

Solid state components also can be damaged if they are bumped or dropped, or if they are laid on a metal work bench or on an electrically operated item such as a radio, a TV or an oscilloscope.

SPECIAL TOOL ORDERING INFORMATION

Special service tools that are shown in this service manual that have tool product numbers beginning with "J" or "BT" are available for worldwide distribution from:

Kent-Moore

SPX Corporation

29784 Little Mack

Roseville, MI 48066-2298

1-800-345-2233

Monday through Friday

8:00 a.m. through 8:00 p.m. EST

Telex: 244040 KMTR VR

Fax: 313-578-7375

General Motors dealers can purchase TECH 1 scan tools and accessories through Kent-Moore at the above address and phone number. Non General Motors dealer repair facilities can purchase TECH 1 scan tools and accessories from Kent-Moore at the above address or:

Sun Electric Corporation

One Sun Parkway

Crystal Lake, IL 60014

1-800-CALLSUN (225-5786)

6:45 a.m. through 7:00 p.m. CST.

BODY IDENTIFICATION

A body identification tag is attached to the vehicle on the center of the radiator tie. The tag gives a schedule number and the last four digits of the vehicle identification number (VIN) sequence number. Refer to "Vehicle Identification Number" in this section

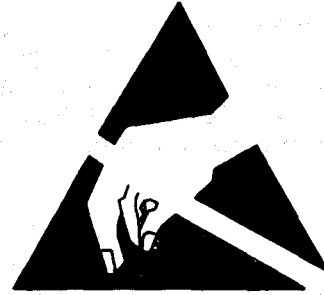
Paint codes, trim numbers, seat option codes and other body information are included on the Service Parts Identification Label. Refer to "Service Parts Identification Label" in this section.

FEDERAL VEHICLE THEFT PREVENTION STANDARD

Federal law requires General Motors to place a vehicle identification number (VIN) label on certain parts of selected vehicles. The purpose of the standard is to reduce motor vehicle thefts by making parts removed from stolen vehicles easier to trace and recover.

The label is permanently attached to an interior surface of the part and displays the complete VIN. The label on a replacement part contains the letter "R," the manufacturer's logo and the symbol "DOT."

NOTICE



**CONTENTS SENSITIVE
TO
STATIC ELECTRICITY**

MCO006-0A-B-RP

Figure 1 – ESD Sensitive Parts Label



Important

- THESE LABELS ARE NOT TO BE DEFACED, REMOVED OR COVERED. The labels must be shielded from paint, rustproofing and undercoating (dealer preparation included).

The theft deterrent labels are found on the front side door windows.

VEHICLE IDENTIFICATION NUMBER

Figures 2 through 4

The vehicle identification number (VIN) legally identifies the vehicle. A VIN plate is attached to the upper left of the instrument panel and can be seen from outside the vehicle. Each sequential unit number is prefixed by letters and numbers that are explained in Figure 2. The VIN also appears on the Vehicle Certificate of Title and Registration.

A derivative of the VIN is stamped on the engine and transmission. The code gives the model year, plant of manufacture and a sequence number that also indicates the car division. A VIN number is also stamped on the frame.

A bar code VIN is also on the vehicle identification plate.

