

# 1990 Corvette ZR-1: Service Bulletin: Engine Exchange Program

**Subject:** Engine Exchange Program

**Model and Year:** 1990 Corvette with LT5 (VIN Code J) Engine

**Source:** Chevrolet Dealer Service Bulletin

**Bulletin No:** 90-59-6

**Section:** 6

**Date:** September 1989

TO: ALL CHEVROLET DEALERS

To gain needed product feedback on the new 1990 Corvette LT5 engine, an exchange program is now in effect and will continue until further notice.

The exchange program will be administered by the Chevrolet Technical Assistance Network (TAN).

The following explains all requirements regarding serviceable and non-serviceable items, warranty claims processing procedures and shipping instructions. This information should be filed in the "Special Exchange Policy Procedures" manual.

In the event your dealership receives a comment on a 1990 Corvette LT5 engine, follow the procedure listed below. your cooperation will greatly improve the effectiveness of the program.

A. ENGINE COMPONENTS WHICH MAY BE SERVICED:

NOTE: Any deficient engine component listed below should be repaired according to Service Procedures in the 1990 Corvette Service Manual.

1. Throttle body and air intake duct.
2. Inlet plenum and related pipes and connectors.
3. Direct Ignition System (cam, crank and ESC sensors, coil, wires, module and spark plugs).
4. Fuel rail assembly and injector housings.
5. Secondary port throttle system (excludes throttle shafts and linkages), including vacuum reservoir, actuators, lines and external linkage in valley of engine, exposed when inlet plenum is removed.
  
6. Crankcase ventilation components including pipes.
7. Oil filter and filter housing and its components.
8. Engine wiring harness.
9. Coolant pump, pipes, water outlet, engine mounts and oil level gauge (dipstick).
10. Complete accessory drive and supporting brackets, to include starter, generator, A/C compressor, power steering pump, and all attaching parts.
11. All engine electrical sensors.
12. Flywheel and clutch components including housing.
13. Exhaust manifold/catalytic converter assembly.
14. Oxygen sensors.
15. Secondary injector modules.

In addition, external coolant and oil leaks not caused by above components may be fixed only if fasteners for major castings are not disturbed with two exceptions:

- a. Cam cover may be removed to repair oil leak between cover and head.

b. Oil pan may be removed to fix oil leak on pan side rails only.

IMPORTANT : All serviceable parts listed above are to be returned on the Chevrolet Parts Return Program. Notification will be via Dealer DCS Claim Memo.

#### B. EXCHANGE ENGINE:

Any deficient engine component not included in paragraph (A.) above may necessitate an exchange engine.

#### C. EXCHANGE PROCEDURE:

Once the above preliminary diagnosis and/or repairs are made and an exchange unit is deemed necessary, call Chevrolet TAN (Miscellaneous Group). The ZR1 engine assembly is not available through GMSPO.

Chevrolet Technical Assistance Network will arrange to ship an exchange unit (within 24 hours) to your dealership and provide your dealership with an engine request number . This number must be written on the return engine inlet plenum chamber, before returning the unit.

To increase the effectiveness of the program, the concerned unit must be returned immediately (not later than 1 week after date of receipt of replacement unit). Failure to return the concerned unit immediately will result in the dealership being billed the value of an exchange engine. All procedural steps must be followed to ensure that your dealership is not billed for this engine.

The removed unit must be returned complete as removed from the vehicle, in the container provided, without examination of the unit other than as described in Paragraph A above. Engine dress on the removed unit must remain same as replacement engine was shipped (i.e. manifolds, throttle body, etc.). Dealerships returning units that have been even partially disassembled

will be judged as violating this procedure and as such will be subject to being billed for all materials furnished (warranty may be voided).

**The exchange unit will be shipped with minimum quantity of oil; add oil per specifications.**

The exchange unit will have an envelope attached to it. This envelope will contain:

- Plastic vials (for oil sample and coolant sample).
- Return shipping label (freight is prepaid).
- Leak identification charts.

NOTE: For Corvette owners who wish to retain original engine in vehicle, a minimum of ten working days (two weeks) must be allowed to repair original unit, plus shipping time. An engine crate will be forwarded to dealer for shipment of engine once TAN is notified of the request. If after inspection of the original engine, it is determined to be non-repairable, the dealer will be notified through TAN. Consequently, a replacement engine will be shipped within twenty-four (24) hours of authorization from the Chevrolet Technical Assistance Network.

