse-mounted composite leaf springs |
| | ■ Monotube shock absorbers ² |
| | ■ Lubed-for-life ball joints |
| | ■ Individual wheel height adjusters |
| Stabilizer bar diam., Base – 19 mm; F45 – 19 mm; Z51 – 21.7 mm | |
| Shock absorber diam., Base – 36 mm; F45 – 28 mm; Z51 – 45 mm | |

¹With automatic transmission

²Includes Selective Real Time Damping control on F45 Suspension

Steering

| | |
|-----------------------------------|---|
| Type | Speed-Sensitive, Power-Assisted, Magnetic Variable Effort |
| Ratio | 16.1:1 |
| Wheel diam. (in.) | TBD |
| Turns, lock-to-lock | 2.66 |
| Turning diam., curb-to-curb (ft.) | 38.50 |
| Turning diam., wall-to-wall (ft.) | 40.26 |

Brakes

| | |
|-------------------------------------|--------------------------|
| Type | Four-Wheel Disc |
| Anti-lock system (Std.) | Four-Wheel (Bosch ABS V) |
| Rotor diam x thickness., front (mm) | 325 x 32 |
| Rotor diam x thickness., rear (mm) | 305 x 26 |
| Swept area, ft./rr. (sq. in.) | TBD |

Wheels/Tires

| | Front | Rear |
|---------------------|----------------------------------|---------------|
| Tires, size | P245/45ZR-17 | P275/40ZR-18 |
| Tires, mfg./type | Goodyear Extended Mobility Tires | |
| Wheels, size (in.) | 17 x 8.5 | 18 x 9.5 |
| Wheels, type | Cast Aluminum | Cast Aluminum |
| Number of studs | 5 | 5 |
| Circle diam., (in.) | TBD | TBD |
| Spare | N/A | N/A |

1997 CORVETTE

FIFTH GENERATION

SPECIFICATIONS

Engine

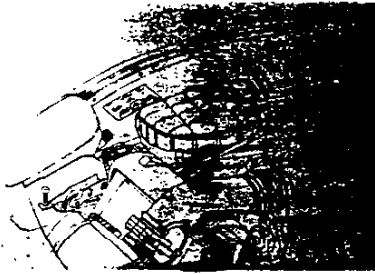
| | |
|----------------------------|--|
| Order Code | LS1 |
| Type | Overhead-Valve (OHV)/Pushrod V8 |
| Displacement (liters) | 5.68 |
| Fuel induction system | Sequential Fuel Injection |
| Horsepower (SAE net @ rpm) | 345 @ 5,600 |
| Torque (lbs.-ft. @ rpm) | 350 @ 4,400 |
| Block material | Cast Aluminum |
| Cylinder head material | Cast Aluminum |
| Valves per cylinder | 2 |
| Hydraulic roller lifters | Std. |
| Roller rocker arms | Std. |
| Bore x stroke (in.) | 3.90 x 3.62 |
| Bore x stroke (mm.) | 99.00 x 92.00 |
| Redline (rpm) | 6,000 |
| Compression ratio | 10.1:1 |
| Cam drive | Chain |
| Recommended fuel | Premium Unleaded |
| Emission control system | <ul style="list-style-type: none"> ■ Three-Way Catalyst ■ Air Injection Reaction (AIR) ■ Positive Crankcase Ventilation (PCV) |

Drivetrain

| Type | Rear Wheel Drive | Rear Wheel Drive |
|--------------------|---|---|
| | Std. | Opt. |
| Transmission | Hydra-Matic
Rear-Mounted
4-Speed Automatic
w/Overdrive
(4L60-E) | Borg-Warner
Rear-Mounted
6-Speed. Manual
(T56) |
| Order Code | M30 | MN6 |
| Gear ratios | | |
| 1st | 3.06 | 2.66 |
| 2nd | 1.63 | 1.78 |
| 3rd | 1.00 | 1.30 |
| 4th | 0.70 | 1.00 |
| 5th | - | 0.74 |
| 6th | - | 0.50 |
| Reverse | 2.29 | 2.90 |
| Axle ratio | 2.73 (3.15 opt.) | 3.42 |
| Final drive ratio | 1.91 (2.21 opt.) | 1.71 |

Capacities

| | |
|------------------------------------|------|
| Fuel (gal.) | 19.1 |
| Engine oil w/filter (qts.) | 6.5 |
| Engine coolant (qts.) | 11.4 |
| Battery (CCA) | 600 |
| Interior passenger volume (cu.ft.) | 51.4 |
| Interior trunk volume (cu.ft.) | 25.0 |