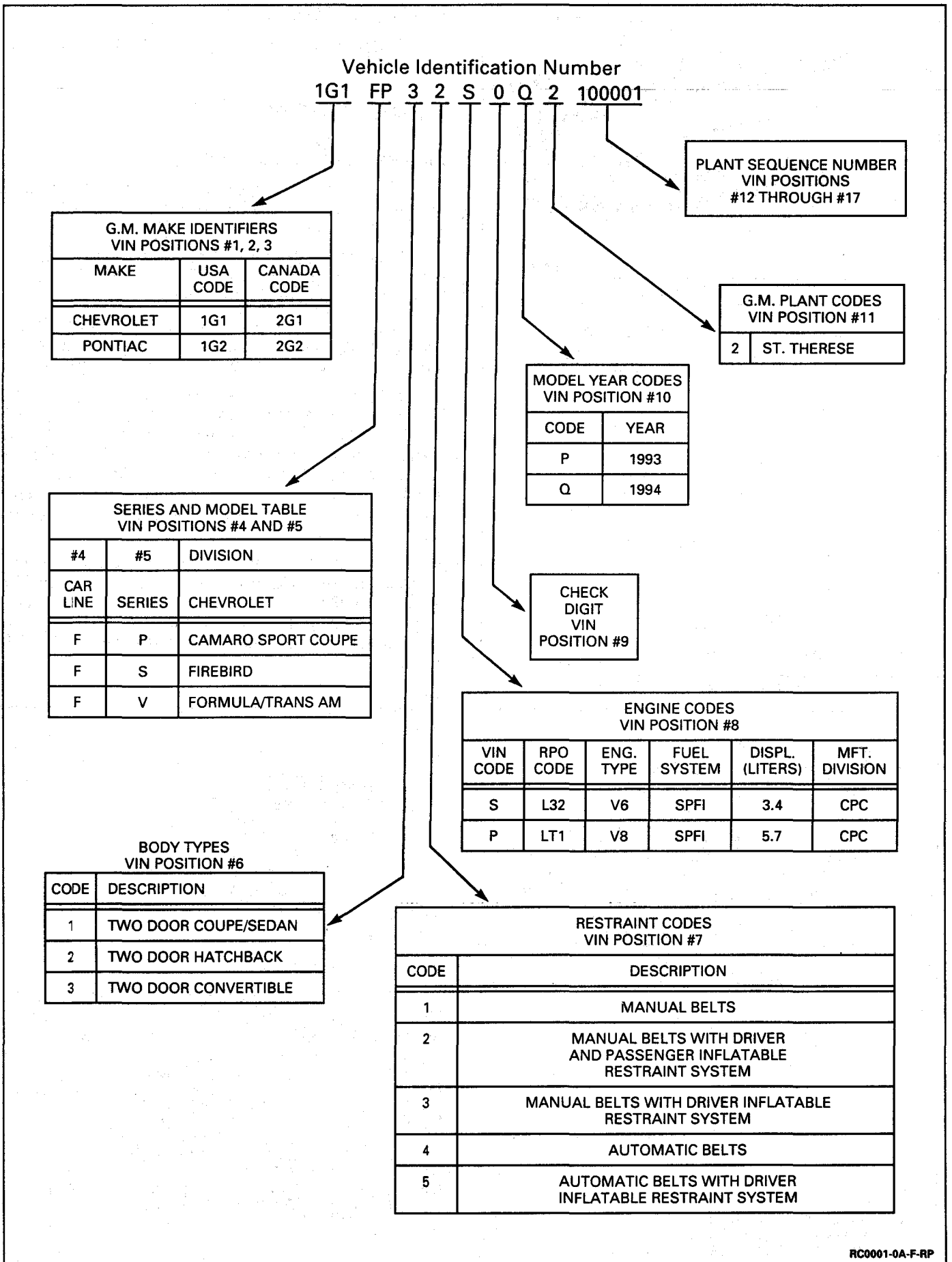


Figure 2 – VIN Codes

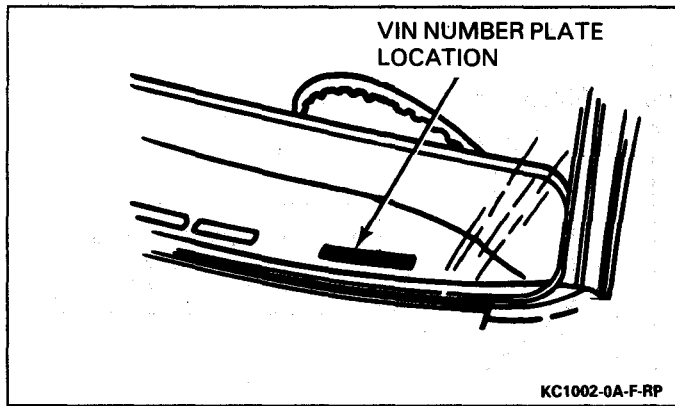


Figure 3 - VIN Plate Location

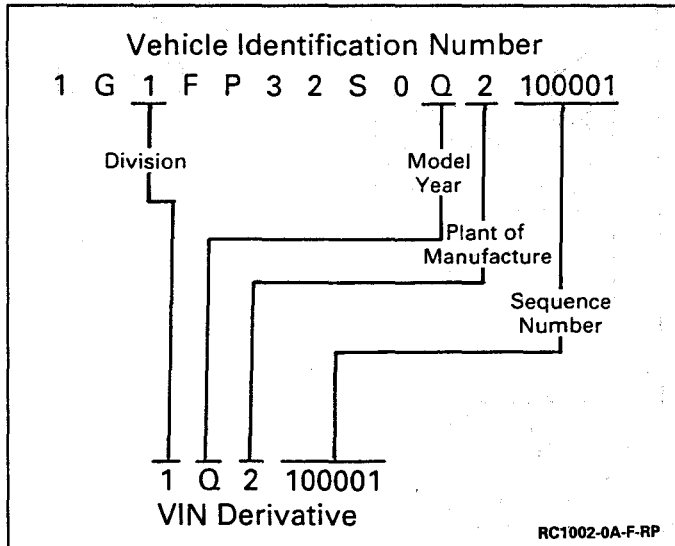


Figure 4 - VIN Derivative (Typical)

MODEL IDENTIFICATION

Models (series) and body styles for the current year are listed in Figure 2.

ENGINE IDENTIFICATION

Figures 2 and 4 through 6

The VIN code (Figure 2) provides detailed engine information by the engine code letter located on the vehicle identification plate.

Stick-on-labels attached to the engine indicate the engine unit number and code. These labels also contain bar codes for in-plant identification.

Engines are stamped with an engine identification number which identifies the assembly plant, the month produced, the day produced and the engine type code.

All engines and transmissions are stamped with a VIN derivative, created from the complete VIN. Refer to "Vehicle Identification Number" in this section. The stamping contains nine positions. Position 1 is the GM car division identifier. Position 2 is the model year code. Position 3 is the car assembly plant code. Positions 4 through 9 contain the assembly plant sequential number of the vehicle (Figure 4).

If the engine in the vehicle is the original engine, information can be derived from the eighth VIN position letter or number (Figure 2). To determine if the engine is original, compare the VIN and the VIN derivative. The VIN derivative should be the same as positions 3 and 10 through 17 of the VIN.