#### D. PREPARATION FOR SHIPPING

Drain and measure the oil and coolant from the concerned unit. Capture supply of oil and coolant samples in plastic vials. Record the oil and coolant measurements results on the repair order. Replace the drain plug. Remove engine assembly as outlined in the 1990 Corvette Service Manual. Remove all plastic shipping plugs and covers from the exchange unit and install them on the removed unit.

If engine leaks (see illustrations attached), mark leak area on engine. mark area of leakage on illustrations with red pen. Write the TAN reference number on the leak identification forms.

NOTE: Engine oil dye is installed during engine test run during production; if original oil is present, a black light will identify leak areas. If original oil has been changed, install Kent Moore Dye # J-28431-6 to identify oil leak areas.

Repack the removed unit into the original shipping container.

Place oil and coolant sample vials, leak identification charts and copy of repair order in original envelope and attach to original engine.

#### E. SHIPPING INSTRUCTIONS

Place the shipping label over the original shipping label on the original container.

Dealer should complete a bill of lading with attached sample information (prepaid, 3rd party billing) so that freight bill will be charged directly to Chevrolet Motor Division. The third party billing address (Charge To:) must be completed exactly as shown on sample. The removed engine is to be shipped Truck Freight to:

Mercury Marine  
3003 N. Perkins Road  
Stillwater, OK 74075

Attn: LT5 ENGINE EXCHANGE



Chevrolet-Pontiac-Canada Group  
General Motors Corporation

Preparer provided Short  
Form Bill of Lading  
Not Negotiable Document

SAMPLE

### Shipper/Bill of Lading- Material Returned Order- Invoice

Location Your Location

Acct. Pay Dr.  Acct. Rec. Dr.

1  
Gate/Financial Copy

No. 092790

Ship To: Dealer Name  
Or  
Mercury Marine

Invoice No. and Date

Charge To: C-P-C Headquarters, Room 116-12  
30001 Van Dyke Avenue  
Warren, MI 48090

Date Shipped

Consignment?  No  Yes

Car Initials & No. \_\_\_\_\_

| Work Order No. | Log No. | PO No. & Release No. | Seal No. | Ppd. | Coll. | Terms | Shipped Via/Routing |
|----------------|---------|----------------------|----------|------|-------|-------|---------------------|
|                |         |                      |          | X    |       |       |                     |

| NMFC | Part or Tool No. | Description & Reason for Shipment | Weight | No. Shipped | Price | Amount |
|------|------------------|-----------------------------------|--------|-------------|-------|--------|
|      |                  | Engine (FAK)                      |        |             |       |        |
|      |                  | 3rd Party Billing                 |        |             |       |        |
|      |                  |                                   |        |             |       |        |
|      |                  |                                   |        |             |       |        |
|      |                  |                                   |        |             |       |        |
|      |                  |                                   |        |             |       |        |
|      |                  |                                   |        |             |       |        |
|      |                  |                                   |        |             |       |        |
|      |                  |                                   |        |             |       |        |