1997 CORVETTE

FIFTH GENERATION

SPECIFICATIONS

Performance Data

| | |
|---|---------|
| Weight-to-power ratio, auto. trans. (lbs./hp) | 9.4:1 |
| Weight-to-power ratio, man. trans. (lbs./hp) | 9.3:1 |
| Frontal area (sq. in.) | TBD |
| Coefficient of drag (CD) | 0.29 |
| Specific output (hp/liter) | 60.53:1 |

Acceleration

| | |
|---------------------------------|---------------|
| 0 - 60 mph, man. trans. (sec.) | 4.72 |
| 0 - 60 mph, auto. trans. (sec.) | 5.05 |
| Top speed (mph) | 172 |
| 1/4 mile (sec./mph) | 13.36 / 109.4 |
| Lateral Acceleration (g) | 0.93 |

Braking

| | |
|------------------|-----|
| 60 - 0 mph (ft.) | 125 |
|------------------|-----|

Fuel Consumption

| | |
|--|---|
| Manual Trans. EPA mileage (mpg city/hwy) | 18/28 ¹ |
| Auto. Trans. EPA mileage (mpg city/hwy) | 17/25 ¹ |
| Max. cruising range, man. trans. (miles) | 534.8 ¹ / 477.5 ¹ |

¹ Preliminary - subject to change.

Exterior Dimensions

| | |
|----------------------------------|-----------|
| Wheelbase (in.) | 104.5 |
| Track, ft./rr. (in.) | 62.0/62.1 |
| Length, overall (in.) | 179.7 |
| Width, overall w/o mirrors (in.) | 73.6 |
| Height, overall (in.) | 47.7 |
| Min. ground clearance (in.) | 3.7 |
| Overhang, ft./rr. (in.) | 38.8/35.7 |
| Trunk liftover height (in.) | 36.7 |
| Curb weight, auto. trans. (lbs.) | 3,229 |
| Curb weight, man. trans. (lbs.) | 3,218 |

Interior Dimensions

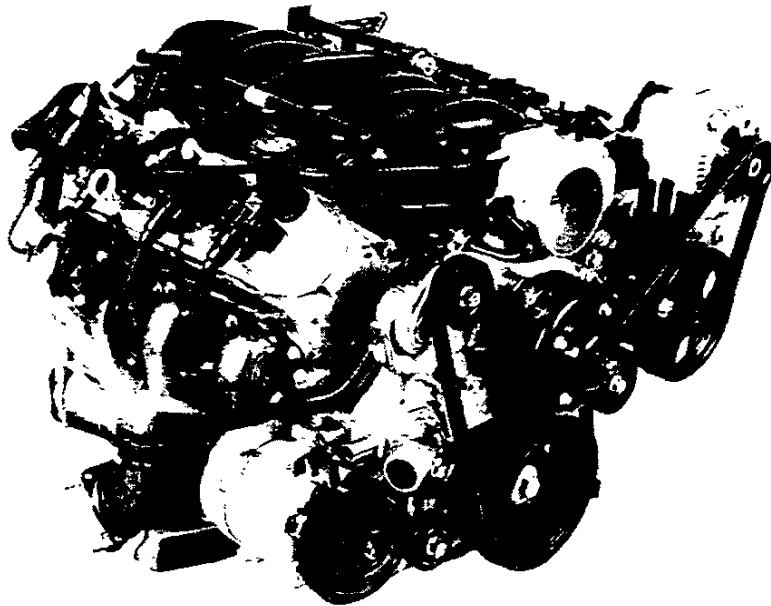
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| Head room (in.) | 37.8 |
| Leg room (in.) | 42.7 |
| Shoulder room (in.) | 55.3 |
| Hip room (in.) | 54.2 |



5.7L V8

NEW 97

LS1



Among its revolutionary *changes*, the LS1 will have: an aluminum block, a first in small block history; an accessory *drive* system that sets the industry standard for *quality*, reliability and durability; one of the *industry's* most sophisticated PCMs; and the *first* passenger car application of Electronic *Throttle* Control (ETC).