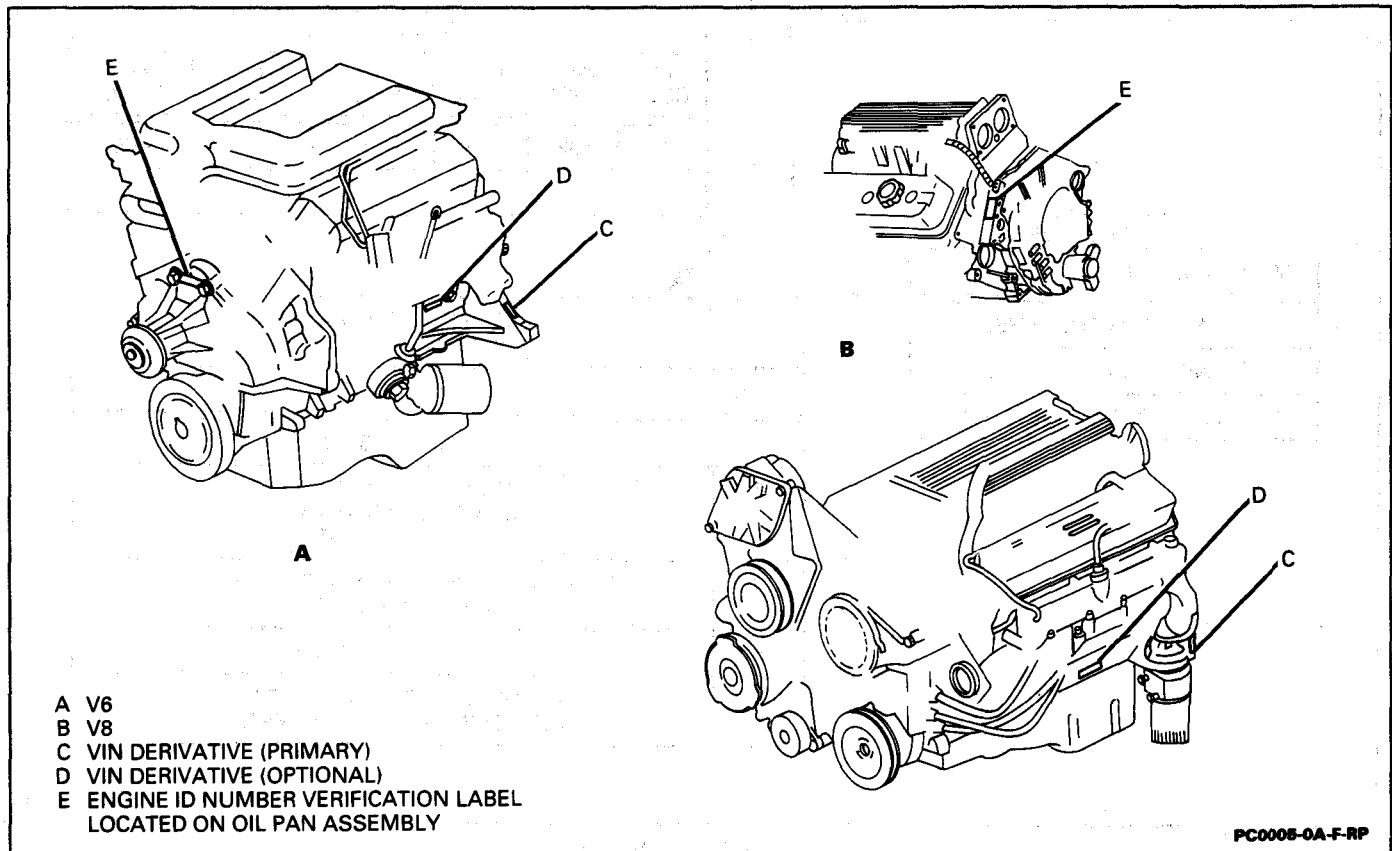


Figure 5 - Engine Identification Locations (Typical)

TRANSMISSION USAGE

Figure 7

Transmission usage affects axle usage. The transmission usage chart lists each engine with the axles and transmissions used for each.

TRANSMISSION IDENTIFICATION

Figures 8 and 9

The transmission has two identifying stampings: the transmission identification and the VIN derivative. The transmission identification number gives the transmission model and when it was made. On the automatic transmission, the transmission identification number is located on the plate on the automatic transmission case. On the manual transmission, the transmission identification number is located either on the transmission case or the bell housing. The VIN derivative is created from the complete VIN and is stamped in either of 2 places (Figure 8). Refer to "Vehicle Identification Number" in this section. For more information on rear axle differential ratio codes, refer to SECTION 4B.

DIFFERENTIAL RATIOS AND TIRE INFORMATION

For differential ratios, refer to SECTION 4B. For tire information, refer to SECTION 3E.

GENERAL VEHICLE LIFTING AND JACKING

Figure 10

CAUTION: To help avoid personal injury when a vehicle is on a hoist, provide additional support for the vehicle at the opposite end from which components are being removed. The additional support will reduce the possibility of the vehicle's falling off the hoist. When removing major components of the vehicle while the vehicle is on a hoist, the vehicle frame should be chained to the hoist pads at the same end as the removed components to prevent tip-off. Failure to follow these precautionary measures could result in vehicle damage, serious personal injury or death.

NOTICE: When jacking or lifting a vehicle at the frame side rails or other prescribed lift points, be