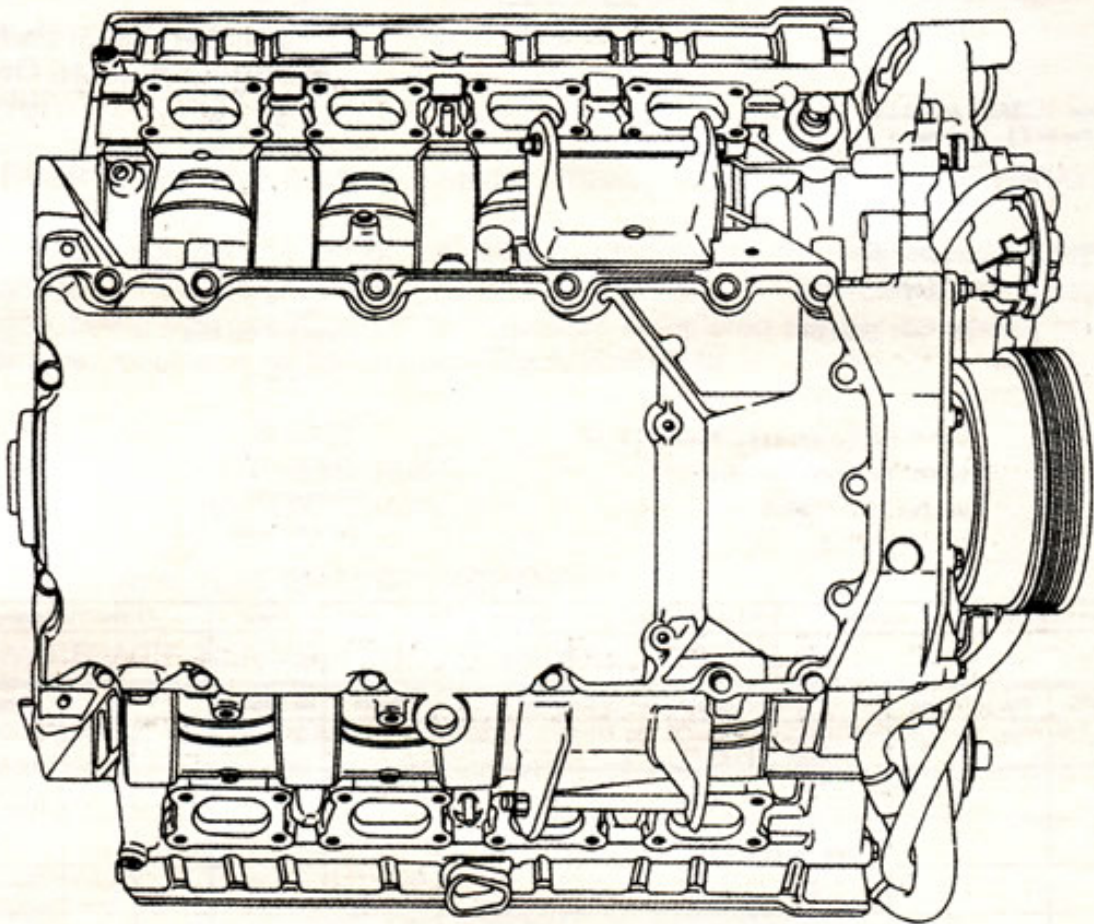
|                          |                |            |                          |
|--------------------------|----------------|------------|--------------------------|
| No. & Type of Containers | Shipping Clerk | Originator | Request for Shipper Inv. |
|--------------------------|----------------|------------|--------------------------|

| Vehicle Pass |      |      |             |                       |
|--------------|------|------|-------------|-----------------------|
| Driver/Agent | Date | Time | License No. | Patrolman's Signature |
|              |      |      |             |                       |