Product Specifications

Type:
5.7L V8

Bore x Stroke:
99.00 x 92.00 mm (3.90 x 3.62 in)

Displacement:
5665 cc

Fuel System:
SEQUENTIAL FUEL INJECTION

Compression Ratio:
10.1:1

Horsepower:
345 @ 5600 rpm

Valve Configuration:
OVERHEAD VALVES

Torque (lb-ft):
350 @ 4400 rpm

Assembly Site:
ROMULUS, MI

Maximum Engine Speed:
6000 rpm

Valve Lifters:
HYDRAULIC ROLLER

Emissions Control:

- THREE WAY CATALYST
- AIR INJECTION REACTION (AIR)
- POSITIVE CRANKCASE VENTILATION (PCV)

Firing Order:
1-8-7-2-6-5-4-3

Materials

Block:
CAST ALUMINUM

Cylinder Head:
CAST ALUMINUM

Intake Manifold:
COMPOSITE

Exhaust Manifold:
INSULATED DUAL WALL
STAINLESS STEEL

Main Bearing Caps:
POWDERED METAL

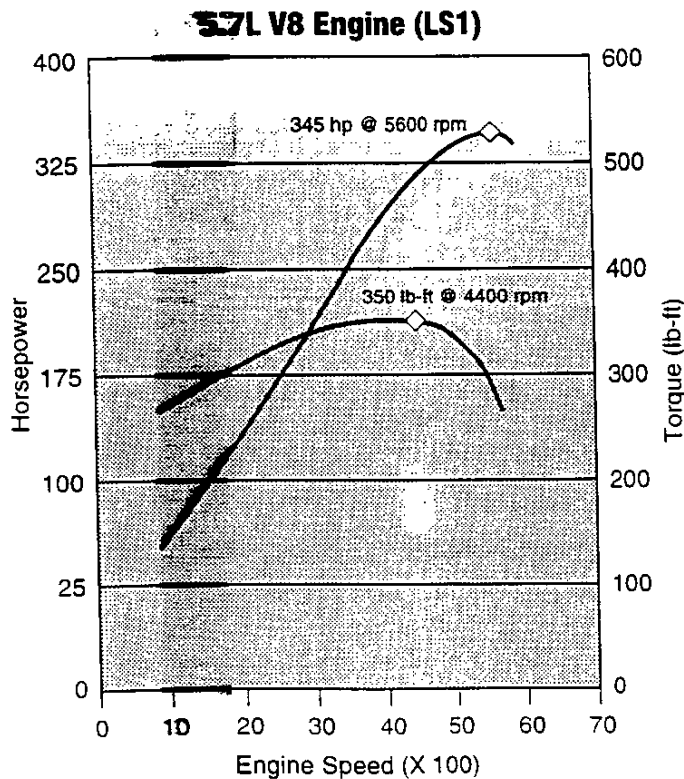
Crankshaft:
CAST IRON WITH UNDERCUT
AND ROLLED FILLETS

Camshaft:
HOLLOW STEEL

Connecting Rods:
POWDERED METAL

Additional Features:
EXTENDED LIFE SPARK PLUGS
EXTENDED LIFE COOLANT
OIL LEVEL SENSOR

Application:
Chevrolet Corvette



Information may vary with application. All specifications listed are based on the latest product information available at the time of publication. The right is reserved to make changes at any time without notice.

5.7L V8

NEW 97

LS1

Features and Benefits

All new for 1997

Cylinder head - The LS1 features replicated ports to optimize air flow into the engine. This means that each cylinder head port is identical in every detail, and allows for very constant cylinder-to-cylinder air-flow distribution. Better air flow means better performance for the customer. A four-bolt head and improved cylinder head fasteners reduce bore distortion, which in turn improves both fuel economy and emissions.

Intake manifold - The intake manifold was redesigned to provide capability to meet the performance, emissions and fuel economy requirements of the new LS1. The LS1 intake manifold breathes better, thanks to the use of new composite materials. The new material is smoother and cooler, and allows air to glide with less restriction through the tubular thermoplastic intake manifold. This also enhances performance and reduces mass.

Valve train - The LS1 valve train, also new for 1997, offers customers some significant benefits in the areas of increased performance capability, fuel economy and noise reduction. Engineers designed a hollow camshaft to take mass out of the engine, based on the "lighter = faster" theory. The camshaft has larger bearing journals, which in turn, allows larger lobes; thereby, reducing lobe stress. In doing so, engineers have added the capability to design a more aggressive cam profile, which gains performance. Next, they've incorporated cast steel roller rocker arms. This adds stiffness to the valve train structure that reduces friction and enables higher speeds. You'll also find hydraulic roller valve lifters that minimize friction and help eliminate internal power loss. They also maximize fuel economy and improve wear resistance over time.