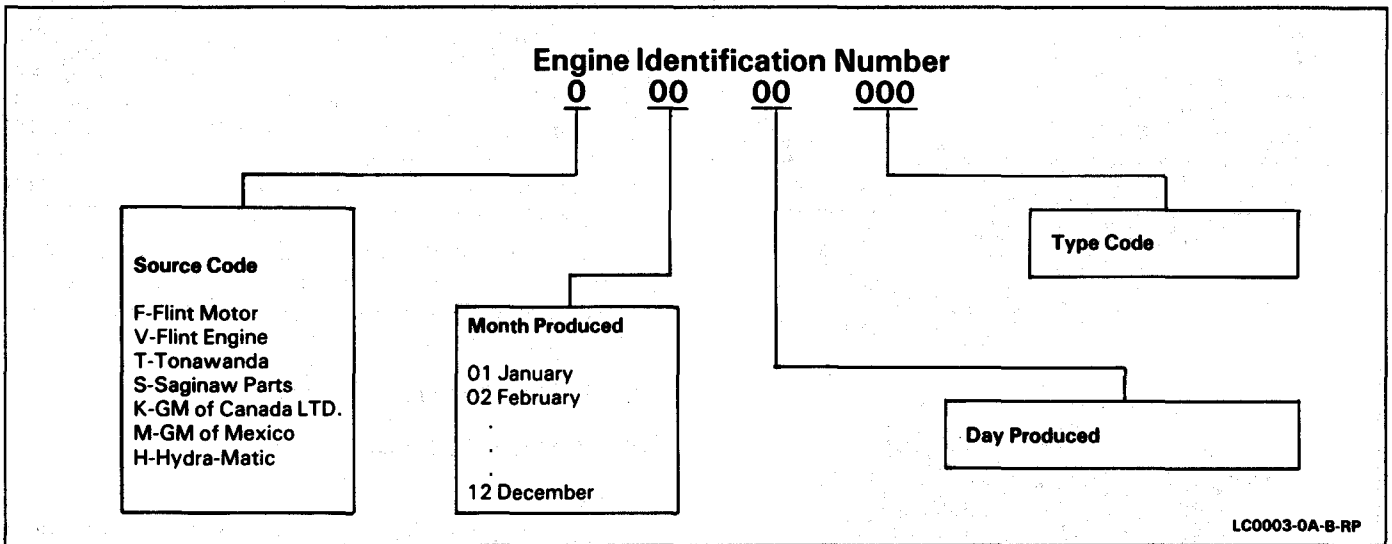


Figure 6 – Engine Identification Number

TRANSMISSION USAGE		
Engine	Axle (RPO-Ratio)	Transmission
3.4L, V6 (VIN S)	GU5 3.23	M49-Borg-Warner Manual 5-speed M30 Hydra-Matic 4L60-E
5.7L, V8 (VIN P)	GU2-2.73 or GU5-3.23	M49 Borg-Warner Manual 5-Speed MM6 Borg-Warner Manual 6-Speed M30 Hydra-Matic 4L60-E

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Figure 7 – Transmission Usage Chart