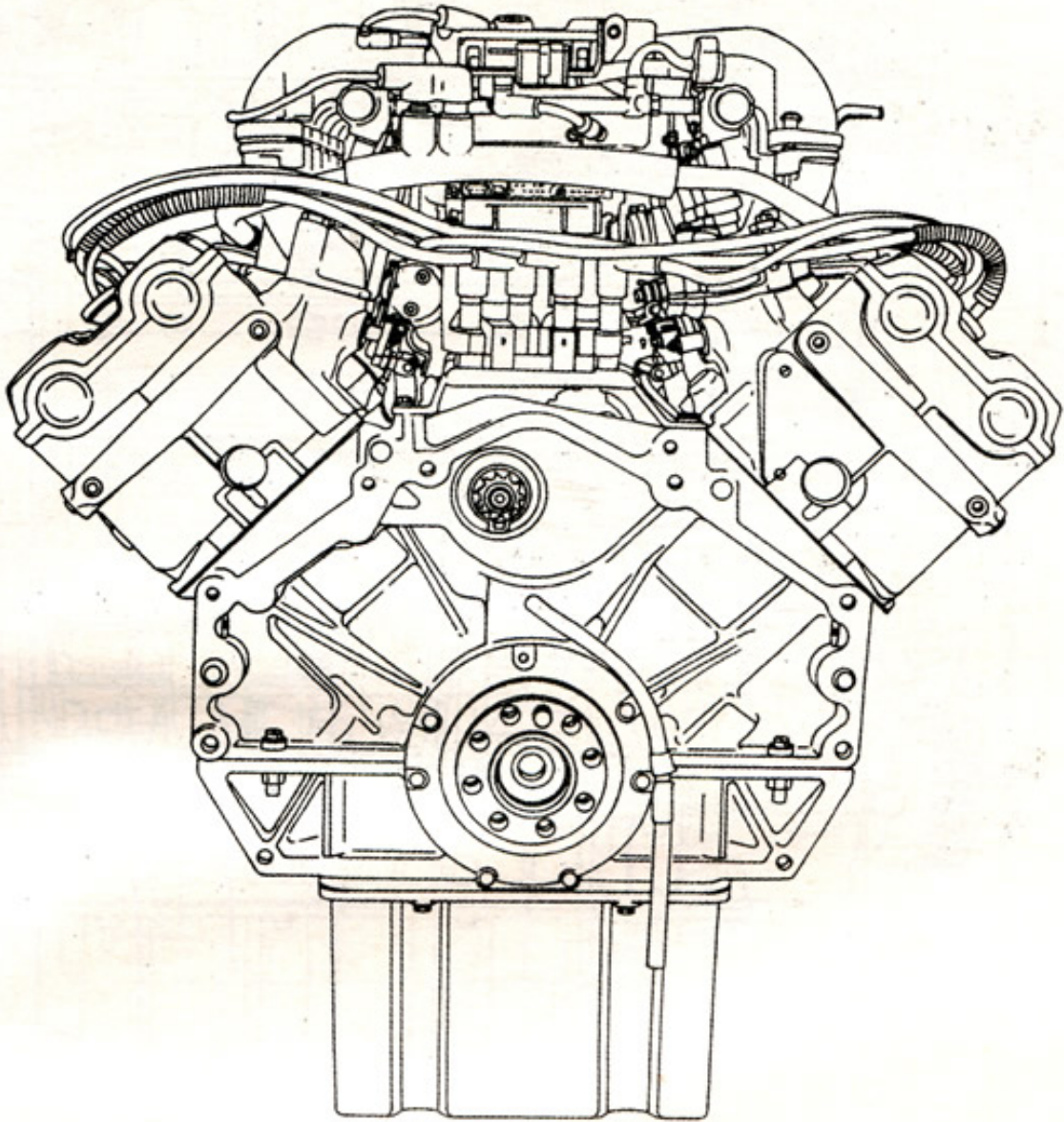
Received subject to the classification, terms and conditions in effect on the date of issue of this Bill of Lading. The terms and conditions shown in the Uniform Bill of Lading apply.  
Subject to Section 7 of conditions of applicable Bill of Lading. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  
Per \_\_\_\_\_

We hereby certify that these goods were produced in compliance with all applicable requirements of Section 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the U.S. Dept. of Labor issued under Section 14 thereof.