Engine block - Changes to the small block for 1997 aren't merely skin deep. Engineers used every opportunity to improve the engine, starting with the block. For 1997, the LS1 will have an aluminum block, a first in small block history. The design of the block itself is also unique. Engineers call it a "deep skirt" configuration because the block actually extends further down. This allows the main bearing caps to cross bolt into the block — six bolts per cap. This increases stiffness, and reduces crankshaft bending and, therefore, engine noise. Cast iron liners provide for durable cylinder bore wear. Also featured is a crankshaft with hollow main bearing journals — a definite improvement for mass as well as improved engine breathing. Improved breathing means that less energy is used "internal" to the engine, which — in turn — leaves more horsepower available for the vehicle to improve performance.

Accessory drive - Engineers designing the LS1 accessory drive system had some very specific requirements in mind. The system was developed to set the industry standard for quality, reliability and durability, as well as reduce noise, vibration and contamination. Some enablers to achieve these goals are neat direct mount accessories; low static belt tension; slack side tensioner placement; dual track drive and the elimination of captured components, fasteners and wet attachment holes. Additionally, this new system gave the vehicle designers flexibility in packaging the powertrain.

Extended sump oil pan - Engineers on the LS1 program became very adept at turning challenges into opportunities. The oil pan design is a very good example. Based on the design criteria for the '97 Corvette, the oil pan had to adhere to a very low profile to maintain required ground clearance. However, it also had to allow for the high performance requirements of the vehicle. Engineers knew that oil would tend to migrate away from the pick up tube during high G-force turns for which Corvette drivers are famous.

What to do? Engineers developed a new shallow pan extended sump design with an intricate baffling system that increases overall sump capability and better holds oil in place even during high lateral accelerations. The structural aluminum oil pan also increases overall powertrain bending stiffness, by allowing 360 degree bolting to the transmission bell housing.

G-Rotor oil pump - The LS1 incorporates a high-efficiency G-Rotor oil pump, driven at the front of the crankshaft. It provides numerous customer benefits, such as improved low temperature oil delivery and better performance, due to less parasitic loss and improved pump efficiency.

Pistons - Another goal of the LS1 program was emissions compliance well into the future. To that end, engineers redesigned the piston with its top ring closer to the top of the piston to reduce hydrocarbon emissions. They also eased tension on the piston rings to reduce friction and improve fuel economy. LS1 pistons and rods are also very lightweight, which enables spinning the engine at higher RPMs. This allows engineers to achieve more power from lower, more fuel efficient displacements.

Ignition system - Engineers have developed a new coil per cylinder ignition system. It features eight individual bolt coils secured to two aluminum rocker covers. The coils themselves feature a composite material coil housing and integrated interface electronics to control the coil. The coil is located near the plug for high ignition energy, which results in increased combustion, better emissions and durability. The electronic spark timing signals for the coil are derived from a crankshaft and camshaft position sensor to enable high accuracy spark delivery and misfire detection.

Powertrain control module (PCM) - The PCM for the new LS1 engine will be one of the industry's most sophisticated. In fact, it may have more power than your home computer. It incorporates two new custom integrated circuits — a multi-functional device that combines control functions for the fuel pump, linear EGR, and transmission line pressure control actuator output drivers into one package; and a new method to control engine knock, utilizing a digital signal to noise enhancement filter eliminating the plug-in module and PCM access cover. Both are industry firsts. The "up-integration" of the features reduces mass and improves reliability by reducing the number of external wiring connections.

Exhaust manifold - The new design is significantly different from the conventional cast manifold. The dual-wall fabricated manifold consists of two layers of high strength stainless steel, with an air gap in between. The thin inner wall heats up quickly, allowing rapid converter light off, thus reducing cold start emissions. The air gap helps as an insulator and thus prevents the heat loss from the exhaust gas. This latest technology was selected primarily for its ability to aid in the reduction of cold start emissions by cutting down drastically on the time-to-temperature requirements. It dramatically improves the efficiency of the catalytic converter, maintaining at the same time, its ability to meet all other performance goals such as durability, enhanced performance and reduction of noise level. The air gap between the two layers of stainless steel helps to reduce the heat loss from the gas which in addition to helping meet the emissions goals, aids in reducing the underhood temperature. To further enhance the ability to reduce emissions, this dual wall manifold features integrated AIR passages.