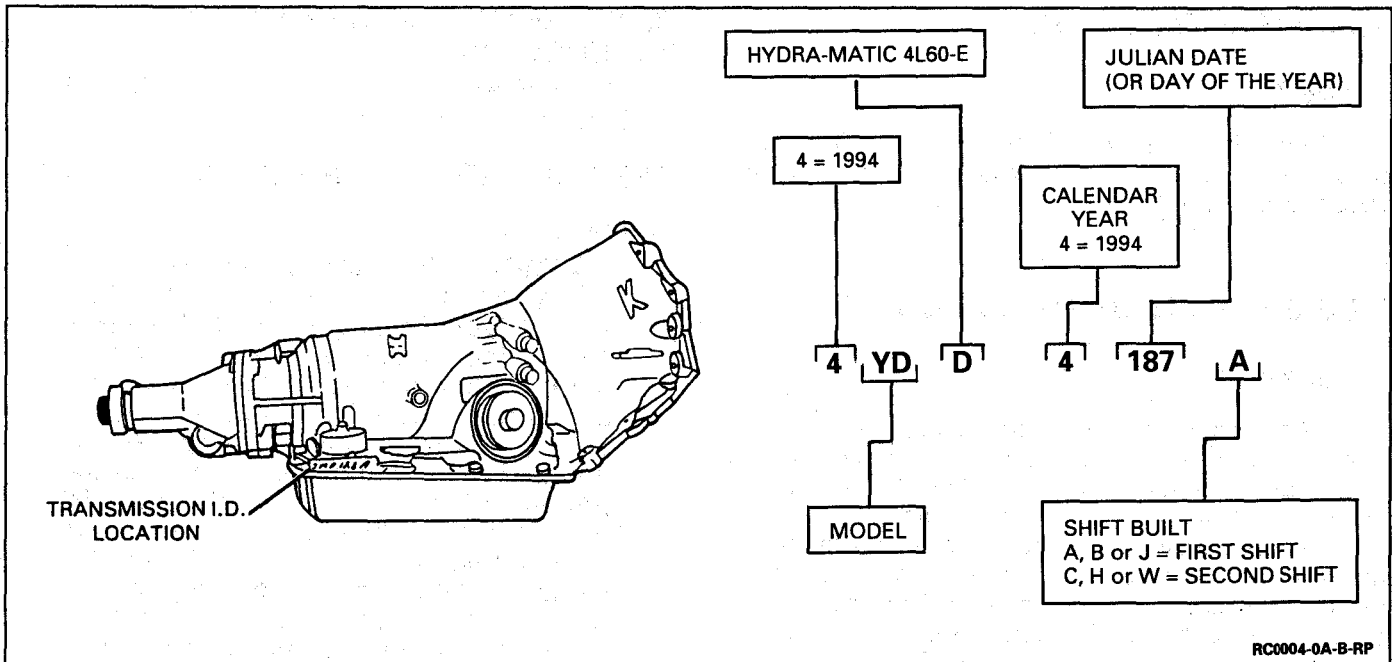


Figure 8 – Hydra-Matic 4L60-E Transmission I.D. Location

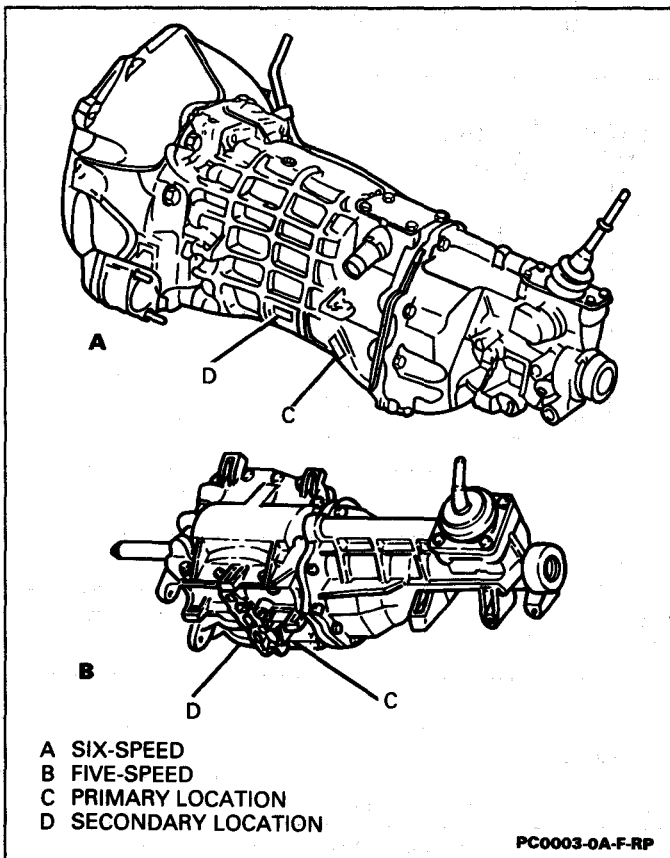


Figure 9 – Manual Transmission Identification

certain that lift pads do not contact the catalytic converter, brake pipes or fuel lines. Such contact may result in damage or unsatisfactory vehicle performance.

When a vehicle is lifted with a vehicle jack or floor jack, the wheels at the opposite end should be blocked.

Jackstands should be used to provide additional support. Jackstands should be placed under either the frame, the front suspension crossmember or the axle.

The vehicle should be on a clean, hard, level surface before any lifting procedure begins. All lifting equipment must meet weight standards and be in good working order. Make sure all vehicle loads are equally distributed and secure. If the only support for the vehicle is at the frame side rails, make sure the lifting equipment does not put too much stress on or weaken the frame side rails.

Recommended vehicle lifting points are shown in Figure 10. If any other hoist methods are used, take special care not to damage the fuel tank, filler neck, exhaust system or underbody.

LOCK CYLINDER CODING

Key Identification and Usage

Figure 11

The lock cylinder keyway is designed so that other model keys will not enter a current model lock cylinder. Two noninterchangeable keys are used.

- Square-headed key is used in the ignition lock cylinder.
- Oval-headed key is used in all other lock cylinders.

Key identification is obtained from the four-character key code stamped on the knockout portion of the key head and from an identification letter stamped on the key shank. After the code number has been recorded by the owner, the plugs should be knocked out of the key head. Using these numbers, owners of key-cutting equipment can determine the lock combination by consulting a code list available from equipment suppliers. If the key code numbers are not available from records or from the knockout plug, the lock combination (tumbler numbers and position) can be determined by laying the key on the diagram (Figure 11). For information on the square-