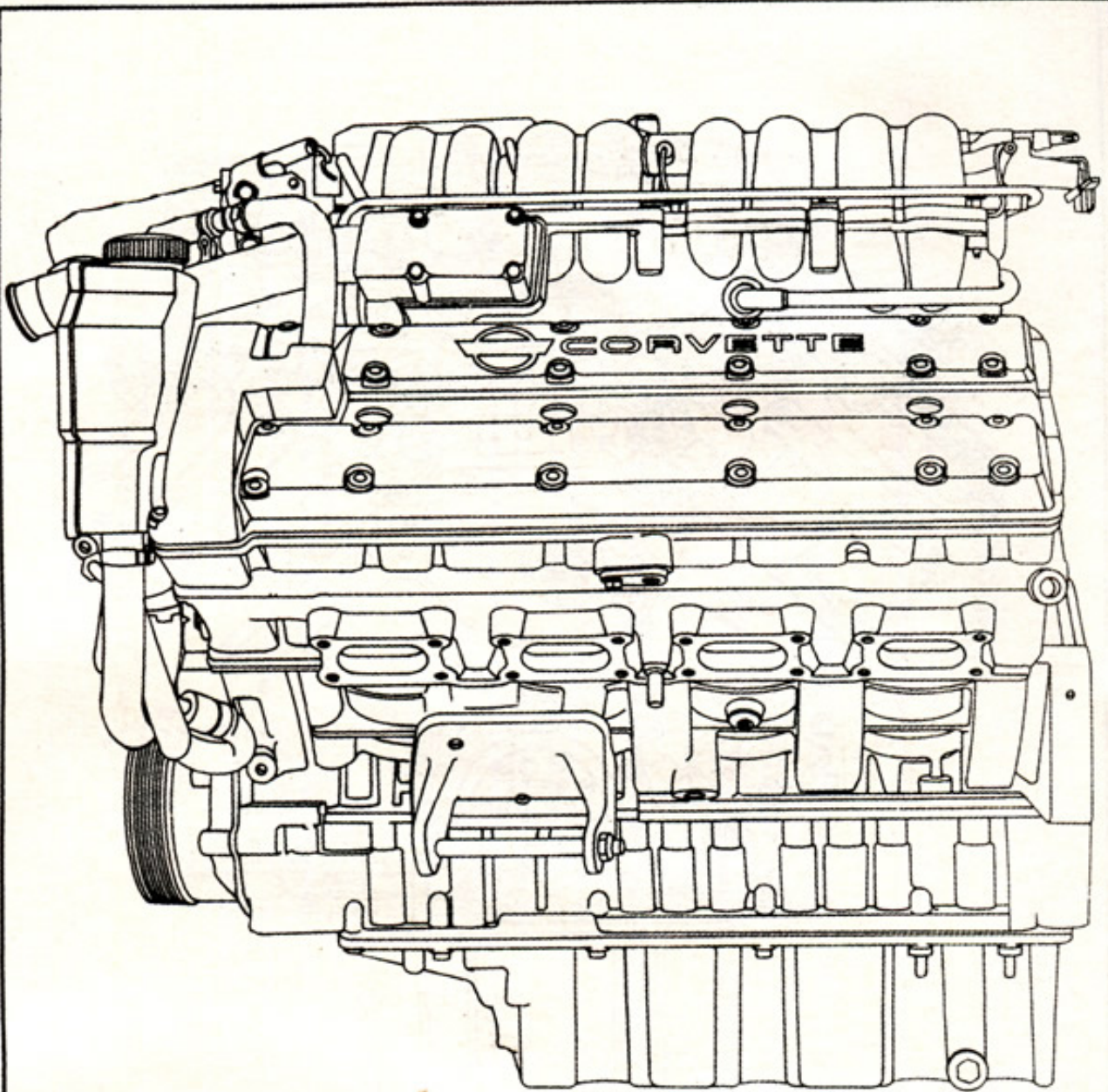
092790



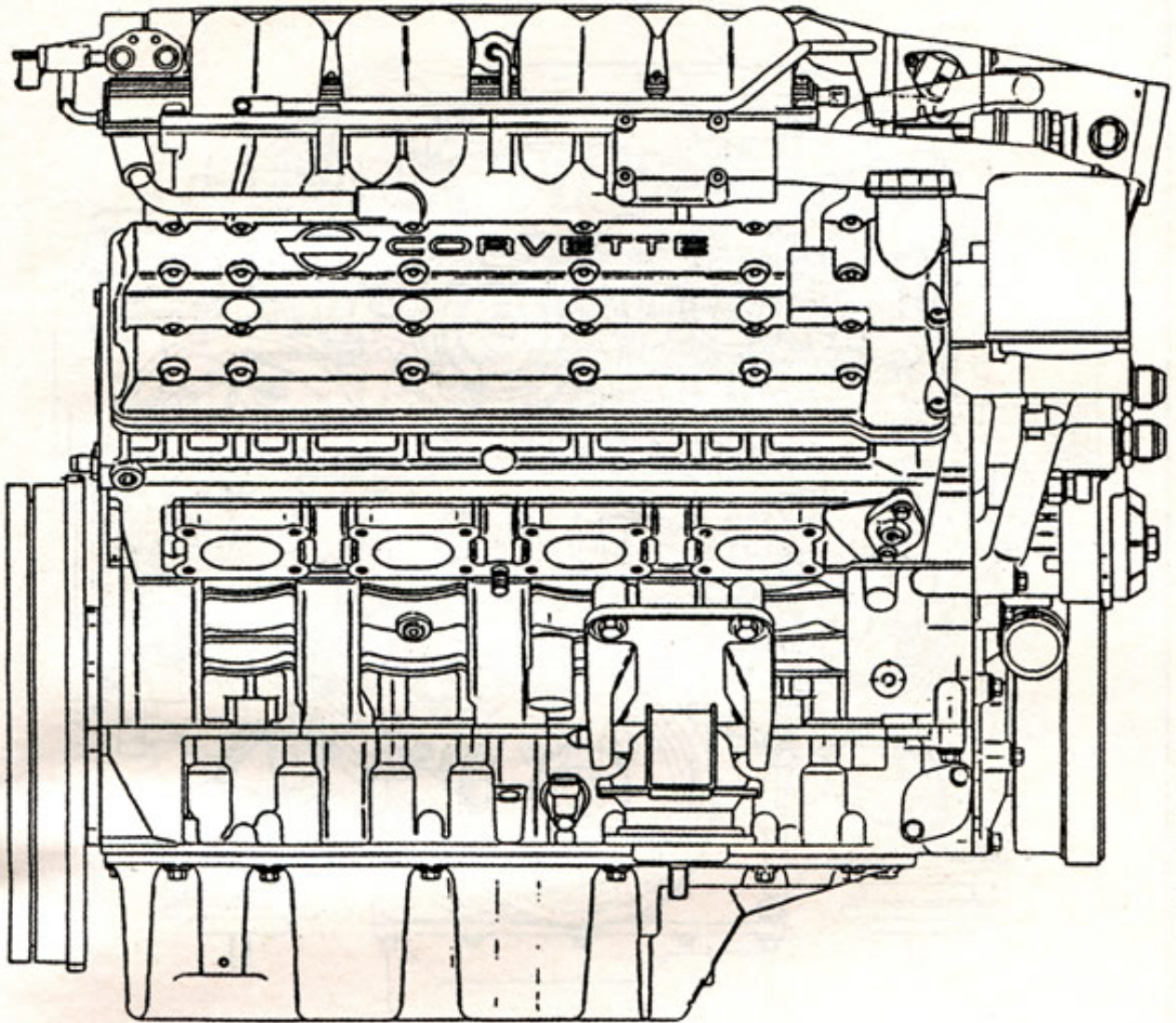
LT-5 BOTTOM VIEW



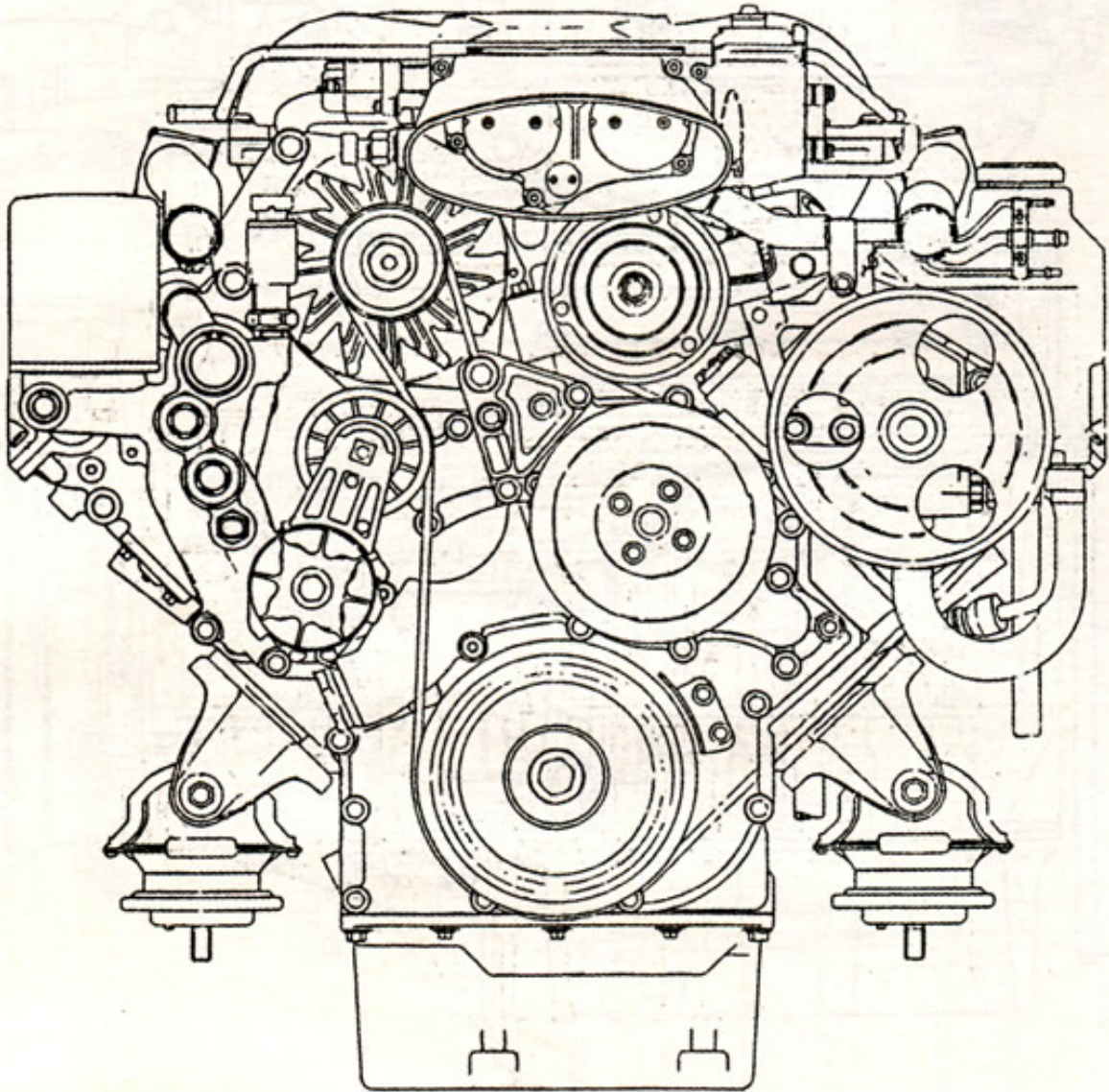