Electronic throttle control (ETC) - The 1997 LS1 is GM's first passenger car engine with ETC. (ETC has already appeared on GM's 6.5L turbo diesel.) ETC allows precise tailoring of a specific throttle progression to meet a vehicle's particular character. For the new Corvette, the customer feels a throttle progression that matches and compliments the racy new coupe. ETC has other benefits as well. First, it provides another opportunity to "up-integrate" features that have stood alone in the past. Specifically, ETC integrates cruise control, brake torque management and traction control into a single controller. Gone is a basketful of hardware; that results in reduced mass and improved appearance and durability.

Sequential fuel injection (SFI) - Enthusiasts understand the importance and benefits of SFI. For 1997, the LS1 incorporates the most sophisticated use of this technology. SFI is a very precise fuel delivery system in which the powertrain control module (PCM) individually controls the fuel injectors. With SFI,

each of the eight injectors are fired one at a time, in a sequence that matches the firing order, further improving fuel timing for optimum combustion. With SFI, the fuel is precisely metered, taking into account overall system pressure and temperature. SFI offers greater idle stability, performance, durability, fuel efficiency and driveability. Thanks, in part, to SFI, the new LS1 will be emission complaint for years to come. This includes enhanced EVAP, LEV, TLEV and Tier 1 tailpipe emissions.

Other features - Other features of the LS1 that result in a variety of customer benefits include: powdered-metal connecting rods for improvements to fuel economy, emissions and pleasability; roller timing chain with nylon tensioners, also for improved pleasability; composite lifter restricters that decrease mass and increase fuel economy; dual electronic spark control sensor located in the valley of the block for increased spark control; integrated air filter module for durability; and a mass air flow sensor to improve emissions.



GM Small Block Enters 21st Century

PONTIAC, Mich. — When GM engineers set out to design the series of new, small-block engines, they admit to being a bit humbled by the task.

"This engine's been 40 years in the making," said John Juriga, program manager for GM Powertrain Group. "It is a part of Americana — a true hero with a rich legacy. We didn't approach this job lightly."

Roughly 40 years ago, a Cadillac engineer by the name of Ed Cole joined GM's Chevrolet division with one goal — develop a revolutionary powerplant to capture Ford's rising customer base. Little did Cole know that what he would build in his family's garage would serve as the foundation for GM performance vehicles for decades to come. Cole and his team of engineers achieved their goal, building an engine and a car that became the new standard of the industry, and — in doing so — secured General Motors position as a leader in the sports car market.

Since its original debut in the BelAire, the Chevy small block has powered literally millions of GM cars and trucks. During that time, it has set new records — like Zora Arkus-Duntov's race up Pike's Peak — and set new automotive benchmarks. All along, it has grown a loyal following of enthusiasts, young and old, that have made this engine part of their lives.

In 1997, when GM unveils its Generation III small-block engine, customers will see the rich 40-year heritage combined with cutting-edge technology.

Among its revolutionary changes, the LS1 will have:

- An aluminum block, a first in small block history.
- An accessory drive system that sets the industry standard for quality, reliability and durability while it reduces noise and vibration.
- One of the industry's most sophisticated PCMs with two new custom integrated circuits that combine the fuel pump, linear EGR, force motor and PWM into one package and a digital signal/noise

(more)

enhancement filter that eliminates the plug-in module and PCM access cover the first passenger car application of Electronic Throttle Control (ETC), a device that integrates cruise control, brake torque management and traction control into a single controller and allows precise tailoring of a specific throttle progression to compliment the vehicle's character.

Continuing the Corvette standard of excellence, the LS1 will include a redesigned intake manifold that allows air to glide through with less restriction. This enhances performance and reduces mass. The valve train offers increased performance capability, fuel economy and noise reduction with the introduction of a hollow camshaft. The 1997 use of Sequential Fuel Injection (SFI), one of the most sophisticated uses of this technology, offers greater idle stability, performance, durability, fuel efficiency and driveability.

Rounding out the customer benefits of the LS1 are a variety of enhancements including: powdered-metal connecting rods, a roller timing chain with nylon tensioners, composite lifter restricters, a dual electronic spark control sensor, an integrated air fuel module and a mass air flow sensor. These features are aimed at improved pleasability as well as feature specific improvements in emissions, fuel economy, durability, etc.

###