LT-5 REAR VIEW



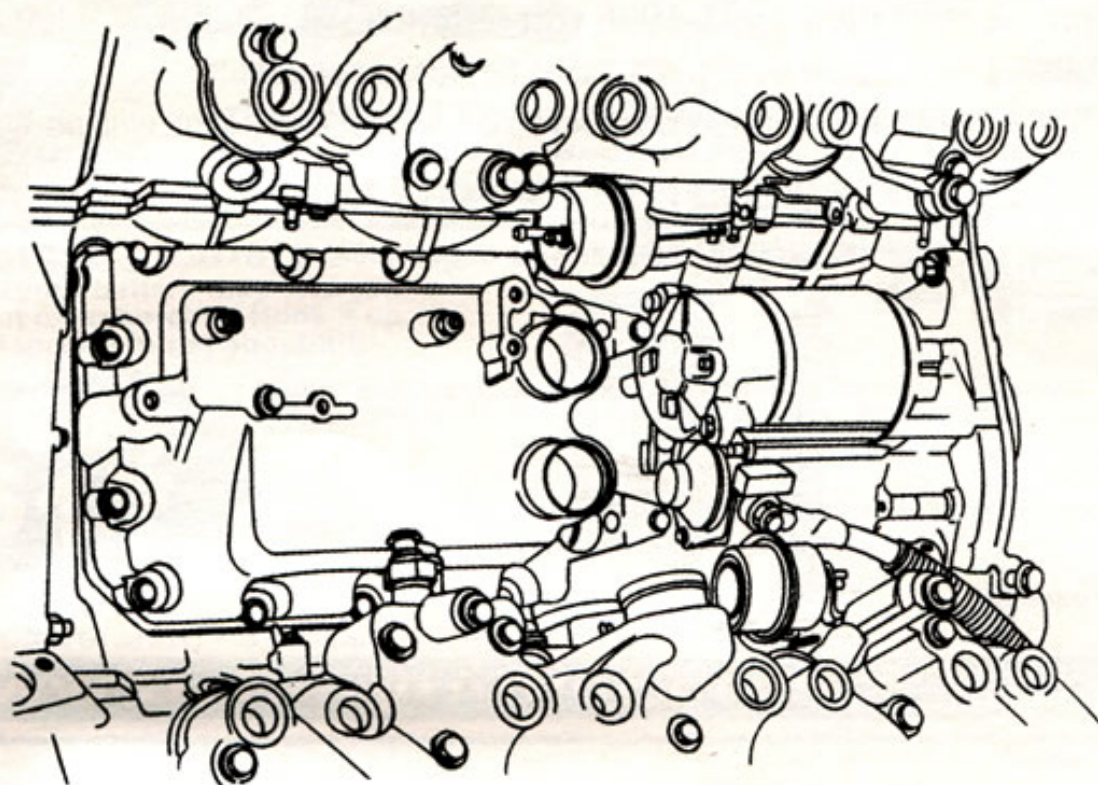
LT-5 LEFT-HAND VIEW



LT-5 RIGHT-HAND VIEW



LT-5 FRONT VIEW



**LT-5 UNDER PLENUM VIEW**

Online URL:

<https://www.corvetteactioncenter.com/tech/knowledgebase/article/1990-corve>

[tte-zr-1-service-bulletin-engine-exchange-program-1018.html](#)